

Environmental influences on independent collaborative play

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Data from two qualitative research projects indicated a relationship between the type of early childhood setting and children's independent collaborative play. The first research project involved 22 three and four-year-old children in a daylong setting and 47 children four-year-old children in a sessional kindergarten. The second project involved 14 parent educators and 31 children in an Auckland Playcentre.

There was substantially greater complexity of the play, and more mixed gender independent collaborative play in the daylong centre than in the kindergarten, and independent collaborative play was largely absent in the Playcentre. Three factors appeared to explain the differences in the nature and frequency of the independent collaborative play. These were the physical environment, the educator's pedagogy, and the nature of the relationships within the setting. The paper discusses these factors and suggests some implications for early childhood educators.

Keywords environments, collaborative play, pedagogy

INTRODUCTION

This article is a discussion of two empirical studies conducted in three different early childhood settings that focussed on children's collaborative play. An essential aim of the studies was to investigate the influence of the physical, social and pedagogical environment on the nature of the collaborative play. The affect of the environment on children's play is well recognised. It conditions how they feel, think, and behave (Greenman, 2005). The environment is an intricate interaction of spaces, resources, values, patterns of expected behaviour and interactions, but these are under the control of early educators and can be shaped and sustained by them (Anning and Edwards, 2006). The nature and significance of the environment on children's play covers not only the physical context, but also is inextricably tied in to the personal and social contexts also (King, 1991). Claxton and Carr (2004) claim that children's frequent participation in shared activity is a key characteristic of potentiating environments that stretch and develop young children.

The literature suggested a number of possible factors that might affect the ability of an early childhood setting to achieve the potentiating environment envisaged by Claxton and Carr. Pairman and Terreni (2001) identified physical, interactional and temporal elements as being the key aspects to early childhood environments. These three aspects are not independent of each other. The physical environment affects not only physical development but also the social development of children (Barbour, 1999). The physical environment is also believed to influence the emotional climate within an early childhood setting (Pairman and Terreni, 2001).

The physical environment may serve to constrain children's play. It can make it easier to act in certain ways, harder to act in others (Kritchevsky, Prescott and Walling, 1997). The size and arrangement of play spaces influences both the nature of children's activities and the number of children who can be involved (King, 1991). If children are denied opportunities to move physically in their dramatic play then their education may be constrained (Bruce, 1991).

Indoor and outdoor environments appear to influence the nature of children's play differently. Shim, Herwig and Shelley (2001) examined the different effects of indoor and outdoor settings on peer play of younger and older preschool children, and the influence of each play environment on children's behaviours with peers. They found that children who did not have a rich learning environment were more likely to engage in less complex peer play. Children were also more likely to engage in the most complex forms of interactive play on the outdoor playground, which they suggest may be due to less-structured equipment in that setting.

The nature of teacher interactions in children's play also appears to be affected by the indoor and outdoor setting. Stephenson (2002) identified significant differences in children's play and teacher-child interactions between outside 'look at me' and inside 'look what I've made' environments. The inside environment was more stable, more controlled and teachers were more reluctant to provide modelling or direct instruction for the children.

Cullen (1993) found that children's outdoor play had little teacher intervention or interaction and tended to produce physical rather than creative play. However, children themselves appear to want teachers to play with them in the outdoor setting (Greenfield, 2007). There is evidence that teachers are reluctant to become involved in children's socio-dramatic play (File, 1994; Smilansky, 1990) but in indoor situations Petrakos and Howe (1996) found that teacher intervention and follow up led to a higher frequency and greater complexity of socio-dramatic play.

There is a divergence of opinion with regard to the impact of adult intervention in children's independent collaborative play. On the one hand it is seen as limiting children's socio-dramatic creativity and opportunity to take leadership roles in play (Samuelsson and Johnson, 2009) and tending to inhibit or stop the play (Kemple, David, and Hysmith, 1997). However Petrakos and Howe (1996) believe adult intervention may lead to richer learning for the children. This view is supported by Bardova (2008) who suggests that effective adult mediation may be a vital factor in developing children's maturity of play.

The importance of the environment is a central feature of the Reggio Emilia early childhood system where it is regarded as the 'third teacher' (Strong-Wilson and Ellis, 2007).

Although the environment includes the whole setting and community of Reggio Emilia, particular care is taken to create physical and social environments within the early childhood settings themselves that give the children time and space to work collaboratively (Ceppi and Zini, 1998). There has been considerable interest internationally in Reggio in the last two decades and there is an increasing literature documenting efforts to incorporate Reggio principles and values into other cultural contexts (e.g., Cadwell, 2003; Fleet, Patterson, and Robertson, 2006; Fraser and Gestwicki, 2002; Fu, Stremmel, and Hill, 2002; Kinney and Wharton, 2008; Lewin-Benham, 2006; Millikan, 2003; Thornton and Brunton, 2005, 2007).

