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Assessment of Motivation for Literacy in Preschoolers

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THE FLORIDA STATE UNIVERSITY
COLLEGE OF ARTS AND SCIENCES

ASSESSMENT OF MOTIVATION FOR LITERACY IN PRESCHOOLERS

By

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ABSTRACT

There has been much speculation about the effects of motivation for literacy on literacy skills; yet, the relations between these variables not been established in preschool, the developmental period during which children begin to acquire literacy skills. This study used a new measure of motivation for literacy, the *Preschool Interest in Literacy Experiences Scale (PILES)*, in which children report their interest in literacy related activities. Overall, the validity and reliability of the PILES was not established. However, parent reports of literacy interest and exposure and direct measures of children's early literacy skills were significantly correlated. These findings suggest motivation for literacy impacts early literacy skills even in young children. They also suggest motivation for literacy may increase early literacy skills because it leads to greater exposure to literacy.

INTRODUCTION

A report from the National Research Council “Preventing Reading Difficulties in Young Children,” identified the absence of initial motivation to read or a failure to develop a mature appreciation for reading as one of the main obstacles in learning to read (Snow, Burns, & Griffin, 1998). This lack of motivation can delay understanding that written language represents words and delay the ability to transfer the comprehension skills of spoken language to reading (Snow et al.). If a young child does not have a positive attitude toward reading, she or he may become disengaged and unwilling to learn initial reading skills or to practice these skills through reading on their own.

Because the origins of literacy are found in early childhood, understanding how preschool-age children are motivated to engage in literacy activities is crucial. Emergent literacy has been defined as the “skills, knowledge, and attitudes that are developmental precursors to reading and writing” (Whitehurst & Lonigan, 1998, p. 848). The attitudes towards reading children develop are therefore regarded as main contributors to the acquisition of reading abilities. Although the skills and knowledge components of emergent literacy have been explored in research (e.g., Lonigan, Burgess, & Anthony, 2000; Storch & Whitehurst, 2002; Wagner & Torgesen, 1987; Whitehurst & Lonigan, 1998), the attitudes associated with literacy have yet to be examined fully. Having a positive attitude toward reading may result in children having more interest and engagement in literacy-related activities. Motivation for literacy may begin developing before literacy skills are fully developed, thereby fueling the acquisition of these skills. The aims of this study were to develop a valid way to assess motivation for literacy in preschool-age children and to explore the relation between motivation for literacy and early literacy skills in this population.

Motivation for literacy may relate to emergent literacy skills through greater exposure to literacy because children who are more motivated may engage in more literacy promoting behaviors. This may result not only in initial gains in emergent literacy skills but further gains in literacy skills throughout childhood. Having high literacy motivation may lead a child to facilitate reading interactions with parents, notice more print in the environment, ask more questions about print, and spend more time reading once she or he is able (Whitehurst & Lonigan, 1998). Each of these activities can contribute to the development of greater literacy skills. Facilitating reading interactions can result in greater literacy as shared-reading experiences

between parents and preschool children have been linked to improvement in literacy skills (Scarborough & Dobrich, 1994). Frequency of story reading in the home with children has been linked to literacy skills; for example, Crain-Thoreson and Dale (1992) reported that story reading at 24 months of age significantly predicted language ability and print conventions at 4.5 years. Questions about and greater attention to print in the environment may lead to greater reading skills as having an interest in literacy may be the link between reading to preschoolers and reading achievement (Lonigan, 1994). Children who are motivated to read do it more often and become more skilled at it (Morgan & Fuchs, 2007), and reported reading frequency is a significant correlate of early literacy skills (Sonnenschein & Munsterman, 2002).

A lack of motivation for reading may hinder the development of early literacy skills that typically occurs for preschool children. Understanding how motivation for literacy and emergent literacy skills are related in preschoolers can lead to the development of early methods to prevent further reading setbacks. Exploring this relationship as children are just beginning to get experience with literacy activities and the school setting will allow for a greater isolation of motivation for literacy's influence on the development of literacy skills. At this early age, there may be a diminished impact of negative feedback resulting from poor reading abilities, such as social comparisons and teacher evaluations. Evaluating this relationship at such an early age may lead to a better understanding of the beginnings of motivation for literacy and aid in the identification of ways to increase this motivation before it leads to further setbacks in the development of literacy skills.

Studies of older children provide support for the relation between motivation for literacy and early literacy skills. Motivation for reading in fourth and fifth graders predicts the amount and breadth of reading children engage in (Wigfield & Guthrie, 1997). Motivation levels of children in the first grade have been linked to reading achievement (Wilson & Trainin, 2007). One study found that parents' reports of their kindergarten children's interest and engagement in literacy activities predicted gains in reading skills through the third grade (Mason, Stewart, Peterman, & Dunning, 1992). Greater orientation to reading-related activities has been shown to predict uniquely the formation of word-reading skills above and beyond phonological awareness and rapid naming skills (Lepola, Poskiparta, & Laakkonen, 2005).

Despite the speculation about the relation between motivation and emergent literacy skills, past research has inadequately addressed this relation in pre-readers. This may be due, in

part, to the incomplete ways of conceptualizing and measuring motivation for literacy in young children. Measures used previously to assess motivation for literacy in young children have examined a variety of child characteristics thought to be related to motivation for literacy. Many of these characteristics have been seen as relating to motivation for literacy in older children but this may not be the case for younger children. Perceived competency or perceived difficulty in literacy-related activities is thought to contribute to literacy motivation in young children (Baker & Scher, 2002; Chapman & Tunmer, 1995; Nolen, 2001; Sonnenschein & Munsterman, 2002; Wilson & Trainin, 2007). However, because preschoolers typically have very little experience with reading themselves, they may not have an adequate understanding of their own reading competencies or the true difficulties of reading. Young children also tend to have overly optimistic views about their competence (Nicholls, 1978); so, although they may have very little experience and understanding about what literacy entails, they may still believe that it is not difficult and that they are good at it. Measures that include perceived competency and difficulty components may, therefore, inadequately assess the construct of literacy motivation in this age group.

The value and importance children place on literacy is seen as a component of motivation for literacy (Baker & Scher, 2002; Nolen, 2001; Sonnenschein & Munsterman, 2002), but this also may inadequately capture this construct. At this young age, the lack of experience children have with reading may hinder their ability to understand the value of literacy activities. Preschool children are just beginning to grasp notions of print conventions and understand that written language portrays meaning (Levy, Gong, Hessels, Evans, & Jared, 2006); thus, they may have yet to develop an accurate understanding of the purpose of reading or its value and importance.

Some measures have involved indices of a child's interest in or attitudes toward literacy-related activities to determine motivation for literacy (Frijters, Barron, & Brunello, 2000; Mason et al., 1992; Saracho & Dayton, 1989; 1991; Sperling & Head, 2002; Thomas, 1984). Unlike other ways of conceptualizing motivation for literacy, assessing a child's interest in literacy activities would allow for a determination of whether that child would be motivated to engage in those behaviors. Preschool children do seem to have likes, dislikes, and preferences for certain activities over others.

