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Children’s experiences of their sonic environment

Reflecting upon the nature of early childhood practitioner research

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In AJEC earlier this year, Marilyn Fleer (Fleer, 2005) challenged early childhood professionals to move beyond a developmental approach to their work and consider alternative frameworks. The developmental framework encourages us to think about childhood as a state of potential: a state where children are learning and growing in order to become adults. Childhood is not valued for itself, but simply as a stepping stone to an adult identity. Following a developmental framework, our role as adults is to determine what children need to learn in order to reach the goal of full adult potential, and to shape opportunities today that will allow this learning.

Rethinking our work requires us to first critique our ideas of childhood—challenging ourselves to think differently about questions such as ‘Who is a child?’ and ‘What is childhood?’ (see Kilderry, Nolan & Noble, 2004). Writers using a human rights framework have encouraged us to think of childhood as a ‘state of being here and now’ rather than as a preparation for the future (James, Jenks & Prout, 1998).

I have been trying to make sense of all these different ideas for some time now, while also trying to reflect on the basis for my own thinking. In this editorial, I hope to explain this in a way that is understandable, while also providing a frame for the articles in this issue of AJEC.

Firstly, it is clear to me that we must consider children as part of the world in which they are immersed. Fleer (2005) identifies a sociocultural framework as one that provides us with the potential to consider children as participants in a social and cultural world. I see the ecological framework of Bronfenbrenner (1979) as providing an overarching framework in which we can see children as participating in, and influencing, the wider social, cultural, political and physical world around them. At the same time, we need to start exploring the mechanisms by which this complex world actually impacts on children and changes outcomes. We know, for example, that children growing up in situations of poverty live shorter and less healthy lives, and are more likely to have less positive mental health outcomes, and lower educational and employment achievements (Allen, 2003). This is demonstrated by Najman and colleagues (2004), who show that disadvantage in the grandparent generation may influence outcomes for grandchildren. How does this happen? How are grandparents’ lives internalised by the child, thus shaping child outcomes?

In my work I have been examining neurological and biochemical research that may help us begin to understand this process. The first surprise for me was the key role stress plays. Stress is a major pathway for transferring outside, environmental influences into our bodies and shaping our neurology and biology (Adam, 2003; Gerhardt, 2004). When we are stressed (e.g. through hunger, pain; feeling unsure of ourselves, fearful, anxious) our body’s biological response is to produce cortisol to enhance our ability to cope (increased heart rate, blood pressure, levels of alertness etc). At the same time, cortisol shuts down functions such as rational thinking, memory, sexual drive. When we are stressed we can not think clearly and rationally, and we do not lay down memories—both major problems when it comes to learning. With chronically high levels of stress, our ‘switch’ for turning cortisol on/off gets stuck—sometimes in the ‘on’ position (long-term high cortisol with consequent hypertension, early heart attacks, strokes, and learning/memory impairments) and sometimes in the ‘off’ position (low cortisol: can not increase alertness, show a ‘flat’ emotional tone, demonstrate difficulty engaging with things, higher risk of post-traumatic stress disorder).

What does this mean for early childhood professionals? To me it means that quality early childhood practice should involve reducing children’s stress levels, rather than focusing solely on offering developmentally appropriate activities. Today, what children need is to be in an environment where they feel safe, loved and respected. When this happens their stress levels are down (Gerhardt, 2004) and then they can benefit from developmentally and culturally appropriate learning opportunities. When we emphasise the need for children to feel safe and loved each and every day, we are ensuring their present experience is high quality, and we are creating opportunities for them to learn and grow.

AJEC has, over many years, been at the forefront of publishing articles reflecting high-quality practice. The articles in this edition are no exception. I suggest to you, the reader, that these articles can be seen as the tools and knowledge you can use to shape your practice in new ways—using the framework I have introduced above. Let’s work through them and see how they link up.

O’Connor and Temple claim that physical activity has
been greatly overlooked in the developmental way of seeing things. As a consequence, some professionals do not see it as important to provide opportunities for physical activity in their programs. However, we know from extensive research that increased physical activity is linked with stress reduction in both children (Crews, Lochbaum & Landers, 2004) and adults (Lochbaum, et al., 2004; Schnohr, 2005). Providing quality physical activity is essential to children’s current wellbeing and will result in many positive longer-term outcomes.

Batchelor and Taylor remind us that social inclusion—feeling part of the group and having the skills to participate—is an essential component of a quality experience for young children. Children who have friends and feel they belong have lower stress levels and can experience for young children. Children who have friends and feel they belong have lower stress levels and can benefit from the learning opportunities offered in their environment. In a more traditional area of the school curriculum (mathematics), Peters and Young-Loveridge also demonstrate the importance of relationships in providing quality learning experiences for children. Caring, secure relationships make children feel safe. Assessment of mathematical outcomes, they argue, should also incorporate reflection on the relationships (teacher–child interactions) in which learning is embedded. Edwards describes the issues facing teachers using computers in the classroom. Sociocultural theory suggests that teachers should incorporate IT learning experiences in the classroom as the world in which children live requires IT literacy. Teachers are grappling with the best ways to offer these learning experiences to young children. I suggest that the use of IT needs to be considered in a relationship framework.

Teachers following traditional developmental pedagogy often overlook aspects of learning and development that are not easily covered by their checklists. Emotional literacy is one such area that has garnered much attention of late (e.g. Mary Gordon’s Roots of Empathy). Sorin discusses one aspect of emotional literacy, that of children’s fear and caregivers’ responses to fear. Effective responses arise out of an understanding of each individual child, and the relationship between child and caregiver. Caregivers offering high-quality services, where relationships are paramount, will be more effective in recognising, and responding to, children’s fears.

Another area often overlooked in developmental pedagogy is the area of sound recognition. Developmentalists may address this simply as a component of language development. Deans, Brown and Dilkes point out that learning to recognise environmental sounds contributes to children’s understanding of the world around them, and thus their ability to feel safe and secure in that environment. Working on sound recognition is another strategy to be used in high-quality early childhood environments to enhance children’s feelings of safety and belonging, lower stress and thus improve learning.

Finally, Goodfellow offers us a strategy to help us in our reflections as we challenge our own frameworks and attempt to construct new ways of going about our work. It is not enough to identify and clarify what is in our own heads. We need to have that thinking influence what we do when we are with children and families.

Enjoy this issue of AJEC. There are thought-provoking articles that can help you explore the models in your head and will, I hope, enable us all to improve our practice.

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Margaret Sims
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CONSTRANTS AND FACILITATORS FOR PHYSICAL ACTIVITY IN FAMILY DAY CARE

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Monash University  
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Movement-seeking behaviours should be fostered in young children to maximise their potential to adopt and maintain a physically active lifestyle. This study examined the constraints and facilitators to meaningful movement for children in family day care. The views of key stakeholders (caregivers, parents, and coordination unit staff) were examined via focus group interviews and questionnaires. There was general agreement among stakeholders that physical activity is an important part of young children’s lives and should be an essential component of family day care. However, there was concern about the variability in provision of opportunities for physical activity and that the variability reflected individual caregivers’ predilection. Despite this, there was little support for structured or programmed physical activity. The major barriers to physical activity described by stakeholders reflected a confluence of environmental and social factors. Major facilitating factors mentioned were training and resources for caregivers.

Introduction

Approximately 23 per cent of Australian children are placed in formal child care (Australian Bureau of Statistics, 1999). Sixty per cent of those children attend care for between five and 19 hours per week (Australian Bureau of Statistics, 1999), and the quality of that care can significantly impact on children’s lives (Love, Harrison, Sagi-Schwartz & Van Ijzendoorn, 2003). The most commonly used types of formal care in Australia are long day care and preschool (33% and 32% respectively), before- and after-school care programs (21%), family day care (12%) and occasional care (6%) (Australian Bureau of Statistics, 1999). Currently, 13,500 caregivers care for 126,000 children (National Family Day Care Council of Australia, 2003) and of those children 72,000 are aged from birth to four years (Australian Bureau of Statistics, 2000a).

Family day care is a flexible type of formal care offered to one or more unrelated children in the private homes of registered caregivers. It caters for the children of full-time, part-time, casual, seasonal, and/or shift workers (Australian Bureau of Statistics, 2000b; National Family Day Care Council of Australia, 2003). Australian national standards state that no more than seven children, including the caregiver’s own, can be in care at any one time and only four of the seven children can be under school age (5 years).

There are 343 registered family day care schemes across Australia. These are coordinated by trained staff under the auspices of local government, community groups or religious organisations. They are funded and guided by the Commonwealth Government in cooperation with State Government and a National Resource Unit (National Family Day Care Council of Australia, 2003). Each scheme consists of caregivers and the relevant coordinating unit. A sponsoring local government or non-profit community-based organisation establishes the coordination unit that in turn manages the scheme and interacts with operators, parents and caregivers (Comans, 1999). This unit is responsible for recruiting and supporting caregivers, placing children, monitoring care and financial administration. Within the coordination unit, fieldworkers support and resource caregivers through regular home visits and telephone contact. The fieldworker’s main roles include monitoring standards of care, assisting with selection and training of caregivers, conducting playgroups, and reporting to the program coordinator. The care environment, because of its regulatory control
and commitment to quality practice, provides a unique opportunity to impact upon the physical activity participation of young children.

**Importance of physical activity for young children**

Regular participation in physical activity has been well-established as an integral part of a healthy lifestyle in adults (Pate et al., 1995). Chronic diseases such as coronary heart disease, hypertension and osteoporosis are a result of life-long processes, usually surfacing clinically in the older adult years (Corbin, Pangrazi & Welk, 1994; National Centre for Chronic Disease Prevention and Health Promotion, 2000). Clinical markers of hypokinetic disease have been observed in children (Boreham, Twisk, Savage, Cran & Strain, 1997; National Centre for Chronic Disease Prevention and Health Promotion, 2000).

The increasing prevalence of overweight and obesity within the Australian population is a concern, with overweight children often becoming overweight adults (Crespo & Arbesman, 2003; Goodman, Lewis, Dixon & Travers, 2002; Serdula et al., 1993). While some evidence exists to support the tracking of cardiovascular disease risk factors into adulthood (Kemper, Snel, Verschuur & Storm-van Essen, 1990; Wang, Ge & Popkin, 2000), data demonstrating the tracking of physical activity behaviours is more limited (Kohl & Hobbs, 1998). The lack of supporting evidence may be as much a problem of assessing physical activity in children as much as it is one of tracking (Kohl & Hobbs, 1998). The lack of hard evidence for tracking physical activity has been substituted with a commonsense argument based on the belief that early positive physical activity experiences will predispose people to enjoy physical activity in later years (Booth, 2001; Centers for Disease Control and Prevention, 1997; Corbin & Pangrazi, 1998; Medical Journal of Australia, 2000).

**Importance of movement skill development for young children**

It is generally agreed that, during the preschool years, children should be encouraged to practise movement skills and engage in appropriate physical activity for health, social and psychological reasons (American Medical Association, 1999; Corbin et al., 1994; National Association for Sport and Physical Education, 2002; Shilton & Naughton, 2001). Body management activities, manipulation opportunities with a variety of equipment, and both locomotor and non-locomotor activities should form the basis of a young child’s preschool movement experience (Carson, 1994; Council on Physical Education for Children, 1994; Gallahue & Ozmun, 1998; Sanders, 1992).

Fundamental movement skills are basic movement patterns (catch, throw, kick etc.) that can be adapted, combined and refined to provide a foundation for lifetime sporting, recreational and physical activities (Carson, 1994; Gallahue & Ozmun, 1998; Seefeldt, 1979). These movement skills are best advanced within a supportive social environment with consideration for the affective and cognitive domains.

**Barriers and facilitators for early childhood movement**

Literature exploring physical activity levels of children placed in care environments is limited. Deal (1993), using heart rate and log book recordings to investigate daily activity patterns of three-to-five-year-old children attending day care, found children in the study were largely sedentary when in care. This, and other investigations of preschoolers in the home environment, shows that little time is spent engaged in vigorous activity and most time is devoted to sedentary or low-level activity (Deal, 1993; Freedson, 1989; Saris, 1986).

Higher levels of physical activity have been associated with outdoor play (Burdette, Whitaker & Daniels, 2004; Deal, 1993; Klesges, Eck, Hanson, Haddock & Klesges, 1990). The positive effect of an outdoor environment on activity levels of children may be because of the greater tendency for large-muscle-group activities and higher levels of overall physical activity in comparison to indoor environments (Deal, 1993). However, this does not mean that children will naturally engage in an ideal range of physical activities in outdoor environments. Taggart and Keegan (1997) found children in centres rarely engaged in the fundamental movement skills of kicking, catching or striking, while the dominant behaviours were climbing, jumping and running. This is consistent with other research which found that balls and bean bags for throwing, using a bat/racquet, and kicking activities were not commonly (18%) provided at early childhood centres (Schiller & Broadhurst, 2002), and that equipment commonly requested for purchase by preschool teachers would not facilitate fundamental movement skills requiring object control (Sonenstein, Gates, Schmidt & Bolshun, 2002).

Adult presence also influences the play patterns of pre-primary children during outdoor play. Children participate
in fundamental movement skills for longer periods when an adult is present (Taggart & Keegan, 1997). Interaction and encouragement from adult caregivers precipitated greater engagement in the ball-related skills of catching, throwing, kicking, and using bats (Taggart & Keegan, 1997). Children benefit when teachers and caregivers offer programmed outdoor experiences as well as child-initiated experiences to ensure breadth of learning (DeBord, Hestenes, Moore, Cosco & McGinnis, 2002; Taggart & Keegan, 1997).

Guidelines for early childhood movement

Little is known about the environmental and physical constraints placed on caregivers, which in turn impact upon the physical activity opportunities of children in their care. However, it has recently been suggested that the bar for provision of quality outdoor environments for early childhood education could be raised (DeBord et al., 2002). The National Association for Sport and Physical Education (2002) recently published physical activity guidelines for children from birth to five years of age (see Table 1). These guidelines provide parents, caregivers and administrators with some direction as to the quantity and quality of movement experiences that will meet children’s needs.

This investigation explored constraints and facilitators to meaningful movement for children in family day care. Specifically, the following research questions were addressed:

1. What were the common understandings and feelings about young children’s need for physical activity and meaningful movement experiences?
2. What were parents, caregivers and coordination unit staff perceptions of the level and types of physical activity young children are engaged in within family day care settings?
3. What constraints and facilitating factors did parents, caregivers and coordination unit staff perceive in relation to the provision of physical activity and meaningful movement experiences for children in family day care?

Method

Setting

Family day care provides care in a caregiver’s own home for small, multi-aged groups of children aged from birth to 12 years. Within Victoria, there are 72 accredited family day care schemes (National Family Day Care Council of Australia, 2003). Two rural family day care schemes were involved in the study: Shire A and Shire B. Shire A is characterised by resource-based industries and agriculture and has relatively low median incomes (Australian Bureau of Statistics, 2000c). The scheme has 90 independent caregivers who are monitored and supported by the coordination unit, with 1300 children registered for care in the scheme. Shire B has a higher level of employment with greater median incomes than Shire A. It has a smaller scheme, involving 40 caregivers with 609 registered children (Australian Bureau of Statistics, 2000a). Both Shire A and Shire B family day care is managed and operated by the local city council.

<table>
<thead>
<tr>
<th>Table 1. Physical activity guidelines for children birth to five years</th>
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<tbody>
<tr>
<td><strong>Guideline 1</strong></td>
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<tr>
<td><strong>Guideline 2</strong></td>
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<tr>
<td><strong>Guideline 3</strong></td>
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<tr>
<td><strong>Guideline 4</strong></td>
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<tr>
<td><strong>Guideline 5</strong></td>
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</tbody>
</table>

(National Association for Sport and Physical Education, 2002, pp. 9-11)

Recruitment

Subsequent to ethics clearance, caregivers, coordination unit staff and parents were recruited into the study. All participants provided informed consent. Following a presentation by the principal investigator outlining the study during a regular in-service education session for caregivers, a letter of invitation to participate was sent in the mail. Caregivers interested in participating called the telephone number listed, briefly discussed the...
study’s requirements, and were invited to enrol in the study.

Parents of children in family day care within Shire B were invited by their family day care scheme to participate in a focus group discussion exploring physical activity. Of the 344 families invited, only two expressed an interest in attending, despite many attempts to find times that best suited parents and the offer of child care. The methodology for collecting information from parents was consequently changed from focus group discussion to a distributed questionnaire. It contained both closed- and open-ended questions based on the focus group discussion guide. All families in Shire B were subsequently mailed an ‘invitation to participate’ letter, an informed consent pro forma, the questionnaire, and a pre-paid and addressed envelope.

Participants

Caregivers and coordination unit staff

Participants for five of the six focus groups were caregivers from Shire A (3 groups, 16 participants) and Shire B (2 groups, 8 participants). The sixth focus group consisted of three coordination unit staff from Shire A. All of the caregivers were women aged between 36 and 51 years. They had been caregivers for an average of eight-and-a-half years (range 1-19 years), and looked after an average of four children per day (range 2-5 children) for approximately seven hours per day (range 4-16 hours). All of the caregivers cared for at least one child aged between three and five years and 89 per cent also looked after at least one child aged two years or younger.

Parents

From the questionnaires mailed to parents, 45 responses were received. For the purpose of this study, only the participant whose name appeared upon the questionnaire response form was counted in the descriptive statistics (n=45). Of the 45 respondents, two were male, 39 were female, and three were of unknown gender. The combined parent/guardians had an average of two children each (66 in total), of which 73 per cent were under the age of five (range 10-60 months). Children aged under five years spent an average 10.3 hours (SD=8.3 hours; range 1-40 hours) in family day care per week and constituted the focus for the parent/guardian questionnaire. Care needs to be taken with the interpretation of the parent data, as only those who felt strongly about physical activity may have responded to the survey.

Procedures

Focus group interviews

The focus groups were conducted in accordance with the methods described by Krueger and Casey (2000). The purpose of the interviews was for stakeholders to provide their perspective of physical activity participation by young children and opportunities and barriers for physical activity in family day care environments.

Focus group interviews were held in Shire meeting rooms at a convenient time. The interview length ranged from 60 to 90 minutes and all interviews were tape-recorded. Initially an icebreaking activity was conducted and the purpose of the study was explained to the participants. It was emphasised that children aged between three and five years constituted the focus for the discussion. In addition, physical activity was defined for the participants in the following way: ‘Physical activity is where most of the body is moving, for example: riding a tricycle, running or helping in the garden. It would not include quiet play such as puzzles or drawing.’ The discussion had two distinct components. The first was participants’ views of physical activity and young children in general; the second focused more specifically on the family day care environment.

Parent questionnaire

In order to be comparable with the data collected from caregivers and coordination unit staff, eight open-ended questions were derived from the focus group discussion guide. The questionnaire also contained three closed questions concerning the number of children in care, their ages, and the time they spent in care.

Data analysis

Unabridged transcripts provided the basis for analysis of focus group interviews. Essentially, a long-table analysis (Krueger & Casey, 2000) was made, using a computer to help manage the data. Each quote or section of the transcript was categorised and coded before it was moved electronically to topic areas. The topic areas reflected the discussion guide at this stage. Subsequently, each author independently made a content analysis of each topic and a thematic analysis across all questions. The aim was to identify typical responses among participants and to reveal diversity between respondents. To contribute to the verification and validation of the findings, the identified content and themes were examined for consensus, a process Patton (1990) describes as ‘analyst triangulation’. A similar process of analysis was used for the open-ended responses to the
eight questions in the parent questionnaire. Each author independently reviewed the responses to derive common themes and illustrative examples of those themes. Data presented in this paper reflects content and themes where there was agreement.

Results
The results of this qualitative study found general agreement that physical activity was important for three-to-five-year-old children in care and that a number of barriers and facilitators to providing physical activity opportunities in family day care existed. Table 2 provides a summary of those factors.

