

**Comparing Individual Differences in Literacy Development in
Pre-Kindergarteners and Kindergarteners: A Literature
Review and a Proposal for Future Research**

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Abstract

The thesis, *Comparing Individual Differences in Literacy Development in Pre-Kindergarteners and Kindergarteners*, is a literature review that examines some of the research literature, focusing on the different aspects researchers examined related to literacy development. The articles focused heavily on children's self-concept and the home literacy environment that the parents provide for the child. This thesis describes in depth five articles with a connection to either the home literacy environment, or children's self-concept. The self-concept articles specifically examined how children viewed their own competency in completing school-related tasks. The articles reviewed were chosen because of their connection to the literacy environment and children's success. From the analysis of these articles a study is proposed in which the home literacy environment would be evaluated, and children would be asked questions related to their self-competence. These two measures would then be related to children's reading test scores to examine the relative contribution of each of the two predictors to literacy. In addition to the detailed discussion of previous work, this thesis describes in depth the measures that would be used in this study, the HOME, the Harter Self-Competence scale and school measures such as the BAS and PALs.

Comparing Individual Differences in Literacy Development in Pre-Kindergarteners and Kindergarteners Literature Review

Currently there is an abundance of research that connects literacy development to the home environment and parent involvement. What is less clear is what specific aspects of the home environment and of parental involvement are important? Is it more about how often the child is read to or the meaningful parental interaction that the child has at home? The home literacy environment is something that is studied often as well as it pertains to how parents interact with their children at home. This paper examines key research on factors related to literacy development in young children.

Currently around 32 million (14%) adults in America are considered illiterate, and between 40 and 44 million (20-23%) adults are limited to reading at basic proficiency levels (Lake, 2016). In the past reading has been assessed based on whether the student could read the words on the page not whether or not they understood the words. With newer assessments coming into the school systems, like the BAS, the focus has switched to ensure that children are understanding what they are reading and not just decoding the words on the page.

The home literacy environment is often referred to in this review and the articles discussed. The home literacy environment is the environment in which parents and children interact around reading and writing materials (Bingham, Jeon, Kwon, Lim, 2015, p. 2). This term also pertains to how the family views literacy, do they have books in the home and do the caregivers read to the children? Such assessments also examine whether the family values reading or whether they value other things like technology and playing.

The articles discussed each relate to either the home literacy environment or cognitive perception of the child as a learner. DiBiase and Miller look at preschoolers and their self-perception, while the other articles look at the home literacy environment and connect that to some aspect of school literacy achievement.

Literature Review

Bingham, Jeon, Kwon and Lim (2015) reported that home literacy practices and children's oral language were correlated (p.10). This study hoped to find either a direct or mediated correlation between parenting style, the home literacy environment and children's oral language. "We consider how a parent's parenting style may relate to the quality of home literacy experiences they offer children and how these experiences may enhance or impede children's development" (Bingham et al.,2015. p. 5).

This study had a total of 181 preschool aged children from 12 different child care programs. After consent was given the parents were given a questionnaire to complete about the demographics of their families, their parenting style and home literacy practices. The parenting style questionnaire was "designed to tap three primary types of parenting practices: authoritative, authoritarian and permissive" (Bingham et al., 2015. p. 7). To assess the home literacy environment the parents completed "an updated version of the Language Reading and Family Survey" (Bingham et al., 2015. p. 7). Parents were also given a Title Recognition Test; this was designed to see if parents recognized popular children's books. Children were assessed using the Test of Preschool Early Literacy. This test has three subsections, three subsections, testing children's print knowledge, vocabulary and phonological awareness (Bingham et al., 2015. p. 8).

In this study, it was found that “home literacy environments were associated with children’s oral language skills” (Bingham et al., 2015. p. 10). Now this seems like an obvious correlation however what is somewhat surprising is that “parents report of directly teaching their child literacy skills was negatively associated with children’s oral language skills” (Bingham et al., 2015. p. 10). It is assumed that it should be the opposite. It was found that authoritative parenting style had a positive correlation with home literacy environment, whereas authoritarian parenting style negatively correlated with the home literacy environment (Bingham et al., 2015. p. 10).