Past researchers also have used a variety of formats in their attempts to measure motivation for literacy in preschoolers that may not effectively assess this construct, such as through parent, teacher, and observer measures. The most commonly used method may be parent questionnaires regarding children's behaviors and characteristics (Mason et al., 1992; Thomas, 1984). One study examined the relation between parent-reported child toy preferences and the development of reading (Thomas). Children who began reading at age four were reported to have played with, enjoyed, and valued reading-related toys significantly more than non-readers. This finding lends support to the idea that children who engage in more literacy related activities may develop greater literacy skills than their less engaged counterparts. However, this measure relied only on the parents' recollection of toys that children played with two or more years prior to the study. Parents may have recalled that their children had more of an interest in literacy-related toys just because their children were better readers at the time they completed the questionnaire. Parents' responses also may have been based on their own views or societal values of reading. It is therefore difficult to determine the nature and causal direction of the relations in this study.

Similar biases may be present in teacher ratings of motivation for literacy. Responses to answers on these questionnaires may represent not only a child's interest in literacy activities but include other factors such as a child's reading ability, stereotyped judgments based on the child's other characteristics, or teachers attempts to present the child and themselves in the best light,. In a study by Lepola et al. (2005), teachers in classrooms of 5- to 7-year-olds rated children's motivation by assessing task-orientation, task-avoidance, and socially dependent behaviors. They found that task orientation (i.e., a child's intrinsically motivated tendency to approach, explore, and master learning tasks) played a significant role in the formation of word-reading skills (Lepola et al.). However, in another study in which teacher and researcher ratings of motivational-emotional vulnerability, including a task-orientation measure, were used to measure 5- to 6-year-old children, few differences in the motivational-emotional profiles were found in three different reading levels groups (Poskiparta et al., 2003). The inability of this measure to consistently differentiate among the groups or relate to literacy skills may be due to the biases inherent in these types of measures.

Experimenter observation may be another potentially inadequate way researchers have attempted to examine motivation for literacy. Although these measures may be less prone to biases, they are typically more difficult to collect and can be prone to observer drift. It can also

be difficult to isolate the construct of motivation for literacy when looking only at ambiguous behaviors in children. In one study of 2- and 3-year-olds, interest in reading activities was measured through observations of posture indicating alertness, amount and emotiveness in verbalizations, the child's physical orientation toward the book, and the level of attention given to the activity (Ortiz, Stowe, & Arnold, 2001). In this study, parents who learned strategies to foster interest were able to increase their child's interest in reading through shared reading experiences. In another study with children from 2- to 4.5-years of age, verbal and non-verbal child behavior was coded as an index of story engagement in a shared reading experience with their mother (Crain-Thoreson & Dale, 1992). Engagement in reading at age 2 years predicted knowledge of print conventions at age 4.5 years. These studies suggest a link between motivation and early literacy skills, but the observer measures that were used may be assessing more than just motivation for literacy.

The most direct way of assessing motivation for literacy would be measures completed by the child. These measures may be less prone to biases or ambiguous responses. Some researchers have developed assessments of motivation for literacy that are able to be completed by elementary age children, but many of these measures may not be appropriate for preschoolers. Other measures have shown little variance in motivation or fail to be related to like constructs. One measure used with first graders, the Early Literacy Motivation Survey, assessed perceived confidence (how well a child thought they read, wrote, and spelled), self-efficacy (how well a child thought they would do on a specific task), and attributions (reasons a child gave for their past successes or failures) about literacy by verbally asking children to respond to yes or no questions then asking them to further differentiate their responses (e.g., always/usually; Wilson & Trainin, 2007). Although a confirmatory factor analysis supported motivation as reliably represented by the three components of self-confidence, self-efficacy, and attributions (Wilson & Trainin), this may not be the case in younger children who have little to no experience with reading and have yet to form accurate ideas of their own capabilities. In a similar way, the Reading Self-Concept Scale measured kindergarten through first grade children's competence in, perceived difficulty of and attitudes towards reading by asking children to respond to questions first with a yes or no and then to differentiate their responses further (Chapman & Tunmer, 1995). In this study, it was found that children over five years of age generally had very positive and consistent competency beliefs, perceived difficulty tended to hold constant, and attitudes

towards reading were generally positive in early childhood (Chapman & Tunmer). Inasmuch as few differences were found between children, this measure may not be sensitive to differences in motivation for reading in younger children. The Motivation for Reading Scale has also been used with kindergarten and first grade children (Baker & Scher, 2002; Nolen, 2001; Sonnenschein & Munsterman, 2002). On this measure, children answer questions assessing enjoyment and interest in reading, perceived value of reading, perceived competence in reading, and interest in library-related activities by stating how much they are like or unlike a stuffed animal with certain reading-related qualities. In one study using this measure, most first graders were found to have generally positive attitudes about reading (Baker & Scher). This may have been due to young children's lack of experience with reading, their inability to form accurate perceptions of their own abilities, or their lack of understanding of the value of reading. Overall, these types of measures may be inappropriate for assessing motivation for reading in younger, preschool-age children.

Researchers have also examined children's interest in literacy, the component of motivation for literacy that may be most relevant in young children. Frijters, Barron, and Brunello (2000) showed kindergarten children pictures of happy and sad children engaged in literacy activities and asked them which child they were most like and then how much they were like that child (using different size circles as a visual aid) to assess their interest in literacy. Children's interest in literacy, measured in this way, was related to the children's written language but not to their phonological awareness. Because phonological awareness has been shown to be a main predictor of emergent literacy skills (Wagner & Torgesen, 1987; Lonigan, et al. 2000), it would seem logical for motivation for literacy to be highly correlated with this skill; perhaps even more highly correlated than with written language skills. Perhaps asking children to identify with pictured children and then to represent how alike they are using different size circles was inappropriate and confusing for this age group. The Preschool Reading Attitudes Survey has been used in preschoolers and primarily assesses children's interest in literacy (Sperling & Head, 2002; Saracho & Dayton, 1989; 1991). This measure is intended to assess attitudes for school-, nonschool-, and library-reading by asking children to respond to how they feel about statements regarding reading activities by coloring in smiley faces. Surprisingly, one study using it reported a decrease in reading attitudes through kindergarten as literacy skills continued to increase (Sperling & Head, 2002). Because attitudes about the self are typically

conceptualized as remaining positive in early childhood (Nicholls 1978), such results bring into question the ability of these types of measures to measure motivation for literacy accurately and reliably in preschool children.

The goals of this study were to develop and validate a scale with which it is possible to assess motivation for literacy with preschool children and to define more clearly the relation between motivation for literacy and early literacy skills. The *Preschool Interest in Literacy Experiences Scale (PILES)* was developed to address the shortcomings in prior measures. On this measure, children were presented with pictures of literacy and non-literacy related objects and toys and asked to place each picture into various piles based on how much they liked that particular item. In this way, children were queried directly concerning their own interest and enjoyment in literacy activities as a measure of motivation, thereby eliminating potential biases in observer, teacher, and parent measures. Motivation is, therefore, defined in this study as the child's self-identified interest in literacy-related activities. This may better represent preschool children's motivation for literacy as it may be more developmentally appropriate than assessing perceived competency, perceived value, or observed behaviors.

