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The developmental characteristics of four- and five-year-old pre-schoolers' drawing: An analysis of scribbles, placement patterns, emergent writing, and name writing in archived spontaneous drawing samples

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Abstract The drawings of 17 four- to five-year-old children from two points in time, age four and age five were analyzed. At both ages four and five, the most commonly used scribbles were single vertical lines, single horizontal lines, and single curved lines, whereas the two least used scribbles were spiral and circular lines spread out. The subjects in this sample were most likely to use a centered placement pattern and least likely to use horizontal half, two-sided balance, and extended diagonal half placement patterns. They made significant progress in emergent writing skills from age four to five. At age four, only two children wrote their name on the drawings, while there were fourteen children who did this at age five. In addition to writing their own names, the five year olds often added the names of their family members or friends as well as letter-name elements.

Keywords emergent writing; name writing; placement patterns; scribbles

Introduction

Children come to school with diverse learning experiences and socio-cultural backgrounds, which are reflected in their differing modes of

symbolic representations, such as drawing and emergent writing. A teacher who seeks to embrace children's diverse sociocultural backgrounds and learning experiences must encourage and support all types of knowledge and representation (Kendrick and McKay, 2002; Stein, 2003). One way children express their ideas and thoughts is through a piece of art or a craft, a construction, model, mural, drama, music, or poetry or a book (Clay, 1998).

Children learn to draw and draw to learn (Anning, 1999); 'young children draw what they know while the old children draw what they see' (Willats, 2005: 23). As a result, children's drawing is closely linked to thinking, talking, reading, and writing. They express and interpret meanings in mark making and drawing as well as in speaking and writing (Clay, 1998; Holdaway, 1979). This study explored the characteristics of 17 children's drawings at and between two points in time: age four and age five. Children's scribbles and placement patterns were noted. Kellogg's (1970) and Kellogg and O'Dell's (1967) 20 categories of scribbles and 17 categories of placement were used in the analysis. Emergent writing was evaluated using Sulzby et al.'s (1998) six forms of writing.

This article reports on the results of a descriptive study of children's drawing, which was undertaken as the first phase of a larger study and aims to link children's drawing ability and literacy skills. The current longitudinal study describes the drawings of 17 four- to five-year-old children. Drawings from two points in time were analyzed in terms of scribbles, placement patterns, emergent writing, and name writing. The research questions investigated were: (1) What are the most commonly used scribbles for the four- and five-year olds? (2) Is there any developmental change in the use of scribbles? (3) What are the most commonly used placement patterns for the four- and five-year-olds? (4) What are the characteristics of emergent writing in children's spontaneous drawing at age four and five? (5) What are the characteristics of name writing in children's spontaneous drawing at age four and five?

Literature review

Children become literate prior to formal schooling through the socio-cultural process in which they are reared (Justice and Pullen, 2003). They use drawing or mark making to record personally or culturally significant images embedded in the social-cultural context of their home environment and their domestic community (Anning, 1997). They build up rich, home-version graphicacy and narrative by absorbing graphical representations in the social-cultural context, and then adjust it to the school version of

literacy and numeracy (Anning, 2003). Parents and teachers, as significant others of young children, play a role in shaping children's graphicacy (e.g. mark making, scribbling) toward socially accepted patterns of graphical representations by giving feedback to children's recognizable scribbles or mark making (Anning, 1999).

Young children regard scribbling, drawing, or mark making as a media of communication and expression, and all types of symbolic representation play important roles in the development of literacy. The processes of emergent writing and drawing are thought to be inseparable (Neu and Berglund, 1991). Drawing supports children's generation of ideas, which are later presented in sentences. In this way, drawing is regarded as a memory aid. Children can hold ideas in their minds while attempting to express themselves in written form (Clay, 1998).

In addition to supporting literacy, Neu and Berglund (1991) report that children use writing and drawing to test and stabilize their feelings and to think about and explore their surroundings. Levin and Bus (2003) see drawing as one aspect of children's 'representational-communicative system'. As children learn to write to clarify or accompany what they have drawn or constructed, their first texts emerge as labels, captions or short stories (Sidelnick and Svoboda, 2000).

Seminal work was done by Kellogg (1970) in the area of the development of children's drawing. Kellogg analyzed 2000 works of children's art for emergent writing and placement of the drawing on the paper. The children were between the ages of three and five and attended a San Francisco nursery school between 1948 and 1966.