The environment has a significant impact on play in early childhood education. It has been suggested that the term environment encompasses physical, social and organizational elements. These three elements may in large part set the curriculum in an early childhood setting (Frost, Shin, and Jacobs, 1998). The research investigated the influence of the physical setting, the social climate, and the pedagogical practice on the independent collaborative play of children in three different early childhood settings.

METHODS

There have been a number of definitions of children's collaborative play (e.g., Ashiabi, 2007; Broadhead, 2004; Howes, 1980; Roskos, 1990; Shim, Herwig, and Shelley, 2001; Smilansky, 1990; Verba, 1994). For the purposes of my research I defined independent collaborative play as that in

which two or more children were involved in a self-generated activity in which there was a common understanding of the purpose of the play, joint interest in maintaining and developing the play, and no adult involvement.

The first of these interpretivist (Cohen, Manion, and Morrison, 2007) research projects investigated the nature of independent collaborative play between young children in two Auckland early childhood education settings. An interpretivist approach is 'the systematic analysis of socially meaningful action through the direct detailed observation of people in natural settings in order to arrive at understandings and interpretations of how people create and maintain their social worlds' (Neuman, 2003, p.76). The first site, in 2007, was a daylong centre and involved 22 three and four-year-old children. The second site, in 2008, was the morning session of a kindergarten and involved 47 children four-year-old children.

I spent one morning a week from the beginning of March until the end of November in both early childhood settings. My role was purely as an observer. I did not record any collaborative play episodes occurring around activities the teachers had set up, and I stopped recording any episode whenever a teacher intervened in the play. During 2007 85 episodes were observed in the daylong centre. During 2008 64 episodes were observed in the sessional public kindergarten. The episodes were documented using a mix of field notes, videotape and audiotape recordings, and digital photographs. Not all episodes that occurred were recorded. While observing inside I could not monitor play that was occurring in the outside area, and the reverse also was true. Where two episodes were occurring simultaneously in the same setting normally the episode involving the more complex themes and interactions was more closely observed, and the other episode monitored to record the main themes and direction of the play.

The second research project in 2009 was undertaken in an Auckland Playcentre. The purpose was to identify the parent educators understanding of children's competencies and how they recognized and documented this in the play sessions. The initial stage of the project was semi-structured interviews with the parent educators to identify and document their existing understandings, as to the nature of children's competence and how this was documented. Fourteen parent educators were interviewed, the interviews lasting between 30 to 45 minutes. The portfolios of 32 children were analysed for the period February 2008–August 2009 using a slightly modified version of the list developed by the Competent Children at Five research project (Wylie, Thompson, and Hendricks, 1996). Observations and field notes of the participating children's play were also made during five different weekday morning sessions and one afternoon session. A comparison was then made between the espoused beliefs and practices and the actual practice and feedback was given to the parent educators.

Although the two projects focussed on different research questions, a common element of both was the use of observations of children's play as a data collection method. In the first investigation the focus was on children's unmediated independent collaborative play, and in the second the focus was on children's interactions with adult parent educators. Although in the Playcentre I was focussed on making detailed full field notes documenting the adult/child interactions, due to my interest in unmediated independent collaborative play I also recorded the frequency and gender groupings of this type of play and this provided sufficient data to make comparisons with similar play in the other two settings. The detailed field notes I made of the parent educator's interactions with groups of children also allowed me to make some comparisons with regard to the impact of adult intervention in collaborative play.

Sample and setting

Although geographical separate within Auckland City the daylong centre and the kindergarten were very similar with regard to the ethnic and socio-economic composition of the children and the

qualifications and teaching experience of the three staff responsible for the children at each centre. The daylong setting was open from 7.30am until 6pm and catered for children from six months of age up to five years of age. The research involved the three and four year old group. At various times in the daylong setting (2007) 22 children were participants in the research project. Initially there were 15 children (6 girls, 9 boys) in the group. During the year three children left to go to school, and 6 children moved up into this group from a younger-age group within the centre. In November there were 18 children in the group (8 girls, 10 boys).

The kindergarten was sessional, with a group of 45 four-year-old children who attended five mornings a week, and a group of 45 three year olds who attended for three afternoons. The research involved the morning group. There were originally 35 children (23 girls, 12 boys) in the participant group. During the year 25 children left the group and 18 children entered it. By November the participant group consisted of 28 children (16 girls, 12 boys). The children in both settings were predominantly of New Zealand European ethnic background from middle-class families.

