A Study of Play in Preschool Children: An Examination of Changes in Children's Play Behaviour during their First Year in a Kindergarten.

―Changes in the First Term―

Author(s)
Shinno, Tomoko

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A Study of Play in Preschool Children:
An Examination of Changes in Children's Play
Behaviour during their First Year in a Kindergarten.
—Changes in the First Term—

Tomoko SHINNO*☆

Abstract:
The purpose of this research is to specify the nature of kindergarteners' behaviour during their first term. This is part of a study (which will) analyse changes in children's behaviour through the first year in kindergarten. The behaviour of 17 three-year-olds (eight boys and nine girls) was videotaped. Each child was observed 18 times for three minutes each time in random order during their first three months in kindergarten. The children's behaviour was analysed into 27 categories. In this report, the results are used to examine the type of play and the nature of interpersonal relations.

1) Type of play: Significant differences at the 1% level were observed between each pair of the three categories parallel play, solitary play and social play. Parallel play was observed most frequently, followed by solitary play with social play the least common. Boys were found to play in parallel more than girls (at the 1% level of significance).

2) Interpersonal relations: Behaviour involving the teacher ('proximity to the teacher', 'looking at the teacher', 'body contact', 'talking to the teacher', 'seeking attention from and seeking contact with the teacher') was observed more often than behaviour towards the other children, with a significance at the 1% level.

3) Aggressive behaviour: object conflict, rough and tumble play and automanipulation were fairly rare.

Introduction

A child gets the chance to meet a large group of children of the same age, probably for the first time, on entry into kindergarten. As a consequence of this and other factors, the newcomer to a kindergarten changes greatly in his or her first year.

McGrew(1972) observed a nursery school in Britain during a newcomer's first
five days and reported that the newcomer showed signs of fearfulness such as 'automanipulation', 'immobility' and 'looking behaviour' for the first few days and that this behaviour declined over the first weeks. Feldbaum, Christensen and O'Neil (1980) observed the assimilation of newcomers to a kindergarten in the United States during their first four weeks in the class. There were already some children as hosts in the class which the newcomers entered. The newcomers exhibited significantly higher levels of spatial isolation and off-task behaviour. Hold-Cavell, Attili and Schleidt (1986) studied the changes in newcomers' behaviour in the first year, with a cross-cultural comparison between West Germany and Italy. The comparison revealed differences in 'looking around' and 'body contact' (both more common in Italy), 'talking to somebody', 'automanipulation' (both more common in Germany), and 'the number of children playing together' (German children preferred to play with more than one child, while Italian children played more often in dyads or alone). Children in both cultures preferred children of the same age for social play and children of the same sex for parallel play and showed a decline of 'interactions with the teacher' and 'looking around' over the year. Sex differences were found in both cultures for 'object conflict'. There were host children in the classes used in this research.

As in the study of Feldbaum et al. (1981) Iijima (1986, 1989) studied the changes in children's behaviour longitudinally and reported on the interpersonal behaviour among children enrolled in kindergarten for three years or two years before entering regular school. From these reports, something of the changes of the newcomers' behaviour can be understood, especially as regards interpersonal behaviour.

Smith (1973) and Smith and Connolly (1972) reported that children's behaviour changes involve an increase in 'social participation' (on a scale ranging from self-play to group or social play. Parten (1932) classified behaviour ranges from 'unoccupied behaviour' through 'solitary play', 'onlook behaviour', 'parallel play' and 'associative' play to 'cooperative play'. McGrew (1972) reported that 'unoccupied' and 'looking' behaviour were characteristic for newcomers. Although Iijima (1989, 1986) described the changes of interpersonal behaviour among preschoolers, there were only seven categories in the 1989 research ('unoccupied behaviour', 'solitary behaviour', 'same-sex group', 'same-sex pair', 'mixed group', 'same-sex group with teachers', and 'parallel behaviour'), and there were only 11 categories in the 1986 research (1989 plus 'wandering', 'onlooker', 'approaching' and 'teacher pair'). Hold-Cavell et al. (1986) employed 15 categories ('solitary play', 'social play', 'parallel play', 'imitating another child', 'staying in proximity to other children', 'automanipulation', 'looking behaviour', 'having body contact with someone', 'talking to somebody', 'seeking attention', 'object conflict', 'aggressive behaviour', 'rough and tumble games' and 'interaction with the teacher'). The categories of Hold-Cavell et al. (1986) are insufficient to describe the change of behaviour of preschoolers as regards social play. Iijima's categories are better than those of Hold-Cavell et al for describing changes of interaction with the teacher but
they are still not adequate in this respect, and do not describe behaviour in sufficient detail.