Kellogg discovered that children's drawings differ based on types of scribbles and where on the paper they placed their drawings (called placement patterns). Kellogg (1970) wrote that scribbles are the marks made by spontaneous movement with or without eye control and that any drawing can be analyzed into basic scribbles (Kellogg, 1970). For such analysis he proposed 20 basic scribbles including the dot, single vertical line, single horizontal line, single diagonal line, single curved line, multiple vertical lines, multiple horizontal lines, multiple diagonal lines, multiple curved lines, a roving open line, roving enclosing line, zigzag or waving line, single loop line, multiple loop line, spiral line, multiple-line overlaid circle, multiple-line circumference circle, circular line spread out, single crossed circle, and imperfect circle (Kellogg, 1970: 15). He called these scribbles, 'the building blocks of children's art' (Kellogg and O'Dell, 1967: 19).

The following are a list of Kellogg's (1970) and Kellogg and O'Dell's (1967: 21) placement patterns, which were used in the analysis of the

children's drawings in this study. The examples of each type of placement patterns, as cited from Kellogg (1970) and Kellogg and O'Dell (1967), are illustrated in Table 2.

1. Overall: The entire page is covered with lines or marks, and no emphasis of corner or edge is revealed.
2. Centered: The large or small scribbles are centered on the paper.
3. Spaced border: There seem to be imaginary lines along the perimeter.
4. Vertical half: The scribbles are restricted to one vertical half of the paper.
5. Horizontal: The scribbles are restricted to one horizontal half of the paper.
6. Two-sided balance: Two scribbles are placed on two sides of the paper and they look symmetric and balanced.
7. Diagonal half: The scribbles cover one diagonal half of the paper.
8. Extended diagonal half: The scribbles spill over the diagonal half.
9. Diagonal axis: The scribbles are spread over a diagonal axis and fill two corners while the other two are left empty.
10. Two-thirds division: The scribbles are limited to two-thirds of the paper.
11. Quarter page: The scribbles are restricted to one quarter of the page.
12. One-corner fan: The scribbles flare up from one corner to the other, and the other three corners are left empty.
13. Two-corner arc: The half-circle or arc markings cover the wide edges, and two corners are left empty.
14. Three-corner arc: Only one corner of the paper is left unmarked.
15. Two-corner pyramid: The pyramidal shape scribbles go from one of the narrow edges of the paper, and two corners are left empty.
16. Across the paper: The scribbles are placed from one edge to the opposite edge.
17. Base-line fan: The scribbles flare out from one edge and move toward one or both of the neighboring edges.

Sulzby et al. (1988) developed 12 categories of 'Forms of Writing' based on a longitudinal study of kindergarten children's writing and rereading of their writing. In their study, children's writing samples were collected in group and individual writing sessions through kindergarten and first grade. Important results from this study reveal that scribbling is used as a form of writing for an enduring period of time and invented spelling follows tentatively. Sulzby et al.'s (1988) 12 categories include:

1. Drawing: One picture is drawn for the entire composition or is embedded within other forms of writing.
2. Scribble-wavy: The continuous, curvy or pointed form has no differentiation of shapes.

3. Scribble-letter-like: Different forms within the scribble with some differentiated features of letters.
4. Letter-like units: These are not letters but are child created, letter-like forms, which are close to letter-like scribbles.
5. Letters-random: Letters that appear to be generated at random and there is no letter-sound correspondence between the letters and the child's message.
6. Letter-patterns: Repeated patterns of letters.
7. Letter-name elements: Letters show repeated patterns or repeated letters from the child's name.
8. Copying: The words or letters are the result of copying from the environmental print.
9. Invented spelling-syllabic: Only one letter per syllable is used to represent the phonetic relationships between the sounds and the letters.
10. Invented spelling-intermediate: All the invented spelling between syllabic and full.
11. Invented spelling-full: A letter for all or almost all of the spoken sounds is present.
12. Conventional: Conventional, correct, or dictionary spelling.

Examining emergent writing has been reported to be a useful method for assessing potential reading problems (Stanley and Pershin, 1978) and developmental delays in cognition and language (Haney, 2002). Stanley and Pershin (1978) have shown that pre-school name-writing abilities correspond to children's developmental maturity while Ferguson (1975) explained how a child's ability to write his/her name could be a good predictor of later reading ability. There is prominent support for the significance of name writing skills as an indicator of young children's literacy development. Vygotsky (1962) indicated that children are aware of object names as early as age two when thought and language work together. Haney (2002) reported that young children learn that individuals, including objects, have their own names and Villaume and Wilson (1989) argue that a child is exposed to his/her name in both written and oral forms (Villaume and Wilson, 1989) and as a result the child prefers the letters that are included in his/her own name. This is called name-letter effect (Hoorens et al., 1990). Clay (1975) indicated that name writing could be an early step toward emergent literacy skills, while Bloodgood (1999) believed name writing reflected a child's mastery of written form, awareness of the print, and perception of literacy.