Playcentres are unique in Aotearoa/New Zealand. They are sessional early childhood education services that are run as parent cooperatives, where the parents take on the role of educators in the centre (Manning, 2008). Each of the 492 Playcentres in New Zealand is autonomous, and is affiliated to the New Zealand Playcentre Federation (NZPF) through one of 33 regional associations. The NZPF oversees the delivery of the Playcentre Diploma of Early Childhood and Adult Education. Ministry of Education funding is provided to those Playcentres who meet the minimal licensing levels of training. Playcentres are run as cooperatives where the parents are also the management and the teachers. This dual role is recognized by the use of the term 'parent educator' throughout this article. All the parent educators were involved in the Playcentre programme on a rostered basis. All the parent educators were also on the management committee of the Playcentre. Fourteen parent educators, all female, and all possessing a University qualification participated. There were 32 child participants, 17 girls and 15 boys ranging from four months old to four years ten months old. An average session consisted of seven parent educators and 17 children; the ratio of adults to children was always less than 1:3.

The daylong centre was situated in an old villa that had been adapted for use as an early childhood centre by the removal of two internal walls to make larger internal spaces. The infants and younger toddlers, the smallest group, occupied one normal sized bedroom. The middle group of children, who were aged from about two years to three years, three months, occupied one of the larger created spaces. This group also had a small outside area for their own use. The older children who were the participants in the research had another larger created space at the back of the house and a reasonably sized elevated deck for their use. Part of the space was also used as the dining area for the other two groups as the wall between their rooms and the kitchen had also been removed. When the other children were eating the space available for the older children became more restricted. There was a large outdoor area in the front of the house that had a big sandpit, climbing frames, and a playhouse within it. The children did not have free access to the outside area. They normally were able to play in this outside area for one and a half hours in the morning and one hour in the afternoon and often had to share it with the middle group of younger children.

In comparison the kindergarten was in a purpose built building that was about the same size as the complete house of the daylong centre. The outside area was also more than twice the size of that available to the children in the daylong centre, and it had more fixed equipment in it. This consisted of a larger sandpit, swings, two play houses, a large slide, a water trough, a permanently set up carpentry table, and a painting and collage area.

As well as having more space and equipment outside the children in the kindergarten also had

a greater variety of resources and play spaces available to them inside, including a large, well stocked 'home' space for domestically themed socio-dramatic play. There was free-flow from the inside space to the outside play area, and apart from formal group times the children were free to play wherever they wished.

The Playcentre environment was similar to the kindergarten environment. It consisted of a purpose built building with a permanently set up library corner, home corner and block corner. There was free access at all times for the children to a large outdoor area with a large sandpit, swings and slide, climbing frame and water trough. A carpentry table was also available on a daily basis.

Ethical considerations

Research with young children poses a number of important ethical issues that need to be addressed. Although the children, aged three and four-years-old were not able to give fully informed consent, which was gained from the parent/care giver, care was taken to explain to the children in terms that they could understand what was being observed and to make clear that they could ask not to be observed at any time. I also looked for non-verbal indications that children were withdrawing their consent such as frowns, or turning away from me. As parental consent was gained for all children in the daylong setting the exclusion of non-consenting children was not a concern when collecting data. However this became more problematic in the kindergarten setting where parental consent varied from 75% to 66% of the children during the year. If non-participating children were playing with participant children then only field notes were used to record the play event, and the field notes only related to the participant children. Difficulties in avoiding capturing non-participant children led to the decision not to use the video camera in the kindergarten but with care the digital camera could be used to record many of the play episodes.

FINDINGS

The differences in the type and nature of independent collaborative play between the three early childhood settings seem to be related both to the physical environment and the social and pedagogical culture. Although the kindergarten children had more space to play and a greater range of activities and resources to choose from, their collaborative play was less complex and less sustained than that of the daylong children. The lesser complexity could be seen both in the range and depth of the themes explored in the play and the sophistication of the language used in the play. While the daylong children tended to remain focussed on the scenario they were involved in, the kindergarten children tended to move more quickly in and out of collaborative play episodes and to also move from place to place during the play. On average a play episode would be twice as long in the daylong setting compared to the kindergarten. Elaborate scenarios lasting more than an hour were common in the daylong centre, but rarely occurred in the kindergarten. Although independent collaborative play episodes developed in the Playcentre at the same frequency as in the daylong centre and kindergarten, none lasted longer than three minutes before an adult entered the play. There was also a greater incidence of mixed gender play in the daylong centre than in the kindergarten. Twenty-seven percent of the 85 episodes in the daylong centre involved mixed gender play compared with six percent of 64 episodes in the kindergarten.