In using the PILES, this study utilized a more refined concept of motivation for literacy to examine the relationship between literacy interest and early literacy skills in preschool children. To assess the validity of the newly developed PILES, parents' reports of children's activity preferences were also collected. Because the PILES assessed motivation through children's reports of interest in literary activities, it was hypothesized that it would correlate with parents' reports of child interests. Because exposure may be the link between literacy motivation and early literacy skills, parent surveys of literacy exposure and reading habits were also collected. It is hypothesized that exposure to literacy will correlate with motivation for literacy. Because motivation for literacy may be linked to literacy promoting behaviors (Crain-Thoreson & Dale 1992; Lonigan, 1994; Morgan & Fuchs, 2007; Scarborough & Dobrich, 1994; Sonnenschein & Munsterman, 2002; Whitehurst & Lonigan, 1998) and literacy skills in older children (Lepola et al., 2005; Mason et al., 1992; Wigfield & Guthrie, 1997; Wilson & Trainin, 2007), it was hypothesized that motivation for literacy would correlate with early literacy skills in this study.

METHOD

Preschool-age children from the Tallahassee, Florida area were recruited to participate in this study. Some children were recruited initially for a study seeking to identify children at risk for later reading problems and others were recruited solely for participation in this study. Although measures were collected on 339 children, not all measures were completed on each child. Three hundred and twenty children completed the PILES and 300 children completed the Test of Preschool Early Literacy (TOPEL). Parent measures were also collected on these children. Two hundred and eighty six parents completed the Language and Reading Survey (LRS); 204 completed the Child Activities Preference Checklist (CAPC); and 218 completed the Child Book Title Checklist (CBTC). To provide results with the most representative sample, all analyses were conducted using the maximum number of children on which sets of measures were collected. All children were primarily English-speaking and had no known developmental disorders. Children in the full sample ($n = 339$) ranged in age from 34 to 70 months ($M = 55.68$ months, $SD = 6.71$). In this sample, 52% of the children were female and 48% were male. Of the 265 participants for which ethnic background data was available, 83.4% were White, 9.1% were Black, and 7.6% were of another ethnicity. Parents reported income by selecting the range at which their annual family income fell. Of the 266 parents that reported, income ranged from \$5,000 to \$175,000 with a median income range of \$51,000 to \$75,000.

The Preschool Interest in Literacy Experiences Scale (PILES) used a Q-sort type methodology to assess children's interest in literacy related activities. Children were shown pictures of toys and other items and asked to place these pictures into three piles based on how much they liked that item (see Appendix A). First, the child sorted the pictures into three piles of things they "really like," things that are "okay," and things they "don't really like." They were then asked to sort items in each of these three piles further into things they "like more" or "don't like as much" resulting in a total of six piles. Each pile was accompanied by a "smiley face" that was used as a picture cue for the amount of liking for the items in each pile. First children performed a practice sort by putting 10 pictures of food into the six piles to become familiar with the task. They then went on to sort the 36-test items into six piles.

Because an exploratory factor analysis of the CAPC, a parent-report measure of activities preschool children engage in, revealed three main factors of children's interest: literacy, toys, and physical activities, items relating to each of these factors were included in the PILES

(McQueen & Lonigan, 2007). Twelve of the 36 items in the test set related to literacy and included items such as a book, letter blocks, and magazines. Twelve of the items related to physical activity and included items such as a slide, a basketball, and a trampoline. The final 12 items related to toys children play with, such as Mr. Potato Head, Legos, and puppets. The numbers of items in each group were chosen to maximize reliability on each after piloting an earlier version of the measure. All items were clearly pictured and recognized by preschool-age children.

A final literacy score was given based on the final pile in which the literacy-related items ended. Literacy items in the most-liked pile received a score of six and those in least-liked pile received a score of one. A literacy score was computed by summing the scores of all literacy items. Toy scores and physical activity scores were also computed based on the piles in which these items ended. The structure of this task allowed children to report the activities they most like directly. It was designed to measure motivation for literacy through children's self-perception of enjoyment and did not rely on an interpretation of engagement or interest through parent, teacher, or observer measures.

Pilot data were collected on 55 children between the ages of three and five years ($M = 4.2$ years; $SD = .49$) in the Tallahassee area. This piloting was conducted to ensure that the scale was understood by these children and able to be completed. The PILES was shown to be reliable with acceptable internal consistency for each of the subscale scores (literacy: $\alpha = .83$, toy: $\alpha = .77$, physical activity: $\alpha = .71$). Pilot data were also used to reduce an initial 60-item pool to 36 items. Evaluation of item-total correlations, item means and variance, and response distributions were used to eliminate items and reduce error in the PILES. Items that had low item-total correlations, had high or low means, or little variance were eliminated. Other items that children seemed to have problems identifying were also eliminated.

A set of questionnaires was used to measure parent's perception of their child's interests and the child's level of reading exposure. The CAPC, a parent report of how often children engage in literacy and non-literacy related activities served as a comparison measure to the PILES. On this measure, parents rate the frequency (from 1 to 5) in which their child has engaged in a certain activity including literacy activities, toys, and physical activities over the past three months (See Appendix B). In the present sample, reliability of the Literacy ($\alpha = .78$), Toy ($\alpha = .71$), and Physical Activity ($\alpha = .63$) scales of the CAPC were all in the acceptable

range. The Children's Book Title Checklist (CBTC) was used as a proxy measure of children's exposure to books (Senechal, LeFevre, Hudson, & Lawson, 1996; Stanovich & West, 1989). This measure is very similar to the Children's Title Checklist used by Senechal et al. (1996) which was shown to be reliable with a Spearman-Brown coefficient of .86. On this measure, parents were instructed to check off the book titles they recognized from a list that included both real and fake titles. Parents were also asked to complete the Language and Reading Survey (LRS) that included a variety of multiple response questions regarding their child's language and reading development (see Appendix C). An Interest score was formed by summing 7 items on the LRS that related to children's interest (e.g. If your child is read to by you or others, how much does your child enjoy it?; How often does your child play with alphabet games?; About how many times per week does your child look at books by himself or herself?) and an Exposure score was formed by summing 24 items relating to the degree children have been exposed to literacy experiences (e.g. How many children's books do you own?; When reading with my child, I ask my child questions about the story.; About how often do you point out words to your child and tell him or her what they say?). Both LRS scales exhibited adequate reliability in the present sample (LRS Interest $\alpha = .65$, LRS Exposure $\alpha = .83$).

The *Test of Preschool Early Literacy (TOPEL; Lonigan, Wagner, Torgesen, & Rashotte, 2007)* was used to examine emergent literacy skills. This measure has been shown to be a valid and reliable measure for preschool age children. The TOPEL includes Print Knowledge, Definitional Vocabulary, and Phonological Awareness subtests. According to the manual, the TOPEL has an overall internal consistency reliability of .96 and the subtests have internal consistency reliabilities ranging from .86 to .96 among three to five year old children. Test-retest reliability for the TOPEL over a 1-2 week period is in the range of .81 - .89. The inter-scorer reliability coefficient was also found to be high at .98 for the test as a whole. Criterion-prediction validity coefficients for the TOPEL range from .59 to .77, which are within an acceptable range. Print Knowledge (PK) was assessed through children's knowledge of the alphabet and early knowledge about written language conventions and form. In this subtest, administrators ask children to identify letters, identify written words, point to specific letters, identify letters with specific sounds, and say the sounds associated with specific letters. Phonological Awareness (PA) was assessed through elisions tasks in which children say a word then say what is left after removing a specific unit of sound and blending tasks in which children listen to separate units of

sound and combine them to form a word. The Definitional Vocabulary (DV) subtest is designed to assess both surface and deep vocabulary knowledge. In this subtest, the administrator showed a picture and asked the child to tell what the picture is and to describe one of its important features. The results from all three subtests were combined to yield an Early Literacy Index (ELI) composite score, which represents a child's overall emergent literacy skills. Participants in the current study scored similar to the normative population on the TOPEL ELI ($M = 102.83$, $SD = 13.82$).