Research was undertaken to clarify the changes of children's play behaviour in the first year of the kindergarten with a more adequate range of categorisation than has been used previously. The present paper reports results for changes in the first term.

Method

Subject: The subjects were 17 three-year-old children (eight boys and nine girls). The average age of the subjects when the observation started was 42.8 months (SD = 2.71), the average age of the boys being 43.1 months (SD = 2.32) and the average age of the girls being 42.6 months (SD = 2.97). The subjects were newcomers in the kindergarten in the youngest group.

The subjects did not have previous experience in a kindergarten except for one girl who had been to a day nursery school before entering the kindergarten for about one year. The children's parents were upper-middle or middle class.

Setting: The classroom was 144 square metres in area and was well equipped, with toys such as large blocks, a fully equipped doll's house and materials for painting, etc. The observation sessions took place when the attendance of the children was between 82% and 100% and when they were playing freely. The kindergarten used for observation employed the 'informal education' method, in which all of the children's time was occupied in free-play and there was no formal instruction in any of the three years.

Data collection: The time sampling method was employed for data collection. Each child was observed in random order for three minutes at each observation session, and there were 18 observation sessions. Each three minutes was divided into 18 ten-second periods. Thus, 324 data-units were collected on each child. The observation took place from 25 April 1989 to 8 June 1989. Observation was done between 8:30 a.m. and 10:30 a.m. The kindergarten opens at 8:00 a.m. each day and the children must arrive by 9:00 a.m. Observation began at 8:30 or when 50 per cent of the children were present, whichever was later. The observation was done wherever the children who were focused on chose to play. Therefore the observer and the video-camera had to follow the children around. When the child remained in the main room, this following could often be achieved simply by use of the zoom. Occasionally, and also when the children left the main room, the camera had to follow the children more closely and more obviously.

There were two teachers in the class, one of whom was always present during the observation sessions. Also, as the observation was done during the children's first term, some of the children's parents were in attendance in the classroom, although not constantly. Also, the children chose the author for interaction sometimes, but this never amounted to more than 10 per cent of the two hours of each session.

The behaviour of the children was classified under three headings: type of play, interpersonal relations and other behaviour. Type of play was further classified into solitary play, parallel play and social play. Social play was divided into pair play and
group play. Pair play was categorised as same-sex pair play or mixed-sex pair play. Group play was broken into categories depending on whether the play was same-sex or mixed-sex and without or with a teacher. The categories of 'interpersonal relations' included those of 'indicating other children’s behaviour', 'imitating teacher’s behaviour', 'proximity to another child or children', 'proximity to a teacher', 'looking at a teacher', 'looking at another child or children', 'body contact with a teacher', 'body contact with a child or children', 'talking to a teacher', 'talking to another child or children', 'seeking attention from a teacher', 'seeking contact with a teacher' and 'seeking contact with another child or children'. Other categories include these five categories: 'object conflict', 'rough and tumble play', 'aggressive behaviour', 'automanipulation' and 'wandering'.

Definitions of Categories of Analysis:

A) Type of play
1) solitary play: a child is occupied with an object and is spatially isolated from other children — solitary play;
2) parallel play: a child is involved in an activity, manipulating material while in proximity to other children who are involved in similar activities or material usage without influencing each other’s behaviour — parallel play;