Perceptions of young children’s physical activity
All respondents felt that physical activity was an important component in the lives of young children and the family day care environment. Caregivers and parents indicated that children are very active when in day care, but both groups qualified this somewhat by indicating that it depends on the weather and opportunities provided by individual caregivers. Coordination unit staff agreed that

<table>
<thead>
<tr>
<th>Key themes</th>
<th>Coordination unit staff</th>
<th>Caregivers</th>
<th>Parents</th>
</tr>
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<tbody>
<tr>
<td>Role of parents</td>
<td>C: Some parents do not want their children to be outdoors during care</td>
<td>C: Children sent to care in clothing inappropriate for physical activity. For example, in good clothes the parents wanted kept clean, or without outdoor wear in winter</td>
<td>C: Majority unaware of physical activity taking place in care F: Majority positively predisposed toward physical activity in family day care</td>
</tr>
<tr>
<td>Diversity of children in care</td>
<td>C: Younger children used as an excuse for not engaging three-to-five-year-old children in more physical activity</td>
<td>C: Some children come to day care predisposed to sedentary behaviour. Difficult to motivate C: Time taken to drop-off and pick-up children from kindergarten, school etc. C: 3-5-year-olds need to be quiet and indoors when the babies are sleeping F: Same age group would be easier</td>
<td>C: Babies decrease outdoor time because supervision is needed indoors</td>
</tr>
<tr>
<td>Physical environment</td>
<td>C: Little undercover outdoor space available F: See possibilities in small spaces and with little equipment</td>
<td>C: Lack of suitable outdoor space for poor weather C: Local playgrounds unsuitable for young children, vandalised or no undercover area C: Rules for indoor play</td>
<td>C: Bad weather C: Caregiver’s facilities</td>
</tr>
<tr>
<td>Staff attitudes and capabilities</td>
<td>C: Majority of caregivers do not give priority to physical activity; do not encourage children to participate C: Caregivers lack knowledge, confidence and ideas for physical activity C: Caregivers resistant to training</td>
<td>C and F: Diverse caregivers group. Some provide little physical activity, others a great deal C: Caregivers in general lack skill, knowledge and confidence related to physical activity F: Want support and encouragement</td>
<td>C and F: Quality and quantity of physical activity provision depends on the particular caregiver</td>
</tr>
<tr>
<td>Resources and policies</td>
<td>F: Specific family day care toy library and play group</td>
<td>C: Toy library inadequate; play group inaccessible F: Caregivers want resources</td>
<td>F: Physical activity and outdoor time should be monitored</td>
</tr>
</tbody>
</table>

NB. C = constraint and F = facilitator
children were active when opportunities were provided, but their overall impression was that children were not physically active in family day care.

Caregivers were generally uncertain about the role physical activity plays in later life, and articulated a limited role for it in the development of the child. In contrast, coordination unit staff felt strongly that children were not as active as they used to be, and were concerned about inactivity, lack of fitness and poorly-developed skills. They indicated that inactive children would become inactive adults. Coordination unit staff and parents could clearly convey a role for physical activity in a child’s development. They mentioned that basic movement skills were the building blocks for more complex skills, and that physical activity helped develop confidence, self-esteem, cooperation and creativity.

Caregivers and coordination unit staff expressed a strong desire for play to be unstructured, although a small proportion of respondents felt that structured physical activity was needed. Specific activities consistently mentioned as important physical activity for children in family day care were riding bikes/tricycles/pedal cars; rolling, trapping and catching balls; and the locomotor fundamental movement skills (hop, jump and run). Notable silences were creative play, and most of the other ball-related fundamental movement skills (such as batting, throwing and kicking a ball). Only parents mentioned dance as an important movement category.

Role of parents

Both coordination unit staff and caregivers perceived parents as obstacles to physical activity provision through trying to restrict activities. This included wanting to restrict time spent outdoors and excursions such as walking to the park. The issue of appropriate clothing was mentioned consistently. Caregivers and coordination unit staff indicated that many children came to family day care in clothes that impeded participation in physical activity. These constraints included oversized shoes, ‘good’ clothes that the parents wanted kept clean, and not having appropriate clothing for outdoor activity in the winter. Parents did not identify themselves as being a barrier to their child’s activity when in care. Of the 45 parents surveyed, none mentioned clothing or imposition of restrictions as potential barriers. When asked why they valued physical activity, parents most frequently listed the development of movement skills and coordination, enhancement of social interaction, and establishing lifelong activity habits.

Diversity of children in care

Caregivers and parents indicated that the diversity of children in care was a constraint to providing a physical active environment. Caregivers reflected that children of different ages had needs that could be incompatible. For example, when babies slept the older children could not be outside or participating in activities which created disturbance. Several caregivers felt they had little time to facilitate physical activity for three-to-five-year-olds because of other demands on their time such as feeding younger children, changing nappies and toilet training. In addition, dropping off and picking up children from kindergarten took up a lot of time. Caregivers also felt that many children were used to more sedentary activities such as watching television and videos at home, and they had to battle to persuade the children to do otherwise. Coordination unit staff clearly diverged from this view and felt babies and toddlers were used as an excuse to minimise the need to facilitate participation for three-to-five-year-old children.

Physical environment

All participants described environmental barriers to physical activity. These included lack of space, a lack of undercover areas for poor weather (both summer and winter), and local playgrounds that were unsuitable for young children or had been vandalised. Several caregivers indicated that they had outdoor spaces such as sheds and verandas available for play in poor weather, but other caregivers indicated that this was not always the case. One focus group member declared, ‘I don’t have anything; we just have to stay inside.’ Little gross motor activity was allowed indoors. In particular, caregivers would not allow running, throwing, climbing, catching, or riding bicycles/tricycles indoors.

Staff attitudes and capabilities

According to coordination unit staff, caregivers do not give priority to physical activity. They said caregivers were not physically active themselves, lacked ideas, knowledge and competence for providing physical activity, and were resistant to training. They went so far as to say that some caregivers actually discouraged physical activity. Caregivers and parents did not totally disagree with these views, but placed a great deal more emphasis on the beliefs and backgrounds of individual caregivers. Summed up by this caregiver: ‘I think if you are an active person yourself it will rub off on the children you look after. If you sit and watch tele [TV] then the kids will sit and watch tele. ... So how do you regulate something like
this? An emergent theme across caregiver interviews was a general lack of confidence, knowledge and skill regarding physical activity participation and provision.

**Resources and policies**

According to coordination unit staff, the toy library and play group operated by the family day care scheme were great resources, but under-utilised. Caregivers felt that the play group was a good idea, but found access a struggle because of transportation difficulties. The range of toys available from the toy library was considered inadequate by caregivers, who suggested that greater emphasis should be placed on larger equipment such as obstacle-course materials. Other facilitating factors mentioned by caregivers and coordination unit staff were resources, support and encouragement. Caregivers said they wanted to share ideas and learn new activities, and there were many thoughts about what ‘resources’ could consist of, including posters for the wall, a book to refer back to, a box of cards, a workshop and a video. The coordination unit staff said resources and training were the greatest areas of need because they felt caregivers had difficulty being flexible or adaptable when considering physical activity. A notable silence from caregivers and coordination unit staff related to policy and quality assurance practices. Only parents mentioned that monitoring of physical activity and/or outdoor time could be valuable.

**Discussion**

The study sought to explore issues related to physical activity and meaningful movement experiences for children aged three to five years within family day care. The first two questions dealt with perceptions towards activity, and all of the stakeholders felt that children should be physically active while in care. Caregivers and parents were quite positive about the provision of physical activity, whereas coordination unit staff members were less optimistic about physical activity within family day care. This may reflect the fact that coordination unit staff see a greater diversity of carer styles while visiting caregivers, and that caregivers and parents who participated in this study were perhaps more favourably disposed to physical activity. A powerful theme emerging across the stakeholder groups was the view that physical activity provision depended on the individual caregiver. This reveals a common perception of the variability of practice in family day care and, in this instance, in the provision of physical activity experiences across the schemes.

When asked what types of physical activity children should engage in, all stakeholders mentioned outdoor play and gross motor activities. More emphasis was placed on locomotor movement skills than on ball-related movement skills. These findings are consistent with Taggart and Keegan’s (1997) observations of children’s play in pre-primary centres, where they found children rarely engaged in ball-related fundamental movement skills. Only parents mentioned that children should engage in group games and social play. All stakeholders mentioned social development as a positive outcome of physical activity, but only parents mentioned it as a process.

There was little support from stakeholders for programmed or structured physical activity. In contrast, staff from long day care centres in the same geographical region were favourably disposed toward structuring physical activity (Temple & O’Connor, 2003). There needs to be a balance of child-initiated and caregiver-initiated or supported movement experiences (DeBord et al., 2002; Taggart & Keegan, 1997) so that children experiment with a wide variety of movements (Taggart & Keegan, 1997) and they have opportunities to enhance their fundamental movement skills (Kelly, Dagger & Walkley, 1989). Given that parents reported that their children were spending many hours per day in family day care, it is important for some time to be devoted to structured physical activity that affords opportunities to participate in positive movement experiences. It would seem unlikely that many parents would find time to engage children in activity before or after work. Deal (1993) noted that the greatest portion of time in the home environment was devoted to sedentary or low-level activity.

The third question posed by this study sought to shed some light on the constraints and facilitating factors for activity in care, with the environment and significant others emerging as major themes. The environment as a facilitating factor or a constraint was a confluence of the physical features of the environment and social features such as rules for play, or presence or absence of suitable clothing. For example, outdoor play spaces when the weather was not too hot or too cold/wet were generally adequate according to stakeholders. However, undercover or indoor play places were much smaller (or non-existent) than outdoor play areas, and the indoor play spaces were governed by rules that restricted many gross motor activities. A cyclical activity pattern associated with weather has been observed in other literature (Poest, Williams, Witt &
opportunities for children in family day care.

Confidence and competence to afford physical activity provision of resources to help caregivers acquire the redefinition should be concomitant training and Physical Education, 2002). Associated with this groups such as NASPE (National Association for Sport recommendations for physical activity suggested by

Consistency of practice, and meet minimum physical activity to assume greater prominence, the quality elements for family day care would allow

planning for children's development (Department of

Redefinition of family day care to program activity and provide creative solutions to counter the impact of these environmental constraints.

Another social factor which interacted with the physical environment was the diversity of children in care. Coordination unit staff disagreed that this diversity was the issue, and felt that if caregivers had more confidence and training they could find creative solutions to keep the older children more active during those times. Caregivers also felt that resources and training would be helpful in this area, a notion supported by Poest et al. (1989), who indicated that training would better equip instructors to implement movement activities for preschool-aged children.

Children's physical activity participation is influenced by those who care for them. We heard that some children were sent to day care in clothes that inhibited activity and that some parents sought to constrain outdoor time and particular activities. We also heard that there was variability in the provision of physical activity opportunities, as well as opportunities for sedentary behaviour such as watching television. One caregiver reflected that it would be difficult to regulate such practices, and a parent suggested that physical activity should be monitored. A loose framework for programming physical activity exists within the National Standards for Family Day Care. Within this framework, utilisation of a programming model is encouraged when planning for children’s development (Department of Family and Community Services, 2000). Redefinition of the quality elements for family day care would allow physical activity to assume greater prominence, consistency of practice, and meet minimum recommendations for physical activity suggested by groups such as NASPE (National Association for Sport and Physical Education, 2002). Associated with this redefinition should be concomitant training and provision of resources to help caregivers acquire the confidence and competence to afford physical activity opportunities for children in family day care.

Conclusion and recommendations

It is clear from the responses provided by the participants that physical activity should be an essential component of family day care. However, there was concern that variability in provision of physical activity reflected the individual caregiver’s predilection. Notwithstanding apprehension among participants about structured or programmed physical activity, family day care schemes need to ensure that physical activity is scheduled and monitored. Consistent with Finn’s (2002) ‘planned play experiences’, we recommend that activities be designed to facilitate skills associated with movement and health-related aspects of physical activity without overwhelming children’s exploration and creativity. To facilitate this provision, innovative resources with ideas for providing equipment and appropriate activities together with associated training must be provided for caregivers in order to cater for the unique and often constrained environments of family day care.

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Introduction
From our own experience as teachers in community early childhood settings (ECSs) we observed that children with developmental disabilities/delays were often relatively socially isolated from their peers and interacted far more frequently with adults. Our more recent experience as early childhood intervention (ECI) teachers has served to reinforce these observations through our consultation to many and varied ECSs. The families we work with constantly identify the development of friendships with other children as one of the main priorities for their child when they enter inclusive settings. Lack of friendships for the child can be a significant and ongoing stressor for families.

Examination of the research literature demonstrated that strategies to promote social interaction and social acceptance between children with a disability/delay and their peers were clearly identified and documented. Why then are these strategies not commonly used, even in the most socially-aware ECS programs? Could it be that these strategies have not moved beyond the university-based early childhood programs from where they originated, perhaps because conditions within community ECSs preclude implementation of such time-intensive methods? The aim of this project was to investigate whether a user-friendly social intervention package, devised in consultation with ECS staff, encompassing social integration activities and peer-mediated strategies, could be incorporated into the everyday activities and routines of the ECS program, and whether this would lead to increases in social interaction and social acceptance between children with developmental disabilities/delays and their peers.

Literature review
Relevant literature reinforces the observation that typically-developing children are more likely to interact socially with one another than with peers who have developmental delays or disabilities (Guralnick, 1981; Stoneman, 1993). Compared with typically-developing peers, children with disabilities in inclusive settings interact directly with adults up to 12 times more than with their peers (Hundert, Mahoney, Mund & Vernon, 1998). Social interaction within the peer culture is the basis from which friendships develop (Guralnick, 1981), and is an important medium through which language, cognitive and social learning takes place (Guralnick 1981; McEvoy & Odom, 1987). Young children who do not have access to positive social interactions with peers are at risk of social maladjustment in later life (Brown, Odom & Conroy, 2001; Strain & Odom, 1986). If the above findings are considered together then it
seems reasonable to suggest that children with a disability are likely to have reduced opportunities to access the peer culture and to develop meaningful interactions and acceptance within it. Consequently, their potential to form friendships is severely limited, even within inclusive ECSs. While undoubtedly some of this increased direct adult contact is necessary, Harper and McCluskey (2003) suggest that too much direct contact with adults reduces these children’s opportunities to interact meaningfully with their peers.

How then can the problem be addressed? Research into interventions aimed at facilitating social acceptance and social interaction between young children with disabilities and their peers has been prevalent for the past quarter-century. A range of social interventions has been identified within the literature, as follows:

1. **Child-specific social interventions** are those directed specifically at the child with a disability (Strain & Odom, 1986). An assessment is made of the child’s deficits in social skills and a program worked out to try and remediate these. Much effort is put into prompting and reinforcing interaction with peers. It is interesting to note that child-specific interventions were found to have a negative effect on peer acceptance of the child with a disability (Odom, McConnell & Chandler, 1993; Odom et al., 1999).

2. **Affective interventions** are group-focused interventions aimed at changing peers’ attitudes towards children with disabilities (Favazza & Odom, 1997). They are designed to depict children in realistic and positive ways using stories, discussions groups, audiovisual materials and puppetry.

3. **Friendship activity interventions** (also known as group affection activities) are those which adapt young children’s songs, group games and activities to include opportunities for social interactions (Twardosz, Norquist, Simon & Bodkin, 1983). An example might be incorporating high fives, tickling, smiling at or making a friendly comment to a peer into a familiar action game.

4. **Incidental teaching of social skills** occurs when early childhood staff use incidents arising during the ongoing play to help shape or scaffold the social interaction of children with disabilities and their peers. It involves modelling appropriate social skills, using adult and peer models (Brown, McEvoy & Bishop, 1991; Odom, Zercher, Marquat, Sandall & Wolfberg, 2002).

5. **Social integration activity interventions**, also known as environmental arrangements (Frea, Craig-Unfeker, Odom & Johnson, 1999; Odom et al., 1988) are those where staff arrange for children with limited peer interaction to be in contact with peers who are highly socially competent. The adult then scaffolds the play activity to the degree required to promote and maintain interaction. The child with a disability has the opportunity to not only observe but also be directly involved in such play, which can lead to the establishment of positive interactions with peers, often not previously experienced.

6. **Peer-mediated interventions** are programs designed to train typically-developing peers with the social skills needed to draw children with disabilities into the play (English, Goldstein, Shafer & Kaczmarak, 1997; Goldstein, 1993; Goldstein, English, Shafer & Kaczmarak, 1997; Kohler & Strain, 1993; Odom et al., 1988; Visoky & Dickerman-Poe, 2000). Within play activities and routines of early childhood programs, typically-developing children are seen as the best promoters of social interaction and acceptance between children with disabilities and themselves. These peers are trained to initiate social behaviour with specific children and to respond positively to the initiations of this child. The adult would need to intervene only when there was no way a situation could be dealt with by one of the children in the play—for example a safety situation (DeKlyen & Odom, 1989; Harper & McCluskey, 2003). It could then be said that the peers were mediating the play.

**Efficacy studies of social interventions**

A small number of research studies have examined the relative effectiveness of social skill interventions designed for use with preschoolers in promoting social interaction and/or acceptance. The implementation of a combined affective and social integration intervention package resulted in positive attitude change of typically-developing peers toward children with disabilities (Favazza & Odom, 1997). A further study by Hestenes and Carroll (2000) suggested that affective interventions do not necessarily lead to increased social interaction. Incidental teaching interventions were found by Brown and Odom (1995) to be insufficient to promote social interaction between typically-developing children and children with disabilities when implemented in isolation from other strategies. Hundert and Houghton (1992) found that social integration, child-specific and peer-mediated
interventions, when combined, led to increases in positive play interactions, the effects of which were generalised into other settings.

A comprehensive study by Odom et al. (1999) examined the relative effectiveness of social integration, child-specific, peer-mediated interventions, and a program that combined the previous three interventions. The participants consisted of 98 children with mild to moderate developmental disabilities within inclusive settings. Results indicated that social integration, child-specific and especially the peer-mediated interventions led to an immediate increase in the frequency of social interaction. Child-specific and peer-mediated interventions had the greatest immediate impact on the quality of the interaction; however in the long term these results were maintained for more than 12 months only in the peer-mediated group. Social integration intervention had the most impact in both the short and long terms on increasing social acceptance, although the peer-mediation intervention also appeared to have a substantial effect.

Studies regarding implementation of interventions in ECSs

Several studies found that planned social interventions were infrequently incorporated into community ECSs, despite the large range of empirically-validated strategies available to professional staff (Hamilton, 1994; McConnell, McEvoy & Odom, 1992; Michnowicz, McConnell, Peterson & Odom, 1995). In studies investigating the reasons for lack of implementation of strategies by teachers, it was found that strategies were often not considered to be user-friendly in the context of everyday kindergarten or childcare programs. Such strategies were usually too demanding and time-consuming, and required specialised resources not readily available within the setting (Brown & Odom, 1995; Odom, McConnell & Chandler, 1993). However, studies by Hendrickson, Gardiner, Kaiser and Riley (1993) and Hundert and Hopkins (1992) found that, when staff were comprehensively resourced regarding appropriate strategies within their programs, they were more likely to use interventions, resulting in marked increases in social interaction between children with disabilities and their peers. The research indicates the need for staff, after initial training, to have a high degree of autonomy in implementing social interventions relevant to their own environments.

Method

Setting

An ECS within the catchment area of the ECI program was selected according to the following criteria: (i) a child with a developmental disability from the ECI program attended the kindergarten; (ii) the kindergarten program showed a commitment to developing the children's social skills; (iii) the kindergarten staff were prepared to engage in collaboration in order to plan and implement jointly-preferred strategies within the context of their program. A kindergarten in the northern suburbs of Melbourne was selected. While the program was consistent with other ECSs, it should be noted that the group size was smaller than the average kindergarten group, and an additional inclusion support worker was present for part of the sessions.

Participants

The focal child for the purpose of this study was a four-year-old girl with a moderate developmental disability, attending the selected setting. Interventions targeted this child and her kindergarten peers.

Materials

Following collaborative investigation of the selected literature with the kindergarten teacher, it was decided that the most appropriate strategy to use was an adapted version of Goldstein and colleagues' (1997) peer-mediated 'Stay, Play and Talk' program. The central idea of this program is that joint attention around an object or toy for the focal child and a peer is most likely to lead to further communicative acts. This necessitated children being made aware that, to play, they needed to stay fairly close to their friend, and know how to initiate and maintain contact and how to sustain communication. The 'Stay, Play and Talk' catchphrase was seen by the team as something that would appeal to children and could be easily identified by both children and adults. Increasing the sensitivity of peers to the form of augmentative communication used by the focal child was another aspect of this program that the team felt was important. Rather than withdrawing children to view and discuss teacher-made videos of the focal child, puppetry with the whole group was used to explore the ‘Stay, Play and Talk’ concepts.