RESULTS

Descriptive Statistics and Preliminary Analyses

Different groups of children completed different subsets of measures. Analyses within each group of related measures were conducted on the maximum number of children within that subset. Descriptive statistics for these different subgroups of children are shown in Table 1. Comparisons between children in each of these subgroups to all other children from the full sample revealed few statistically significant differences. Children in the group that had data on all measures ($n = 132$) had significantly lower CAPC toy, $t(202) = -1.99, p = 0.05$, and TOPEL DV, $t(298) = -2.52, p = 0.01$, scores than did children missing one or more measure. Children in the group that had data on the LRS and the TOPEL had significantly lower LRS exposure, $t(284) = -2.61, p = 0.01$, and higher TOPEL DV, $t(298) = 2.86, p < 0.01$, scores than did children without data on both the LRS and TOPEL. Finally, children who had data on the CBTC and the TOPEL had significantly lower TOPEL DV scores, $t(216) = -2.50, p = 0.01$, than did children without data on both the CBTC and TOPEL. No other significant differences emerged.

Outliers were corrected using +/- two interquartile ranges from the median. Although the PILES literacy subscale, PILES physical activity subscale, LRS Interest scale, LRS Exposure scale, TOPEL DV score, and TOPEL ELI score exhibited significant skew ($p < .05$), correlations between variables using transformed data revealed no differences from untransformed data. Therefore, all analyses were conducted with untransformed data. Inspection of data within each subgroup revealed no further outliers or skew.

Identifying Subscales of the PILES

An exploratory factor analysis (EFA) was conducted on the full sample of children who had completed the PILES ($n = 320$). All 36 items of the PILES were used in the EFA to determine if items loaded onto the literacy, toy, and physical activity subscales that were proposed. Examination of initial eigenvalues suggested there were between one and 10 factors. Comparisons across solutions indicated that a three-factor solution was the most interpretable as it maximized the number of items with high loadings ($\lambda \geq .30$) and minimized the number of items with cross-loadings. Factor loadings for each item, based on a three-factor EFA in which varimax rotation was used to maximize the interpretability of the results, are shown in Table 2.

Table 1
Descriptive Statistics for Each Subgroup Used in Analyses

Variable	Group											
	1		2		3		4		5		6	
<i>N</i>	132		196		294		193		258		197	
% Female	47		49		51		49		51		51	
% Male	53		50		48		50		48		49	
	<i>M</i>	<i>(SD)</i>										
Age Months	54.25	(7.90)	54.66	(7.26)	55.10	(6.90)	54.47	(7.31)	54.86	(6.75)	54.75	(7.06)
<i>PILES</i>												
Literacy	53.68	(10.49)	54.25	(10.68)	53.47	(10.97)	-	-	-	-	-	-
Toy	54.87	(10.65)	54.72	(10.75)	54.96	(10.51)	-	-	-	-	-	-
Physical Activities	58.87	(9.57)	59.16	(9.24)	58.46	(9.00)	-	-	-	-	-	-
<i>CAPC</i>												
Literacy	28.09	(6.66)	28.16	(6.71)	-	-	27.98	(6.71)	-	-	-	-
Toy	31.49	(5.90)	32.06	(5.59)	-	-	31.97	(5.62)	-	-	-	-
Physical Activities	34.15	(5.92)	34.16	(5.93)	-	-	34.07	(5.93)	-	-	-	-
<i>LRS</i>												
Interest	27.90	(5.77)	27.92	(5.86)	-	-	-	-	28.14	(5.72)	-	-
Exposure	66.19	(12.79)	66.86	(13.37)	-	-	-	-	66.68	(13.34)	-	-
<i>CBTC</i>	10.27	(6.70)	-	-	-	-	-	-	-	-	10.89	(6.64)
<i>TOPEL</i>												
DV	100.27	(12.12)	-	-	101.89	(11.33)	102.85	(11.84)	102.71	(11.09)	100.87	(11.10)
PK	107.22	(15.69)	-	-	105.48	(15.32)	106.59	(15.84)	105.50	(15.60)	105.48	(15.64)
PA	99.39	(14.44)	-	-	101.06	(14.72)	101.16	(15.17)	101.33	(14.78)	100.55	(13.96)
ELI	102.23	(14.00)	-	-	102.74	(13.75)	103.68	(14.18)	103.20	(13.58)	102.14	(13.25)

Note. PILES = Preschool Interest in Literacy Experiences Scale; CAPC = Child Activities Preference Checklist; LRS = Language and Reading Survey; CBTC = Children's Book Title Checklist; TOPEL = Test of Preschool Early Literacy; DV= Definitional Vocabulary; PK= Print Knowledge; PA= Phonological Awareness; ELI = Early Literacy Index; Group 1 = Children with data on all measures; Group 2 = Children with data on the PILES, the CAPC, and the LRS; Group 3 = Children with data on the PILES and the TOPEL; Group 4 = Children with data on the CAPC and the TOPEL; Group 5 = Children with data on the LRS and the TOPEL; Group 6 = Children with data on the CBTC and the TOPEL.

Table 2

*Summary of Items and Factor Loadings for Varimax Rotation of Three-Factor Solution
Exploratory Factor Analysis of the Preschool Interest in Literacy Experiences Scale*

Item	Factor Loadings			Communalities
	Factor 1	Factor 2	Factor 3	
1. ABC Book*	.53	.23	.06	.34
10. Book*	.52	.20	.16	.33
4. Notebooks*	.48	.14	.13	.27
12. Crayons*	.48	.07	.21	.28
11. Pencil and Paper*	.46	.13	.32	.33
2. Sidewalk Chalk*	.45	.12	.23	.27
6. ABC Blocks*	.41	.38	.05	.32
3. Dry-erase Board*	.39	.04	.36	.28
7. Magazines*	.38	.37	-.02	.28
28. Red Wagon	.38	.27	.29	.30
20. Puppets	.38	.25	.26	.27
9. Chalk Board*	.38	.20	.23	.24
8. Finger Paint*	.35	.18	.27	.23
5. ABC Tiles*	.34	.32	.07	.22
29. Turtle Floaty	.34	.16	.13	.16
15. Plastic Animals	.32	.28	.00	.19
17. Shape Puzzle Box	.19	.55	.11	.35
24. Train Set	.12	.52	.14	.31
13. Legos	.09	.50	.24	.31
22. Train Puzzle	.30	.46	.08	.31
19. Blocks	.22	.44	.17	.27
21. Bead Game	.20	.40	.30	.30
26. Slide	.23	.36	.33	.28
33. Sand Box Toys	.25	.32	.30	.26
14. Mr. Potato Head	.28	.28	.21	.20
32. Trampoline	.07	.05	.52	.27
27. Swing Set	.26	.06	.43	.26
36. See-Saw	.31	.09	.43	.29
35. Bubbles	.24	.21	.41	.27
30. Basketball	.06	.24	.38	.21
25. Hop Ball	.09	.07	.37	.15
31. Play Ground Ball	.14	.22	.35	.19
18. Xylophone	.30	.22	.34	.26
16. Matchbox Cars	-.11	.29	.33	.20
34. Roller Skates	.30	.03	.32	.20
23. Play Doh	.16	.31	.32	.23

Note. *indicate items initially selected as literacy-related activities; loadings shown in bold > .30.
n = 320.

