Research Article

My Brother's Teacher? Siblings and Literacy Development in the Home

Laura Sokal[1] and Caroline Piotrowski[2]

[1] *Faculty of Education, University of Winnipeg, 515 Portage Avenue, Winnipeg, MB, Canada R3B 2E9*
[2] *Department of Family Social Sciences, University of Manitoba, Winnipeg, MB, Canada R3T 2N2*

Correspondence should be addressed to Laura Sokal, lj.sokal@uwinnipeg.ca

Frequency of sibling literacy interactions were examined in 134 families with at least two children, where at least one of the children attended school in grade one to grade four. Parents in the majority of families reported that their children read together on a regular basis without a parent present. This held across various demographic constellations including gender of the older child. However, children from families with three or more children were less likely to read with their siblings. Implications for parents and teachers are discussed.

1. Introduction

Proficiency in reading is the strongest predictor of school success [1, 2], and basic mastery of literacy skills is a protective factor against school failure [3]. Furthermore, success in school and in reading is related to better life trajectories as measured by factors such as employment, health, and involvement with community activities [4]. Given these findings, it is essential that all Canadian children be given the best opportunities to develop into successful readers, students, and citizens.

An important context for literacy development is the home. A survey of 1,512 school-age children showed that over eighty percent of children prefer reading at home to reading in other places [5]. Of particular note in the home reading literature are parent-child interactions [6]. Children's reading interest and achievement have been shown to be fostered by ensuring a print rich home environment [7], family use of libraries [8], having a parent who reads to him/herself and to his/her children each day [9], parents who speak the same language as the language of instruction at school [10], and having adult reading models in the home who perceive reading as entertainment rather than holding a skill-focused orientation [11].

Less attention, however, has been paid to other people within the home who may play important roles in children's literacy development, specifically siblings. With several noteworthy exceptions [11–15], most family literacy research has focused on parent-child interactions. Even studies that claimed to measure "family literacy practices (such as) how often during the week children are read to by *family members*" failed to report on any family members other than parents [10, page 72]. While the scaffolding that parents and teachers provide for children's literacy development can be effective in fostering reading skills, less is known about the reading processes in relationships between siblings.

1.1. What Do We Know about Siblings and Their Effects on Literacy? The role of siblings in children's literacy development is under-researched. Gregory and Williams [15], who studied literacy development in sibling relationships, stress that siblings may be an important bridge between school and home, particularly in families where the parents are less familiar with the school's language of instruction than are the siblings who attend school [16]. This is especially true for low income and immigrant families—a demographic over-represented group of children who struggle with reading [17]—where older siblings can pass along school values

to the home and home values to the school. Some work suggests that children in these families are more likely to read with siblings than parents [18]. Furthermore, Gregory and Williams suggest that the "synergy" siblings produce through reciprocal teaching is unique to child-child relationships. In this way, either the younger or older sibling can take on a leadership role in creating a fluid relationship very different from the typical teacher/child or parent/child scaffolding process where an expert guides a learner [19]. The positive effects of sibling teaching are not restricted to academic benefits to the younger sibling: Ewin Smith [13] showed that older siblings who taught their younger siblings developed greater reading and language achievement than other children who did not teach their siblings. This finding suggests that reciprocal benefits to both siblings require investigation.

In contrast, other research has shown that larger families have lower literacy scores [20]. Although some research suggests this may be a function of these families being socio-economically disadvantaged [21, 22], others have shown large family size to be a risk factor even when SES is controlled [23, 24]. Yarosz and Barnett [10] found that the "resource dilution" that occurs in larger families is predictive of children having no family members reading to them. Moreover, Sonnenchien and Munsterman [18] found that siblings were more likely to express negative emotion when reading together than with parents, suggesting that the quality of the sibling relationship may be an important factor that mediates the nature of sibling influence.

Together, these findings suggest that siblings do not always serve as resources but instead can pose barriers to children's literacy development. However, Ewin Smith [13] showed that an older child teaching a younger child in the home was enough to counteract any negative effects of having a younger sibling (such as less parental attention) on the older child's academic achievement.