An additional preferred method identified by the team was social integration activity interventions. Again it was decided to modify strategies suggested in the
literature (Frea, Craig-Unfeker, Odom & Johnson, 1999; Odom et al., 1988). The adaptations involved identifying a pool of socially-mature children, rather than limiting the involvement of particular children to a specific day or activity. It was felt that this flexibility would optimise naturally-occurring dynamics within the play. Odom et al. (1988) suggested that peers be given external reinforcement for their participation in the social integration activities; however, this was not seen as appropriate within the context of the kindergarten philosophy as it would not allow the play to progress in a natural way. Sandall and Schwartz’s (2002) teacher resource book provided useful strategies on how to implement the preferred interventions across a range of everyday early childhood activities. After careful consideration of the research, the team hypothesised that successful social integration activities would lead to spontaneous peer mediation.

**Data coding**

Prior to the commencement of the program, three sets of baseline data of the focal child’s social interaction were collected by analysis of a 45-minute video. An adapted version of the Code for Active Student Participation and Engagement—Revised (CASPER II) (Brown, Favazza & Odom, 1995, cited in Brown, Odom, Li & Zercher, 1999) was used to code the video at five second intervals. The most significant adaptations were the inclusion of the categories the authors called ‘Child Interactions’ and ‘Peer Interactions’ which coded the nature of the interaction for the child and the peer, to enable a comparison of the quality of the interactions. Eighteen codes were developed to represent social interaction behaviours identified in the research that would be expected at the kindergarten level (English et al., 1997; Goldstein et al., 1997; Kohler & Strain, 1993; Odom et al., 1988; Odom, McConnell & Chandler, 1993). Another additional category was ‘Intervention Strategies’ which documented the strategies used during each interval. One researcher coded each video. The focal child’s social acceptance within the group was also evaluated using an adapted version of McConnell and Odom’s (1986) ‘Friendship Train’ sociometric peer rating scale (cited in English et al., 1997). The ‘Friendship Train’ was used with all of the children in the group to gauge the focal child’s social acceptance level. Each child played a game with the researcher where they were able to choose the photos of three friends to take with them in a ‘Thomas the Tank Engine’ train to a favoured destination. This was repeated with the child until all of the children’s photos had been put in the train. The researcher then noted the order that each child placed their peers in the train.

A questionnaire distributed to all parents in the kindergarten group asked for their perceptions of whether their child talked about or used any of the strategies implemented within the program, at home or in the community. In Part 1 of the questionnaire parents were asked to rate several strategies/concepts on a three-point scale, as to whether their child had used or talked about them either ‘not at all’, ‘sometimes’ or ‘frequently’. In Part 2 parents were asked to rate whether they had noticed any changes in their child’s behaviour with other children, in seven social behavioural domains targeted by the program. Again a three-point rating scale was used; however, the wording was varied slightly. Parents could choose from ‘no change’, ‘some change’ or ‘a lot of change’.

**Procedure**

The program commenced in the fourth week of second term in 2003, to enable the group to settle in to the kindergarten, and to allow for the development of the normal social structure. Each week the teacher, in collaboration with the researchers, identified three play activities from the teacher’s program as possible social integration activities. The activities were chosen for their potential to offer opportunities for social interaction between the focal child and highly-socially-responsive peers (e.g. dramatic play, construction, and small group games) (Odom et al., 1988). Possible peers were identified in the planning, including children who had shown some initial interest in the focal child. While activities were planned, and specific peers were identified, these could be changed or adapted to respond to the children’s interests, while still focusing on the planned promotion of social interaction skills. Within the activities an adult scaffolded the interaction only to the degree required to promote and extend that between the focal child and her peers. Some initial modelling and direction was provided by the ECI researchers to kindergarten staff. This was reduced and then withdrawn as the staff became familiar and more confident with the application of the strategies. Each week the activities were videoed for approximately 45 minutes and analysed as per the baseline data.

In addition to the social integration activities, two whole-group experiences such as puppetry scenarios, discussions, stories and appropriate songs were planned weekly. They were designed to: (i) increase peer awareness of the specific communication modes used
by the focal child (in this case, predominantly key word signing); (ii) increase whole group awareness of the skills required to initiate and sustain positive social play interactions with peers, using the ‘Stay, Play and Talk’ framework; and (iii) involve the children in social problem-solving experiences (e.g. what do you do if your peer won’t share). Two childlike puppets, which the group named Maddy and Peggy, were engaged in play scenarios to explore social interaction themes (e.g. exclusion, turn-taking). The scenarios were often based on current social issues observed within the play. The group activities were also videotaped as a method of observing and evaluating the program, and used to modify subsequent whole-group experiences. To assist the staff in implementing the program during ongoing play, written and visual prompts were displayed as wall charts. These included enlarged key word signs, which related to social play situations (e.g. ‘my turn’). As social skills were investigated with the whole group, written prompts were added to wall charts utilising the ‘Stay, Play and Talk’ framework.

The program continued until mid-October 2003, for the duration of 14 weeks (excluding school holidays). At the conclusion of the program the Friendship Train sociometric rating was repeated. After a break of six weeks, during which time ECI staff withdrew from the planning process, three 45-minute maintenance observations were recorded and coded, and another set of sociometric ratings was recorded. The maintenance was unable to be conducted over a longer period because of the relocation of the kindergarten to a new building. This relocation included a break in the kindergarten program for two weeks.

**Results**

**Social interaction**

The most significant result derived from the data, obtained by coding the video using the adapted CASPER II, was the increase in the percentage of peer-initiated interactions with the focal child. This ranged

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**Figure 1. Percentage of intervals peers initiated interactions with the focal child**

![Figure 1](image1)

**Figure 2. Percentage of intervals where spontaneous peer mediation occurred**

![Figure 2](image2)
from 2.65 per cent during the baseline period to 31.24 per cent towards the end of the intervention period, and was sustained in the upper range during the maintenance period (refer to Figure 1). In addition, the amount of time the focal child spent not interacting either with her peers or adults markedly decreased over the program period, ranging from 69.66 per cent during baseline to 25.89 per cent towards the conclusion of the program. The focal child maintained her frequency of interacting with both her peers and adults at a fairly constant level; however, the decrease in the amount of intervals she was not interacting is directly proportional to the increase in peer initiations. Over the duration of the intervention period the level of spontaneous peer mediation increased from zero during the baseline period and early in the program, to 20.66 per cent at the end of the project (refer to Figure 2). It should be noted that in Weeks 5, 7, 9 and 10 there was no peer mediation evident. Table 1 shows a comparison of the range of social behaviours recorded for both the focal child and her peers at periodic intervals throughout the program. Most significantly there was a considerable change in the frequency of mutual attention (attending to the same thing together) over the course of the program, for both the focal child and her peers (refer also to Figure 3). There was also a decrease in the amount of intervals where no interactions by the focal child occurred (53.75% in Baseline 1 to 31.60% at Week 14) and by her peers (63.04% in Baseline 1 to 45.42% in Week 14). As shown in Table 1, many of the social interaction behaviours had small increases in frequency, with some decreasing or fluctuating over the course of the program. Play organisation, which is the highest level social behaviour represented in Table 1, increased from zero to 3.21 per cent by peers to the focal child. While this was not a big increase, it did indicate that the peers were engaging the focal child in high-level play for a small percentage of the time by the end of the program.

Social acceptance

The results from the ‘Friendship Train’ sociometric rating scale indicated a very significant increase in the social acceptance of the focal child by her peers. There was an increase in her rating by 64.31 per cent of peers at the conclusion of the program. At the end of the maintenance period 78.63 per cent of peers rated her more highly than they did during the testing undertaken in the baseline period.

Parent evaluation

Of the questionnaires distributed to the parents of the children in the kindergarten group, 100 per cent were returned. In Part 1 the most common response to the questions was ‘sometimes’. In Part 2 ‘some change’ was the most common response. The questionnaire also invited comments from parents about the program, with 60.00 per cent of respondents taking the opportunity to write comments. Of these, all respondents wrote comments that were positive in nature.

Discussion

Findings

The findings from this study suggest that a social intervention program devised in consultation with professional staff within a kindergarten can lead to a marked increase in social initiations from peers to a child with a moderate developmental disability. It is noteworthy that, before the implementation of the program, even within a highly-responsive social environment, peers were initiating interactions with the focal child on average less than four per cent of the time, although the focal child was initiating interactions at a consistent level with her peers. The considerable increase in mutual attention for both the focal child and her peers is significant in that mutual attention is a prerequisite for further communication and interaction to occur (Goldstein & Cisar, 1992). Furthermore, an increase in spontaneous peer mediation suggested that peers were increasingly taking over the scaffolding role from the adults within the play situations, and were
applying the social problem-solving strategies investigated within the context of the whole group experiences. After the maintenance period there were slight decreases in the initiations from peers to the focal child, and in the incidence of peer mediation. However, this could possibly be attributed to the relocation of the kindergarten to a new building immediately prior to the recording of the maintenance results, after a break in the program for relocation. Of even greater significance was the marked change in the social acceptance of the focal child by her peers, which indicates that she became an accepted member of the group, improving her chances of forming friendships as an equal partner (Goldstein et al., 1997).

That the results were sustained within the upper range during the maintenance period indicates that the program could be implemented within the everyday kindergarten program, without further need for input from ECI research staff. This substantiated the hypothesis that the program is user-friendly and could be implemented within the context of the teacher’s normal planning process. The survey of parental perceptions indicated some generalisation of the concepts and skills targeted to the home environment; however this was not investigated quantitatively and may be an area for further investigation.

**Limitations**

This study has several limitations. First, that it is a case study of one child within one kindergarten setting, and has not been replicated. Because of budgetary and time constraints, interobserver agreements were unable to be conducted for either the analysis of the videos or the implementation of the Friendship Train social acceptance ratings. This may have led to bias in the interpretation of the ecobehavioural constructs. Generalisation of the program to other ECSs may need slight modification, as it was conducted in a setting where the group size was smaller than an average kindergarten group, and had three staff, including a support worker, instead of two. Other factors that may impact on the outcome of the results were: (i) the disability of the focal child, as such rapid improvements may not have occurred for children with more socially-limiting disabilities; (ii) the selection of the centre, as the kindergarten selected had an existing commitment to social inclusion; (iii) the gains that may be attributed to the naturally-occurring increase in the level of social responsiveness of typically-developing children over the course of the kindergarten year.

**Implications and conclusion**

The major implication of this study is that children at risk of being socially marginalised within preschool or childcare environments are unlikely to experience an increase in their social status without a planned social intervention program designed to promote peer mediation. The difference between this program and others identified in the literature is that it can be easily incorporated with the everyday routines of the kindergarten or childcare setting. Because of this, the program has the potential for wider use within the early childhood field, particularly as the user-friendly nature of the program means that staff need only to use existing or readily-available resources.

Topics for future research might include investigating the impact of the program on other children within a range of settings and whether the outcomes can be generalised to the home environment and other community settings. The outcome of this project is the development of a user-friendly resource, which includes suggested readings, strategies, ideas for activities, suggested scaffolding techniques and prompts, and practical resources to enable parents and others to implement a social inclusion program for the children in their care. The resource is available from Broad Insight Group Early Childhood Intervention Program.

**References**


Authors’ notes
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### Table 1. Comparison of the percentage of the types of interactions for the focal child and peers at intervals before, during and after the program

<table>
<thead>
<tr>
<th>Interaction type</th>
<th>Focal Child</th>
<th>Peers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base1 Wk5 Wk10 Wk14 Maint2</td>
<td>Base1 Wk5 Wk10 Wk14 Maint2</td>
</tr>
<tr>
<td>Eye contact</td>
<td>3.21 4.13 8.86 18.31 13.41</td>
<td>8.57 7.79 8.64 11.13 10.99</td>
</tr>
<tr>
<td>Mutual attention</td>
<td>4.29 5.62 10.15 19.57 18.06</td>
<td>4.82 4.17 5.83 15.80 17.50</td>
</tr>
<tr>
<td>Request attention</td>
<td>4.11 1.09 4.75 1.97 2.05</td>
<td>0.54 1.09 0.43 2.51 2.05</td>
</tr>
<tr>
<td>Offering to share</td>
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*The University of New England Summer Institute, 2006*

**Engaging Children’s Minds: The Project Approach**

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For more information, contact Margaret Brooks
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This paper presents an overview of events in Aotearoa/New Zealand mathematics education over the past decade or so. We begin with the curriculum reforms of the 1990s that led to the development of the current mathematics curriculum (Ministry of Education, 1992), and document developments in policy, resources and approaches to teaching. There has been a strong emphasis on improving student achievement, and the overview illustrates how developments in the school sector have been accompanied by a focus on early childhood education, adult numeracy, and community involvement in children's learning. We conclude by reflecting on the current curriculum review, and what this might mean for practice.

Introduction
Summarising the developments that have taken place in education can assist in understanding the wider picture of mathematics education within Aotearoa/New Zealand and identify possible sites of tension as well as cohesion. One clearly defined tension over the past decade has been the focus on the individual student, whose skills are assessed to provide international, national and local measures of individual achievement, alongside an increasingly sociocultural emphasis that recognises the importance of the social dimension of learning.

During the past decade, the work of Lev Vygotsky has been increasingly influential in ways of looking at learning. Unlike the more individualist approach of Jean Piaget, Vygotsky's theory takes account of the community in which the learner lives, and the important role that more skilled others (peers, older children, adults) can take in supporting and facilitating learning. Family and community and responsive, reciprocal relationships are an integral part of the early childhood curriculum (Te Whāriki, Ministry of Education, 1996), but have received less recognition in the school mathematics curriculum (Ministry of Education, 1992) and in the individualistic assessment policies that have dominated the school sector. Assessments such as those underpinning the Numeracy Projects (Ministry of Education, 2004a) provide a guide for teachers in their planning, but pay little attention to the situated nature of learning and the way action is ‘mediated by social partners, social practices and tools’ (see Carr, 2001, p. 8). This situation is not unique to Aotearoa/New Zealand. Fleer (2002) noted that in many Western countries, while sociocultural approaches have influenced teaching and learning, assessment practices have not undergone the same level of conceptual change. One of the challenges to the development of more complex sociocultural forms of assessment has been the desire for the measurement of educational outcomes that has dominated the school sector, an approach resisted in early childhood education. In Aotearoa/New Zealand, this has led to very different assessments being made in early childhood education and in school, sometimes making it difficult for parents/caregivers and others to see the connections in their children’s learning across the two sectors (Peters, 2004).

The current curriculum reforms suggest greater cohesion between the sectors through a focus on key competencies. Drawing from the OECD work on ‘key competencies for a successful life and a well-functioning society’ (Rychen & Salganik, 2003), the Ministry of Education (2004b) has proposed replacing the eight essential skills in the Aotearoa/New Zealand curriculum framework (numeracy, information, problem-solving, social and cooperative, physical, self-management and competitive, work and study, and communication) with five key competencies. The exact nature of these competencies is still the subject of
consultation and discussions, but the five that have been proposed are: thinking; relating to others; belonging, participating, and contributing; managing self; and making meaning.

These changes link well with the focus on adult numeracy. If the aim is for the population to ‘have the ability and inclination to use mathematics effectively’ (Ministry of Education, 2001a, p. 1), then, as Niss (2003) reflected when considering mathematical competency, factual knowledge and technical skills are necessary, but not sufficient, for this purpose. The proposed competencies include knowledge, attitudes, values and motivation (Ministry of Education, 2004d), and thus, when considered in relation to mathematics, would foster both ability and inclination.

Reflecting on the reforms of the past decade can help in setting new developments in context and considering future developments. The following sections summarise some of the key events in Aotearoa/New Zealand’s mathematics education.

**1992–1996**

The curriculum reforms of the 1990s led to the development of a new mathematics curriculum (see Ministry of Education, 1992), the first in a series of new curriculum documents for the compulsory school sector (see Ministry of Education, 1993). Three years later, the early childhood sector got its first curriculum, Te Whāriki (Ministry of Education, 1996). This was the first truly bicultural curriculum development in Aotearoa/New Zealand, and it took a more holistic approach to children’s development than found in the compulsory school sector documents, weaving mathematics learning into the five strands of the curriculum—wellbeing, belonging, contribution, communication, and exploration—rather than having it as a subject area. At the same time, the results of the Third International Mathematics and Science Study (TIMSS) showed that Aotearoa/New Zealand students had performed poorly in mathematics compared with their peers in most other countries, with scores well below the international averages (Garden, 1996). Publication of the TIMSS results signalled an urgent need to look at mathematics teaching and learning.

**1997**

Concern about the need for better assessment tools to identify children’s knowledge and understanding on entry to school at five led to the development of School Entry Assessment (SEA)/Aro maturai Urunga-ā-Kura (AKA), consisting of three tools: Checkout/Rapua (numeracy), Concepts about Print/Nga Tikanga o te Tuhi Korero (literacy), Tell Me/Ki Mai (oral language) in both English and Māori (Ministry of Education, 1997a; 1998a). Previous research had shown enormous diversity in the mathematical skills and understanding that children bring with them to school (Young-Loveridge, 1991), and the need for teachers to build on that knowledge more effectively (Young-Loveridge, 1993; 2004a). Checkout/Rapua, a shopping game to assess children’s numeracy, used cards to convey simple instructions through a combination of words and pictures. In following the instructions, children revealed their knowledge and understanding of mathematics to the teacher, who recorded their responses. The use of materials that were attractive and appealing to children (e.g. miniature bananas, pegs, birthday cards) helped to allay concerns about the negative impact of using a ‘test’ with children so young. The Ministry’s decision that School Entry Assessment be optional for teachers was also important in its gaining acceptance by schools. The Ministry of Education began a publicity program, including the development of a mathematics website to provide resources and materials for teachers (www.nzmaths.co.nz, see Ministry of Education, n.d.). The International Adult Literacy Survey (IALS) found that half of all adult New Zealanders were below Level 3, the minimum level of quantitative literacy competence required to meet the demands of everyday life (Ministry of Education, 1997b). These findings had important implications for children whose parents lacked sufficient quantitative literacy to provide the kind of help and support their children needed with their mathematics learning. Because of Aotearoa/New Zealand’s poor TIMSS results, a Mathematics and Science Taskforce was established which recommended providing help for teachers of five-to-nine-year-olds, focusing first on number concepts (including place value) and then on algebra and measurement (Ministry of Education, 1997c). It also recommended that support material be accompanied by school-based professional development.

**1998**

A research seminar on mathematics education identified several key issues: developing teachers’ pedagogical content knowledge, improving teaching quality and confidence, providing resources to support teaching and learning, making research more accessible, and emphasising the importance of mathematics education prior to school (see Ministry of Education,
1999a). The Ministry of Education began developing a comprehensive numeracy policy and strategy. In the early childhood education sector, Quality in Action was produced to support the government's revised Statement of Desirable Objectives and Practices (DOPs), and provided guidance for teachers working alongside family/whanau to provide 'a rich environment for a child’s well-being and learning' (Ministry of Education, 1998b, p. 4).

1999
A teaching resource, Making Things Count, was provided to early childhood teachers (Ministry of Education, 1999b) and a publicity campaign, Feed the Mind/Whangaihia te Hinengaro, was launched, using television, radio, posters, swatches and leaflets to give parents ideas about ways they could use everyday materials and experiences to support their children’s mathematics learning (Ministry of Education, 2000a, 2000b). A Mathematics Proposals Pool was established to fund initiatives for professional development of teachers in (mainly) low decile schools. The Ministry of Education’s Junior Mathematics Review Group recommended number as the focus at levels one and two of the curriculum, the development of an early number learning framework, and the development of diagnostic tools for early number assessment (Ministry of Education, 2001a). The recommendations of the Literacy Taskforce echoed those of the Mathematics and Science Taskforce: priority on first practice, well-prepared teachers supported by strong professional leadership, opportunities for quality professional development, effective interventions, and home-school partnerships (Ministry of Education, 2002b).

2000
Ministry of Education policy development initiatives focused on stages of early number development. Count Me In Too was piloted nationally with teachers of children at Years 0–3 (Thomas & Ward, 2001), and an exploratory study began with teachers of children at Years 4–6. A group of mathematics researchers began work on a national number framework for Years 1–6, to provide teachers with: an effective means to assess students’ current levels of thinking in number, guidance for instruction, knowledge of how children acquire number concepts, and an increased understanding of how they could assist children to progress. The National Administration Guidelines (NAGs), the legal requirements for schools, were modified to emphasise literacy and numeracy, particularly in the first four years of school (Ministry of Education, 2000c). A working group provided a definition of a numerate person which focused on the usefulness of mathematics in many different aspects of people’s lives: to be numerate is to have the ability and inclination to use mathematics effectively in our lives—at home, at work, and in the community (Ministry of Education, 2001a).