DiBiase and Miller (2012) studied cognitive competence in preschoolers. This study had the purpose of enhancing the understanding of predictors of cognitive self-concept and hypothesized that teachers had an effect on the children’s self-perception (DiBiase & Miller, 2012. p. 27). The participants of this study were mothers and their 4-5-year-old children. In total there were 45 mothers and children, all of whom were enrolled in a head start program (DiBiase & Miller, 2012. p. 29). The children’s teachers were asked to rate the children, they used the “Harter Scale of Perceived Competence for Children Teacher Section” (DiBiase & Miller, 2012. p. 29). The children in the study were given the child’s version of the Harter Self Competence questions, and their language was measured using the Head Start tests.

It was found that there was an association “between children’s cognitive self-concepts and each of the predictor variables” (DiBiase & Miller, 2012. p. 31). Meaning that the children the teachers thought highly of gave higher ratings of themselves on the Harter Self-Competence scale. Maternal education was also a factor, the higher the

education of the mother, the more highly the teacher scored the child in competence. However, DiBiase and Miller reported no significant relationship between maternal education and children's rating of their own competence (p. 31). This is interesting because there is a relationship between maternal education and teacher rating, and teaching rating and the child's self-perception.

Roebbers, Cimeli, Rothlisberger and, Neuenschwander (2012) completed a study with first and second graders about their executive functioning (EF), metacognition and self-perceived competence. This study began with 209 end of the year first graders (Roebbers, Cimeli, Rothlisberger, Neuenschwander, 2012. p. 157). The children were tested while in first grade and then tested again one year later when they were just finishing up second grade. This makes this study a longitudinal study as it takes place over the course of a year. This study also looked at the children's school achievement by looking at curriculum-based school achievement tests in mathematics, reading and spelling (Roebbers et al., 2012. p. 161).

Roebbers et al. (2012) reported "predicting academic achievement at the end of children's 2nd grade revealed substantial direct impacts of EF on mathematics and literacy achievement, and significant direct effects of metacognitive control on literacy[achievement]" (p. 163). The authors point out that these two variables together explained a large amount of the variance seen in children's math and literacy achievement. Metacognition was found to have a significant relationship with the children's self-competence ratings, although EF did not. At the same time, EF and metacognition were significantly related to each other.

LaCour, McDonald, Thomason and Tissington (2011) explored the relationship between how much storybook reading parents did at home and emergent literacy development. A key activity for parents to develop their child's literacy skills is by reading storybooks to them (LaCour, McDonald, Thomason and Tissington, 2011. p. 66). This study "explored an early intervention method for increasing storybook reading in the home for the purpose of increasing emergent literacy development among Pre-Kindergarten children" (LaCour et al., 2011. p. 70). The hypothesis suggested that there would be no significant differences between a control group and experimental group, the children's readiness to read for all children would have similar means when tested "using the Readiness for Reading assessment in the BRIGANCE Diagnostic Comprehensive Inventory of Basic Skills Revised" (LaCour et al., 2011. p. 70). This assessment tests the child's readiness to read by assessing their ability to read and write letters as well as their basic math skills like counting.

This study was completed in two Head Start programs and consisted of twenty-two total participants. The participants were broken up into two groups, ten were assigned to the control group and twelve were assigned to the experimental group. All children in the study were given the Readiness for Reading assessment pretest. After the pretest, the caregivers of the children in the experimental group "attended a workshop regarding effective storybook reading, coupled with the receipt of twenty storybooks for use in reading with their child at home" (LaCour et al., 2011. p. 71). Then seven weeks of instructional time later, both groups of children were assessed again with a reading posttest.