1.2. On What Theoretical Basis Do We Build Our Study? A model for examining children's development in general and their literacy development in particular within multiple contexts is provided by ecological systems theory. Bronfen-brenner [25] proposed that children develop within a context of overlapping systems; specifically, the "mesosystem" refers to connections between important contexts, such as the interaction between home and school environments. Risk is defined less by the "factors" within each system than by the links or "protective mechanisms" between them [26]. Siblings may provide strong links between the home and school, which may serve as a resiliency mechanism for children who come from homes where parents cannot or will not assist their children with reading. For example, older siblings may provide another source of reading mentoring to children with busy or disinterested parents in situations where these children are assigned home reading by their teachers or may serve as tutors in new immigrant families where older siblings have a better understanding of English than parents. Johnson and Howard [27] suggest these types of resiliency mechanisms have the potential to provide a redirection of the life trajectories of children at risk and to

open up opportunities such as those that accompany school completion. Alternatively, siblings who provide reading mentoring or opportunities in homes where parents are already playing this role may amplify literacy development and further enhance school success.

Current discussions of literacy development [28–30] suggest that attention to multiple literacies is essential to understanding literacy development. New literacy studies (NLS) are concerned with "discourses": "ways of behaving, interacting, valuing, thinking, believing, and often reading and writing that are accepted as instantiations of particular roles" [31, page viii], In this way, proponents of NLS take a broader perspective, and argue that "reading and writing cannot be separated from speaking, listening, and interacting, on one hand, or using language to think about and act on the world, on the other" [32, page 714]. Street [33, 34] suggests that school-based practices are only one context of literacy and criticizes this narrow view as the defining form of reading and writing [35]. Sibling-based literacy interactions (SBLIs) are grounded within this viewpoint, in that the home-based activities they engage in together may or may not mirror school-based activities. Drawing upon this framework, we examined both traditional literacy activities siblings engaged in together in the home (e.g., reading, helping with homework) and as well those activities that require literacy-related skills (e.g., computer games, board games, etc.).

Taken together, the combination of an ecological systems approach that accentuates the potential linkages between home and school and a NLS approach that acknowledges the value of multiple literacies is a logical fit for the study of sibling-based literacy interactions. Siblings engage in many different types of interactions together that potentially scaffold, reinforce, and expand children's literacy skills. Given that so little is known about SBLIs in general, an awareness of both the contextual factors such as family life, combined with an expanded conceptualization of what constitutes literacy, is imperative for a better understanding of children's literacy development. Moreover, while homework involving parent-child interactions is commonplace, assignments involving siblings are less so. If sibling-based literacy interactions are found to be common, there is potential for teachers to use these exchanges as an additional scaffolding process in the home.

2. Methods

2.1. Participants and Procedures. Computer-assisted telephone interviews (CATIs) were conducted using a random digit dialing method. Families were contacted at home, and asked to participate in a short survey lasting 10–15 minutes. Only families with at least two children, one of whom attended grades one to four, were deemed eligible to participate. Over 1,900 phone numbers were contacted with a refusal rate of 16%, which is typical of survey research [36]. Although 675 families agreed to participate, 541 were not eligible based on the criteria outlined above. Demographic characteristics of those who did not participate were not collected. The final sample size was 134 families;

62.6% had two children living in the home, 30.6% had three children living in the home, 5.2% had four children living in the home, and 1.5% had five children living in the home. The respondents were mainly female (70.1%). A small percentage (5.2%) of the families lived in poverty with incomes under $28,000 per year, and 85% had incomes above that amount. The most highly educated parent in each household was highly educated, with 12.7% having completed graduate school, 45.5% holding university degrees, 19.4% being college graduates, 6.7% having been in the university, 14.2% having graduated high school, and 1.5% having not graduated from high school. The majority of families (87.3%) spoke English at their homes. Most parents were married (86.6%), 5.2% lived common law, 4.5 were single, 3% were separated, and 0.7% were divorced. The majority (96.3%) did not consider themselves to be of First Nations, Inuit, or Metis decent.

2.2. Measures. The survey consisted of six sibling-based literacy interaction questions that were created for the present study. In keeping with the broader definition of literacy-based activities discussed previously, these questions asked if any two or more children in the home engaged in the following activities in the past 24 hours: (1) played computer games, (2) played video games, (3) played board games, (4) watched television together, (5) did homework together, and (6) read together. Details regarding which children participated and for how long were also collected. In addition, further probes explored how often siblings typically read together, for how long, the type of reading material, and who usually initiated the activity. All survey questions were piloted with parents of children in the appropriate age group prior to data collection.

3. Findings

Based on their observations over the past 24 hours, 39.6 % of the respondents reported siblings in their homes engaging in homework together, 50.7% indicated they observed siblings using the computer together, 38.1% indicated siblings played video games together, 32% indicated siblings played board games together, 77.6% indicated their children had watched television together, and 51.5 % indicated their children had read together without a parent present.