There was no discernable progression in the breadth or depth of the collaborative play scenarios during the year in both the daylong centre and kindergarten. The children in both centres tended to repeat scenarios without developing the roles or situations. Although the children's vocabulary increased during the year this was not reflected in a deeper exploration of the social concepts that underpinned their socio-dramatic scenarios. There was also no development in the

sophistication and complexity of the outcomes of block, construction set, or sand play. There was however more richness of language and depth in the exploration of social issues in the Playcentre once the parent educators became involved in the children's collaborative play.

Differences in the amount of space to play in and the amount of resources available for play in the daylong centre and kindergarten led to different patterns of play emerging. A greater percentage of independent collaborative play (57%) took place in the indoor setting in the daylong centre than in the kindergarten (45%). The home corner was a key element in the kindergarten children's collaborative play, 60% of the indoor episodes taking place in that space. Nearly all this play revolved around caring for babies and preparing and eating food using the playdough that was always set out on the table. As there was no similar facility in the daylong centre the children's play was less focused on the use of props and the socio-dramatic play in that centre encompassed a wider range of themes. Doctors and 'pretend I'm dead' (Mawson, 2008) were significant topics of play in the daylong centre, yet were absent in the kindergarten. Although the incidence of block and construction set play was similar for both settings (30/32%) there were clear gender differences. In the daylong centre girls were as likely to play collaboratively with the blocks as were boys. On three occasions mixed gender block play occurred. In the kindergarten there was only one episode of girls playing in the block corner. On that occasion the girls' play was disrupted by a group of three boys within ten minutes causing the girls to leave the area.

The sandpit was the main arena of outside independent collaborative play in the kindergarten, 72% of the observed episodes taking place within it. On most occasions water was also involved in the sandpit play, as a hose was freely available to the children. Both boys and girls played in the sandpit, the girls play normally focused on pretend cooking scenarios and the boys on castle, volcano or road construction scenarios. Only one episode of collaborative water play took place outside the sandpit although a water trough was available everyday. The water trough was a place of solitary or parallel play in the kindergarten.

Sandpit play accounted for only 31% of the outdoor collaborative play episodes in the daylong centre and water was involved in less than half of the episodes. Water was only available from a storage tank and had to be carried into the sandpit. As the storage tank depended on rain catchment to fill it, water needed to be husbanded and it was not always available to the children. Two small water troughs were available on the outside deck and a significant amount (28%) of collaborative play was centred on them.

A greater amount of outdoor non-facility based collaborative play took place in the daylong centre (40%) compared to the kindergarten (26%). Again there was a much greater incidence of mixed-gender play and a wider range of scenarios evident in the daylong centre compared to the kindergarten. There were 11 episodes (17%) in the kindergarten where the play began inside, normally in the home corner, and moved outside as the scenario developed. This did not occur in the daylong centre where free access from indoor to outdoor was not available.

During the 15 hours of observation spread over six sessions in the Playcentre no episode of independent collaborative play lasted more than three minutes before a parent educator moved into the play, invariably taking control and directing the play. The initial play of the children was predominantly situated in either the sandpit or around the carpentry table. A much smaller amount of independent collaborative play originated inside in the home corner.

DISCUSSION

There appear to be three factors that contributed to the different nature of independent collaborative play within the three settings. These factors are the physical setting and restrictions

on free movement, the children's relationships, and the pedagogical beliefs of the teachers and parent educators.

As the daylong children did not have the choice whether to play indoor or outdoor the gender division of play that occurred in the kindergarten with the boys tending to play outdoors and the girls indoors did not have an opportunity to develop. The preference for boys to play in outdoor environments and girls to play in indoor environments is one of a number of gender differences in the choice of play environments and activities (Frost, Shin, and Jacobs, 1998). This was strongly evident in the kindergarten setting. One affect of this was the lack of boys block play in the kindergarten. Block play is seen as a consistent element of boys play (Rubin, Maioni, and Hornung, 1976) yet was almost totally absent in the kindergarten, involving only one of the 64 collaborative play episodes observed. In comparison 16 (19%) episodes in the daylong centred involved block play, and the majority of these involved boys.

These findings suggest that less may be more in terms of access to space and resources for rich collaborative play in early childhood settings. Although other factors such as the length of time the children had been together as a group, and the Reggio influenced pedagogy of the staff played a part, the more limited space, lower freedom of movement, restricted play sites and materials available to the children in the daylong centre does seem to be significant in accounting for the greater complexity and duration of their independent collaborative play compared to the kindergarten children.