LaCour et al. (2011), found through their research that caregivers' attendance at the workshop did not lead to a significant gain in the child's reading readiness (p. 75). In fact, both the control group and the experimental group made significant gains in their reading during the seven-week instructional period. It should be noted that the gains made by the control group were not as large as those made by the experimental group, but both groups improved significantly (LaCour et al., 2011. p. 75).

Niklas, Cahrssen and Tayler (2016) explored the impact the home literacy environment has on more general aspects of children's cognitive skills for example fluid reasoning. Fluid reasoning is the ability to solve problems while incorporating novel information and rules. This study took place in Australia. The purpose of this study was to increase the quality of interactions between parents and children in the home literacy environment (Niklas, Chorsen, Tayler, 2016. p. 421). The researchers undertook this study partly because earlier research had shown that fluid reasoning was closely associated with both mathematical and literacy skills (Niklas et al., 2016. p. 419).

To assess the children's cognitive concepts, The Woodcock-John III concept formation subtest was used to assess the child's fluid reasoning (Niklas et al., 2016. p.421). This assessment is a broad measure of a child's ability to reason. For each item, "the child tries to determine the rule that distinguishes a set of symbols into two groups" (Niklas et al., 2016. p. 421). This measure then provides the child with feedback if errors are made and correct answers are pointed out (Niklas et al., 2016. p. 421). Parents were also asked to participate in this study as well providing researchers with information about the home literacy environment. "Parents were requested to report on various

aspects of the HLE[Home Literacy Environment]. HLE was measured by ten questions that focused on cognitive activities at home” (Niklas et al., 2016. p. 422).

Total there were 113 kindergarten children participating in this study (Niklas et al., 2016. p. 421). Children were assessed at two points in the school year, with the first assessment being between February and March and the second assessment being between mid-July (Niklas et al., 2016. p. 421). After the first assessment parents were invited to attend a parent meeting where for about forty minutes the parents listened to a PowerPoint presentation on methods of increasing cognitive development in your child (Niklas et al., 2016. p. 422). Parents who attended this session were then eligible for an individualized session. These sessions consisted of individualized support for the parents and children including being given games to play at home that were designed to increase cognitive development (Niklas et al., 2016. p. 422).

It was found that the older the children were the better they performed on the concept formation tasks (Niklas et al., 2016. p. 423). The home literacy environment was also found to be significantly associated with children’s concept formation (Niklas et al., 2016. p. 423). As for the intervention, at the second assessment time eight percent of parents had indicated that they had changed their home literacy practices to reflect what they had learned in the parent sessions (Niklas et al., 2016. p. 423). The intervention improved the home literacy environment significantly at the time of the second assessment compared to the no intervention group (Niklas et al., 2016. p. 423).

Overall, these articles have contributed to findings in literacy development in children from preschool and up to second grade. Literacy development and learning to

read are complex and effected by many factors but the home literacy environment is arguably one of the most important. Each of these articles explored some aspect of the home environment and cognitive development. Each article also found that the home environment and or adults' beliefs about children and adults' practices with children had an effect on the child and their cognitive development and their literacy skills.

In the next section, and based on the articles just reviewed, this paper will review information about two instruments that have been shown to be useful in predicting literacy in young children. These are the Home Observation Measure of the Environment (HOME) and Harter's measure of cognitive self-competence.

Measures that Could be Used

The Home Observation Measurement of the Environment (HOME) is often used by researchers to measure the quality of a child's home environment (The HOME (Home observation Measurement of the Environment)). The HOME form "has been extensively used as both an input in helping to explain other child characteristics or behaviors and as an outcome in its own right...to explain associations between the quality of a child's home environment and earlier familial and maternal traits and behaviors" (The HOME (Home Observation Measurement of the Environment)). The HOME is completed by the mother of the child and then has a portion where the researcher observes the mother and child interactions.