Encouraged by the finding that reading together was the most frequently reported sibling-based activity next to watching television, we probed for more information about the nature of the reading activities observed by parents. Parents reported that the majority of children (54.5%) read together with siblings on a regular basis. Of those, respondents indicated 49.3% read every day, 31.5% read several times each week, 12.3% indicated they read once each week, 2.7% indicated they read several times each month, and 4.1% indicated siblings read together once per month. In terms of the constellation of these interactions, parents indicated that in 74% of the sibling interactions, the older sibling read to one or more of the younger siblings.

We then compared two groups of families: (1) those families where parents reported siblings read together and (2) those families where parents reported siblings did not read together. First, the demographic characteristics of these two groups were compared (income, parental education, marital status, heritage, language spoken in the home, number of children) using a series of chi-square analyses. Results indicated there were no statistically significant differences between families where siblings read together in terms of income, parental education, marital status, or language spoken in the home in comparison to families where siblings did not read together. However, families whose children read together were significantly more likely to have 2 children rather than 3 or more children living in the home than those families whose children did not read together $\chi^2(1) = 4.99$, $P < .025$. Further chi-square analyses were conducted to determine whether sibling dyads were more likely to read together if the older or younger child was female. Findings indicated no significant differences in parental reporting of children reading regularly together based on the gender of either the older or younger sibling.

4. Discussion

Our findings indicated that the majority of children engaged in a variety of literacy activities with their siblings. Furthermore, about half of siblings read together on a regular basis without a parent present. Parents indicated that most older siblings (74%) read to younger siblings, rather than the other way around, supporting previous work indicating that older siblings are more likely to instigate activities and take leadership roles within them, regardless of gender [37]. However, there are clearly cases where the younger sibling takes the dominant reading role. Future work investigating the circumstances under which older or younger siblings assume this role would be beneficial. Our finding that siblings read together without a parent held true across demographic characteristics such as family income, parental education level, parental marital status, family heritage, and language spoken in the home, although it should be noted that the present sample was relatively small and homogeneous in the sense that parents who responded tended to be married, middle class, and well educated. Moreover, it held equally in families where the other child—the child who usually reads to his/her siblings—was a boy and in families where the older child was a girl. This finding suggests that the gender constellation of the families was not a limiting factor in whether or not siblings read together.

The lack of a gender bias in the current research fails to replicate similar findings from Ewin Smith [13] that showed that girls are more likely than boys to take a leadership role and teach their younger siblings, if reading is perceived as an instructional activity rather than a recreational one. If reading is perceived as a caretaking activity, our findings also fail to replicate work that has shown that older sisters are more likely to act as caretakers than older brothers [38]. Use of a phone survey methodology precluded the exploration of how reading is perceived by either parents or children. A mixed methods approach that examines reading frequency across families, as well as whether reading is considered to be recreational, instructional, or part of sibling

caretaking responsibilities by differing family members, may be a fruitful avenue for future research.

The lack of gender differences found in the present research provide indirect support for those of Sokal et al. [39] who found that spontaneous family literacy activities involving boys are more often sibling based than parent based. Our findings indicated that in at least half of the families who participated, young boys are active participants in sibling-based literacy interactions. Evidence of boys' inclination to read with siblings is further supported by recent research conducted by the UK Literacy Trust [5] that showed both boys and girls believed that helping others learn to read is an incentive for themselves and others to read more.

In keeping with Bronfenbrenner's ecological perspective, our findings suggest that siblings may be a rich resource for teachers looking to build links between school- and home-based literacy practices. When the importance of reading skills for a variety of indicators of quality of life is considered [4], it becomes imperative that every possible avenue is explored in ensuring all children experience reading success. Both Bronfenbrenner's model [25] and Rutter's work on resilience [26] suggest that it is not the number of risk factors nor the number of protective factors that determine a child's life trajectory, but rather the nature of the mesosystem or the linkages between the various systems within a child's life that create an interwoven safety net. By taking advantage of family processes that are already in place, teachers who promote literacy interactions between siblings in innovative ways that are both entertaining and maintain an element of choice may generate new links between home and school. Keeping in mind that sibling-based literacy activities included a wide range of behaviours that were not limited to reading, teacher promotion of sibling interaction will not only create an additional link to families where there are positive parent-child literacy interactions occurring, it will also provide a new opportunity for a home-school link for families where they do not occur.