2001
All of the work described above provided the impetus for a major initiative in mathematics education, the Numeracy Development Project (NDP) (Ministry of Education, 2001a). The NDP sits within the context of Aotearoa/New Zealand’s Literacy and Numeracy Strategy, and reflects the three key themes of that strategy: clarifying expectations, improving professional capability, and involving the community. The NDP was designed to improve student achievement in mathematics by improving the professional capabilities of their teachers. Te Poutama Tau (a numeracy project for students in Māori immersion settings) was also developed (Christensen, 2003). A key feature of the NDP is the number framework, consisting of a sequence of global stages describing the mental processes students use to solve problems with numbers (the Strategy section) (Ministry of Education, 2004c). A separate Knowledge section described key pieces of knowledge that students need to learn in order to be able to use strategies effectively. The diagnostic interview, an individual (task-based) assessment tool aligned with the number framework, provides teachers with information about their students’ knowledge and mental strategies (Ministry of Education, 2004c). Professional development programs cater for teachers working at different year levels, and in the medium of English or Māori (e.g. ENP, the Early Numeracy Project, is for teachers working at the Years 0 to 3 level). In addition, the tertiary education sector began work on adult numeracy as part of the government’s Adult Literacy Strategy (More Than Words, see Ministry of Education, 2001b).

2002
The work of the Adult Literacy Strategy was complemented by The Tertiary Education Strategy (specifically Strategy 3: Raise foundation skills [including literacy and numeracy] so that all people could participate in our knowledge society) (Ministry of Education, 2002a). The hope was that, by upgrading the
whole population’s skills in literacy and numeracy, not only would adults be better prepared to meet the challenges of everyday life, but children’s learning could be more effectively supported by their parents, wider family and the community. Planning for Better Student Outcomes was published to help schools to focus explicitly on raising student achievement (Ministry of Education, 2002c). New legislation required schools to revise their charters to include longer-term strategic goals, as well as annual targets, for improving student outcomes. The Government expected this new planning process to help schools to adopt a ‘continuous improvement’ culture based on annual self-review. Through this process, schools would ‘gather comprehensive information about student achievement, identify specific areas for improvement, implement programs to lift performance and report on progress each year’ (p. 1). The focus of these developments was largely individualistic. However, the growing interest in making links between the beginning school level and the early childhood sector was indicative of a more sociocultural approach to learning. For example, the Curriculum Stocktake report recommended revising the eight groupings of essential skills in the curriculum framework into five groups of essential skills and attitudes consistent with Te Whāriki, and the inclusion of capability to use the skills, discernment in their use, and willingness to use the skills (Ministry of Education, 2002d). The document Pathways to the Future: Nga Huarahi Arataki: A 10-year strategic plan for early childhood education (Ministry of Education, 2002e) suggested that coherence of education from birth to eight years could be achieved by promoting a better understanding between early childhood and primary teachers and about the links between curricula.

2003

A series of Best Evidence Syntheses was published, focusing on community and family influences, quality teaching, and professional development (Alton-Lee, 2003; Biddulph, Biddulph & Biddulph, 2003; Farquhar, 2003; Mitchell & Cubey, 2003). Mitchell and Cubey (2003) noted the importance of teacher content and pedagogical knowledge in enhancing young children’s mathematical knowledge. They referred to the findings of the EMI-4s study, showing how teachers could capitalise on opportunities for fostering mathematical thinking within children’s familiar everyday activities and become more sensitive to, plan for, pick up on, and extend mathematical ideas within children’s play (Young-Loveridge, Peters & Carr, 1998).

2004

By 2004, evaluations of the numeracy projects had shown that all students benefit, regardless of gender, ethnicity or socio-economic status (SES). However, analyses indicated that the project had been more effective for European/Pākehā and Asian students than for those of Māori or Pasifika descent. Children from schools in high socio-economic areas benefited more from the project than did those in middle and low SES areas. Boys made greater progress than did girls, particularly at higher framework stages. Although the project was clearly effective, it did little if anything to reduce the gaps between different groups. In fact, differences between groups of different ethnicity, gender, and socio-economic status had increased slightly by the end of the project. This so-called ‘Matthew Effect’ (with the rich getting richer and the poor getting poorer) indicates that more work needs to be done to help teachers more effectively meet the learning needs of children of Māori and Pacific Islands descent, girls, and students in low SES schools (Young-Loveridge, 2004b).

Conclusion

After a decade of change, we find there are still challenges to be addressed in the teaching and learning of mathematics. Curriculum development in New Zealand has come full circle with the recent launch of the Curriculum Project, a curriculum redevelopment process designed to reframe, refocus, and revitalise the current curriculum (see Ministry of Education, 2004c). This project builds on the recommendations of the Curriculum Stocktake report, which focused attention on the importance of quality teaching to student outcomes (see Ministry of Education, 2002d).

Although the initiatives of the past ten years have been multifaceted and targeted at early childhood, school, adult numeracy and community involvement, the influence of families and communities has received less attention than have reforms targeting the individual school student. Relationships and family and community have been a principle of the early childhood curriculum since Te Whāriki (Ministry of Education, 1996), but their relevance in other educational settings is increasingly being recognised. The individual is only one part of a complex picture. Recent research identified a key influence in the educational achievement of Māori students as the ‘quality of in-class face-to-face relationships and interactions between themselves as Māori people and their teachers’ (Bishop et al., 2003).
This may help to explain the smaller gains for Māori and Pasifika students on the NDP evaluations. The current curriculum developments acknowledge some of this complexity. In the proposed focus on competencies, the influence of the social context must be taken into account when looking at student capabilities. Greater acknowledgement is to be given to a sense of belonging and to relationships than in the past. Knowledge of the child’s home culture and the mathematics engaged in by their communities will be useful in developing more effective teacher-student relationships.

Macfarlane (2004) has argued for relationship-based pedagogies and cultural centredness as key factors in Māori students’ achievement. ‘Lifting professional capability … so that … interaction between teacher and learner is as effective as possible’ is one of the key themes of the Literacy and Numeracy Strategy (Ministry of Education, 2002f). This offers promising directions for mathematics education, but will require new assessment practices. Assessment should not only document individual achievement but also acknowledge the complexity of the learning process, and the importance of the learning environment, particularly interactions with the teacher (Fleer, 2002). Developing such approaches may be assisted by the early childhood exemplars (Carr, Lee & Jones, 2005). These offer assessment examples that capture the complexity of the learning situation, and allow different aspects of the situation to be analysed. They, along with the work on key competencies, may offer additional insights for mathematics education.

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An earlier version of this paper was ‘presented-by-distribution’ on the website for TSG1 at the 10th International Congress on Mathematics Education (ICME-10), 4–11 July 2004, Copenhagen, Denmark.

References


THE REASONING BEHIND THE SCENE:
Why do early childhood educators use computers in their classrooms?

Suzy Edwards
Monash University

In recent times discussion surrounding the use of computers in early childhood education has emphasised the role computers play in children’s everyday lives. This realisation has replaced early debate regarding the appropriateness or otherwise of computer use for young children in early childhood education. An important component of computer use in early childhood education relates to the reasons why educators decide to use a computer in their classrooms in the first instance. This paper reports the findings from a pilot investigation in which 12 early childhood educators from Melbourne were interviewed to determine why they used a computer in their classroom. The findings indicated that they did so for one of three main reasons: 1) the need to remain up to date with technology; 2) the management body decided to use a computer in the classroom; and 3) the computer was viewed as providing an extra learning experience for young children. Implications regarding the relationship between the curricula and computer use are examined in light of these reasons.

Introduction

Information and Communication Technologies (ICT) have been an established part of the educational scene for the past 15 years (Anderson, 1999). In tertiary institutions, secondary and primary schools, computers (and their associated technologies) have come to occupy a place of importance in student learning. In such contexts, computer use, while often subject to discussion regarding pedagogical appropriateness, is rarely considered an unsuitable learning tool harbouring the potential to threaten a student's developmental outcomes, as can be the case in the pre-primary sector (Kankaanranta & Kangassalo, 2003, p. 292). In early childhood education, debate on the use of computers in young children's learning was prompted by Barnes and Hill's (1983) warning regarding the adverse effects of computer use on children’s development. Despite later research findings to the contrary (e.g. Clements, Nastasi & Swaminathan, 1993; Clements & Sarama, 2002; Finegan & Austin, 2002; Rivera, Galarza, Entz & Tharp, 2002; Shade & Davis, 1997; Yelland, 1999), concerns are still occasionally expressed regarding the adverse effects of computer use on children's development. Despite later research findings to the contrary (e.g. Cordes & Miller, 2000; Levin & Rosenquest, 2001; Postman, 1993). An important clarification in this debate refers to the difference between IT (Information Technologies) and ICT, the latter focusing on the communicative as well as the technical capabilities of the technology. This paper centres on the use of the computer as a specific IT tool in early childhood education.

More contemporary perspectives have moved beyond the ‘to-use-or-not-to-use’ debate and now focus on how children employ computers in their learning (Brooker & Siraj-Blatchford, 2002). This shift in emphasis has been shaped by the idea that questioning the relevancy of computers to young children’s lives and educational experiences serves only to question the relevancy of the technology constituting the period of history into which they are born (Luke, 1999; Marsh, 2002). Combined with research supporting the developmentally appropriate and constructivist use of computers in early childhood education (Haugland & Wright, 1997; Yelland, 1999) the argument holds that children are likely to have had experience with computers even before they attend early childhood educational programs. Positioning the computer as separate from children’s development and learning within the early childhood educational context is arguably akin to denying the role it plays in their sociocultural experiences outside the educational setting, since childhood itself is a ‘historically mediated concept located in specific sociocultural and economic contexts which frame its meaning’ (Marsh, 2002, p. 133).

This argument was reflected in the 1996 position statement published by the National Association for the Education of Young Children (NAEYC) on Technology and the Young Child, which noted that ‘technology plays a significant role in all aspects of [US] life today and this role will only increase in the future’ (p. 11). In Australia, a similar position statement was published by Early...
Contemporary understandings associated with early childhood computing are consequently informed by a socio-historical dimension which recognises technology as a defining feature of young children’s experience of the world and, as such, a necessary component of their education (Clements, 1999). In addition, research has consistently shown that the use of developmentally appropriate, open-ended software serves to support children’s learning and contributes to their developing understanding of key mathematical concepts (Samara, Clements & Vukelic, 1996; Yelland, 1999). Investigations aimed at examining computers and early childhood education have begun to move away from the initial research focus. Clements and Sarama (2002) argue:

Research has moved beyond the simple question of whether computers can help young children learn—we know that they can. We now need to understand how best to use computers to aid learning and what types of learning we should facilitate with computers. Obviously, we do not believe that every use of technology is appropriate or beneficial. The design of the curriculum and that of the social setting are two of many important components in learning (p. 341).

Questions associated with relationships among computers, educational settings, and the way computers are perceived and utilised by children and educators to support learning are therefore of increased research importance. One aspect of the role computers have within the early childhood classroom is the question about why educators decide to integrate them into their curricula in the first instance. Higgins and Moseley’s (2001) investigation into teachers’ thinking about computers found that teachers’ beliefs ‘play an essential role in their classroom practices and affect their teaching and learning interactions’ (p. 204), including those associated with computer use in the classroom.

Initial research into why educators use computers in early childhood classrooms provides an interesting counterpoint to the view promoted by the literature and the NAEYC and Early Childhood Australia position statements. In an investigation into the use of computers by a cohort of Australian early childhood educators, Dockett, Perry and Nanlohy (1999) found that ‘whilst some staff had actively incorporated computer experiences within their programs and felt confident to do so, others had incorporated such experiences almost by default, when computer equipment had been donated’ (p. 167). Wood, Willoughby and Specht (1998) surveyed 193 Canadian early childhood educators to find that the most common reasons for using computers in classrooms were to prepare children for later school experiences, to facilitate learning, and to enhance their physical coordination (p. 242). Preparation for later school experiences was likewise identified as a rationale for computer use in Cuban’s (2001) examination of how computers were used in 11 US early childhood settings. Cuban found that computer presence in classrooms was largely an outcome of the perception held by parents and teachers that children need early access to technologies in order to ensure their later academic and work success.

A similar conclusion was reached by Leung (2003), in an investigation regarding computer use in Hong Kong preschools. An Australian case study (O’Rourke & Harrison, 2004) examining the integration of computers into a range of early childhood settings similarly noted that ‘parents were often aspirational, seeing the computer as providing their children with opportunities to get ahead’ (p. 17). In each case, the decision to provide computers in classrooms appeared to be related to either chance and/or pressures associated with preparing children for their educational futures. These findings suggest that the reasons educators hold for using computers in their classrooms may differ from those promoted by the NAEYC and Early Childhood Australia. In addition, they may not necessarily be in accordance with the findings articulated by the literature which suggests computers can be used to support children’s learning when integrated according to constructivist principles of learning (Clements, 1999; Finegan & Austin, 2002; Yelland, 1998; 1999).

This paper aims to contribute to existing research about how early childhood teachers come to have computers in their classrooms. Findings from a pilot investigation aimed at identifying the issues early childhood teachers associate with using computers in their classrooms are reported.

**Methodology**

Twelve early childhood educators drawn from government funded kindergartens (n=6) and early learning centres (n=6) associated with independent schools participated in the study. Teachers in the kindergartens taught children on a sessional basis and worked with both three- and four-year-old groups.
Teachers from early learning centres worked predominately in long day care situations with children aged three to five years. The study population was drawn from inner and eastern metropolitan Melbourne.

Participants were not previously known to the researcher and were recruited using a snowballing technique (Wiersma, 2000) in order to identify educators currently using computers in their classrooms. Purposive sampling (Wellington, 2000) was then used to confirm the participants’ status in the pilot study from the snowball population. Confirmation of participation meant that each of the teachers held a (minimum) three-year tertiary degree in early childhood education, had at least two years’ experience working in the sector, and at least eight months’ experience using computers in their programs and with young children (aged 3–5 years). All participants were female; the mean length of time spent working in their current setting was 7.5 years (SD 6.75), with the mean years of teaching experience in early childhood education being 23 years (SD 9.34).

Data was collected using a semi-structured interview schedule in which educators were asked to respond to a series of questions regarding computer use in early childhood classrooms. The first question examined the educators’ reasons for using a computer. The response to this question forms the focus of discussion in this paper. Other questions were concerned with identifying the main factors the educators saw as relevant to their use of computers in early childhood education. All interviews were conducted individually at the educators’ centres, taking one hour on average to complete, and were audio-recorded and transcribed for analysis. As the data collection process was strongly context-bound, the results presented may not be generalised beyond the sample population. In addition, the pilot and investigative status of the study meant that the interview schedule was not previously tested, so the data reported in this paper is of a primarily descriptive nature. The data is therefore of most value in establishing the broad categories related to educators’ decisions to use a computer in their classrooms and in opening avenues for future investigation.

The data was analysed using the qualitative data analysis package NVIVO in order to establish the main themes of the educators’ decision to use a computer in their classroom. Each theme was coded in NVIVO, using the system whereby codes (or nodes) can be assigned to sets of text as they occur within the transcript and later recalled for analysis. After the initial coding, the transcripts were re-coded to ensure that each was exposed to the same number of codes.

Research sites
Teachers working in Victorian early childhood settings operate under the Children’s Services Act 1996 and the Children’s Services Regulations 1998 as administered by the Department of Human Services. Victorian early childhood services are not informed by a state-approved curriculum framework as is the situation in other states and territories of Australia (Anning, Cullen & Fleer, 2004). Rather, educators have historically drawn on their knowledge and understanding of young children to develop and implement individualised curricula for their settings (Kirby & Harper, 2001). In addition to working in the absence of a formalised set of curriculum guidelines, the educators also worked without reference to a policy statement on computer use in early childhood education. None of the participating educators expressed an awareness of the position statements published by the NAEYC or Early Childhood Australia, while three described operating under a centre policy as to how the computer was to be used within their individual contexts.

Ten of the teachers had a computer dedicated for the children’s use in their classrooms as well as access to a computer for their own professional use. Two had only one computer, which was located in their office. In these cases children would be supervised in the office when the teacher wished to use the computer. Each centre catered for approximately 15–20 children. Of the 12 teachers, one had attended an ‘introduction to computers’ course. The remaining teachers had self-taught computer skills, and none had attended professional development courses on the use of computers in early childhood educational settings.

Results and discussion
Three main themes were identified in relation to the question, ‘Why did you decide to use a computer in your program?’ Table 1 provides the breakdown regarding the number of educators expressing allegiance to each of the three reasons. These are discussed with reference to the data collected during the interviews.

Reason 1: Up to date with technology
One of the first reasons for using a computer reported by the educators was that the children needed to be kept ‘up to date’ with technology. This idea was stated immediately by one teacher:
Because it is something that I know is very necessary in a progressive education and to be up to date it is important (Teacher 1).

A similar idea was expressed by another educator:

Because children start computers sort of right through now, and they need to feel relaxed on it, and I think they actually need the skills for it, and even if they are just exploring I think it is a good part of the curriculum (Teacher 2).

For these two teachers, the decision to use a computer in their classrooms was linked to the idea that children needed to remain up to date with the technology. It was interesting to note the way the educators continued to discuss this decision in relation to their perceptions of the early childhood curriculum. For example, Teacher 1, having indicated that technological currency was important, continued to describe how this importance was moderated by her beliefs regarding children’s learning:

However, my focus has been that there are many other developmentally appropriate things that children need to be doing and I am not all for children sitting in front of a screen, I believe that we need to provide more things that the children act on [educator emphasis] and make work rather than things that are more likely to entertain. There are a lot of things that are provided for children through computer programs of an entertaining nature and so that is why I use it as a tool, more like another aid to learning, rather than something specific to itself (Teacher 1).

Siraj-Blatchford and Whitebread (2003) have noted that some early childhood teachers reject the use of computers in their classrooms because of the assumed passivity of computer use by young children. They cite research evidence to the contrary, arguing that ‘the use of appropriate ICT technology can be a very active, social, intellectually stimulating and liberating experience for young children, which opens up new possibilities for them in a variety of areas’ (p. 28).

Brooker (2003) argues that this perception is likely linked to the tradition in early childhood education that children freely explore a range of ‘natural’ materials, suggesting that (despite research to the contrary) ‘we are innately reluctant to hook children up to machinery of any kind, as if it deprives them of the physical freedom and intellectual innocence we hold dear’ (p. 263). Thus, as Teacher 1 described, the computer may be viewed as a passive rather than active educational experience, albeit one that still provides opportunities for children to acquire computer skills associated with remaining ‘up to date’ with technology.

Teacher 3 also made reference to the computer in relation to the curriculum and the need for it to be included in the classroom in terms of technological currency:

I thought initially, I didn’t really see it probably as part of the curriculum, I saw it as needing to keep up with technology and that is how I did see it, that we needed it to keep up with modern technology, we needed to at least let the children have some sort of experience of the technology. I still think that way. I don’t plan the computer in the curriculum as much, I don’t have any expectations of the child, my one expectation is that they have the experience and also that they gain control of the mouse (Teacher 3).

For this teacher, as for Teacher 1 and Teacher 2, the decision to use a computer was informed by the need to ‘keep up with modern technology’.

The response from Teacher 4 regarding her decision likewise emphasised the notion of technological literacy. The decision related more to skills acquisition than it

<table>
<thead>
<tr>
<th>Reason</th>
<th>(N) Educators</th>
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<tr>
<td>1. Children need exposure to computers in preschool settings to ensure that they are up to date with technology</td>
<td>5</td>
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<tr>
<td>2. The management body governing the preschool setting determined that computers would be used in the classroom</td>
<td>5</td>
</tr>
<tr>
<td>3. The computer provides children with a beneficial ‘extra’ experience in the early childhood classroom</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
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was an understanding of how it could be effectively integrated into the existing curriculum:

I feel that they need the skills, and like [mouse] control when they get to school because it is used when they get there and that was one of the reasons why I started it, and just to make it easier when they started school and they would be familiar with it and wouldn’t be frightened. I think children are better prepared and a little bit more ready for it (Teacher 4).

According to this teacher, children require access to the computer in order to ensure that they have the skills necessary for its operation when they attend school. In this respect, technological currency was linked to operational need. Teacher 5 also identified technological currency as a factor in the decision-making behind the computer’s presence in her classroom. However, there was an awareness that computer use should be mediated by her skill and knowledge as a teacher:

Well that is the schools, isn’t it? It is what they want. I am a little more removed from it I think in the pre-prep area, but I think you know, what the parents as the clients want[s], that’s what the schools provide[s] and so the teacher has to learn about them. Society is going to have its pressure, but the parents want the new, better and the best, they want the most modern approach and up-to-date teaching and if it is technology for them I think, that is the better. I don’t totally agree with that, I think the teacher’s independent knowledge is important and how she can provide for that demand and then the school provides the materials; all of these things have to come together (Teacher 5).