   Social play 3 – 8: a child is interacting with other children during a role game, or he is playing with the same object as other children or is doing something on request.
3) same-sex pair play: a child plays with one child of the same-sex — same sex play;
4) same-sex group play: a child plays with other children of the same-sex — same sex group;
5) same-sex group play with a teacher and/or adults: a child plays with children of the same-sex, together with a teacher and/or one (or, rarely, more than one) adult — same group teacher;
6) mixed-sex pair play: a child plays with another child of a different sex — mixed sex pair;
7) mixed-sex group play: a child plays with children of both sexes — mixed sex group;
8) mixed-sex group with a teacher and/or one or more adults: a child plays with children of both sexes together with a teacher and/or one (or, rarely, more than one) adult — mixed group teacher;

B) Interpersonal relations
9) imitating teacher: a child imitates the behaviour of a teacher and/or one adult — imitating teacher;
10) imitating another child: a child imitates another child, for example moving or vocalizing in a similar way to another child or playing a game which another child
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started — imitating child;

11) *proximity to a teacher and/or one (or, rarely, more than one) adult*: — proximity to teacher;

12) *proximity to other children*: — proximity to children;

13) *looking at a teacher and/or adults*: looking for at least three seconds at a teacher and/or one (or, rarely, more than one) adult while not interacting with them — looking at teacher;

14) *looking at a child (while unoccupied)*: looking for at least three seconds at one or more children while not interacting with them — looking at child;

15) *body contact with a teacher and/or an adult*: touching, embracing, taking a hand or caressing a teacher and/or an adult — body contact teacher;

16) *body contact with other child*: touching, embracing, taking a hand or caressing another child — body contact child;

17) *talking to teacher and/or adults*: saying something to a teacher and/or one (or, rarely, more than one) adult — talking to a teacher;

18) *talking to a child*: saying something, to one or more children, or talking or muttering alone — talking to a child;

19) *seeking attention from a teacher and/or an adult*: screaming or making noise, climbing on a chair or a table, running around and making large-scale body movements in the direction of a teacher and/or an adult — seeking attention teacher;

20) *seeking attention of other children*: screaming or making noise, climbing on a chair or a table, running around and making large-scale body movements — seeking attention child;

21) *seeking contact with a teacher and/or an adult*: offering something, 'greeting', calling someone's name or smiling at a teacher and/or one (or rarely, more than one) adult — seeking contact teacher;

22) *seeking contact with children*: offering something, greeting, calling someone's name or smiling at other children — seeking contact child;

C) *Other behaviour*

23) *object conflict*: taking an object or trying to take one, or resisting one being taken away — object conflict;

24) *rough and tumble play*: chasing, wrestling, teasing in a joking manner — rough and tumble play;

25) *aggressive behaviour*: aggressive behaviour patterns with or without body contact such as hitting, insulting, threatening, including verbal aggressive behaviour — aggressive behaviour;

26) *automanipulation*: sucking, tongue/lips, rubbing eyes, nose contact, ear contact, brushing hair, adjusting clothes, scratching, genital contact, hand-fumble, mouth-fumble, clothes-fumble and hitching;

27) *wandering*: — wandering.
Results

Type of Play:

Table 1 shows the frequency of each type of play. After two-factorial analysis by the chi-square test, it became clear that parallel play was observed most frequently ($X^2 = 7.205$, df = 2), followed by solitary play ($X^2 = 4.721$, df = 2), while social play was observed the least ($X^2 = -10.110$, df = 2) at the 1 percent level of significance. Boys played more often in parallel than girls at the 5 per cent level of significance ($X^2 = 2.450$, df = 1).

Table 1. The frequency of type of play

<table>
<thead>
<tr>
<th>type of play</th>
<th>boys</th>
<th>girls</th>
<th>$X^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solitary play</td>
<td>276</td>
<td>306</td>
<td></td>
</tr>
<tr>
<td>Parallel play</td>
<td>150</td>
<td>172</td>
<td></td>
</tr>
<tr>
<td>Social play</td>
<td>339</td>
<td>295</td>
<td>$*2,450$</td>
</tr>
</tbody>
</table>

For the chi-square testing of type of play, since there were six categories of social play, the sum of the frequencies was divided by six in order to equalize the chance incidence of each of the three types of play.