This model explained 26.1 percent of the variance. All literacy-related items loaded onto Factor 1, but several items not associated with literacy (e.g., red wagon and puppets) also loaded onto this factor. Many of the items related to toys and games loaded onto Factor 2, and most of the physical activity items loaded onto Factor 3. Several items loaded onto multiple factors and one item, Mr. Potato Head, failed to load onto any of the factors. Factor-derived subscale scores were computed by summing items with loadings greater than .30 for each factor. All of these factor-derived subscales were moderately inter-correlated, with correlations of .64 between Factor 1 (Literacy) and Factor 3 (Physical Activities), .79 between Factor 1 and Factor 2 (Toys), and .66 between Factor 2 and Factor 3.

To examine the relations between children's reported interest in literacy related activities and other variables of interest (i.e., parent-reported interest, exposure, and early literacy skills) and to isolate children's interest in literacy related activities, subscale scores were computed by summing only like items of the PILES. Three PILES subscale scores were formed by summing scores of the 12 items that related to each type of activity. All subscales evidenced acceptable reliability (Literacy $\alpha = .81$; Physical Activity $\alpha = .75$; Toy $\alpha = .78$). These subscale scores correlated moderately with each other. The Literacy and Toys scales correlated at .65; the Literacy and Physical Activities scales correlated at .63; and the Toys and Physical Activity scales correlated at .66 ($n = 320$). Because of the high alphas and overall lower correlation among subscales, these unit-sum scores, rather than the factor-derived subscale scores, were used in all subsequent analyses.

Convergent and Discriminant Validity Analyses

Validity of the PILES was examined by comparing the PILES scales to the other measures that assessed children's literacy interest. The first set of analyses examined the pattern of correlations for the 196 children who had data from the PILES, the CAPC, and the LRS. Correlations of the subscales of the PILES with the subscales of the CAPC and the interest variable from the LRS are shown in Table 3. As can be seen in the table, correlations between scores on the PILES and CAPC subscales were small and not statistically significant. There was a small and marginally significant correlation between the PILES Literacy subscale and the CAPC Literacy subscale. PILES subscales were not significantly correlated with the interest score from the LRS. In contrast, the Literacy subscale, as well as the Toy subscale, of the CAPC was significantly correlated with the interest scores from the LRS.

Table 3
Correlations between Literacy Interest Measures

Measures	PILES Subscales			CAPC Subscales			LRS Subscales	
	Literacy	Toys	Physical	Literacy	Toys	Physical	Interest	Exposure
<i>PILES Subscales</i>								
Literacy	-							
Toy	.71**	-						
Physical Activity	.62**	.64**	-					
<i>CAPC Subscales</i>								
Literacy	.13 [†]	.07	-.02	-				
Toy	.09	-.03	-.01	.61**	-			
Physical Activity	-.02	.04	.04	.34**	.32**	-		
<i>LRS Subscales</i>								
Interest	.01	-.01	-.03	.51**	.43**	.08	-	
Exposure	.03	-.04	-.03	.51**	.44**	.27**	.58**	-

Note. PILES = Preschool Interest in Literacy Experiences Scale; CAPC = Child Activities Preference Checklist; LRS = Language and Reading Survey.

$n = 196$.

[†] $p < .10$. ** $p < .05$. *** $p < .01$.

Correlations between subscales of the PILES from the full sample, as well as for this restricted sample, were moderate to high, suggesting little differentiation of constructs measured by the subscales of the PILES. In contrast, correlations between the subscales of the CAPC, presumed to measure the same domains as the subscales of the PILES, were small to moderate. Because of the high overlap of scores on the PILES subscales and because there were no statistically significant correlations between the PILES subscales and the other interest measures, correlations for hypothesized convergent relations were not compared statistically to correlations for hypothesized discriminant relations.

Relations Between Literacy Interest, Exposure, and Early Literacy Skills

Because motivation for literacy is presumed to impact early literacy skills, in part, by increasing children's exposure to literacy, the pattern of correlations between these variables was examined. These analyses also served to further examine the validity of the PILES. First, the relation between literacy interest and exposure to literacy was examined. Correlations between interest and exposure measures for the 196 children who had data from the PILES, the CAPC, and the LRS (as well as the 132 children who had complete data from all measures) are shown in Table 4. In the larger sample none of the PILES subscales were significantly correlated with parent's reports of children's exposure to literacy (the LRS Exposure score and the CBTC). Yet,

in the sample of children who had data on all measures, the LRS Exposure score was significantly correlated with the PILES Toy subscale and marginally correlated with the PILES Physical Activities subscale. Because there were so few statistically significant correlations between the PILES subscales and the exposure measures, hypothesized convergent relations were not compared statistically to correlations for hypothesized discriminant relations.

Table 4
Correlations between Exposure to Literacy and Literacy Interest Measures

Measures	LRS Exposure ^a	LRS Exposure ^b	CBTC ^b
<i>PILES Subscales</i>			
Literacy Interest	.03	-.08	-.05
Toys Interest	-.04	-.18*	.01
Physical Activity Interest	-.01	.15 [†]	-.10
<i>CAPC Subscales</i>			
Literacy Interest	.51**	.52**	.14
Toys Interest	.44**	.47**	.17*
Physical Activity Interest	.27**	.21*	-.03
<i>LRS Subscales</i>			
LRS Interest	.58**	.64**	.19*
LRS Exposure	-	-	.21*

Note. PILES = Preschool Interest in Literacy Experiences Scale; CAPC = Child Activities Preference Checklist; LRS = Language and Reading Survey; CBTC = Children's Book Title Checklist.

Ns vary across measures. ^a*n* = 196. ^b*n* = 132.

[†]*p* < .10. **p* < .05. ***p* < .01.

The other measures of literacy interest did correlate with the exposure measures. On the CAPC, the Literacy subscale (as well as CAPC Toy and CAPC Physical Activity subscales) significantly correlated with the LRS Exposure score in both subsamples of children. The CAPC Toy subscale also significantly correlated with the CBTC. The LRS interest score was significantly correlated with both the LRS exposure score and the CBTC. A comparison of correlations between parents' reports of exposure to literacy on the LRS and children's interest in literacy, toy, and physical activities reported from the CAPC was completed using the method outlined by Meng, Rosenthal and Rubin (1992). All subsequent analyses comparing correlations also used this procedure. In both the *n* = 196 and *n* = 132 subsamples of children, the correlation between the CAPC Literacy scale and the LRS Exposure scale was significantly higher than the

correlation between the CAPC Physical Activity and LRS Exposure scale ($n = 196$, $Z = 3.3$, $p < .01$; $n = 132$, $Z = 4.29$, $p < .01$). No other significant differences were found between CAPC subscale and LRS exposure correlations. The correlation between the CAPC Toy subscale and CBTC was also compared to the correlation between the CAPC Literacy subscale and CBTC. These correlations did not significantly differ ($n = 132$, $Z = .41$, $p = .34$), indicating the CAPC Toy interest subscale was not more highly correlated with CBTC scores than CAPC Literacy interest subscale.

To examine whether more exposure to literacy related to greater early literacy skills, the correlations between exposure measures and TOPEL scores were examined. Correlations between TOPEL scores and all other measures are shown in Table 5. As can be seen in the table, correlations between the LRS Exposure score and TOPEL scores (PK, PA and the ELI) were small but statistically significant for the subset of children who completed both the LRS and the TOPEL. For children who completed the CBTC and the TOPEL, CBTC scores were correlated with all subtests of the TOPEL.