It is interesting to note that there was only one significant difference between families whose children read together and those who did not and that factor was the number of siblings in the home. Given that the participating families did not come from impoverished homes—an explanation offered by Broh [21] and Dooley and Stewart [22], for lower literacy scores in larger families—it is more likely that Yarosz and Barnett's [10] concept of "resource dilution" was in effect. Families with three or more children were less likely to report sibling-based literacy interactions; this may have been due to fewer resources available in the home or to the wider range of developmental stages of the children involved. Future research should address the developmental nature of sibling-based literacy interactions, including how they change over time as children become more independent readers. Our preliminary results suggest that family size is an important factor to consider when teachers assign homework in primary grades where sibling participation is required; smaller families may be more likely to participate and to be successful. Future research is needed to replicate these findings with a larger and more diverse sample of families.

Another important finding is that, in addition to reading together, siblings were also engaged in a many different literacy-related activities that exemplified multiple literacies [31, 32]. The most popular shared sibling activity was television viewing, which, depending on content, may be beneficial to young children's literacy development [40]. Other common literacy activities that siblings engaged included doing homework together, using the computer together, and playing board games. These findings indicate that there are many literacy opportunities throughout children's everyday activities and that parental or teacher encouragement to participate in shared activities, including quality television viewing, may be a useful way to foster home literacy practices. Teachers with a goal of engaging sibling in home-based literacy development may wish to consider this broader definition of literacy in the type of homework they assign. Recent work by Gregory [41] supports this recommendation. Her work has shown that, in some family cultures, whole family teaching is seen as the norm and siblings play a crucial role in scaffolding the literacy development of younger siblings. Taken together, her results and the present findings suggest that parents may profit from an increased awareness of the benefits of sibling-based literacy interactions. This awareness may provide parents with another important avenue to contribute to their children's literacy development, if they are encouraged to foster new sibling literacy-oriented activities, as well as sustain current ones.

There are several limitations to the research project and findings as described. First, the present sample, although quasirandom, was not representative of the general population. For example, only a small minority of families lived in poverty (5.2%); most parents were married, highly educated (77.6% held university degrees or college diplomas) with dual incomes, and only 3.7% of families self-reported having an Indigenous heritage. This is in contrast to the broader general population in which approximately 10% of families self-identify as having an Indigenous heritage, and 19% of families with two or more children live below the low-income cut-off (LICO) set by Statistics Canada [42]. In addition, given the small percentage (under 15%) of families who did not use English in their homes, it is unlikely that new Canadians were proportionally represented in the sample. It is possible that utilization of phone survey methodology reduced the likelihood of including families from lower socioeconomic groups who are less able to afford home phones. Furthermore, some immigrant families where English is not spoken in the home may not have had the capacity to participate in a survey conducted in English. Future research should consider using a qualitative interview conducted in a family's language of origin, which may be better suited to meet the needs of newly immigrated or refugee families. When these limitations are considered, generalizations from the present results should be made with caution and only to families with similar characteristics.
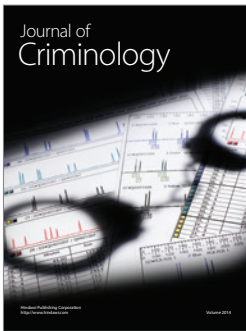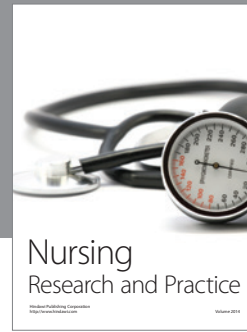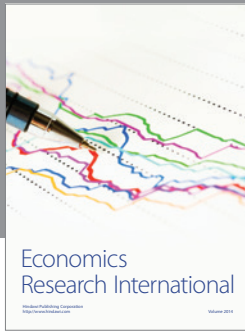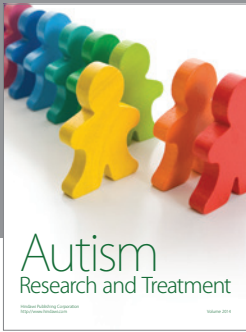
It should also be noted that the present study was limited to parental perceptions of sibling-based literacy activities. The addition of reports from school-aged children themselves, as well as those of an objective home-based

observer, would provide an interesting comparison. And although we asked what type of reading materials were used by siblings, we did not provide parents with a definition of reading. Despite these limitations, the findings do highlight the viability of the sibling interactions in the home as holding rich potential for enhanced literacy development. Parents and teachers would be wise to explore the ways that these interactions could capture opportunities for growth.

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