Table 2. The frequency of the six categories of social play

<table>
<thead>
<tr>
<th>categories of social play</th>
<th>gender</th>
<th>boys</th>
<th>girls</th>
<th>$X^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same sex pair</td>
<td></td>
<td>373</td>
<td>321</td>
<td>$2,161*$</td>
</tr>
<tr>
<td>Same sex group</td>
<td></td>
<td>87</td>
<td>219</td>
<td>$-2,796**$</td>
</tr>
<tr>
<td>Same group with T</td>
<td></td>
<td>30</td>
<td>133</td>
<td>$4,759**$</td>
</tr>
<tr>
<td>Mixed sex pair</td>
<td></td>
<td>99</td>
<td>91</td>
<td>$-3,884**$</td>
</tr>
<tr>
<td>Mixed sex group</td>
<td></td>
<td>190</td>
<td>156</td>
<td>$-2,128*$</td>
</tr>
<tr>
<td>Mixed group with T</td>
<td></td>
<td>69</td>
<td>111</td>
<td>$8,433**$</td>
</tr>
</tbody>
</table>

Table 2 shows the frequency of each of the six categories of social play and the results of two factorial analysis between the categories and sex.

Among the social play categories, children played with a teacher and/or an adult most often ($X^2 = 8,433$, df = 5), and 'same sex group play' occurred the least often ($X^2 = 2,796$, df = 5). Boys played in a group ( 'same sex group', 'same sex group with teacher', 'mixed sex group' and 'mixed sex group with teacher', combined) less than girls at the 5 % level of significance. Girls played with a teacher ( 'same sex group with teacher' and 'mixed sex group with teacher', combined) more often than boys at the 1 %

* In the tables, $* = p < .05; ~ ** = p < .01; ~ T =$ teacher and/or an adult and C= child or children.
level of significance. There was a tendency at the 10% level for the boys to play in a pair more often than girls.

Table 3. Sexual composition of group not including a teacher, by gender

<table>
<thead>
<tr>
<th>categories</th>
<th>boys</th>
<th>girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed group</td>
<td>190</td>
<td>156</td>
</tr>
<tr>
<td>Same group</td>
<td>87</td>
<td>219</td>
</tr>
</tbody>
</table>

Table 4. Sexual composition of group including a teacher, by gender

<table>
<thead>
<tr>
<th>categories T</th>
<th>boys</th>
<th>girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed group T</td>
<td>69</td>
<td>133</td>
</tr>
<tr>
<td>Same group T</td>
<td>30</td>
<td>111</td>
</tr>
</tbody>
</table>

Table 5. Comparison of the incidence of pair play and group play, by gender

<table>
<thead>
<tr>
<th>categories</th>
<th>boys</th>
<th>girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>pair play</td>
<td>436</td>
<td>412</td>
</tr>
<tr>
<td>group play</td>
<td>277</td>
<td>375</td>
</tr>
</tbody>
</table>

Children played more often in a group than in a pair at the 1% level of significance ($X^2 = 2.731$, df = 1). Social play occurred more often among girls than boys at the 1% level of significance. Testing the interaction between the categories of social play and gender, significance at the 1% level was shown for pair play for boys and group play for girls.

Interpersonal relations

Table 6 shows the results for the total frequency of each category of interpersonal relations. As mentioned, there were two teachers and 17 children in this class, so the total frequency of behaviour towards other children was divided by 16 and the total frequency of behaviour towards the two teachers was divided by two in order to equalise the chance incidence of each of the categories. It became clear that behaviour towards
teachers occurred more often at the 1% level of significance than behaviour to other children. A significant gender difference was not shown in these categories. Examining each of the categories of interpersonal behaviour, it became clear that children showed a preference for teachers more often than for other children in the categories of 'imitating' ($X^2 = 3.013, df = 1$), 'proximity' ($X^2 = 6.048, df = 1$), 'looking at' ($X^2 = 10.544, df = 1$), 'body contact' ($X^2 = 6.204, df = 1$), and 'talking to' ($X^2 = 7.407, df = 1$) at the 1 per cent level of significance. Statistically significant results were not observed for the categories of 'seeking attention' and 'seeking contact'. Statistically significant results were not shown for gender difference in any category.