Table 5
Correlations between Early Literacy Skills and Literacy Interest and Literacy Exposure

Measures	Test of Preschool Early Literacy Subscales			
	Definitional Vocabulary	Print Knowledge	Phonological Awareness	Early Literacy Index
PILES Subscales^a				
Literacy Interest	-.02	-.01	.03	.00
Toys Interest	-.04	.00	.00	-.01
Physical Activity Interest	.03	-.02	.12*	.06
CAPC Subscales^b				
Literacy Interest	-.02	.18*	.07	.11
Toys Interest	.12 [†]	.21**	.15*	.22**
Physical Activity Interest	.01	-.03	-.09	-.04
LRS Subscales^c				
LRS Interest	.14*	.31**	.15*	.27**
LRS Exposure	.07	.13*	.13*	.15*
CBTC Score^d				
	.23*	.20**	.26**	.30**

Note. PILES = Preschool Interest in Literacy Experiences Scale. CAPC = Child Activities Preference Checklist.

LRS = Language and Reading Survey. CBTC = Children's Book Title Checklist. Ns vary across measures. ^a $n = 294$.

^b $n = 193$. ^c $n = 258$. ^d $n = 197$.

[†] $p < .10$, * $p < .05$, ** $p < .01$.

Finally, the relations between literacy interest and TOPEL scores were examined to determine the impact of literacy interest on emergent literacy skills. As can be seen in Table 5, all analyses were conducted with the maximum number of data available for each set of measures. For the children with data on the TOPEL and the PILES ($n = 294$) correlations between the PILES subscales and TOPEL scores were small and not statistically significant, with the exception that the PILES Physical Activity scale was significantly correlated with the PA subscale of the TOPEL. Because so few significant correlations were found, correlations between TOPEL scores and the PILES literacy subscale were not compared statistically to correlations between the TOPEL scores and non-literacy related PILES subscales.

For the subsample of children with data on the TOPEL and the LRS ($n = 193$), parents' reports of literacy interest on the LRS were significantly related to all of the TOPEL scores. As for children who had data on the CAPC and the TOPEL ($n = 258$), the correlation between the CAPC Literacy subscale and the TOPEL PK subscale was small and significant. The CAPC Toy subscale also was significantly or marginally significantly correlated with the TOPEL subscale scores, however. In comparing the correlations between the CAPC Toy subscale and TOPEL scores to the CAPC Literacy subscale and TOPEL scores, few of the correlations were significantly different. The correlation between the CAPC Toy subscale and the DV score was significantly higher than the correlation between CAPC Literacy subscale and the DV score ($Z = 2.19, p = .01$). Also, the correlation between the CAPC Toy subscale and the ELI score was significantly higher than the correlation between the CAPC Literacy subscale and the ELI score ($Z = 1.75, p = .04$).

To determine if the relation between interest in literacy and early literacy skills was higher than the relation between exposure to literacy and early literacy skills the correlations between LRS scores and TOPEL scores were compared. In the sample of children with data on the LRS and the TOPEL ($n = 258$), the correlation between the LRS Interest score and the TOPEL ELI was significantly higher than the correlation between the LRS Exposure score and the ELI ($Z = 2.12, p = .02$). Also, the correlation between the LRS Interest score and the TOPEL PK score was higher than the correlation between the LRS Exposure and the TOPEL PK score ($Z = 3.20, p < .01$).

To compare how all measures of literacy interest and exposure to literacy relate to early literacy skills, correlations between all measures were examined in the 132 children with data on all measures. As can be seen in Table 6, the correlations between the PILES Literacy subscale and TOPEL scores were again small and non-significant in this subsample. The correlation between the CAPC Literacy scale and TOPEL PK score was again small and significant, but the correlation between the CAPC Literacy scale and TOPEL ELI was also marginally significant. In this subsample correlations between LRS scores and TOPEL scores were more highly correlated, overall, than in the larger subsample (see Table 5), but they exhibited the same pattern of correlations as found in that subsample (LRS Interest was correlated with all TOPEL scores, LRS Exposure was correlated with the PK, PA, and ELI TOPEL Scores). The correlations between the CBTC and TOPEL scores were also higher in this subsample than in the larger sample found in Table 5.

Correlations between TOPEL scores and literacy interest measures were compared to correlations between TOPEL scores and exposure to literacy measures. Correlations between the PILES Literacy subscale and TOPEL scores were significantly smaller than all correlations between the CBTC and TOPEL scores (DV, $Z = 2.05, p = .02$; PK, $Z = 2.52, p < .01$; PA, $Z = 3.74, p < .01$; ELI, $Z = 3.5, p < .01$) and between the LRS Exposure score and TOPEL scores (PK, $Z = 2.40, p = .01$; PA, $Z = 2.63, p < .01$; ELI, $Z = 2.63, p < .01$), except the correlation between LRS Exposure and the TOPEL DV score, which was not significantly different than the correlation between the PILES Literacy subscale and the TOPEL DV score. On the CAPC, the correlations between the CAPC Literacy subscale and TOPEL DV and PA were significantly smaller than the respective correlations between the CBTC and the TOPEL DV and PA (DV, $Z = 1.84, p = .03$; PA, $Z = 1.80, p = .04$). No other significant differences were found when comparing correlations between the CAPC Literacy subscale and TOPEL scores to correlations between the CBTC and TOPEL scores or to correlations between the LRS Exposure score and TOPEL scores. Correlations between the LRS Interest score and TOPEL scores were also compared to correlations between exposure scores and TOPEL scores. The correlations between the LRS interest score and TOPEL scores did not significantly differ from any correlations between the CBTC and the TOPEL. In this sample, like in the sample of children who completed LRS and TOPEL scores, the correlation between the LRS Interest and TOPEL PK scores was significantly higher than the correlation between LRS Exposure and TOPEL PK scores ($Z =$

1.68, $p = .05$) and the correlation between the LRS Interest and TOPEL DV scores was significantly higher than the correlation between the LRS Exposure and TOPEL DV scores ($Z = 1.91, p = .03$). Correlations between these measures did not significantly differ in their correlations with TOPEL PA and ELI.

Table 6

Correlations Between Interest, Exposure, and Early Literacy Skills of Children Who Completed All Measures

Measure	PILES			CAPC			LRS		CBTC	DV	TOPEL		ELI
	Literacy	Toys	Physical	Literacy	Toys	Physical	Interest	Exposure	CBTC		PK	PA	
PILES													
Literacy	-												
Toys	.71**	-											
Physical	.65**	.66**	-										
CAPC													
Literacy	.08	.07	.04	-									
Toys	.02	-.08	.00	.64**	-								
Physical	.02	.11	.07	.38**	.32**	-							
LRS													
Interest	-.01	-.01	.01	.50**	.42**	.07	-						
Exposure	-.09	-.18*	-.15 [†]	.52**	.47**	.21*	.64**	-					
CBTC	-.05	.01	-.10	.14	.17*	-.03	.19*	.21*	-				
TOPEL													
DV	-.04	-.01	.08	.01	.10	.07	.24**	.10	.22*	-			
PK	-.10	.00	-.05	.19*	.28**	.04	.33**	.21*	.22**	.38**	-		
PA	-.13	-.15 [†]	-.03	.13	.21*	.01	.21*	.20*	.33**	.52**	.42**	-	
ELI	-.11	-.06	-.01	.15 [†]	.26**	.06	.33**	.23**	.33**	.76**	.79**	.81**	-

Note. PILES = Preschool Interest in Literacy Experiences Scale; CAPC = Child Activities Preference Checklist; CBTC = Children's Book Title Checklist; LRS = Language and Reading Survey; TOPEL = Test of Preschool Early Literacy; DV= Definitional Vocabulary; PK= Print Knowledge; PA= Phonological Awareness; ELI = Early Literacy Index.