The HOME assessment is broken up by age group, birth to age two, age three to five, age six to nine and age ten to fourteen. However, not all aspects of the HOME are assessed at each age level. For the younger children the questions are more focused on

getting out of the house and the number of toys the child has. When the child is aged three to nine there are specific questions about how often the child is read to and how many books, they have access to at home. This is also where the HOME asks the mother if the family is subscribed to any magazines or if they get the daily newspaper. As the children become older, the questions shift and are more focused on what the child does in terms of chores and what the family does together.

After successful completion of the HOME, the child will receive three total scores. The first score is the raw score. This varies by age group as the total number of items varies by age group (The HOME (Home Observation Measurement of the Environment.)). The raw score “is a simple summation of the recorded individual item scores” (The HOME (Home Observation Measurement of the Environment.)). In addition to the raw score the children also receive a cognitive stimulation and emotional support score.

The use of the HOME would give an overall understanding of the child’s home literacy environment; however, aspects of this instrument are outdated. There are questions asking whether the parents subscribe to at least one magazine a month and get the daily newspaper (HOME (Home Observation Measurement of the Environment)). These questions do not take into consideration that today, most news both pop culture and other, come from technology and many families do not receive a newspaper when news is now instantaneous through phones, computers and television.

The HOME instrument does not take into account cultural and familial differences. For example, this questionnaire asks questions and makes observations of mothers specifically, and states observations in a mother/mom format. This is not

catering toward families where for whatever reason a mother is not in the picture. This is also not taking into consideration cultures where storytelling happens through means other than a storybook. Some cultures use oral or physical means to tell stories and the HOME does not ask any questions that may indicate that this sort of language use is also valuable.

The Harter Scale is often used to measure a child's perceived self-competence. The scale is given interview style to the child. They are asked which child on the paper they are most like and then on a scale of 1 to 4 how much like them are they (Harter, 1982. p. 88). The child placing themselves at a 1 means that there is low perceived competence and 4 means that they have high perceived competence. The scale is also given to the child's teacher and the questions are "reworded to obtain the teacher's best judgement of the child's actual competence" (Harter, 1982. p. 90).

From Harter's work with the instrument, three subscales emerged. The three subscales are cognitive competence, social competence and physical competence (Harter, 1982. p. 88). Cognitive competence has an emphasis on academic performance, doing well in school and feeling smart (Harter, 1982. p. 88). Social competence tends to include items on such things as being easy to like and being an important member of the classroom (Harter, 1982. p. 88). Physical competence has a focus on playing sports and games rather than just watching others play (Harter, 1982. p. 88). These three subscales are all covered in the interview with the child.

The Harter Scale was designed with the purpose of offsetting the children's tendency for socially desirable responses (Harter, 1982. p. 88). This was an issue because children at this age have a desire to please people and because responses are elicited in an

interview, the children will likely try to choose the answer that will please the interviewer.

Hassan completed a study to try and show the validity of the Harter Scale. This study was completed in Lebanon with 152 preschool aged children. A few low ratings on the scale could be explained by cultural differences. These might include items such as staying overnight at a friend's house and tying their own shoes. In Lebanon, the children are trained to be dependent and are not usually given the chance to learn how to tie their shoes, the same can be said about staying overnight at a friend's house (Hassan, 1999. p. 343). Adding different variations of this scale or omitting questions that would be culturally irrelevant would be a way to ensure a full understanding of a child's perceived self-competence.

Some of the measures to assess the child's reading skills in a future study would be the Benchmark Assessment System (BAS) or the Peer Assisted Learning Strategies (PALS). The BAS is best used on children who already have some idea of how to read as this assessment asks the children to read a book and then answer comprehension questions about the book. The PALS is a measure of children's knowledge of several literacy concepts such as phonological awareness, alphabet recognition, concepts about print and knowledge of letter sounds (PALS-K). For beginning of the year kindergarteners, the PALS would be the best assessment as it does not require the child to know how to read just yet. Since there is a tendency for a few children to show up at kindergarten having already learned to read at home, the BAS might be used as a follow up for such children.

