Mothers' Measured Reading and Their Preschool Children's Language and Reading Proficiency

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Abstract

This study investigated 1) whether mothers' measured reading has predictive power for their preschool children's language and reading over and above SES predictors, and 2) whether mothers' measured reading can help to compensate for negative influences on children's language and reading that arise from SES factors such as speaking a minority language and belonging to some ethnic minorities. One hundred fifty-eight children (aged 3-5 years) and 156 mothers of low income and low educational background from a large city in Western Canada participated. Mothers were interviewed regarding demographic information and their reading was measured. Children were administered language and reading tests. The findings support the conclusion that mothers' measured reading predicts their children's language and reading prior to schooling, ($b = .63$, $p \leq .05$, on TERA-2; $b = 4.04$, $p \leq .001$, on PPVT-III; coefficients are unstandardized) and that mothers' education and mothers' reading proficiency do not serve as proxies for each other. Our results not only confirm the predictive power of mothers' education on their children's language and reading already shown in the literature, but also provide evidence of the predictive power of mothers' measured reading level over and above their education level. Our results also point to the crucial importance of finishing high school with commensurate reading attainment. Benefits from high school completion accrue not only to the adults but also to their children. Intervention programs must shift focus to improvements to mothers' reading as their primary goal in addition to their children's language and reading.

1. Introduction

Fewer than 27% of children on Free School Meals in the United Kingdom attain good results on their General Certificate of Secondary Education [1]. Ireland has shown improvements in early school leaving results but report 27% non-completion rates for those pupils with educational disadvantage [2]. Approximately 25% of all children in Canada and

the United States start school at risk for school failure [3] [4]; cognitive ability scores of low SES children are 60% lower than those of high SES children [3]; and a large proportion (50% to 73%) of those exhibiting reading difficulties also have impairments in language abilities [5] [6]. Over the last decade there has been a flurry of research on family literacy intervention programs undertaken as a way to prevent such disparities.

Results of a recent meta-analysis of 30 studies of family literacy programs between 1990 and 2010 revealed discouragingly "small but significant weighted mean effect sizes for general literacy ability and for both comprehension-related abilities and code-related abilities" [7]. Moreover, many of these programs expended enormous effort to achieve these modest results. It was in light of this finding, that remediation is so costly and only slightly effective, that we considered whether other avenues should be examined. Given that most studies on emergent language and literacy, early literacy practices, and reading development speak to the general effects of maternal literacy, education, home language, and ethnicity on their children's literacy, but that by comparison we know much less about the specific relationship between mothers' measured reading and their preschool children's language and reading, we studied this connection.

1. Does mothers' measured reading have predictive power for their preschool children's language and reading over and above SES predictors?

2. Does mothers' measured reading help to compensate for negative influences on children's language and reading that arise from SES factors such as speaking a minority language and belonging to some ethnic minorities?

2. Theoretical framework

There are multiple pathways and challenges to preschool language and literacy proficiency. Children's preschool interactions with print are primarily with their mothers. These interactions are a time for children to engage in the precursors (oral vocabulary, concepts about print, letter knowledge, and the parts of a story) to language and literacy

necessary for success in schooling. Not all mothers interact similarly with their preschool children. It is known that maternal education matters. Mothers with high school education and beyond provide direct teaching to their children, hold high expectations for advanced schooling for their children, and provide literacy-enriched opportunities.

The nature of the interactions between mothers and their children vary. The manner in which highly educated and less educated mothers talk with their children differs as well as the number of utterances (2102 versus 416) [8]. The former directly engage their children in discussions about a story they are reading together whereas those with less than a high school education tend to read through the story without stopping to engage the child. Thus, the reading experience is less pleasant, discussion is limited, and children are not encouraged to read on their own. There are multiple risk factors that influence children's performance on measures of language and reading. Children from homes with sound financial resources are often from educated families which in turn means that they have access to books, and educated mothers who read to and engage them with print in language-rich oral discussions - the foundation of successful reading.

There is also a link between familial influence and children's intellectual attainment [9]. It is known that parental education among other factors provides children from advantaged families exposure to more cognitive benefits than those from disadvantaged families. Cognitive benefits include children learning to control, plan and direct their behavior which leads to a successful transition to formal schooling [10]. However, supportive home environments where families place a high value on educational involvement through supportive home literacy practices and environments may offset the negative effects of low maternal education on their children's reading development. We know from our research that some children who live in poverty do well in school. Their mothers hold high expectations for their children, read as much as they can to them, talk about pictures and their environment, and have an intense love and desire for their children to be healthy and well-educated.