[†] $p < .10$. * $p < .05$. ** $p < .01$.

$n = 132$.

DISCUSSION

The goals of this study were to develop and validate a measure for assessing preschool children's interest in literacy activities. Overall, the results of this study indicate that the PILES is a poor measure of motivation for literacy in preschool age children. The high correlations between subscales on the PILES, coupled with the results from the factor analysis in which items of separate domains of interest grouped together, demonstrated that this measure did not adequately distinguish between children's interest in literacy, toys, and physical activities. How parents and children reported motivation for literacy also differed, as indicated by low correlations between the PILES Literacy interest subscale and the finding that parents' reports of literacy interest, but not children's reports of literacy interest, correlated with exposure measures and early literacy skills. Differences found in relations of interest to exposure and interest to early literacy skills may be based on how motivation for literacy is measured. The correlations between parent reports of literacy interest, exposure to literacy, and early literacy skills do indicate these variables are related in preschool-age children, further expanding on past research in this area.

Children's reports of their interest in literacy may have differed from parent's reports of children's interest in literacy for several reasons. Low correlations between parent and child reports and between children's reports of interest and exposure and early literacy skills may indicate that children do not accurately report their degree of interest in literacy. To naturally foster learning and development, young children are prone to find a variety of objects and activities interesting. In fact, children in the present study did seem to view many of the items in the PILES positively. The mean score of all PILES items (including literacy items) was well above the middle of the scale. The high literacy scores could also be the result of social pressure children felt to report being interested in literacy. Children were all tested in school settings and may have felt pressure to state a liking of literacy related toys. However, scores on all items, including toys and physical activity related items had high means. It is also possible that children did not fully understand the task. Yet, this is less likely because piloting was conducted to ensure children were able to recognize items and understand directions, children were given many practice items before testing, and testers reported that all children understood the instructions.

Perhaps children of this age cannot accurately reflect on their motivation for literacy or their interests. Children may be responding instead to "interest of the moment" instead of

patterns of choices over a longer period of time. It may be that interest as a trait-like dimension is not present in children this young. Children's engagement in different activities may be more driven by more proximal motivations than by a child-centered preference. Unfortunately, little is known about the development of literacy interest in young children. Although some research suggests boys develop interest in specific conceptual domains (e.g., dinosaurs, airplanes; Alexander, Johnson, Leibham, & Kelly, 2008), the same developmental patterns are not found in girls. The author knows of no research that has examined the development of literacy interest in young children. Although preschool-age children seem to agree unanimously (at least within the same gender) on things that are interesting or foods that they would want to eat, they may not be able to discriminate interest among different types of toys and games with which they like to play. If this is the case, a measure that accurately assessed the amount of time children would spend engaged in literacy activity may better reflect literacy interest.

That children's reports of literacy interest did not relate to parent reports of exposure to literacy or early literacy skills may indicate children's motivation for literacy is not a primary factor in determining exposure to literacy or the development of early literacy skills. Other researchers examining slightly older children have also failed to find relations between children's self-reported interest and exposure to literacy or self-reported interest and literacy skills. In one study, kindergarten children's composite scores of self-reported interest in literacy did not significantly correlate with the home literacy experiences score (Frijters et al., 2000). In first graders, child self-report of overall motivation for reading failed to correlate with parent reports of library visits, children's storybook reading, or skills book reading (Baker & Scher, 2007). In fact, parent reports of shared-reading experiences using basic-skills books (e.g. ABC books) negatively correlated with children's self-reports of motivation (Baker & Scher). In another study, children's self-reports of reading attitudes (i.e. Do you like word games in class?; Is it fun for you to read books?; Do you look forward to reading?; Do you like reading to yourself?; Do you like reading at home?) were not correlated with literacy skills such as letter identification, word identification, pseudo-word naming, or spelling (Chapman & Tunmer, 1995).

The inability of so many studies to link children's self-reports of motivation to other seemingly related constructs again points out the difficulty of measuring motivation for literacy through self-report in young children. It may not be that these constructs are unrelated, but that children's self-reports of motivation are inherently inaccurate. Parent and child reports have been

shown to differ when examining a variety of constructs. Researchers have found parent reports of impulsivity (Schwebel, 2004), internalizing and externalizing problems (Kidwell & Barnett, 2003), and post-op pain (Chambers et al., 1999) to be low or non-significantly correlated with child reports of the same variables.

In the current study, parent reports provide different results than child reports. Overall, parent reports of interest and exposure were moderately related and both were correlated with early literacy skills. This finding supports the idea that interest in literacy may increase exposure, thereby increasing experience with literacy activities and leading to more early literacy skills development. However, it is important to keep in mind that parent reports are prone to biases that may have increased the correlations between interest in literacy, literacy exposure, and early literacy skills. Correlations between parent reports of exposure and literacy interest may be due to the fact that parents reported at the same time, in the same survey packet, children's interest and exposure to literacy. Yet, measurement variance alone does not explain all the results found because children, not parents, completed the early literacy measure.

Parent biases may be another source of variance in correlations found between interest, exposure, and early literacy measures. Parents may have "seen what they want to see" and reported that their child was more interest or engaged in literacy than they actually were. For example, parents may have reported that their child more consistently engaged in literacy activities because the parents themselves had provided more literacy activities to their child or because their child had more early literacy skills. However, numerous previous studies have also linked parent reported child interest to early literacy skills. Parent reports of interest and engagement in literacy have been shown to predict reading skills through third grade (Mason et al., 1992). Parent reports of interest, done retrospectively, does relate to later reading skills (Thomas, 1984). Parent reports of exposure to literacy have also been found to be related to early literacy skills (for review, see Scarborough & Dobrich, 1994). For example, parent reports of the frequency of storybook reading were related to phonological awareness skills in 5 year olds (Sonnenechein & Musterman, 2002) and parent reports of story reading at 24 months predicted language ability at 4.5 years (Crain-Thoreson & Dale, 1992). Because parent reports and methods varied throughout these studies, it is less likely that the relations found between interest, exposure, and early literacy skills in the present study are solely a product of parent biases.

The pattern of results found in this study leads to the question of the best way to measure motivation for literacy in young children. Studies that use only parent reports to assess motivation for literacy may be obtaining biased or incomplete pictures of children's characteristics (Mason et al., 1992; Thomas, 1984). Observer and teacher reports may be viable options for general reports of characteristics, but they are prone to their own biases and inaccuracies due to less familiarity with the child. Often, child self-reports are completely excluded from research examining characteristics of young children. Perhaps this is because of the lack of accurate self-report measures available for this age group, and, as the present study shows, developing self-report measures for three to five year olds can prove difficult. However, this study, along with previous studies examining children's characteristics, has found differences in child and parent reports of the same constructs. The best way to assess young children's characteristics may be to use multiple measures including reports from children, when accurate measures are available, along with reports from parents, teachers, and observers.