Name writing has also been used as an indicator of literacy progress. As mentioned in Haney's paper (2002), Haney and Behnken developed the

Name Writing Scale to quantitatively assess the developmental progress of young children's name writing skills. They assigned points to the criteria of alignment of name on paper, capitalization, spacing, size of letters, and correct spelling. Additionally, the early study by Hildreth (1936) investigated developmental sequences in writing for 170 children aged 3–6. Children's ability in name writing was evaluated by assigning points to the percentage correct as well as the number of letters correct in the child's first and last name. Both Haney's (2002) and Hildreth's (1936) studies found that name writing levels may be used in evaluating young children's literacy levels. Thus, drawing is related to emergent writing and name writing is potentially useful in evaluating a child for possible future reading problems.

In summary, the analysis of children's drawings in the study of literacy has found a secure place. This article describes a study, which analyzed the archived drawings of 19 children to note the characteristics of children's drawings at 2 points in time and compares name writing ability over this time period.

Method

The archived drawings of 17 children who attended a campus childcare center at a public university in New York State during the 2004–5 academic year were analyzed with permission from the childcare center director and approval from the local campus Institutional Review Board (IRB).

The children who attended the center were the children of students attending classes on campus (most children), children of faculty or staff (about one-third) and children from the community (one or two). The children's families represented a rather educated upwardly mobile population. Out of 17 children whose drawings were sampled, one was Latino, one Korean, and the remainder Caucasian; 7 were boys and 10 were girls.

The teachers of the center maintain an archive of children's drawings, to which the children themselves have the ability to add or delete drawings. The vast majority of drawings had children's names and the dates written on them. If children did not spontaneously write their own name, or could not write their name, a teacher usually wrote the child's name and the date on the drawing. After obtaining birth-date information for each child, the investigators used this archive to choose four drawings from each child, two from within two months of the child's fourth birthday and two from within two months of the child's fifth birthday. The main selection criterion was the proper age of the child at the time of the drawing (within two months of age five and within two months of age four). As a result, there were 68 drawings to analyze. The investigators were given permission to

take the drawings with them for one night, to make color copies, and return them to the file the following day.






Children's drawings were analyzed based on Kellogg's (1970) work for characteristics and frequencies of scribbles and the placement of the drawing within the page on which it was drawn. Table 1 lists the categories of scribbles used in analysis and Table 2 the categories of placement patterns. In order to study the development of emergent writing, six forms selected from Sulzby et al.'s (1988) *Forms of Writing* were used to code the writing samples embedded in the drawing. The first five (i.e. drawing, scribble-wavy, scribble-letter-like, letter-like unit, letters-random) and the seventh category (i.e. copying) were not used in this study. Owing to the lack of children's explanation or statement about their drawing or writing, it proved to be difficult to identify whether a child's drawing was an illustration or used for an entire story, whether the scribble-wavy, scribble-letter-like, letter-like units, or letters-random were the result of spontaneous movement or were used to represent letters, or whether the letters or words were the result of copying from the environmental print. As a result, only the identifiable letters or words were grouped into six categories, including letter-patterns, letter-name elements, invented spelling-syllabic, invented spelling-intermediate, invented spelling-full, and conventional writing. The frequency distribution of various types of emergent writing is shown in Table 3.

Finally, those drawings on which children had written their own names were further examined. Only 1 drawing from each child was selected for this analysis and a total of 14 drawings were analyzed for this purpose. If name writing was present on both drawings of a child, both were scored on name writing and the one with the higher score on the name writing scale was selected for analysis. Hildreth's (1936) measure of the percentage of correct letters in a child's name as well as Haney and Behnken's five categories (spelling, capitalization, space, size, alignment of letters on space) of name writing evaluation criteria (Haney, 2002) were used to assess these name writing samples. The first author assigned points to the name writing samples according to the criteria of (1) the percentage correct letters, (2) correct spelling, (3) capitalization, (4) spacing, (5) size of letters, and (6) alignment of letters on the paper. The percentage of correct letters rather than the number of correct letters was noted and one point was given for correct spelling, capitalization, equal spacing, and equal size of the letters. The upside down, reverse, incomplete letters were considered wrong. The score of 0 was assigned to wrong spelling, inappropriate mixed capital and lower-case letters (e.g. MaRY, jOHn), inappropriate spacing (e.g. the overlap of letters, larger than one-letter