Several factors determining the socioeconomic status (SES) of families are known to predict preschool language and literacy of children. In particular, mothers' characteristics such as being employed, having at least a high school education, having as a first language the majority language of the society, and belonging to the majority ethnic and racial group all predict higher language and reading proficiency among their children. Higher SES has been shown to be predictive of children's higher school achievement and of cognitive benefits more generally, such as improved executive functioning [11]. Since mothers' education often is treated as one

contributor to an overall measure of SES, higher mothers' education is implicated in these benefits for their children. The effect of mothers' education also has been studied separately from SES. It has been shown that mothers who obtain more education tend to beneficially alter the literacy environments of their homes [12] and it also has been demonstrated that home literacy environments affect children's literacy development.

Mothers with higher education tend to be better readers, serve as more effective models of reading, set expectations of a higher level of school completion for their children [13], engage in literacy practices more conducive to their children's literacy development [14], tend to be more involved with reading with their children, and create home environments rich in books and other reading materials [15]. The story is even more promising, because detriments in mothers' educational levels can be overcome in part by mothers' positive and active involvement in their children's literacy, and by enrolling their children in daycares where they are taught reading and writing [14], [16]. The research also shows that mothers' reading is positively associated with their children's language and literacy development. Yet, the research cautions that mothers' education and mothers' reading proficiency cannot be treated as the same variables for predictive purposes [17]. However, the research thus far does not confirm whether mothers' reading proficiency has predictive power for their children's language and literacy proficiency over and above mothers' education level.

3. Methodology

3.1 Sample and data sources

The sample comprised 158 children ages 3-5 years and 156 mothers of low income and low educational background from a large city in Western Canada. Children and mothers were tested for their reading proficiency (Children: Test of Early Reading Ability), (TERA-2) — measured children's ability to ascribe meaning to printed symbols, knowledge of the alphabet, and conventions of print [18]; Mothers: (Canadian Adult Reading Assessment), (CARA) — an informal reading inventory for adults [19]. Children's language proficiency (receptive vocabulary) was also tested (Peabody Picture Vocabulary Test III), (PPVT-III) — judged to be a general test of verbal ability [20].

The families in this study often lacked basic needs such as sufficient food, adequate shelter and the resources to maintain good health due to substance abuse, parenting issues, and violence in the family. The recruitment of these families required the assistance of many agencies, use of the public media,

as well as visits to many supermarkets and shopping centers.

3.2 Procedures

In cooperation with a family literacy centre, mothers of the preschool children granted consent to be interviewed, have their reading proficiency measured, and allow their children's language and reading proficiency to be tested. An extensively trained group of educators interviewed the mothers either in their homes, at a family literacy site, or at a mutually agreeable location. The interview contained questions that sought demographic information (age, ethnicity, first language, highest level of education completed, occupational status, marital status, number of children, and children's ages). Children and mothers were tested and interviewed individually, and all sessions audio-recorded to ensure accuracy in testing, scoring, and interviewing.

The mothers and children participated subsequently in a family literacy intervention with follow-up. The results reported here are based on data collected before the intervention began.

4. Results and discussion

4.1. Sample characteristics

At the time they entered the study, the mothers' average age was 30.9 years. In response to an open-ended request for ethnicity, 64% were Caucasian, 16% Aboriginal, and 20% represented more than a dozen other ethnic groups. The number of children per family ranged from 1 to 8, with a mean of 2.5. Marital status included 75% married or common law, 18% single, 5% separated, and 3% divorced. Employment status showed 32% employed full- or part-time, and 68% unemployed. Reported educational levels ranged from third grade to at least some university. Approximately 16% had no high school education, another 28% had some high school education, 56% had graduated from high school, and about 1% had some university education. There were twenty first languages spoken in the group with English being the most common at about 76% and all other languages at less than 3% of the sample. Mothers' measured reading scores with a mean of 6.7 on the CARA Graded Passages is equivalent to junior high school reading ability.

4.2. Regression analysis

We regressed children's TERA-2 and PPVT-III scores as dependent variables on mothers' characteristics. These models were statistically significant ($p \leq .01$; $p \leq .001$) and accounted for 14% of the variance in children's TERA-2 preschool

scores and 31% of their PPVT-III scores. For the analyses, parental age and CARA Graded Passage scores were centered around their respective means. In the case of TERA-2, high school education or greater and CARA were significant predictors. For the PPVT-III, CARA and number of children in the family were significant predictors.