Discussion

Bingham et al. (2015) reported a correlation between parenting style and children's literacy skills. A proposed explanation for some of their findings may be that previous studies have typically been constructed of White middle-class families, this study included African-American families (Bingham et al., 2015, p. 13). Bingham et al. (2015) then go on to explain that the literacy beliefs of these parents are different. These differences could explain some of their results. "In this study, African-American parents, who are more likely to endorse authoritative parenting perspectives, may believe that teaching language and literacy skills is important, and therefore, engage in a variety of informal home literacy and direct teaching experiences with their children (Bingham et al., 2015, p. 13).

In order to gain a full understanding of the role of both literacy and parenting skills it is important to look at a wide range of children and families. This study had a great number of participants, however, there could have been more diversity within the participants. As stated above, this study contained mostly African-American participants. This study could have given an overall understanding had it included all different backgrounds.

DiBiase and Miller (2012), completed their study in Head Start. Their findings included that teacher perceived competence of a child leads that child to have higher perceived self-competence. A limitation of this study could be that this study was only completed with preschoolers in Head Start. It would be interesting to see if the findings in this study hold up across preschools and even continue into kindergarten.

Perhaps more research could be done examining the relationship of self-competence measures to the development of executive function Roebbers et al. (2012),

found that metacognition has a correlation with executive functioning, self-perceived competence and test scores in first and second graders. This study had a great sample number with 209 children participating. It would be interesting and informative to study this topic in children who are slightly younger, when behaviors such as executive function and metacognition are just beginning to develop. More importantly perhaps, it would be useful to understand the relationship between parenting and the HOME environment, and the measures studied by Roebbers et al. (2012).

LaCour et al. (2011) looked to find a relationship between storybooks and literacy development. This study gave parents the opportunity to participate in an intervention program to help further their child's literacy development. Parents of children in the designated experimental group were then asked to attend a workshop about effective storybook reading (LaCour et al., 2011, p. 71). It was found that attendance at the intervention workshop did not lead to significant gain in the child's reading readiness (LaCour et al., 2011, p. 75). Even though those children who participated in the intervention did make slightly more gains than the children who did not participate, each group made significant improvements in their development (LaCour et al., 2011, p. 75). This study took place in two small head start programs. A limitation of this study would be their small sample size. In total there were twenty-two participants which is not a significant amount.

Niklas et al. (2016) explored home literacy as it pertains to general aspects of children's cognitive skills. This study had a large sample size of 113 children, assessed at two points in the school year (Niklas et al., 2016, p. 421). Children's ability to reason was assessed and then parents were invited to join a parent workshop. This study found that

the intervention improved the home literacy environment significantly (Niklas et al., 2016. p. 423).

This research specifically pertains to schools and the teaching of children. DiBiase and Miller found that teacher perception of a child impacts the child's self-perception. This almost goes without saying but teachers need to ensure that they are treating each child the same, as well as making sure to challenge each child appropriately so that the child does not come to think that they are not capable of learning. The home literacy environment is not something that a school has the power to change, that is up to the parents. Schools could help parents change the home literacy environment by providing workshops like the one LaCour et al. used in their study. LaCour et al. completed their workshop by giving parents a list of storybooks to read to their children (p. 71). With schools giving the option to parents to attend a workshop for parents about literacy development they could see improvements in their student's literacy development.

All of these articles were chosen as they have a strong correlation with the proposed future study. These articles each look at a different aspect of the study, such as the home literacy environment, self-perceived competence and test scores.

Future Studies

In order to fill some gaps in the research, a study is proposed to look at some of the individual differences in development that are related to literacy. Looking at the child's home life, using the HOME scale, evaluating the child's competence using the Harter Self-Competence scale and then looking at the students reading scores, could give a different insight into children's literacy development. Based on the prior evaluation of

the HOME scale, questions would be omitted, and some would be added to keep up to date with the current technology and to be more potentially inclusive with respect to literacy practices in different cultures. The Harter Scale would also be adapted to keep a focus on literacy and the child's academic self-competence. This research could lead to advancements in teaching for early literacy and early education.

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