For Teacher 5, technological currency was positioned as more of a social and parental pressure to use computers than it was an educational need (Leung, 2003; O’Rourke & Harrison, 2004). The way the teacher blended her knowledge with the materials provided by the school was considered a better indicator of a modern education than the presence of the computer alone.

In the main, the need to remain up to date with technology appeared to be informed by a sub-level of reasoning on the teachers’ behalf (except Teacher 5) which saw skills acquisition and preparation for school as important features of the decision to use a computer. It is notable that skill development was perceived as an external process to the curriculum, yet simultaneously considered a skill of importance to the children. Thus, these teachers expressed tension between what was a valued skill and its presence in the actual curriculum. A similar finding was noted by Plowman and Stephen (2005), whose investigation into the use of computers within seven early childhood settings noted a discrepancy between teachers’ understanding of the role of play and active learning in the traditional curriculum and their role in children’s use of computers.

It may be asked whether the notion of remaining ‘up to date’ with the technology is represented more by skill acquisition than by any use of the technology to support pedagogy and/or engage children in the technological experiences advocated in the literature (e.g. Shade & Davis, 1997; Yelland, 1999). Methodological limitations associated with the size of the sample in this study make it difficult to consider this question in greater detail. However, of interest are what these teachers said regarding the importance of skill acquisition and how this emphasis relates to both the research and position statements. To what extent is the notion of skills acquisition considered an important feature of computer use by early childhood educators? Is the relationship between skills acquisition and technological currency perceived as external to the early childhood curriculum by a broader population of teachers? If so, what are the implications of this view for the way computers are actually utilised by teachers and children in early childhood classrooms?

**Reason 2: Management body decision**

The second reason reported by the educators for using a computer was that it was a decision made on their behalf by the management bodies governing their settings. For two of these educators, a computer was already present in the classroom upon the commencement of their employment. Both expressed their unease with the computer, the decision made by the management, and concerns regarding its relationship to the curriculum and/or their beliefs about children’s learning:

I came into it without any choice, because of my lack of knowledge I think I would’ve probably avoided using it because it wasn’t something I was interested in putting in the programming and planning, but it came out to be not a choice [educator emphasis]. But I have grown to learn how to write it into the program and choosing what sort of programs I want to be using at certain times and I think I have sort of learnt myself, you know, ways of including it and it has been a benefit to me to use something that wasn’t, something that I wouldn’t choose to use, so it has been good (Teacher 6).

Three years ago I entered a program where they had a computer and I hadn’t really done much with children...
and computers. I guess I was of the school of thought that primarily I would like children to be in kindergarten to have lots of hands-on experiences and to provide the optimum social experiences, so having a computer, yes it was just one other area of the actual program, but something I just didn't want to engulf the children in (Teacher 7).

For these teachers, although the actual decision regarding the integration of the computer in the classroom was not made by them, the manner in which it was ultimately related to the curriculum and program planning remained in their jurisdiction. In this situation, Teacher 6 was eventually able to relate the computer to her programming, while Teacher 7 tended to sideline it as another area rather than an integrated aspect of the program. Teachers 8 and 9 similarly described tension between the computer and the curriculum:

It was suggested by the Committee [of Management]. When it was first suggested to me I wasn’t sure how it was going to fit in at all. I didn’t think it was sort of appropriate for the preschool program to have a computer, although the Committee felt that it would be good. So I had to do it in, and I didn’t ever think that it worked really well in my program, and that theory hasn’t changed since, I haven’t sort of introduced it this year for those reasons (Teacher 8).

I didn’t have a choice because there was so much pressure from the Committee of Management, they wanted a computer and so it was here and all year they were saying to me, ‘when are you going to be getting the computer out?’ And so, you know, in order to keep everybody sweet I felt like I couldn’t really keep on saying ‘no’. I think that is one of the problems with a really expensive piece of equipment, one year the Committee has decided to purchase one and then every teacher that comes along gets really stuck with it, and there is this belief among the community that somehow there is something innately wonderful about a computer and it must therefore be beneficial to all children of all ages (Teacher 9).

In both responses the decision was clearly not initiated by the educators themselves. A result of this situation was the way Teachers 8 and 9 described the computer as something that did not relate to their programs and/or their beliefs about what the computer had to offer the children. When considered in relation to the ‘remaining up to date with technology’ reason, this raises an interesting implication with respect to what the children will learn (if anything) from the computer’s presence in the classroom when the decision regarding its use does not stem from the educator themself. The teachers who had described technological currency as the reason for using a computer in their classrooms were at least able to identify the acquisition of computer skills as part of that reason. In contrast, those teachers directed to use a computer by management struggled to describe its relationship to the curriculum and questioned its relevance to children’s learning.

Issues associated with teacher agency and decision-making regarding the use of educational equipment become of fundamental importance to discussion associated with the use of computers in early childhood education. Ryan and Deci’s (2000) research highlights the extent to which externally directed behaviour is likely to impact on an individual’s motivation to engage with and/or complete a task. According to their categorisation, ‘external regulation’ represents the least autonomous form of motivation, with ‘behaviours performed to satisfy an external demand or obtain an externally imposed reward contingency’ (p. 61). A problem with this form of motivation is that ‘individuals typically experience externally regulated behaviour as controlled or alienated, and their actions have an external perceived locus of causality’ (p. 62). According to this idea, Teachers 8 and 9 were less likely to be motivated in the integration of the computer into their curricula, and/or to find benefits associated with its use.

Insisting that computers form a part of the early childhood curriculum may not necessarily result in the situation described by Teacher 6, who grew ‘to learn how to write it into the program and to choose what sort of programs to be using at certain times’. Instead, such an approach holds the potential for the computer to be viewed as a learning experience irrelevant to the early childhood curriculum. For Teacher 8, this potential was expressed in her belief that the computer ‘didn’t ever work really well in my program, and that theory hasn’t changed since, I haven’t sort of introduced it this year for those reasons’. Merely directing teachers to use a computer will not necessarily result in its effective integration into early childhood curricula. Haugland (1999), drawing on Epstein’s (1993) work, identifies four stages of development considered critical in supporting teachers to work with computers and young children, including practice experiences with computers, participation in workshops, exposure to models and mentors, and supervisory follow-up support (p. 30). In this study, the teachers directed to use a computer by
management were not provided with these opportunities and so responded by describing the computer as existing outside their curriculum. For Teacher 9 the coping strategy became one in which she used the computer not because she believed in its educational value, but ‘in order to keep everyone sweet’. In these situations, it is questionable whether the computer was being used in the developmentally appropriate and constructivist way advocated by the literature (Clements, 1999; Finegan & Austin, 2002) and the NAEYC and Early Childhood Australia position statements. For example, the NAEYC document argues that ‘the teacher’s role is critical in making certain that good decisions are made about which technology to use and in supporting children in their use of technology to ensure that potential benefits are achieved’ (NAEYC, 1996, p. 11). For the resistant teachers, the potential benefits of computer use in the early childhood classroom may not be realised. It is important to consider why management bodies may be insisting on computer use. This argument was one explored by Teacher 10, whose explanation regarding the presence of a computer in her classroom made reference to the decision by management:

'It was the Committee [of Management] that felt we should have one. Most children I know, sit on a computer at home and I often find that when we have had it out at kinder they’re the ones who want to sit at it at kinder, the ones who don’t have it at home couldn’t care less, they just get on with doing other things. But that was one of the reasons for the Committee feeling we should get one, for the children who didn’t have one, to prepare for some skills when they go to school (Teacher 10).

Of interest here is the manner in which the management body decided to utilise a computer in the classroom by arguing that it was necessary for the children’s skills base prior to their attendance at school. In many ways this argument is similar to that offered by those educators who felt that it was important to remain up to date with technology. Once again the notion of teacher agency becomes of interest, primarily because in those situations where the teacher decided to integrate the computer on the basis of technological currency, reference was at least made to the need for skills acquisition. The extent to which teachers told to use a computer by management are likely to consider such issues requires further consideration. This raises implications regarding the use of computers with children aged three to five years, and the extent to which management should be responsible for the decision to integrate computers in the early childhood classroom over teacher concerns regarding their use and relevance.

Reason 3: ‘Extra’ experience

The third reason reported by the educators regarding their use of a computer in the early childhood classroom was that a computer had become available, and this was viewed as a useful opportunity to provide the children with an ‘extra’ experience. This reason was stated by Teacher 11:

'Someone gave us a free one from one of the local schools and I thought ‘oh that will, that can fill up a corner’ (laughing). That is the only reason. It had limited programs, and it was just another thing to do. There was nothing else behind it (Teacher 11).

In this situation, the decision to use the computer was not necessarily related to issues of pedagogy, technological currency, or even skills acquisition. The computer was considered ‘just another thing to do’, with ‘nothing else’ except its sudden availability supporting its inclusion in the classroom. A similar reason was expressed by Teacher 12, who also described the positioning in the program of a donated computer as an ‘extra’ experience for the children:

'We had the computer donated from a parent who does that, he does computers and we felt it would be a nice reward activity for children who you know, get through other work, we felt it would be a nice extra thing in indoor time or when we are stuck inside. Something that is a novelty, something different, that was really [educator emphasis] why we brought it in, because I am not so keen on computers with children (Teacher 12).

Teacher 12 continued to discuss the reasoning behind her decision to use a computer in her classroom, clarifying her initial response regarding its use as an ‘extra’ activity:

'I think they have a lot of opportunities at home to be on the computer, well, not all of them, but you know for a lot of children it is becoming more common in the home and they have videos at home and they have television at home. I think kindergarten should be the one chance they have to have real social interactions, whereas the computer is generally a one-child activity that they do on their own and there is not a lot of chance for interaction (Teacher 12).

While the computer may be present in this classroom, its use and benefit to the children was not necessarily
considered in terms of this educator’s beliefs about the purpose of early childhood education and, by extension, was unlikely to be incorporated effectively into the curriculum. This perception appeared to exist despite research demonstrating that computer use between two or more children is characterised by social interactions involving negotiation, discussion and turn-taking (Lomangino, Nicholson & Sulzby, 1999). As Haugland (1999) notes, without appropriate professional support educators are unlikely to understand how the computer can be integrated into the existing curriculum, leading to it being seen as an extra or reward experience (Clements, Nastasi & Swaminathan, 1993). Consequently, as was the situation for the ‘technological currency’ and the ‘management directed’ teachers, the computer experience was viewed as potentially external to curriculum and those social, hands-on active learning experiences considered of importance to early childhood education (Brooker, 2003). In other words, while the decision to use a computer might be made on the grounds of technological currency, or as a response to an externally imposed decision; or the use of a computer as an extra, rather than integrated, learning experience. These reasons saw the educators describing the computers as largely outside their general perception of the curriculum and what were considered appropriate pedagogical experiences for young children. The computer itself was not often described by these teachers as a form of active or social learning, despite alternative descriptions in the relevant literature (Siraj-Blatchford & Whitebread, 2003). Rather, as Teacher 7 said, ‘I would like children to be in kindergarten to have lots of hands on experiences and to provide the optimum social experiences’ than use a computer.

The findings in this study raise a number of questions worthy of further investigation. First, it would be interesting to explore in greater detail the issue of skills acquisition noted in the ‘remaining up to date with technology’ reason. These teachers saw skills acquisition as an important reason for using the computer, yet still positioned the computer and computer skills as outside the curriculum. To what extent, then, do early childhood teachers in general view computer skills as a part of the curriculum? Are these skills viewed more as an add-on, necessary for later attendance at school but not a central part of the core learning undertaken in early childhood education? Second, what beliefs do teachers hold about young children’s computer use in early childhood education, and to what extent do these beliefs inform the reasons for computer use cited in this investigation? Third, how far away from the ideal described in the literature (Brooker, 2003) is the reality of computer use in early childhood education? Are the educators participating in this study typical of a larger group of early childhood educators, or has their lack of access to appropriate professional development (Haugland, 1999) hampered their understandings of how computers can be integrated into the curriculum?

These questions require further consideration, given research findings that argue computers are beneficial to children’s learning and development when utilised in pedagogically and developmentally appropriate ways. However, as teachers are responsible for the implementation of learning experiences in early childhood education, such research findings will not automatically translate into effective computer based learning for children. Further research and appropriate professional development opportunities are needed to support educators in the integration of computers within the early childhood classroom so that the potential computers arguably hold for supporting children’s learning may be realised in practice.
References


This paper describes a cross-cultural study of the emotion of fear. Caregivers from an independent preschool, a preschool attached to a public school, an extended hours care facility for children from birth to school age, and an indigenous community preschool were invited to participate. In total, 20 caregivers in Canada and 21 in Australia participated. They were asked to name fears that preschool-aged children experience, to describe how children show fear, and to further describe how they respond to children’s fears. Findings suggest that caregivers can miss or misinterpret fear and fear displays and that they could, in many cases, respond to fear more effectively. By expanding their understanding of what young children fear, the variety of ways that children express fear, and how to help children to understand fear, early childhood educators in both countries can more effectively respond to fear and other emotions in young children. It is hoped that insights provided through this cross-cultural study will assist early childhood educators to achieve this.

Introduction

Emotions play an integral role in our lives, as it is through emotional displays that we gain information about how we and other people feel and respond to any situation. A smile universally conveys warmth, happiness, contentment; a frown disappointment, sadness, discontent. Up to 10 emotions are considered to be basic or innate, with some having universal and others culturally-specific rules of display (Berk, 2003; Ekman & Friesen, 1975). According to Darwin (1872), emotions began as survival and communicative behaviours, eventually becoming habitual. The fight or flight response to dangerous situations is one such behaviour. The current functionalist approach views emotions as signals that prompt us to act. Central to all human activity, emotions are also considered integral to the development of self-awareness and socialisation, as it is through emotions that children learn self-control and learn to adapt to the social and physical environment (Berk, 2003).

Fear is an emotion almost universally named by theorists as basic or innate (Berk, 2003; Darwin, 1872; Ekman & Friesen, 1975; Plutchik, 1980; Sroufe, 1995; Watson, 1970). Fear can be positive, in that it can bond people together for protection (Izard & Kobak in Garber & Dodge, 1991) and can motivate one to take action in the face of danger (Darwin, 1872; Izard, 1991; Ledoux, 1998). However, fear can also be dysfunctional and can have a devastating effect on the individual, limiting learning, problem-solving and interpreting ability, and reducing the brain’s capacity for storing and processing information (Izard, 1991).

According to the literature, fear is displayed in a number of ways. As early as 1872, Darwin described fear display as including rapid heartbeats and hurried breathing, accompanied by pale and sweaty skin, a dry mouth and trembling limbs. The body is said to cower and become motionless in fear (Darwin, 1872; Goleman, 1995; Izard, 1991, Ledoux, 1998). Other fear displays include vocalisations such as screaming or crying (Bowlby, 1973), facial expressions where the eyes are opened wide and the upper eyelid is raised (Fewtrell & O’Connor, 1995), and withdrawal from the feared stimuli while seeking out an attachment figure (Bowlby, 1973). In the early childhood classroom, fearful children might remove themselves from the feared object, cling to a caregiver, cry, scream, or hide and refuse to participate in classroom activities.

From birth, children are acculturated in the ways of naming, interpretation and display of fear and other emotions by their parents, caregivers and others with whom they interact (Bamberg, 1997). While similar patterns occur cross-culturally, such as the universal
smile of happiness, cultures tend to define which kinds of situations call for particular emotions and which kinds of emotional patterns will be recognised and experienced, based on the group’s habitual and normative social behaviour (Markus & Kitayama in Kitayama & Markus, 1997). For example, stranger anxiety is minimal in infants of the Efe tribe in Zaire, Africa, where collective caregiving by a number of adults in the community is a common practice. Yet in infants living in isolated communities subject to terrorist attacks in Israel, stranger anxiety is strong (Berk, 2003). According to Heelas (in Parrott & Harre, 1996), basic emotions such as anger show little cross-cultural consistency in how they are understood and displayed.

While much of the information about emotion and emotion display is relayed indirectly through the socialisation process itself, both within the family context and in the broader community, a growing awareness of the importance of developing social and emotional skills along with cognitive skills (Rodd, 1999) has highlighted the role of the education system in actively teaching children the language and ways of emotion. Goleman (1995) noted that teachers and peers are increasingly becoming models of empathy and values to young children. In some ways, this expands the role of the early childhood educator to include supporting children’s emotional and social development as well as their cognitive development.

It is important for adults who work with young children to be aware of situations that elicit fear, ways children display fear, and ways they can respond effectively to children’s fear. This research was conducted in Australia and in Canada to see whether practices were similar, or whether practices in each country could provide insights into ways of recognising and responding to fear that would increase the effectiveness of caregivers’ work in emotion education. Using fear as a prototype for emotions in general, this study examined causes of fear, fear displays and caregivers’ responses to fear in two cultures: Canadian and Australian. Through awareness of specific fears, fear displays, and ways of responding to and educating children about fear cross-culturally, early childhood educators expand their understanding of fear and emotions in general and their repertoires of responding to and effectively teaching young children about emotions.

The research
This research was conducted in two urban settings: a city of 400,000 in New South Wales, Australia; and a city of 700,000 in Manitoba, Canada. In each country, four preschool (education and care for three-to-five-year-olds) venues were included: an independent preschool operated by either a private or community organisation; a preschool attached to a public school; an extended hours care facility for children from birth to school age; and an indigenous community preschool. Twenty caregivers in Canada and 21 in Australia participated in this study. Caregivers’ qualifications ranged from university degrees to college diplomas to untrained assistants working in a preschool environment.

A total of 41 caregivers from eight venues were interviewed individually about children’s fears, fear displays, and their responses to fear. The Australian component was part of a larger study that included other emotions, which were named by example in a written survey. In both countries, participants were asked open-ended questions about children’s fears, fear displays, and caregivers’ responses to children’s fears. Research questions addressed in this paper are:

- What are preschool children afraid of?
- How do preschool children display their fear?
- How do caregivers respond to children’s fear?
- How effective are the ways that caregivers currently respond to children’s fears?

Caregivers’ responses were audiotaped and transcribed. The researcher also took notes of participants’ responses throughout the interview, to confirm and support the audiotapes. Data was coded for emergent themes. For example, fears were coded as ‘loud noises’ if words such as ‘bells’, ‘fire alarms’ or ‘thunder’ were used; a fear display was coded as ‘verbal’ if words such as ‘talk’, ‘question’ or ‘discuss’ were used. Fears were further coded using Sorin’s (2003) Fear Categories. These categories are: fear of separation from attachment figure; fear of the unfamiliar; fear of being harmed; fear of failure, criticism and embarrassment; fear of insects or animals; and fear of the intangible.

From caregivers’ responses to the question, ‘How do you respond to children’s fears?’, the following code categories emerged. A response was coded as ‘verbal’ when the caregiver reported using some form of speech to address children’s fears. This included...
acknowledgement, reassuring, sharing their own experiences of fear, questioning, explaining the situation, and labelling the feeling. A response was coded as 'physical' where the caregiver reported either giving a hug, touching the child, picking the child up, or staying in close proximity to the child. However, the word ‘comfort’ was coded as both a verbal and a physical response, as a number of caregivers defined the word as constituting both a physical component, such as a pat on the shoulder, or a hug, and a verbal component, such as saying, ‘There, there, it’ll be all right.’

A response was coded as 'action' when the caregiver described taking some form of action to address the fear, such as distracting the child with a puzzle, taking the child back to look at the feared object, or removing the feared object. A response was coded as 'modelling' when the caregiver reported that, through his or her own behaviour, he/she attempted to show the child how to behave in a calm or fearless manner. Responses were coded as 'teaching strategies' when they indicated spontaneous responses to children's fears that would have been informed by an understanding of child development and pedagogy. These included bending down to a child's level, making eye contact, and giving the child 'time out' away from class activities to calm down. Finally, responses were coded as 'planning' when they were informed programming choices, based on an understanding of child development and pedagogy, and generally implemented prior to the appearance of a fear. These included introducing books, songs or rhymes about issues that may be fearful to some children; having discussions with children, parents or other caregivers about fears and ways to address fears; and programming lessons or activities to explore fears.

Following coding, charts were developed to analyse and compare Australian and Canadian data. This paper examines some of these findings. All names have been changed and only pseudonyms used. Where percentages are cited, these were determined by the number of caregivers out of 21 in Australia and 20 in Canada who reported each item.