Table 1 Developmental changes in scribbles

<i>Categories</i>	<i>Examples</i>	<i>4 years old (frequency)</i>	<i>5 years old (frequency)</i>
1. Dot	.,	10	14
2. Single vertical line		18	18
3. Single horizontal line	—	14	18
4. Single diagonal lines		12	17
5. Single curved lines		14	16
6. Multiple vertical lines		10	15
7. Multiple horizontal lines		6	13
8. Multiple diagonal lines		9	12
9. Multiple curved lines		2	2
10. Roving curved line		11	5
11. Roving enclosing line		5	1
12. Zigzag or waving line		10	6
13. Single loop line		7	2
14. Multiple loop line		4	2

Table 1 Continued

Categories	Examples	4 years old (frequency)	5 years old (frequency)
15. Spiral		1	1
16. Multiple-line overlaid circle		7	5
17. Multiple-line circumference circle		4	1
18. Circular line spread out		1	1
19. Single crossed circle		11	11

Notes: d.f. = 38, $t = 1.20$, $p > .10$.

Both the categories and examples of scribbles are adapted from Kellogg (1970).

space between letters, unequal spaces between letters), and unequal size of the letters. As a result, the total score of the five categories (i.e. correct letters, spelling, capitalization, spacing, size of letters) ranged from 0 to 5. The score for each category that each writing sample obtained is listed in the second to the sixth columns of Table 4. Rather than assigning the points to the alignment of name on paper, it was noted as 'top', 'bottom', or 'top and bottom', as presented in the most right column on Table 4. In sum, the frequency distribution was used to analyze and summarize the quantitative data for research questions 1, 3, 4, and 5.

Results

Scribbles

Using Kellogg's (1970) and Kellogg and O'Dell's (1967) chart of developmental changes in scribbles, the most commonly used scribbles at ages four and five were single vertical lines, single horizontal lines, single curved lines, and single diagonal lines. The two least used scribbles were spiral and circular lines spread out. Table 1 shows that scribble usage at age four included single vertical lines (18), single horizontal lines (14), single

Table 2 Developmental changes in placement patterns



















<i>Categories</i>	<i>Examples</i>	<i>4 years old</i>	<i>5 years old</i>
1. Over-all		4	8
2. Centered		13	10
3. Space border		0	1
4. Vertical half		2	0
5. Horizontal half		0	0
6. Two-sided balance		0	0
7. Diagonal half		0	1
8. Extended diagonal half		0	0

Table 2 Continued

Categories	Examples	4 years old	5 years old
9. Diagonal axis		1	1
10. Two-thirds division		4	1
11. Quarter page		1	5
12. One-corner fan		3	2
13. Two-corner arch		0	1
14. Three-corner arc		2	0
15. Two-corner pyramid		0	1
16. Across the paper		2	4
17. Base-line fan		2	0
Total		34	34

Note: Both categories and examples of placement patterns are adapted from Kellogg (1970) and Kellogg and O'Dell (1967).

Table 3 Developmental changes in emergent writing

<i>Categories</i>	<i>4 years old (frequency)</i>	<i>5 years old (frequency)</i>
1. Letter-Patterns	0	1
2. Letter-Name Elements	0	5
3. Invented Spelling-Syllabic	0	0
4. Invented Spelling-Intermediate	0	0
5. Invented Spelling-Full	0	1
6. Conventional	0	1
Other	1 letter like (e.g. )	3 dates
Total	2 names 1 letter like 2 names	14 names 1 letter-pattern (OONOOO) 5 letter-name elements (e.g. SOOS, MAEA, MAOA, MLAL, MLALM, BAC) 3 dates (3/23/2005, 5-3-05, 4/8/2005) 14 names 1 invented spelling-full (e.g. NENIN) 1 conventional spelling (e.g. WATER)

Note: The six forms of writing are adapted from Sulzby et al. (1988).

curved lines (14), single diagonal lines (12), single crossed circle (11), roving curved lines (11), dots (10), multiple vertical lines (10), zigzag or waving lines (10), multiple diagonal lines (9), imperfect circles (9), single loop lines (7), multiple-line overlaid circles (7), multiple horizontal lines (6), roving enclosing lines (5), multiple loop lines (4), multiple-line circumference circles (4), multiple curved lines (2), spirals (1), and circular lines spread out (1).