Table 6. The frequency of the categories of interpersonal relations

<table>
<thead>
<tr>
<th>categories</th>
<th>boys</th>
<th>girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>imitating T</td>
<td>19</td>
<td>25</td>
</tr>
<tr>
<td>imitating C</td>
<td>14</td>
<td>64</td>
</tr>
<tr>
<td>proximity T</td>
<td>73</td>
<td>72</td>
</tr>
<tr>
<td>proximity C</td>
<td>29</td>
<td>27</td>
</tr>
<tr>
<td>looking at T</td>
<td>271</td>
<td>249</td>
</tr>
<tr>
<td>looking at C</td>
<td>102</td>
<td>122</td>
</tr>
<tr>
<td>body contact T</td>
<td>74</td>
<td>95</td>
</tr>
<tr>
<td>body contact C</td>
<td>49</td>
<td>96</td>
</tr>
<tr>
<td>talk to T</td>
<td>124</td>
<td>102</td>
</tr>
<tr>
<td>talk to C</td>
<td>41</td>
<td>48</td>
</tr>
<tr>
<td>seeking attention T</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>seeking attention C</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>seeking contact T</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>seeking contact C</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

Other behaviour

Table 7 shows the results for other categories. There was a gender difference at the 1% level of significance in the category of 'wandering' ($X^2 = 6.810, df = 1$), and a gender difference at the 0.1% level of significance for the categories of rough and tumble play ($X^2 = 22.781, df = 1$), and automanipulation ($X^2 = 19.266, df = 1$).

Table 7. The frequency of other categories

<table>
<thead>
<tr>
<th>categories</th>
<th>boys</th>
<th>girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>object conflict</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>rough and tumble play</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>aggressive behaviour</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>automanipulation</td>
<td>13</td>
<td>47</td>
</tr>
<tr>
<td>wandering</td>
<td>612</td>
<td>525</td>
</tr>
</tbody>
</table>
Boys did 'rough and tumble play' more often than girls at the 0.1% level of significance. Girls did automanipulation more often than boys at the 0.1% level of significance.

Consideration

The aim of the research was to clarify the changes of children's play behaviour in their first year at kindergarten. In the present study, the changes in their first term were examined. The changes of the children's play behaviour were examined under these headings: the 'type of play', 'interpersonal relations', and 'other behaviour'. A more detailed range of categories than had been used in previous work on the subject was employed.

1. Type of Play

The fact that parallel play was most frequent, followed by solitary play, while social play was observed the least is not coincidence judging from the results of Hold-Cavell et al. (1986). These results may differ from those of the present study became of the existence of the host children.

2. Interpersonal Relations

Interpersonal relations were examined under the categories of 'imitating', 'proximity', 'looking at', 'body contact with', 'talking to', 'seeking attention' and 'seeking contact with'. Each category was further classified depending upon whether the behaviour was towards the teacher and/or an adult or towards other children. There were two kinds of interpersonal relations relations between a teacher and/or an adult and children, and between children alone.

There were significant differences between the occurrence of teacher-oriented and the child-oriented behaviour for each category. This fact shows that the importance of the existence of teachers and adults in the newcomer's class in their first term.

Hold-Cavell et al. (1986) compared German preschoolers with Italian preschoolers. Their results revealed that there was a significant cultural difference in body contact between these two countries. Germany was shown to be a 'non-contact culture' while Italy was a 'contact culture'. In the present study it was observed that the children contacted with teachers and/or an adult very often, although Japanese children are usually regarded as belonging to a non-contact culture. They seemed to make body contact to get relief.

The influence of the presence of the observer should be considered. Connolly and Smith (1972) showed that the influence of the presence of the observer is especially important in the first few sessions but that this influence disappears quickly. In the present study the children showed interest in the author during the first few sessions - sometimes
they watched the author, some of the children talked to the author or invited the author to explore in the kindergarten and once one of them asked for agreement. However these reactions decreased soon.

3. Other categories

The categories of wandering and automanipulation were shown more often by the girls than boys. The category of 'rough and tumble play' were shown more often by the boys than by the girls. It is necessary to examine carefully the changes in the occurrence of these categories as the children's experience in the kindergarten increases.

References


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