**Findings**

**Children's fears**

Reports of types and incidences of fear varied considerably between Canada and Australia. In Canada, the fear most reported by caregivers was a fear of loud noises. Eleven caregivers reported that their preschoolers experience this fear. Canadian caregiver Hayley noted, ‘When we have fire drills, the alarm sounds off for the fire drills. It really upsets the little guys if they’re not expecting it.’ Yet in Australia, fear of loud noises was reported far less frequently, with only two caregivers reporting this fear. The most widely reported fear in Australia was a fear of preschool, with 12 caregivers reporting this fear. While this result may have been influenced by the Australian survey item, ‘has been anxious about leaving the parent to attend preschool’, this fear was reported to a much greater extent than fear of separation from a primary caregiver, the fear most closely aligned to the fear of attending preschool that was mentioned by Canadian caregivers. Six Canadian caregivers reported this fear. Canadian caregiver Janette said, ‘When we have new children that come [to preschool] they are very frightened at first to leave their parents or to see their parents leaving them. They don’t think they’re going to come back.’

Examining the current data using Sorin’s (2003) Fear Categories further differentiates childhood fears in Canada and Australia (see Table 1). In Australia, fear of separation from attachment figures was reported to a much greater extent than in Canada. However, fear of the unfamiliar was more widely reported by caregivers in Canada. In this category, fear of strangers and fear of new experiences were similar cross-culturally, but fear of the dark and fear of loud noises were far greater in Canada than in Australia.

In the category of fear of being harmed, Canadian children were reported to be more inclined to a fear of heights, while Australian children were reported to be more inclined to medical fears. The reporting of medical fears in Australia could be partly because of items included in the Australian survey relating to medical fears, but the fear of heights, while an item on the Australian survey, was still mentioned more frequently by Canadian participants.

Fear of failure, criticism and embarrassment was reported to a greater extent in Australia than in Canada. Again, this could be because of items in the Australian survey. Yet fear of insects and animals was more widely reported in Canada than in Australia, despite items in the Australian survey. With a more temperate climate in Australia, children may spend more time outdoors and in contact with animals than would be the case in Canada, thus reducing their fear.

Fear of the intangible was reported to a greater extent in Canada than in Australia. In Canada, the intangible largely took the form of monsters, masks and clowns, all of which can be part of the Halloween celebration.
In Australia, where Halloween is usually not celebrated, the intangible took the form of bad dreams, ghosts and spirits. It is noted that this data comes from caregiver reports, and the perceptions of caregivers may be inconsistent with children’s actual fears. Table 1 compares Canadian and Australian data using Sorin’s Fear Categories.

<table>
<thead>
<tr>
<th>Fear category</th>
<th>Examples</th>
<th>Canada (n=20)</th>
<th>Australia (n=21)</th>
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</table>
| Separation from attachment figure | • Fear of school/ preschool  
• Fear of being lost  
• Fear of being alone  
• Fear of being left with a babysitter | Separation – 6                  | Preschool (Separation from parents) – 12  
Separation – 6                           |
| The unfamiliar               | • Fear of strange people, places and objects  
• Fear of the dark  
• Fear of loud noises | Strangers – 7  
New experiences – 7  
The dark – 4  
Loud noises – 11 | Strangers – 7  
New experiences – 5  
The dark – 2  
Loud noises – 2                           |
| Being harmed                 | • Fear of injury accident, illness or death  
• Medical fears  
• Fear of deep water, fire, carnival rides and burglary  
• Fear of heights or falling from high places | Getting hurt – 1  
Heights – 3 | Accident, illness, death – 1  
Doctor, dentist, hospital – 3  
Heights – 1                           |
| Failure, criticism and embarrassment | • Fear of being teased  
• Fear of being in a fight  
• Fear of making mistakes  
• Fear of adults arguing | Embarrassment – 1 | Teasing – 8  
Fighting – 2  
Adults arguing – 1                           |
| Insects or animals           | • Fear of spiders or other insects  
• Fear of snakes  
• Fear of dogs, cats, bats, etc. | Dogs – 7  
Animals – 5  
Insects – 4 | Dogs/animals – 3  
Insects – 3                           |
| The intangible               | • Fear of bad dreams or nightmares  
• Fear of ghosts, monsters or spirits | Monsters, masks, clowns – 6 | Bad dreams, nightmares – 4  
Ghosts, monsters, spirits – 4                           |
Fear displays

Both Canadian and Australian caregivers were asked, ‘How do preschool children display their fear?’ For the large part, this question elicited similar responses, including crying, verbalising, withdrawing and hiding, body language, clinging to an adult, and screaming or vocalising. The difference, as with the fears themselves, was the extent to which each response was reported by caregivers in both countries (see Table 2).

While a high percentage of both Canadian and Australian caregivers reported that children show fear by crying, incidences of other fear displays varied considerably between countries. Ten Canadian caregivers reported that children talk about their fears. Linda, a caregiver in Canada said: ‘Depending on their age and if they have language and social skills, they might tell you [about their fear].’ Two Canadian caregivers also reported that children display their fear through screaming or vocalising. In many cases, this was because of a child’s lack of language. Canadian caregiver Tina explained, ‘The child who is afraid of dogs is actually a child who doesn’t have much speech, so he’s not telling us with his words. He’s making a noise, showing us he’s afraid.

In Australia, there were far fewer reports of children verbalising their fears, but more reports of children screaming or vocalising. Australian caregiver, Helen noted that children show fear by ‘crying, getting upset and screaming’. Australian children were also more prone to withdraw and hide, and to get close or cling to an adult. Fifteen Australian caregivers said that children show fear by withdrawing and hiding, while only seven of their Canadian counterparts mentioned this fear display. Likewise, eight Australian caregivers reported that children who are afraid get close to or cling to an adult, whereas only five Canadian caregivers reported this fear display.

While fear is commonly reported in the literature as being displayed through body language, including facial expression and gesture (Ekman & Friesen, 1975), only two caregivers in Australia reported this as a way that children show fear. Yet in Canada nine caregivers reported that children show fear through their body language. Canadian caregiver Sheila said, ‘You can just tell in their body the way they’re reacting—they stiffen up.’ Carrie, another Canadian caregiver, added:

Sometimes you can just tell by a certain child’s reaction that they’re nervous. They … do some physical thing like hold onto their mouth, or pace … If they have a look of fear or nervousness, you can tell they want to say something or do something and they’re just trying to figure what to do at that time … so it’s usually something in their physical characteristics.

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<thead>
<tr>
<th>Fear display</th>
<th>Canada</th>
<th>Australia</th>
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<tr>
<td>Cry</td>
<td>14</td>
<td>14</td>
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<td>Verbalise</td>
<td>10</td>
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<tr>
<td>Body language</td>
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<td>2</td>
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<tr>
<td>Get close/cling to adult</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Scream/vocalise</td>
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Caregivers’ responses

Almost every caregiver in both countries reported using a combination of responses to respond to children’s fears. Jane, a caregiver in Australia, described four different approaches she uses to respond to children’s fears:

I think it’s important that you don’t suddenly rush up and overwhelm the child, but just be calm and talk to the child about what’s worrying them. And then make a note of that and follow through later in the program through stories or maybe they just need very calming activities that you can talk to them while they’re working with finger paint. Or sometimes I’d put figures out that they can just work through themselves. You may not necessarily be listening all the time, but they can just work through that with dolls in the home corner, figures in a small playhouse, or in the block area. Or just follow through suggestions that they might make, ‘cause often they say that they’d like to play with something and they’re telling you that they need to work that through.

All but one caregiver (in Australia) said that one of their responses to children’s fears was a verbal response. Much of the verbalisation included acknowledging or validating the emotion. Barbara, a caregiver in Australia, reported that she acknowledged the fear and talked to the child to ‘help them to express that yes, it’s okay to feel like that. And that not everyone feels the same about different things’. Canadian caregiver Linda said, ‘I let them know it’s okay to have that fear, that it’s natural and normal, that everyone has a fear of something.’ Often words were used to explain fearful situations, and importantly to label the feeling, as young children often do not have the words to express their emotions. Canadian caregiver Melanie reported:
Labelling is one thing I find that sometimes we forget about doing, but then once you do it, it really works ... that really helps them to identify for themselves what they're feeling, because sometimes they can't tell and they're just crying ... Sometimes they don't know a word, so you give them different ones for the emotion.

Beyond verbal responses, the incidences of other responses varied considerably between Australia and Canada. In Australia, only 14 caregivers reported using any form of physical response, and these responses for the large part were being in close proximity to the fearful child. Yet in Canada, 17 caregivers reported physical responses to fear. Brad, a Canadian caregiver, noted that for 'something like a thunderstorm, some children need to be either held or just sit on your lap'. Melanie explained, 'I would like my caregivers to be giving [the children] hugs and playing with them ... I just think that it's very important, the touching and everything.'

Canadian caregivers reported a higher incidence of taking action, where they responded in a physically active or participatory way to the fear or feared object, than did their Australian counterparts. Ten Canadian caregivers said they took action to address the fear; as opposed to only five Australian caregivers. Lucy, a Canadian caregiver, described an incident at Halloween with a child who was afraid of witches:

We had a boy who's ... terrified of witches. So Halloween there's lots of fear ... we're careful about the songs we sing, we're careful about costumes that come in. Another thing I did this year for him ... I brought my costume here and it was a witch costume and he helped me get ready and so I was showing him that it was just me underneath and he was the one preparing me almost, and so he had no fear.

The action taken by Lucy was to deconstruct the feared situation by getting the child to participate in her 'transformation' into the witch costume. Action taken by Australian caregivers was often to redirect the fearful child to another activity. Kelly, an Australian caregiver, said that, when children become fearful after their parent leaves the preschool, she might 'offer some alternatives, like "let's go to the gate and wave goodbye" or ... find an interesting activity in the room. Sometimes it's as simple as redirecting to another activity.'

Caregivers both in Australia and in Canada described actions taken where the feared object was removed. Canadian caregiver Paula said she would 'remove them if there is something that's scared them', and in relation to a child who was afraid of loud noises: 'we will leave the situation and come back when she's calmer; when whatever it is that's initiating the fear is over'. Some caregivers suggested taking this further, so that, after the child was removed, they would reintroduce the child to the fearful situation. Hayley said:

When you knew the child was afraid of the clown, if we had a clown come into the centre, if the child saw the clown right away and they started getting really upset about it then we wouldn't let them go and watch the clown. We would take them away from it and then we would ask them once they started calming down if they felt more comfortable if they would like to go and just look at the clown; maybe peek into the room. And just slowly, gradually try to introduce them to whatever it was that frightened them.

Fear of water and fear of dogs also elicited action responses from caregivers. Janette noted that if a child is afraid of water, she would 'take them to the water and [ask them to] maybe just put your hand in or put your foot in and then hold them and then stand in the water ... encourage them to at least try and go in the water'. With a fear of dogs, Carrie said, 'I'd probably just move the child away from the dog ... I'd introduce them but I wouldn't make them stay there or anything like that because it would just be too hard on them, so I make sure to just be around and support them if they don't want to be there, let's go.'

Taking action might also include confronting or interacting with the feared object. This might include brushing away the insect or, as Linda described, 'I have no fear of [spiders] and I had picked up the spider and let the spider crawl on me and showed her that it was kind of tickling and there were lots of other children that she could see that were interested but nobody was sort of demeaning her thoughts or feelings.' It is noted here that there are no poisonous spiders in Canada, but in Australia an action response to a fear of spiders was:

[I tell him] I understand that you are afraid of the spider and that it's okay to be afraid of spiders. And then, 'let's go, can we look at the spider together.' And if he says 'Yep, that's fine,' then we go and have a look at the spider and talk about spiders.

Equal percentages of Australian and Canadian caregivers reported that they would model non-fearful behaviour for the fearful child. Canadian caregiver Annette noted, 'You need to remain very calm if a child
is feeling afraid. They need to get a sense of support and strength from us.'

Six Australian and six Canadian caregivers reported teaching strategies that they used to respond to children's fears. In Australia, the teaching strategies were eye contact, allowing the child personal space and time out, offering the child a favoured toy, getting down to the child's level, and getting the child to draw their fears. In Canada, the teaching strategies included getting down to the child's level, removing the child from the fearful situation, and getting children to visualise the situation but in a non-fearful way. Canadian caregiver June reported the teaching strategy of getting children to visualise:

> When we go out to the play structure, some of [the children] will jump off and make me catch them. Some kids won’t and they’ll stand there and they’ll be, ‘No! No!’ and I’ll say things like, ‘Imagine you’re a bird and you’re flying to me.’ And sometimes just by making them imagine [it] makes them forget about their fears.'

Planning, where caregivers make informed programming choices and implement these choices, if possible prior to the appearance of a fear, was twice as prevalent in Canada as in Australia, with 10 Canadian caregivers and only five Australian caregivers reporting this response. Simone, a caregiver in Australia, advocated using books and songs to encourage children to learn more about the feared object:

> If it’s a fear that was a really strong fear, like every time a thunderstorm came or something like that, I would probably work with the child and encourage them to find out more about thunderstorms. That’s just an example—like how does it happen and look in books, introduce songs and all that’s relevant to the fear.

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With action and planning reported twice as frequently in Canada as in Australia, it is interesting to look at caregivers’ judgements of the effectiveness of their current responses in helping children to deal with fear. In Canada, 18 caregivers felt that their responses to children’s fears were either effective or very effective. Yet in Australia, only 15 felt responses were effective or very effective. Three Australian caregivers felt that responses could be more effective, and another three didn’t know how effective their responses were. This compares with two Canadian caregivers who felt their responses could be more effective.

**Conclusion**

Young children in Australia and in Canada experience a number of similar fears, but the extent to which these fears were reported varied between the countries. Canadian children were reported to experience fear of the unfamiliar and fear of insects and animals to a much greater extent than were Australian children. Conversely, Australian children were reported to experience fear of separation from attachment figures and fear of failure, criticism and embarrassment to a much greater extent than their Canadian counterparts. Implications here are that caregivers are probably aware of only a portion of young children’s fears, rather than the array of fears that are experienced. By communicating with other caregivers, parents and the children themselves, a broader picture of the range of children’s fears is possible. Through meetings, questions about fears on enrolment forms, communication books, and informal discussions caregivers may be able to gain a deeper insight into the kinds of fears experienced by the children in their care.

Ways of displaying fear are similar in both countries, with verbal displays such as vocalisations, crying, screaming or talking about the fear area common, along with physical displays such as withdrawal, hiding, clinging to an adult or refusing to participate in activities. The difference found was the extent to which they are used by children or noticed by caregivers. The majority of caregivers reported that children cry when they are afraid. However, in Canada, children are reported to verbalise their fear and use body language to display their fear to a much greater extent than was reported in Australia. In Australia, children are reported to withdraw from the feared situation, hide, or cling to an adult much more so than children in Canada. This could be because of differences in the recognition of children’s fear displays or different practices in fear display in each country. It may be possible that in Canada children are more encouraged to talk about fear and to express it using their bodies, and this is something that could be implemented to a greater extent in Australia. But it may also indicate that caregivers don’t always pick up emotion displays, and that perhaps learning about fear and other emotions and their display should be part of early childhood professional development. Australian caregiver Barbara suggested that further resources and professional development programs would be helpful in enhancing caregivers understandings of fear other emotions:

*Texts—just reading up on a certain thing, just finding out a lot more information so that you’re able to help the child with it. So you’re actually looking at learning a bit more about the way the child responds to certain situations.*

Caregivers in both Australia and Canada respond to children’s fears in a number of ways, including verbally, physically, taking action, modelling fearlessness, and using teaching and planning strategies. However, there are marked differences in the degree to which Australian and Canadian caregivers respond with physical strategies, action and planning. Canadian caregivers are much more likely to respond using these strategies. Satisfaction with current responses to children’s fears was also greater in Canada than in Australia. While a number of physical responses are guided by health and safety policies in each country, it seems that taking action and planning curricula to address issues of fear and other emotions could be more widely used. Again, through resources and professional development, early childhood educators could learn a variety of strategies to respond to children’s fears and other emotions. Table 3 suggests some actions, teaching and planning strategies that can be used to respond to fear, and provides elaboration in caregivers’ own words.

The following actions, teaching and planning strategies are some suggestions for responding to young children’s fears. These, combined with a knowledge of child development and an understanding of each child’s personal and sociocultural background, should assist caregivers to respond to children’s fears in ways that provide children with the opportunity to develop their understandings and expression of emotions.
With the bees, there’s not much I can do with a bee other than kill it or shoo it away (Lynette).

Offer some alternatives, like "let’s go to the gate and wave goodbye" or find an interesting activity in the room (Kelly).

Regarding a child afraid to use the toilet: ‘We just slowly brought the potty out of the washroom and then maybe [the] next week I would go with him; we’d bring the potty closer to the toilet, so eventually just getting closer and being with him. And he now will go into the bathroom and he will sit on the toilet’ (April).

Using eye contact, that goes without saying, getting down to their level so they know that you’re serious (Narelle).

They can bring something from home that they keep with them here at the centre and have access to throughout the day (Linda).

Allowing them to spend time away from others if they need it (Donna).

If it’s something very obvious, I’ll talk to the parents about it, say have they noticed and how do they deal with it (Sandra).

I would probably work with the child and encourage them to find out more about thunderstorms. That’s just an example—like how does it happen and look in books, introduce songs and all that’s relevant to the fear (Simone).

Sometimes I’d put figures out that they can just work through with dolls in the home corner, figures in a small playhouse or in the block area (Jane).

We had a whole … emerging curriculum theme based on insects and spiders … In no time at all [the fearful child] was as curious as anybody and pointing them out and asking me to come and look and being the first to say she found one’ (Linda).

Regarding fear of the dentist: ‘We would go on a field trip to a dentist’s office’ (Lucy).

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Elaboration</th>
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<td>Remove feared object</td>
<td>‘With the bees, there’s not much I can do with a bee other than kill it or shoo it away’ (Lynette)</td>
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<tr>
<td>Offer alternatives</td>
<td>‘Offer some alternatives, like &quot;let’s go to the gate and wave goodbye&quot; or find an interesting activity in the room’ (Kelly).</td>
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<td>Desensitise</td>
<td>Regarding a child afraid to use the toilet: ‘We just slowly brought the potty out of the washroom and then maybe [the] next week I would go with him; we’d bring the potty closer to the toilet, so eventually just getting closer and being with him. And he now will go into the bathroom and he will sit on the toilet’ (April).</td>
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<td>Make eye contact/get down to the child’s level</td>
<td>‘Using eye contact, that goes without saying, getting down to their level so they know that you’re serious’ (Narelle).</td>
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<tr>
<td>Toy/security item</td>
<td>‘They can bring something from home that they keep with them here at the centre and have access to throughout the day’ (Linda).</td>
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<tr>
<td>Time out</td>
<td>‘Allowing them to spend time away from others if they need it’ (Donna).</td>
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<td>Partnerships with families</td>
<td>‘If it’s something very obvious, I’ll talk to the parents about it, say have they noticed and how do they deal with it’ (Sandra).</td>
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<td>Pictures/books/stories/songs</td>
<td>‘I would probably work with the child and encourage them to find out more about thunderstorms. That’s just an example—like how does it happen and look in books, introduce songs and all that’s relevant to the fear’ (Simone).</td>
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<td>Drawing, painting, sculpture, drama, movement</td>
<td>‘Sometimes I’d put figures out that they can just work through with dolls in the home corner, figures in a small playhouse or in the block area’ (Jane).</td>
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<td>Planning curricula</td>
<td>‘We had a whole … emerging curriculum theme based on insects and spiders … In no time at all [the fearful child] was as curious as anybody and pointing them out and asking me to come and look and being the first to say she found one’ (Linda).</td>
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<td>Excursions/guest speakers</td>
<td>Regarding fear of the dentist: ‘We would go on a field trip to a dentist’s office’ (Lucy).</td>
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References
A PLACE FOR SOUND:
Raising children’s awareness of their sonic environment

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Helen Dilkes
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This paper reports on an experiential project that involved a group of children aged four to five years and their teachers in an investigation of sounds in their local environment. It describes the key elements of an eight-week teaching and learning program that encouraged children to experience and re-experience their surrounding sound environments through a variety of listening tasks, ‘sound walks’ and reflective art-making. Informed by diverse disciplines such as acoustic ecology (Schafer, 1992), music education (Dilkes, 1998) and environmental education (Palmer, 1998), this project aimed to make the ‘sounds of place’ explicit, to illuminate children’s understandings of sound and to document these early experiences. The key questions asked were, ‘Are young children motivated to investigate sounds in their local environment and, if so, how can the teacher support this process?’ Data was collected in the form of digital audio recordings, written ‘listening lists’, child interviews, a project booklet, photographs and children’s artworks. This study provides guidance for early childhood educators who wish to incorporate the ‘sounds of place’ within a multi-sensory program, so as to assist children to make a deeper connection with their surrounding environment.