Either having some high school education or having a high school education or greater were compared to having no high school education at all. The increase in children's TERA-2 scores was 4.19 when their mothers had a high school education or greater. The increase in TERA-2 scores for children was 0.63 when their mothers' CARA score increased by 1. All other things being equal, a child whose mother has high school or greater education and whose score is the maximum on the CARA Graded Passage should expect a TERA-2 score 9.2 points higher than a child whose mother has no high school education and scores the minimum on the CARA Graded Passages. To put this difference in perspective, for children of average age in this sample (3 years and 9 months) who scored near the bottom of the group (a score of 1 or 2), a 9.2 increase would mean a percentile rank change of more than 70%. For children scoring near the median (~7), a 9.2 score increase would represent a change in percentile rank from the low 70s to high 90s. These results show the incredibly powerful combined predictive power of mothers' education level and measured reading proficiency on their children's reading ability before entering school. Separating the contributions from mothers' education and from reading level, education contributed 4.2 points whereas measured reading level contributed 5.0.

4.3. Predictors of children's preschool language

Only number of children in the family and CARA Graded Passage score were significant predictors of children's PPVT-III score. Children with three siblings, for example, can expect to have scores 7.23 lower than children with no siblings. On the other hand, we saw an even stronger relation of mothers' measured reading proficiency on their children's pre-school language ability than on their reading ability. All other variables being equal, a child with no siblings and a mother scoring at the lowest level on the CARA can expect a PPVT-III score 32.32 points lower than a child with no siblings and a parent scoring the highest level on the CARA. For a child aged 3 years 9 months scoring at the median in the sample, a score increase of this magnitude indicates a percentile rank change from the mid-40s to mid-90s. Given that mothers' education had no predictive power at all on their children's language proficiency, we see very dramatically the reasons for including

mothers' measured reading proficiency in predictive models.

5. Conclusions and implications

The clearest findings from this study are that mothers' measured reading has a significant and positive relationship to their children's language and reading prior to schooling and that mothers' education and mothers' reading proficiency do not serve as proxies for each other. The quantification of the relationship of mothers' measured reading to children's language and reading shows what is possible if family literacy programs focus on the improvement of mothers' reading proficiency as their primary goal. The implementation of family literacy programs that focus on improving mothers' reading proficiency need to be explored. This research enriches the knowledge, understanding, and development of lifespan literacies in a multicultural and multilingual world. Accordingly, the results afford literacy researchers the opportunity to examine a range of literacies in different social and cultural contexts. Our study extends understanding of family literacy factors, specifies and quantifies the role of mothers' measured reading on their children's preschool language and reading proficiency, and points to a shift in focus on improvements to mothers' reading.

Our results not only confirm the predictive power of mothers' education on their children's language and reading already shown in the literature, but also provide evidence of the predictive power of mothers' measured reading level over and above their education level. Our results also point to the crucial importance of finishing high school with commensurate reading attainment. Benefits accrue not only to the adults but also to their children. Precisely how reading proficiency and educational attainment interact is a topic for further research. Until such time, it would be prudent to take both factors into account in any intervention or compensatory programs. Moreover, it is also important to remember that mothers' reading proficiency is the most significant of the two. We have shown that mothers' reading proficiency can compensate for their language and ethnicity when it comes to improving their children's preschool language and reading.

It is important to emphasize that it is both high school completion and commensurate reading attainment that are important. Educational policy makers would be wise to redouble efforts to promote the importance of high school completion with appropriately corresponding levels of reading proficiency.

Our results support ongoing maternal literacy programs to assist and instruct mothers to maintain their significant role in the language and literacy

development of their children. Long-term research on maternal literacy is necessary in order to study the barriers to sustained literacy development; to understand social and cultural differences and their effects on maternal and child literacy development; to examine ways in which policy and practice can be integrated to best serve mothers and their children; and to devise ways to use limited resources more efficiently by more accurately pinpointing which approaches work best, for which groups, and at what time.

There is much to learn about the factors underlying preschool language and reading development. Undoubtedly, early success with language and literacy remains a critical goal given the numbers of children worldwide who start school at risk of school failure. It was encouraging to confirm that maternal reading ability was strongly related to their children's language and reading development. The results we have reported could be extended usefully to what happens after children start school.

6. References

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