At age five children's drawings revealed single vertical lines (18), single horizontal lines (14), single diagonal lines (17), single curved lines (16), multiple vertical lines (15), imperfect circles (14), dots (14), multiple horizontal lines (13), multiple diagonal lines (12), single crossed circles (11), zigzag or waving lines (6), multiple-line overlaid circles (5), roving curved lines (5), multiple curved lines (2), multiple loop lines (2), single loop lines (2), roving enclosing lines (1), multiple-line circumference circles (1), spirals (1), and circular lines spread out (1).

Table 4 Frequency distribution of name writing

Subject Code	Percentage of correct letters in the name	Correct spelling	Capitalization of each letter	Equal spacing	Equal size of the letters	Total	Alignment of name on paper
1	1	1	1	1	1	5	Bottom
2	1	1	0	0	0	2	Bottom
3	1	1	1	0	0	3	Top
4	2/6	0	1	0	0	1 1/3	Top
5	1	1	0	1	0	3	Top and bottom
6	1	1	1	1	1	5	Top and Bottom
7	1	1	1	0	0	3	Top
8	1	1	1	1	1	5	Top
9	4/5	1	0	0	0	1 4/5	Bottom
10	1	1	1	1	1	5	Top
11	1	1	1	1	1	5	Top
12	1	1	0	1	0	3	Top
13	1	1	1	0	0	3	Bottom
14	1	1	0	1	0	3	Top
Total	13 2/15	13	9	8	5	48 2/15	Top-8 Bottom-4 Top and Bottom-2

No significant differences in the use of scribbles at age four and five were found. For $d.f. = 38, t = 1.20, p > .10$. Because the probability value did not meet the criterion for significance (that is, $p < .05$), the research hypothesis was rejected in favor of the null hypothesis. That is, the subjects in this sample seemed to use similar categories of scribbles at age four and five.

Placement patterns

Subjects in this sample at ages four and five were most likely to use the centered placement pattern followed by the second most common placement pattern called overall. The placement patterns least likely to be seen were horizontal half, two-sided balance, and extended diagonal half. As shown in Table 2, at age four the placement patterns used by the children (arranged from high to low frequency) were: centered (13), overall (4), two-thirds division (4), one-corner fan (3), three-corner arc (2), vertical half (2), across the page (2), base-line fan (2), diagonal axis (1), and quarter page (1). At age five, the placement patterns children used (again arranged from high to low frequency) were: centered (10), over-all (8), two-thirds division (5), across the page (4), quarter page (2), space boarder (1), diagonal half (1), diagonal axis (1), two-corner arch (1), and two-corner pyramid (1).

Emergent writing and name writing

Table 3, including six out of 12 forms of writing from Sulzby et al. (1988) list, shows that the subjects in this sample made significant progress in the emergent writing skills from age four to five, especially the name writing skills. At age 4, only 2 children wrote their names on their drawings while there were 14 children who did this at age 5. In addition to writing their own names, the five-year olds frequently added the names of family members or friends. As shown in Table 4, those who included their names in the drawings were most likely to use correct letters and spelling. Some of them wrote letter-name elements (e.g. SOOS, MAEA, MAOA, MLAL, MLALM, BAC), dates (e.g. 3/23/2005, 5-3-05, 4/8/2005), and letter patterns (e.g. OONOOO), invented spelling-full (e.g. NENIN), and conventional spelling (e.g. WATER). Some of the subjects wrote the letters of their names from right to left in a reverse order, NHOJ for JOHN while others wrote the letter C, N, E in a reverse direction. Capital letters and lower-case letters were sometimes inappropriately mixed (e.g. LiNdA for LINDA). The subjects in this sample sometimes failed to equalize the letter size and spacing. In terms of the placement of the name on paper, eight children placed it at the top, four at the bottom, and two at both the top and bottom.

Discussion and implications

It is interesting to find that the subjects in this sample were most likely to use single vertical lines, single horizontal lines, single curved lines, and single diagonal lines than any other types of scribbles and that the two least used scribbles were spiral and circular lines spread out. Although Kellogg (1970) mentioned that he did not know whether single lines were the first ones to be made by young children, this study revealed that the subjects in this sample used single lines more frequently than multiple lines. It is possible that simple lines are easier to make for young children than the repeated lines. As they become physically mature, children intentionally repeat lines to form patterns or shapes.