Introduction
The premise for the study was that a young child’s world is multi-sensory and learning is experiential. A feeling of ‘being in a place’ is informed by experiencing with all the senses, with the term multi-sensory meaning not just visual, tactile, locomotor and olfactory senses but also the often-ignored sense of hearing. The questions asked by this study include, ‘Are young children motivated to investigate sounds in their local environment and, if so, how should the teacher support this process?’

The ‘Place for Sound’ project explored sound environments at an Early Learning Centre (ELC) located in Melbourne close to the Yarra River and bicycle path, near a busy road and bridge, and a short walk from an inner city children’s farm. This particularly diverse acoustic context was characterised by the sounds of active children, the distinctive sounds of bellbirds and the hum of nearby road traffic. This paper discusses the children’s engagement with, and responses to, this sonic environment.

Over eight weeks, on one morning per week, a group of 20 children, aged between four and five years, engaged in listening, sound-making activities and reflective discussions guided by emerging interests and ideas. This paper describes the program co-developed by the teachers and the ‘soundscape researcher’—a skilled musician and educator who had also developed knowledge in the field of acoustic ecology. Environments for sound included the children’s own bodies, the playroom, the playground, the Yarra River, under a roadway bridge, and a nearby children’s farm. As the weeks progressed, the children experienced cycles of listening, questioning, representing in words and pictures, recording and reflection, and at the end of the program the construction of a sound map linked to audio, textual and visual documentation. Throughout this experiential learning process the children became more aware of their sonic environment and identified significant sounds, including the sounds of birds, water, traffic and leaves.

Sound, curriculum, acoustic ecology and the environment
Sound can be an integral part of any early childhood curriculum, and this view is clarified and strengthened by
the theories stemming from the fields of acoustic ecology and environmental education.

In a discussion of young children’s learning through and about sound, there needs to be some clarification of the ‘place of sound’ within the early childhood curriculum. Experiencing sound has often been considered the responsibility of the music educator (McGinley, 2001); though early childhood explorations of sound are commonly integrated into the spontaneous play context, with teachers encouraging attentive listening habits and open-ended sound explorations. In the context of an emergent curriculum (Jones & Nimmo, 1994), experiences of sound evolve from the children’s interests and investigations and include an inquiry into the qualities of sound, and exploring the characteristics and describing particular sounds (Dilkes, 1998).

The field of acoustic ecology, initiated by the work of Murray Schafer (1977), has been inspiring educators to develop and document methods of investigating the sound environment in learning contexts at all levels. Every environment has sound, and sound is implicit in our experience of place, yet our attention is rarely drawn to it. Listening ‘goes on continuously whether we like it or not, but the possession of ears does not guarantee its effectiveness’ (Schafer, 1992, p. 7). Individuals attend to certain sounds and some sounds come into their awareness because they are significant, while others remain in the background. Through active or attentive listening, individuals make sound explicit, develop sensitivity to sound, make meaning of sound, and raise the possibility of connecting with the environment in a new way. The relationship between sounds, listeners and place is at the heart of notions of acoustic ecology, and, from this perspective, there is a form of ‘acoustic communication’ between the listener and the sounds in any environment. This means that experience of sound is inseparable from context or place; that sounds become a frequent, almost subconscious reminder of the context (Truax, 1984) and the individual’s ‘sense of place’ within it.

Within the field of early childhood education, there have been many prominent theorists, including Dewey, Froebel, Montessori and Steiner (Hutchinson, 1998), who have advocated for a strong sense of connectedness and an authentic mode of relatedness between children and their surrounding environments. Today these ideas continue to be strongly supported by educators and researchers who advocate for the development of pro-environment attitudes and values, and ecological approaches to teaching and learning in the early years (Elliot & Emmett, 1997; Robertson & Gerber, 2000). The development of a deeper ‘sense of place’ through multisensory learning, that is both practical and reflective, encourages learning about, from and for the environment (Palmer, 1998), and such an approach supports major aims noted within environmental education, including awareness-raising and the shaping of positive values to the environment (Fein, 2001). The child-centred and experiential nature of teaching and learning within an early childhood curriculum is well-suited to the development of ecologically sensitive relationships between children and their environments.

**Method**

The ‘Place of Sound’ project was conducted in an inner-city early learning centre and involved 20 children aged four to five years, their two teachers, and a soundscape researcher who engaged in an investigation of sound in their local environment. The soundscape researcher, acting as participant observer and at times co-teacher, collected detailed descriptions of the children’s experiences and reflections (Hatch, 1995), and also advised the teachers on specialised sound experiences and forms of audio documentation. The teachers played a vital role in supporting the acquisition of broadly-based knowledge, encouraging the exploration of sound, documenting the learning process, and bringing children and adults together in an intrinsically social experience. The children actively supported the research process by regularly communicating their ideas on sound: verbally, visually and through sound-making experiments.

Informed by the principles of acoustic ecology (Schafer, 1992), the soundscape researcher guided the development of the emergent learning program by initiating specialised acoustic experiences, facilitating reflection through the production of soundscapes (CD-ROM collections of local sounds); and supporting the collection of diverse forms of data (digital audio recordings, written ‘listening lists’, child interviews, a project booklet, photographs and children’s artworks). Throughout the project, sound recordings (of place and people) proved to be a significant form of documentation (Ceppi & Zini, 1999), as well as promoting both a responsive and reflective learning process.

The analysis of the data involved individual and collaborative reading, whereby the soundscape researcher and two other researchers sought to uncover what was ‘logically related’ (Prosser, 1994) and ‘psychologically sensitive’ (Giorgi, 1985), such as salience, regularity, uniqueness, and emphasis given by participants to particular events and conceptions. As the children...
came with varying degrees of experience and maturity, the analysis did not attempt ‘to classify, compare groups, explain, predict or make judgements’ (Hawke, 1993, p. 10), but rather to identify the key qualities and themes that were suggested as essences of shared experience (Patton, 1990). This analysis provided further information on how children experience sound, their motivation for investigating sound, and the role of the teacher in supporting this process.

Guiding questions
Throughout the project the soundscape researcher and teachers employed a series of open-ended questions to focus the children’s attention on listening to the sounds in the environment and finding language to describe these sounds. Adopting a ‘constructivist’ approach (deVries, Zan, Hildebrandt, Edmiaston & Sales, 2002) that aimed to scaffold children’s learning, the teachers observed, listened and actively engaged with the children so as to extend their interest, media exploration and concept development, taking into consideration individual learning styles. The teachers also posed explicit questions that required children to describe the phenomenon of sound, to hone their listening skills, and eventually to be analytical about sound in different places. Questions such as, ‘Listen, what do you hear?’ and ‘What made those sounds?’, ‘How do those sounds happen?’ and ‘What sounds would you expect to hear there?’ were posed. Through the use of these questions, the children were asked to think about and describe sound and, in doing so, develop a ‘depth of engagement with the soundscape’ that could lead to outcomes not anticipated (McGinley, 2001). The children’s documented responses to these questions guided the emergent design of the program.

The program
The children quickly became engaged in the Monday morning ‘sound project’, which included voice and body warm-ups, listening experiences, sound explorations, spontaneous interviews, creating listening lists, and reflective drawing. The microphone, described as ‘a very big ear’, helped focus and highlight the listening process, and a sound system enabled the teachers to play back what had been recorded, to re-experience conversations, interviews and soundscapes. Throughout the program, one teacher expressed surprise at how ‘un-fazed’ the children were about the use of recording.

The program began with a focus on the ears and listening to a composed soundscape based on familiar sounds, including sounds of the city. This provided a starting point for activities that included ‘ear cleaning’ (Schafer, 1977), listening to sounds and silence and experiencing body stillness, all of which were stimulated by the question, ‘What do you hear?’ At times, eyes were closed and the children extended the size of their ears, using hands, so that their sense of hearing was heightened. Following this, guided by the belief that sound is created by movement and that gesture and sound are inseparable (Wishart, 1996), the children listened to the sounds of their bodies while moving and gently made contact between finger and ear, following the ear’s contours to create an intense sound almost inside their heads.

The children’s emergent ideas guided the development of further sound experiences, and when asked, ‘Where else could we hear sounds?’, they suggested the nearby river and the local children’s farm. This stimulated several sound walks (Schafer, 1977) that were supported by the use of microphone and audio recordings (Figure 1). In preparation for the walks, the children were engaged in an activity that explored the contrast of sound and silence so as to focus their attention on listening rather than talking during the excursions. This experience highlighted the fact that listening is an active rather than a passive process and that the individual is involved in ‘acoustic communication’ (Truax, 1984) with the environment—there being much to listen besides the sounds we make ourselves.

During the walks, listening focused on the sounds of feet stepping to different rhythms and speeds and on a variety of surfaces, as well as on the qualities of specific acoustic environments noted by the children. For example ‘the river’, ‘under the big palm tree’, ‘under the bridge’, and the sounds of animals were acoustic environments noted (Figure 2). Following each walk, to aid memory and reflection and to stimulate further
activities, the teachers and children developed listening lists. For example, the following list was developed in response to a sound walk to the river and the nearby children’s farm:

I hear children playing …
I hear nothing!
Leaves blowing gently …
You had to listen carefully to hear quiet things …
I hear leaves crunching …
Whistling birds … tweeting birds …
People talking … children’s voices …
The Yarra River … the river going past …
A car passing over the bridge
Pigs made a noise … spudge, spudge

Throughout the program the children’s experiences were recorded in a project booklet that included pictures, photos, text and sound. This booklet, along with a listening post established in the playroom, provided a reflective tool for children and teachers to regularly re-experience and refine their understandings of sound.

Re-experiencing and reflection through regular discussions, based on the content of the project booklet, listening lists and audio recordings, enabled the teachers to gauge the children’s developing knowledge and interests. Four sounds emerged as significant in the children’s experience during their sound walks. These were: water birds, leaves, and cars passing over a bridge. Questions put by the teachers such as, ‘How do those sounds happen?’, ‘What made those sounds?’, ‘Where did the sound come from—nearby or far away?’ stimulated a deeper investigation back in the playroom, where small groups of children each explored one significant sound and went about finding a variety of materials to use in experiments that replicated their chosen sound. For example, one child reflected on the sound of water rushing over stones in the river by using the sounds, ‘sssss … whoosh … shhh’ with accompanying vibrant gestures. This interest was later facilitated further by the teacher through the provision of a tub of water filled with stones and moved in a way to replicate the sound qualities.

Drawing offered children important forms of representation with which to make sense of the experience. After one sound walk, when children were asked to ‘draw something they remembered’ about the morning’s activity, many drew the path they had walked to the river, with significant features heard and seen along the way. This led to the idea that the children could make a sound map (Schafer, 1977) to help highlight their sense of place and the location of the centre in relation to the surrounding natural and built environments. The sound map installation consisted of a large canvas map that drew together documentation collected throughout the project. Providing a culmination to the project, pathways, landmarks (the palm tree), buildings (a church) and sounds of places (the river) were depicted through drawings, stand-up figures and the verbal responses of children. This map began through the interest of seven children who drew the pathways followed to special listening places (Figure 3). These drawings were copied by the teacher and then viewed on an overhead projector that stimulated the children to recount their experiences and begin a productive planning process. The children first plotted where the significant listening places would be—including the bridge, kindergarten, church and palm tree—and then drew the path to connect them. Other small groups alternated between drawing/painting and talking about the stand-up figures. One child’s work included coloured ears that had the ability to hear different sounds, while other painted figures referred to the, ‘beep beep birds and their sounds … the bird’s mouth and noise … me on the path … teachers talking … doggies going choo choo … and the swishing of branches in the palm tree’. The production of this map not only assisted children to understand the sonic and spatial qualities of the local environment, but also encouraged further playful reflection on sound, language, and the interactions between people and place. Throughout this process, the children returned to audio recordings and the project booklet to verify and challenge each other’s memories and interpretations. A key element of this map-making experience was the listening and communication between children and adults, who together co-constructed their ‘sense of place’.
Conclusion

The aim of the ‘Place for Sound’ project was to make the sounds of place explicit, to draw these into the foreground, and to raise awareness of the sonic environment for children. The questions asked through the study included, ‘Are young children motivated to investigate sounds in their local environment and, if so, how should the teacher support this process?’

An analysis of the children’s responses indicated that they were motivated to investigate sounds in their local environment and capable of reflecting on the experience of sound for themselves and others. The children became more aware of their sonic environment and identified significant sounds, including those of birds, water, traffic and leaves. Attentive and conscious listening (Ceppi & Zini, 1999) underpinned these multi-sensory investigations, while the children’s responses, through images and words, demonstrated an increased awareness and sensitivity to the place of sound in their local environment. The experiential and reflective nature of the project also supported the children’s developing understandings of relationships between people, sound and the environment, and, in doing so, provided opportunities for learning consistent with the principles of environmental education (Palmer, 1998).

The descriptive analysis of this project also points to the important role teachers play in promoting listening skills that require opportunities for development and practice (Schafer, 1992). While the specialist knowledge and skills of the soundscape researcher informed the emergent program, the teachers were central to curriculum planning that was responsive to the children’s interests and motivation. Adopting a co-constructivist approach, the teachers encouraged multi-sensory exploration and extended learning, supported by guided questioning and reflective tasks centred on listening to sound recordings. The elements of this program—listening, exploring, experimenting and documenting—provide a reference point for early childhood practitioners who wish to provide opportunities for children to expand their sense of place through explorations of sound.

References


RESEARCHING WITH/FOR WHOM? 
Stepping in and out of practitioner research

Joy Goodfellow 
Macquarie University

Practitioner research is defined as systematic inquiry-based efforts directed towards creating and extending professional knowledge and associated understandings of professional practice. A review of ‘primary research’ articles published in the *Australian Journal of Early Childhood* revealed that only a small number involved early childhood practitioners as researchers. However, changing social and theoretical constructs and a sense of low regard by the community for the profession require early childhood practitioners to be much more articulate about their practices. Collaborative inquiry processes provide opportunities for practitioners to deconstruct some of the taken-for-granted practices found within many early childhood services. One of the benefits of such inquiry is an increased sense of empowerment gained by practitioners through greater insights into their own professional knowledge, their increased capacity to work more effectively with children, and their increased ability to communicate more professionally and effectively with parents and other professionals.

To undertake practitioner research is to engage in systematic and critical inquiry (Macpherson, Brooker, Aspland & Cuskelly, 2004; McTaggart, 1989). It also involves meaning-making and a responsibility to make that meaning known (Fasoli & Ford, 2001). Practitioner research within teacher education is most often regarded as research undertaken by practising teachers who seek to improve practice through purposeful and critical examination of, and reflection on, their work. Such introspection is designed to increase awareness of the bases of professional actions, decisions, and judgements enabling these teachers to see their practices anew, and recognise and articulate the complexities of their work and the values that lie at the heart of professional practice (Cochran-Smith, 2005; Stremmel, 2002).

Systematic and critical inquiry by professionals of their practices requires what Fish describes as ‘a discerning eye’ (Fish, 1999, p. 195) as well as the capacity to make judgements against theoretical underpinnings and norms of personal/professional practice. It is this intimate insider knowledge of practice (not readily available to outsider researchers) that provides ‘connoisseurship’—the art of appreciation, illumination, and then ‘criticism’ as understandings gleaned through the process of critical inquiry are shared with others (Eisner, 1991; Fish, 1999; Scanlon, 2001).

Practitioner research enables practitioners to engage in inquiry that is directed towards creating and extending professional knowledge, illuminating and improving practice and influencing policies in an informed way (Macpherson et al., 2004; McTaggart, 1989; McWilliam, 2004). Such inquiry may encompass a variety of methodologies, including interviewing and the use of reflective journals, modelling and mapping, yarning (see Power, 2004), storying and narrative inquiry, phenomenological studies and the use of metaphor. The key features of practitioner research are that it is cooperative, collaborative, constructivist, action-oriented, evidence-based, authentic, participatory and often involves experiential inquiry (Macpherson et al., 2004; Reason, 1988; Russell, 2004).

The following discussion aims to place understandings about practitioner research within an early childhood context through an examination of primary research articles published in the *Australian Journal of Early Childhood* (AJEC) during the past five years. This journal was chosen because it ‘publishes research articles and articles of an academic nature’; encourages authors to ‘bridge the gap between theory and practices’; and its readership includes practitioners as well as ‘expert’ researchers (Waniganayake, 2001, p. 5). It is also ‘local’ in that most of the published articles are submitted by authors from Australia and New Zealand. A systematic
A major concern highlighted by Fleer (2003) was that many of the assumptions and values that support the approaches and traditions used in early childhood are drawn from a particular view of childhood and this view may not readily accommodate traditions found in other cultures. Another issue that strongly supports undertaking a more critical view of professional practices is that of power relationships between researcher and researched (Russell, 2004). An associated issue is the need to address the interplay of context, biography and values that shape teaching practice and the relationship between research and teaching as well as that between theory and practice (Ryan, Ochsner & Genishi, 2001, p. 51).

Early childhood teachers who use child observation and interpretation of theory about children’s learning as a basis for curriculum development are always observing, recording, analysing and acting. These strategies are indicative of action research cycles that support viewing, acting and then reviewing situations in a cyclical way that support. Underpinning this approach are the individual assumptions and understandings about children and childhood. Issues surrounding these processes raise the question—to what extent do practitioners engage in collaborative undertakings that challenge the assumptions that underlie such practices?

Systematic review of early childhood research

The review of AJEC journal articles reported here involved:

- a search of the literature to establish search criteria;
- applying the criteria when sifting through the research studies in the journals;
- applying exclusion/inclusion criteria; and then
- critically appraising the studies that best met the criteria of practitioner research.

Research was defined, for the purposes of this systematic review, as planned and systematic investigation undertaken in order to gain new understandings and/or reflect on professionals’ practices and, where information is sought from others, for the specific purpose of that investigation. It may include (but is not limited to) research involving collaborative
processes where the researcher and participants work together in collecting, reviewing, reflecting upon, interpreting and reporting the research data.

Establishing the review criteria

The literature suggests that practitioner research has a number of defining characteristics, including:

- investigating professional practice;
- being critically informed;
- having as its goal the development of a deeper understanding of professional practice;
- positioning practitioners at the centre of the research activity;
- encouraging democratic participation through cooperative research with colleagues/parents;
- authentic inquiry that is directed towards the ‘social good’ of all participants; and
- having elements of reflective practice such as review, reconsideration, meaning-making and thoughtful/purposeful action (Macpherson et al., 2004; McTaggart, 1989; Stremmel, 2002; Wolfendale, 1999).

These characteristics were applied as when undertaking a search of AJEC journals for evidence of early childhood practitioner research articles.

Journal search for research articles

A search of the quarterly issues of AJEC identified that 93 of the 152 journal articles published during the five-year period 2000–2004 were research articles (i.e. 61%). All were identified by editors as being ‘primary research articles’ except for those in Volume 26, Issues 1, 2 and 4 (2001). Issue 1 in this volume was devoted to the 40th anniversary of the publication of the journal (and its predecessor, the Australian Pre-School Quarterly). Articles in Issues 2 and 4 were read to establish whether they could be considered to be primary research articles and were identified accordingly. As each article was identified, the details of the date/issue, author and title of the article were entered into a database. A record was also made of whether the researchers responsible for the studies were located at a university or other tertiary institution, or whether they were a practitioner in the field. Eighty-seven of the 93 research articles had university staff as authors and significant contributors in the research.

Relevance

The next step in the process was to read each of the primary research articles and code them according to the extent to which their method of inquiry largely involved ‘outsider’ or ‘insider’ responsibility in the research activity. Outsider responsibility was regarded as that undertaken by researchers external to the practices being researched, whereas ‘insider’ activity reflected a strong involvement of practitioners in the research process. The determination of outsider and insider activity largely reflected understanding about the nature of practitioner research and the extent to which practitioners were either initiators of the research, engaged in collaborative inquiry with the researcher, or simply respondents.