The different quality of the relationships among the children also seem to have played a part, particularly with regard to the much greater incidence of mixed-gender play in the daylong centre. The smaller size of the daylong group, and the fact that they had been together as a group for a longer period of time than the kindergarten children seems relevant. Many of the daylong children had been together for over three years, whereas the children in the kindergarten entered the morning session at about age four and there was a constant change as children moved onto compulsory schooling when they turned five. The children in the daylong centre spent much of their time together as a group in the quite small inside space. They were constantly aware of what the other children were doing, and needed to negotiate and compromise on a regular basis to maintain harmony within the group. The greater length and complexity of independent collaborative play in the daylong centre would seem to be related to Matthews' finding (1977, cited in Rubin, 1980) that fantasy play becomes more complex and ideational and less constrained by the physical environment with increasing participant familiarity.

Different pedagogical beliefs also seem to have been significant in the differences in collaborative play in the three settings. The strong Reggio influence on the pedagogy within the daylong centre may have had an impact on the greater incidence of mixed-gender independent collaborative play in that setting. During their time in the centre the children had been engaged in a number of long-term investigations. These projects involved a good deal of mixed-gender discussion and collaborative documentation that encouraged both language and social development. This familiarity with collective in-depth inquiry and mixed-gender grouping appeared to be carried over into their play with each other. The larger number and richness of vocal interactions in the daylong centre seemed to mirror the types of interaction that were recorded in the pedagogical documentation of the long-term investigations they had been involved in.

The absence of any significant independent collaborative play in the Playcentre can be attributed to the pedagogical philosophy of the parent educators and the very low adult-child ratio. Parents join Playcentre because they wish to be fully involved in their children's learning and development. The Playcentre parent educator training programme also has a strong focus on interacting with children as they play. As their own children were involved in the developing collaborative play episode both their personal connection and their training encouraged the parent

educators to intervene and become involved in the play episode. While this adult direction may limit children's socio-dramatic creativity and opportunity to take leadership roles in play (Samuelsson and Johnson, 2009) it may also result in richer learning for the children (Petrakos and Howe, 1996). Effective adult mediation in make-believe play may be a vital element of developing mature play (Bardova, 2008). Research into effective early childhood pedagogy in Britain found that excellent settings tend to achieve a balance between adult-led and child-initiated play and activities (Siraj-Blachford et al, 2002, cited in Wood, 2007). In both the daylong centre and the kindergarten the teacher practice was not to intervene in the independent collaborative play. Any intervention primarily had one of two purposes, and invariably had a negative effect on the play. One purpose was to direct the children to end the play to come to mat time or another routine such as a mealtime. The other was when the children were perceived as being too noisy or physical with each other, or transgressing other established behavioural rules.

There was no discernable progression in the breadth or depth of the collaborative play scenarios during the year in both the daylong centre and kindergarten. The children in both centres tended to repeat scenarios without developing the roles or situations. Although the children's vocabulary increased during the year this was not reflected in a deeper exploration of the social concepts that underpinned their socio-dramatic scenarios. There was also no development in the sophistication and complexity of the outcomes of block, construction set, or sand play. Although the data is not sufficiently robust to make a strong statement it did appear that the intervention of the parent educators in the Playcentre did result in the children using more complex language and engaging in a wider range of concepts than was noted in the short periods of time they played together before the adult intervention.

In view of this lack of progression of complexity in language, themes and construction techniques in the daylong centre and the kindergarten a case might be made for a greater teacher involvement in children's collaborative play. Teachers are reluctant to become involved in children's socio-dramatic play (File, 1994; Smilansky, 1990). Kemple, David, and Hysmith (1997) found that most teacher interventions in children's peer play have a negative effect, and that was the case in the daylong centre and the kindergarten. Any teacher intervention needs to be based on intent observation of the play episode and a clear understanding of how the intervention will enhance the play episode and encourage children's learning (Kitson, 1997). Playing a subordinate role and using that position to suggest possible plot and character development would seem a more appropriate approach than the directorial control position taken by the Playcentre parents.

A link has been proposed between the frequency and complexity of children's independent collaborative play and the physical, social and pedagogical environment in three New Zealand childhood settings. Similar settings and pedagogical approaches are also to be found in other countries such as Britain, Australia and the United States of America. It is probable that like results may also be observed in the wider international context. Further research is also needed to see whether a link between involvement in Reggio-influenced investigations and rich independent collaborative play suggested above exists. In view of the Playcentre findings the nature and impact of adult intervention in children's collaborative play is a further field requiring much greater research.

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