We agree with Kellogg (1970) that the types of placement patterns most often made needs further study. This study found that centered placement is made most often and the overall placement pattern is second in frequency. The least common placement patterns, as revealed in this study, were horizontal half, two-sided balance, and extended diagonal half. It is possible that children at age four and five are still learning to control their eye-hand coordination and are less likely to confine their drawings in a limited space, such as horizontal half or diagonal half. It is also possible that

the concept of symmetry is still developing so that they are less likely to use two-sided balance.

Many children's names were correctly written and spelled on the drawings we analyzed. Children also tended to place their names at the top of the paper as opposed to the bottom. This finding supports what researchers call 'name-letter effect' (Hoorens et al., 1990). Since children are often exposed to their own names in both written and oral forms (Villaume and Wilson, 1989), they prefer the letters included in their own names rather than other letters.

These results contribute to the body of useful knowledge about the development of children's scribbles and placement patterns. Parents and teachers can benefit by gaining insight into what children are drawing. Young children explore diverse modes of graphic representations by absorbing the semiotics embedded in the social-cultural environment (Anning, 1999). Adults should embrace children's diverse modes of symbolic representations by encouraging children's free exploration of all types of scribbles and placement patterns.

Children's development of functional literacy can be facilitated by encouraging them to use drawing as the starting point for name writing and/or letter reproduction. Adults can also use children's drawing as a 'communicative act' to initiate the 'dialogues' between children and adults (Anning, 1999: 166). By so doing, drawing is not only a media of representing meanings but also a tool for learning.

The researchers gained crucial experience and knowledge from this study, which will enhance future work. We reached the following goals: we tested the feasibility of archived drawings as a data source in investigating emergent literacy as well as abbreviated forms of the scribbles and paper placement categories in analysis. This study provided us with data about the potential of such a data source as well as the shortcomings. We will rely on this experience as we design our future investigations, which will explore why and how children's scribbles and placement patterns change as children get older.

Study limitations

We conclude there may be disadvantages related to the utilization of archived drawings in studying emergent literacy (i.e. scribbles and placement patterns). The main problem related to the use of archived drawings is a lack of control of the drawing situation. Future study should analyze drawing and scribbles in a controlled situation in which children are asked to draw a picture about a story and 'write' about the story they had just

heard. In such a study, with explicit instructions to draw and 'write', children would be more likely to give evidence of their drawing and pre-writing capabilities. Other advantages would include the possibility of the researcher asking the child to describe what he or she is drawing and writing. In using archived drawings we were not able to ask children about either their writing or drawing products. As Sulzby et al. (1988: 32) indicated 'a more accurate understanding of the forms of children's writing and how they develop can be gained by observing how children read from their own writing'. In addition, we had very many pictures to choose from for some children and only a limited number of choices for other children. This may have influenced our results.

The results of this study are also limited by the sample characteristics and size. Taking the shortcomings of archived drawings into consideration, a much larger number of children's drawing samples collected at certain time intervals (i.e. monthly, every other month, every three months) should be investigated. It is possible that our sample was simply too small to find differences between the ages of four and five. It would be advantageous to sample drawings from children in a number of different childcare centers over a period of time at regular intervals, thereby creating a more representative sample. Results gleaned from analyzing products of a sample taken from children at one center clearly only generalize to the children of that center.

Future study

Future studies should investigate children's diverse modes of symbolic representation by examining their drawings inside and outside school settings. As Anning (1999) indicated, children use different modes of symbolic representation at home and in school as a result of modeling the semiotics embedded in the diverse social-cultural contexts. The culturally specific ways of symbolic representation are shaped into the formal symbolic mode of literacy and numeracy as children start their formal school education (Anning, 1999). Research into drawings derived from both school and home settings will broaden our understanding of young children's emergent literacy development.

Conclusion

This study utilized archived drawings to describe children's scribbles, placement patterns of their drawings on paper and emergent writing and name writing skills. The results of this study enhance future research in the

relationship between drawing and literacy. The subjects in this sample had a tendency to use certain types of similar scribbles and placement patterns for both ages (i.e. age 4 and 5) and demonstrated the ability of writing their own names on the drawing at age four. Although there was little difference in the types of scribbles or placement patterns between the ages of four and five, it is interesting to find that children at this age prefer certain types of scribbles and placement patterns. Another finding is the obvious developmental change in children's name writing abilities. Name writing is one valuable indicator of children's emergent writing ability, and knowledge of a child's emergent writing ability and name writing skills could help early education teachers better serve the diverse children in their classes. Despite the shortcomings of using archival material and sample limitations, the value of archived drawings in the study of children's emergent literacy was shown.

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