Articles were classified into four categories. These were coded as R (where a researcher undertook the inquiry and those being researched were asked to respond); L (a review of the literature); P (where those being researched made a contribution that was more than a direct response to questions); and C (where the researcher and the researched engaged in a collaborative approach to the inquiry). The intention of each code was to reflect the extent to which practitioners were involved in the research reported in the article. A code was also assigned to articles that focused on a review of documents, including a review of the literature.

In most instances, the researcher’s identification of methodological underpinnings was used as the code that was assigned to the article, and this was recorded. However, there was one instance where the researcher considered the research activity to be ‘participatory’ but, because of the extent of involvement of teachers in the study, it was recoded as ‘collaborative’. Once the pool of research articles that most reflected collaboration between researcher and researched was assembled then these were reviewed to ascertain the accuracy of interpretation and assignment of codes.

The database that was first used to enter the author and titles of primary research articles was also used to record the outsider activity, insider activity, and the researcher-identified methodological underpinnings. Such detail was listed for each of the 93 journal articles identified as ‘primary research articles’. From this information it was possible to code and tally the journal articles. Table 1 identifies the codes and shows the percentage of articles within each of the four codes.
Nature and extent of practitioner collaboration

The analysis of the journal articles in the *Australian Journal of Early Childhood* revealed that few early childhood practitioners were purposefully and systematically involved in questioning and investigating their daily practices and reporting such investigations. More than half (54%) of the 93 research articles in the journals reported on research undertaken by university staff whose investigations sought responses from practitioners. Typically these investigations required little involvement of the practitioners other than answering questions in surveys. There may be a number of reasons for this, including the limited nature of practitioners’ research skills and the lack of availability of time that practitioners have to devote to research of this nature. A third reason may be the extent to which practitioners value undertaking this kind of research activity.

Just over one quarter (26%) of those involved in providing research data were active participants who contributed data that may otherwise have not been considered by the researcher. That is, they contributed information that related to issues targeted by the researcher but were also given opportunities to add their perspectives on the issues through engaged discussion of a collaborative nature.

Only seven articles (7%) were identified as being representative of practitioner research (i.e. collaborative) and coded accordingly (see Appendix for details). While the researcher and initiator of the research identified as an early childhood teacher, it is possible that this teacher is also associated with a university. One of the issues that arises here is the extent to which practitioners may require the support of someone who has research expertise and who is available to guide them through the research process.

**Key elements of practitioner research reported in AJEC**

Four major features emerged through the deductive analysis of the seven journal articles coded as ‘collaborative’. First, the researchers recognised and identified their research as intentional and systematic. They also identified that they engaged in ‘collaborative inquiry’ (Ford & Fasoli, 2001). Such inquiry acknowledged teachers’ involvement in shared meaning-making which in turn made it possible for these teachers to consider the ‘hidden curriculum’ and social justice issues that may need to be addressed (MacNaughton & Smith, 2001; O’Rourke & Harrison, 2004).

Second, the researchers identified a number of factors within their inquiry that were indicative of key elements of practitioner research referred to in the literature. These included ‘freedom to put forward and receive different viewpoints’ (MacNaughton & Smith, 2001); purposefully meeting regularly as a group in ‘cluster meetings’ and ‘research circles’ (O’Rourke & Harrison, 2004); systematic inquiry (Potter, 2001); and recognition of the context-specific nature of their investigation and the limited nature of generalisations (Ford & Fasoli, 2001).

### Table 1. Number of articles coded within each of the four research inquiry codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>No. articles</th>
<th>% of articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>Respondent/informant (i.e. response to researcher-identified inquiry to provide information)</td>
<td>50</td>
<td>54</td>
</tr>
<tr>
<td>L</td>
<td>Review of literature or analysis of documents (i.e. no contact with informants)</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>P</td>
<td>Participant (i.e. being involved through reflection on experience or some kind of active participation or opportunity for reconsideration such as in focus groups)</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>C</td>
<td>Collaborator (i.e. involved in shared methodological decision-making)</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>
A third feature was the identification of constraints to such research activity. These included the need to have an ‘expert’ or facilitator who could supply or provide access to information resources and readings (Ingram, 2000; Potter, 2001) and the difficulty practitioners felt they experienced in ‘articulating embedded knowledge’ (Ford & Fasoli, 2001, p. 15). It also seemed important that the research practitioners were sufficiently motivated and had time available to participate in the research activity (Potter, 2001).

The fourth feature was the salience of the outcomes for practitioners involved in the research. There was considerable recognition of the ‘sense of empowerment where practitioners were able to engage in the construction of meaning’ (MacNaughton & Smith, 2001, p. 35). This meaningful involvement also meant that practitioners were more likely to make changes in their practices because they could see and understand the purposefulness of their work (devVries, 2004; Ingram, 2000). Being involved also meant that teachers developed the capacity to critically analyse their practices (Ingram, 2000).

Practitioner research reported in these journal articles had a focus on enlightened knowing in that the practitioners, through involvement in meaning-making, became energised as they recognised their new-found knowledge and understandings. The research was personalised and yet had a community orientation through the collaborative efforts of the participants. Further to this, Cusick (2000) suggests that ‘a focus on participants’ situations and experiences through participation in practitioner research offers increased credibility as a basis for enhanced personal status and job satisfaction’ (p. 25). While such involvement and enlightenment motivated the practitioners to reconsider their practices and make changes accordingly, there was a bigger issue: the extent to which it was possible for practitioners to engage in inquiry of their professional practices and review the purposes of those practices.

Challenges
Practitioner research such as that revealed through this investigation of the AJEC articles has a number of challenges. These include:

- the capacity of participants to reflect on interactions and practices (Ryan, Ochsner & Genishi, 2001);
- the lack of familiarity of participants with research processes and methodologies and uncertainty about how to translate research findings into everyday practices (McCrystal, 2000);
- the often-needed requirement to have someone with ‘research expertise’ as a facilitator; and
- time and motivation on the part of participants.

The challenges need to be addressed when advocating and planning participatory and collaborative research activity, particularly within childcare contexts where staff have little time beyond meeting the requirements of their daily professional activities. One way to think about the possibilities of undertaking practitioner research in an early childhood context is to identify the roles that may need to be considered when undertaking this kind of investigation.

There are three clusters of research participant roles to be considered. These are research consultant, practitioner consultant and practitioners. The research consultant role is one that provides for the required research ‘expertise’. The practitioner consultant role represents a facilitator at the practitioner level who, as a participant, is also an informed practitioner. This may be a person from amongst the practitioners who is identified by practitioners as being a coordinator for the research undertaking and responsible for such things as calling regular meetings. Practitioners are those participants who are very familiar with the context within which the research is undertaken.

The three roles have been identified for the purpose of this discussion so that different levels of understanding and associated responsibilities can be realised (see Table 2 for a description). However, in practice, the role definition may not be so clear and there may be a merging of roles during the life of the investigation. That is, these roles may often be interdependent. An elaboration of each of the three roles is provided in the next section that draws from a research project undertaken within childcare centres under the auspice of a not-for-profit organisation.
The infant learning project

Research focus and responsibilities

The topic for investigation in the project reported here was identified by the practitioner consultant who sought the support of the research consultant in undertaking the project. The practitioner consultant had been inspired to pursue this particular topic following attendance at an international conference, and identified what she described as her ‘passion’ for working with and understanding infants. She wished to enable practitioners themselves to become aware of ‘infants’ communication, learning, empathy and relationships’ (Barns, 2005). She had carefully considered the focus for her investigation and the (research) tasks she would initially invite the practitioners to undertake in collaboration with her. Her aim was to involve practitioners in research so that they may discover ways in which infants engage in learning. The practitioner consultant had no prior experience in undertaking research of this nature. However, the practitioner consultant was well known to the practitioners and had previously developed a trusting relationship with them through her role in the organisation where she was employed. The organisation supported her research activity through the provision of a time allowance as well as recognition and encouragement through opportunities to present her project findings at staff forums.

It is not the intent of this article to report on the outcomes of the study, since the complete study is described elsewhere (see Barns, 2005). However, what is relevant are the processes engaged in by the research consultant, the practitioner consultant (an inexperienced ‘researcher’) and the centre-based early childhood practitioners.

The research consultant, a university academic, acted as resource/support person who was able to offer suggestions in relation to research strategies, provide practical and relevant literature resources and advice on documentation and analysis of the findings, and to assist with the writing up of the project outcomes. This was found to be a challenging and interesting role and different from that of a chief investigator in university-based research projects.

Table 2. Research activities undertaken by research consultant, practitioner consultant and practitioners

<table>
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<tr>
<th>Research Consultant</th>
<th>Practitioner Consultant</th>
<th>Practitioners</th>
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<tbody>
<tr>
<td>Provide:</td>
<td>Undertake background reading in order to further understand and be able to identify areas for investigation</td>
<td>Participate in the project through:</td>
</tr>
<tr>
<td>• research expertise regarding procedures and processes</td>
<td>• planning for a systematised approach to inquiry</td>
<td>• discussion of the research questions</td>
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<tr>
<td>• resource information including journal articles and books on early development, and learning particularly in relation to findings from brain research</td>
<td>• negotiating to meet regularly with the participants for the purposes of identifying areas for investigation, gathering and sifting through the information and documenting work in progress</td>
<td>• undertaking research activities that provide experiential and other data</td>
</tr>
<tr>
<td>Facilitate:</td>
<td>• consulting with the participants about interpretations of the findings</td>
<td>• searching information in order to make sense of what has been revealed through the research activity</td>
</tr>
<tr>
<td>• a systematic approach to inquiry</td>
<td>• reporting back to the practitioners on ‘findings’</td>
<td>• reflecting upon and making decisions about changes in professional practices and the rationale for such changes</td>
</tr>
<tr>
<td>• reflection on the processes through regular discussion of both strategies and ongoing findings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support:</td>
<td>Support:</td>
<td>Support:</td>
</tr>
<tr>
<td>• the development of the project through displaying interest and a sense of ‘worthiness’ of the project</td>
<td>• the development of strategies for documenting project findings and interpretation of those findings</td>
<td>through the provision of feedback on the written report of the project</td>
</tr>
<tr>
<td>• development of strategies for documenting project findings and interpretation of those findings</td>
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<td>• through the provision of feedback on the written report of the project</td>
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The role of research consultant required a degree of ‘humility’ (Sumsion, 2003). The role of the practitioner consultant also required humility along with trust and other elements of a caring relationship such as respectfulness and reciprocity, as evidenced in her reflections on the project:

The approach is important. It needs to be friendly and respectful, not authoritarian … You need to be able to work alongside staff (practitioner consultant).

The practitioners in the project were five primary caregivers in three childcare centres who were invited and indicated their interest in participating in the project. The infants were aged from five to eight months of age, and permission was sought from the infants’ parents to participate.

Processes

The research was undertaken within the regular activities of the childcare centres. When the practitioner consultant visited the childcare centres for the purposes of the research, she focused particularly on:

- working with the practitioners;
- posing questions around things to be ‘found out’;
- identifying with the practitioner the activities that may be used in order to find out; and
- considering ways the practitioners would record their finding out.

A number of visits were made to each practitioner. Each visit involved the practitioners in reporting on what they found out, a discussion of the new questions to be addressed and the everyday activities that might be used in order to explore answers to the questions. In all, nine visits of between one and one-and-a-half hours duration were made to each of the practitioners over a seven-month period.

The timing of such visits was important in that the practitioner consultant was present in the playroom during times when practitioners were regularly involved in play activities with the children. The practitioner consultant saw the value in engaging with both the practitioners and the children during these visits so that observation, modelling and discussion could occur. The practitioner consultant subsequently recorded her reflections on the process:

Often there is no opportunity for these staff to look further into why they are doing what they are doing. This research provided that opportunity (practitioner consultant).

The blending of the research work carried out by the caregivers within the general routine of the working day proved to have merit in creating an environment of learning for other caregivers and relief staff within the centre … (practitioner consultant).

Over the duration of the project the research consultant met regularly with the practitioner consultant to discuss the progress of the project and how the data was being collected and recorded. We also considered how the data might be interpreted and reported in an ongoing and meaningful way.

Perceived benefits

The practitioner consultant reported on the increasing interest shown by the practitioners in what they were finding out about the infants for whom they were responsible. These new understandings empowered staff to share their insights with the infants’ parents as well as with other staff. The value of having a facilitator in the role of the practitioner consultant fostered further cooperative explorations resulting in the meaningful identification of new knowledge and understandings:

Together we [the practitioner consultant and the practitioners] found the more we read and understood about the in-utero time and the very early newborn times of infant development, including brain development, the more interested and interesting we became with our interactions and communications with the infants, their parents and our colleagues (practitioner consultant).

The practitioner-oriented Infant Learning Project had a philosophical approach based on collaborative and authentic inquiry. It sought to position practitioners at the centre of the research activity and to enable them to gain a deeper understanding of professional practice. The practitioner consultant, in reflecting on the process, wrote:

Working in collaboration with the caregivers and the infants in their care has been a rewarding experience.

Talking to other professionals about the process builds personal confidence. It challenges those involved in the study to want to find out more and, at the same time, engenders an interest in others to become involved in a similar project in the future (practitioner consultant).

The practitioner consultant recognised the benefits gained through the collaborative inquiry process for both her and the practitioners.
Personal professional knowledge enables one to think and act confidently and in an informed way. One of the project outcomes was a sense of practitioners gaining greater insights into infants’ learning. Another was an increased capacity to look at their own learning with greater ‘appreciation’ and a more ‘discerning eye’ (reported earlier by Fish, 1999). This appeared to culminate in the practitioners’ increased sense of empowerment:

You feel worthy and capable and needed by the very young infants and it makes you want to find out more about them.

You feel genuinely valued and respected by the parents (practitioner).

The impact of the investigation moved beyond individual staff to other staff in the centres where those staff also benefited from the inquiry in terms of new understandings, insights into practices, and opportunities to engage differently with the infants.

Reflections—researching with/for whom?
Practitioner research is about people finding out together. The collaborative nature of inquiry-oriented practitioner research enables investigation of one’s own practices as well as the shared experiences of others as co-researchers.

Practitioner partnerships in inquiry-oriented collaborative research can be undertaken with self as a reflective practitioner; other adults including university research staff, professional colleagues and community members; and/or children and their families. Undertaking collaborative investigations can also be of benefit to all those involved because of the opportunities provided to engage in shared meaning-making.

Perspectives on the nature and function of practitioner research with respect to its contribution to meaning-making can be explored by responding to two questions: Who do early childhood practitioners undertake research with? Who is practitioner research in early childhood for?

Responses to these questions (see Table 3) narrow the focus of practitioner research so that implications for practitioners can readily be considered. However, the nature of collaboration and how this can proceed in an informed way requires further clarification. As already indicated, research inquiry processes often require the support of an ‘expert’ researcher who can both work collaboratively with the practitioners and sensitively step in and out of the research activity as is required. Where this support is underpinned by practices that are informed by both critical reflection and community-oriented processes, progress can be made in furthering examination of the often taken-for-granted assumptions and practices (Fleer, 2003; Fleet & Winter, 2004). The role of university staff who are researchers may be critical here in supporting and even initiating practitioner research, but it should be undertaken sensitively and with a degree of humility.

<p>| Table 3. Research activities undertaken by research consultant, practitioner consultant and practitioners |</p>
<table>
<thead>
<tr>
<th>Who do early childhood practitioners undertake research with?</th>
<th>Who is practitioner research in early childhood for?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>With self:</strong> Engagement in reflective activities; dialoguing through journal writing that includes experiential accounts</td>
<td>For me: Enables me (as practitioner) to gain an appreciation of and insight to my knowledge/skills and so contributes to my personal and professional knowledge—it is empowering and motivational</td>
</tr>
<tr>
<td><strong>With children:</strong> Listening to and inquiring of children who have a role to play in interpreting their actions and/or products</td>
<td>For us: A cooperative undertaking that enables us as a collaborative group of practitioners to act more effectively as a result of increased understanding within contexts</td>
</tr>
<tr>
<td><strong>With adults:</strong> Working collaboratively in joint decision-making with colleagues, other professionals, parents and/or community members</td>
<td>For them: Provides insight and information that adds to the pool of professional knowledge and understanding. As informed practitioners we are then better equipped to share our understandings with others in our professional community and in the broader social context</td>
</tr>
</tbody>
</table>
Conclusion
Fostering a culture of professional inquiry sits comfortably within the early childhood professional context because of practitioners’ recognition of the value of reflection and their personal/professional approaches to working with children. It is a process ultimately aimed at ‘continual redefinition and renewal’ (Stremmel, 2002, p. 65). However, recognition of the necessity to undertake inquiry in a planned and systematic way may not be widely supported either by professionals or those who employ them, because of a number of contextual factors that impinge on their capacity to focus on such activity. These factors include issues surrounding time, lack of appreciation of the value in undertaking such research activity, and the need for leadership in the process. Further to this, academics in tertiary institutions may need to find ways to explore the possibilities and advantages of practitioner research with students and recognise that they have a role to play in stepping in and out of practitioner research.

In drawing the roles of researched and practitioner together through practitioner research it is possible to address the concerns about the theory–practice gap (Heron & Reason, 2001) by emphasising professional judgement within a climate of collaborative endeavour. In the field of education and care, early childhood practitioner evidence-based research holds considerable promise at a number of levels within and beyond the contexts in which early childhood practitioners work. It also enables practitioners to develop a greater appreciation of their professional practice and provides an increased opportunity to review and challenge the assumptions and values that underpin such practices.

Acknowledgement
As research consultant for SDN Children’s Services I acknowledge the contribution made by Margi Barns, the practitioner consultant whose work has greatly contributed to my thinking.

References


### Appendix. Research published in AJEC 2000–2004 and identified as collaborative

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title of article</th>
<th>Method of inquiry</th>
</tr>
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<tbody>
<tr>
<td>de Vries, P.</td>
<td>The extramusical effects of music lessons on preschoolers</td>
<td>Outsider activity: Author participated with teacher in team-teaching activities with children.</td>
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<tr>
<td></td>
<td></td>
<td>Researcher identified methodological underpinning: Participatory.</td>
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<tr>
<td></td>
<td></td>
<td>Insider activity: Teacher participated in team-teaching with author.</td>
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<tr>
<td>MacNaughton, G.,</td>
<td>Action research, ethics and the risks of practicing freedom for early childhood professionals</td>
<td>Outsider activity: Author distributed survey.</td>
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<tr>
<td></td>
<td></td>
<td>Researcher identified methodological underpinning: Collaborative practitioner research model (Noffke &amp; Stevenson, 1995).</td>
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<tr>
<td></td>
<td></td>
<td>Insider activity: Practitioners were involved in ‘research circles’ that were established within local ‘cluster meetings’.</td>
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<tr>
<td>Ford, M., &amp;</td>
<td>Indigenous early childhood educators’ narratives: Some methodological considerations</td>
<td>Outsider activity: Capture the perspectives of Aboriginal early childhood workers on teaching young Aboriginal children through listening to and working with these practitioners.</td>
</tr>
<tr>
<td>Fasoli, L.</td>
<td></td>
<td>Researcher identified methodological underpinning: Collaborative narrative approach.</td>
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<td></td>
<td></td>
<td>Insider activity: Practitioners engaged in ‘mutual story making’ that sought to ‘elicit practitioners’ embedded knowledge.</td>
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<tr>
<td>Potter, G.</td>
<td>The power of collaborative research in teachers’ professional development</td>
<td>Outsider activity: Document the perspectives of Aboriginal early childhood practitioners in writing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Researcher identified methodological underpinning: Collaborative research project involving ‘systematic inquiry’ culminating in ‘voiced research’.</td>
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<tr>
<td></td>
<td></td>
<td>Insider activity: Practitioners involved in undertaking observations and conducting interviews while keeping a journal on the process.</td>
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<td></td>
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<tr>
<td>Ingram, H. B.</td>
<td>Family day care care sought cooperation of family day care provider</td>
<td>Outsider activity: Collaborative.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Researcher identified methodological underpinning: Practitioner developed literacy program, kept records of that development and of children’s involvement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Insider activity: Practitioner participated in interpreting narrative account of reflection on practice.</td>
</tr>
</tbody>
</table>
The current editor of AJEC is in her second term and would like to work closely with a co-editor who would gradually take on board more responsibility over twelve months with the view to taking on the role of editor at the end of the current editor’s term.

If you are interested in this position, please send in a brief CV, a personal statement about your commitment and vision for AJEC, and the names of two referees.

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The aim of this edition is to generate discussion and reflection on issues of gender and sexuality, and the intersection of gender and sexuality; as well as examining heterosexist/homophobic pedagogies.

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