The results of the current study do show that, based on parent reports, children's motivation for literacy, exposure to literacy, and early literacy skills are related. A child who is interested in literacy activities engages in these more thereby stimulating the development of reading skills. This study is the first to find support for the link between motivation for literacy, exposure to literacy, and early literacy skills in pre-readers. These results indicate that motivation for literacy is present during the same period in which early literacy skills begin developing. Therefore, increasing motivation for literacy may lead to greater increases in both exposure to literacy and early literacy skills over time.

Although the results of this study provided important new information regarding motivation for literacy in young children, it is not without limitations. Because all measures were collected concurrently, it is not possible to determine the direction of these relations. However, the findings do set the stage for longitudinal research examining these constructs and the potential causal relations between them. It is also important to note that not all measures were collected on all children. Analyses of each of the subgroups of children provided few differences between groups; yet, it is possible the groups differed on some unmeasured variable. For example, parents who completed all measures may view literacy and education as more important and reported their children to have more literacy interest and exposure than parents who did not complete these measures. However, this seems unlikely because similar patterns of

relations between literacy interest, literacy exposure, and early literacy skills were found in all subgroups of children. Because a lack of motivation for literacy has a potential to limit literacy experiences from a very early age, it is essential that these relations continue to be examined.

APPENDIX A

PILES Items

Practice Items:

1. Brussel sprouts
2. Peas
3. Broccoli
4. Corn on the cob
5. Loaf of bread
6. Apple
7. Banana
8. Spaghetti
9. Pizza
10. Ice cream

Test Items:

Literacy:

1. ABC book
2. Side walk chalk
3. Dry-erase board
4. Notebooks
5. ABC tiles
6. ABC blocks
7. Magazines
8. Finger paint
9. Chalk board
10. Book
11. Pencil and paper
12. Crayons

Toy:

1. Legos
2. Mr. Potato head
3. Plastic animals
4. Matchbox cars
5. Shape puzzle box
6. Xylophone
7. Blocks
8. Puppets
9. Bead game
10. Train puzzle
11. Play doh
12. Train set

Physical Activity:

1. Hop ball
2. Slide
3. Swing set
4. Red wagon
5. Turtle floaty
6. Basketball
7. Play ground ball
8. Trampoline
9. Sand box toys
10. Roller skates
11. Bubbles
12. See-saw

APPENDIX B

Instructions: Children differ in the types of games and toys they most enjoy. Often these preferences change as children get older and encounter new activities. Please rate how frequently your child has played with the following in the past three months.

	Rarely (every 2 weeks)	Not often	Occasionally (weekly)	Often	Very often (daily)
1. Playing Ball (e.g. catch, soccer)	1	2	3	4	5
2. Sand Box	1	2	3	4	5
3. Musical Toys or Instruments	1	2	3	4	5
4. Drawing, Coloring, Painting	1	2	3	4	5
5. Matchbox cars, Trucks	1	2	3	4	5
6. ABC Books (looking at by self)	1	2	3	4	5
7. Bicycle, Tricycle, Big Wheel, etc.	1	2	3	4	5
8. ABC's (plastic/magnetic letter)	1	2	3	4	5
9. Pull Toys	1	2	3	4	5
10. Fisher Price Toys	1	2	3	4	5
11. Board Games (Candyland, etc.)	1	2	3	4	5
12. Swing, Slide, See-Saw	1	2	3	4	5
13. Climbing Gym	1	2	3	4	5
14. Alphabet Blocks	1	2	3	4	5
15. Numbers	1	2	3	4	5
16. Children's Books (looking at by self)	1	2	3	4	5
17. Play-Doh, Clay, etc.	1	2	3	4	5
18. Stuffed Animals, Dolls, Puppets	1	2	3	4	5
19. Cards (Uno, etc.)	1	2	3	4	5
20. Television	1	2	3	4	5
21. Rocking Horse	1	2	3	4	5
22. Magazines (looking at by self)	1	2	3	4	5
23. Tools	1	2	3	4	5
24. Playing House	1	2	3	4	5
25. Legos, Blocks, Tinker Toys, etc.	1	2	3	4	5
26. Letter Puzzles	1	2	3	4	5
27. Play Store	1	2	3	4	5
28. Tag, Chase, etc.	1	2	3	4	5
29. Listening to Taped Stories	1	2	3	4	5
30. Shape Puzzles, Picture Puzzles	1	2	3	4	5
31. Listening to Music	1	2	3	4	5

APPENDIX C

Items from Language and Reading Survey Used to Index Literacy Interest and Exposure to Literacy

Interest Items

1. If your child is read to by you or others, how much does your child enjoy it?
2. About how many times per week does your child ask to be read to?
3. About how many times per week does your child look at books by himself or herself?
4. About how often does your child ask you what printed words say (e.g., in books, on signs)?
5. About how often does your child attempt to write words?
6. How often does your child play with alphabet games?
7. When reading with my child, I find that she or he rapidly loses interest and does not pay attention.

Exposure Items

8. How many children's books do you own?
9. About how many of these are alphabet books?
10. How many times per week do you read to your child at home?
11. About how many times per month do you go to the library with your child?
12. Has your child been in any library programs?
13. When reading with my child, I point out when words rhyme.
14. When reading with my child, I ask my child to name objects in the pictures.
15. When reading with my child, I move my finger along with the words I am reading out loud.
16. When reading with my child, I try to engage my child in the story by having him or her make the face that shows how the character is feeling, make sounds for the animals, use gestures, etc.
17. When reading with my child, I ask my child questions about the story.
18. When reading with my child, I try to get my child to tell the story her or himself by describing the pictures
19. When reading to my child, I ask questions or draw his or her attention to the text
20. When reading with my child, I make connections between the content of the story and my child's interests or experiences.
21. When reading with my child I let my child choose the storybook we read together.
22. When reading with my child, I have my child ask me questions about the story.
23. When reading with my child, I use different voices for different characters in the story.
24. When reading with my child, I have my child turn the pages of the book.
25. When reading with my child, I praise or encourage my child's involvement.
26. When reading with my child, I repeat what my child says back to him or her.
27. About how often do you try to teach your child the letters of the alphabet?
28. About how often do you help your child try to learn to write letters, his or her name, or other words?
29. About how often do you play rhyming games with your child?
30. About how often do you play sound games with your child such as pointing out that two words start with the same sound?

31. About how often do you point out words to your child (e.g., in books, on signs) and tell him or her what they say?

Scaling: Item 1 was rated as: a little, pretty much, very much, loves it; Items 2, 3, and 10 were rated as: never, once/week, twice/week, three times/week, four times/week, five times/week, almost every day; Items 4-6, 11, and 27-31 were rated as: never, almost never, monthly, twice/month, weekly, every other day, daily; Items 7, and 13-26 were rated as: never, rarely, sometimes, usually, always; Item 8 required parents to circle a number range from 0 to 300+; Item 9 required parents to circle a number range from 0 to 30+; and Item 12 was rated as: yes, no.

APPENDIX D
HUMAN SUBJECTS RESEARCH APPROVAL AND CONSENT
FORM

Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 · FAX (850) 644-4392

RE-APPROVAL MEMORANDUM

Date: 9/9/2010
To: Laura Hume
Dept.: PSYCHOLOGY DEPARTMENT
From: Thomas L. Jacobson, Chair

Re: Re-approval of Use of Human subjects in Research
Assessment of Motivation for Literacy in Preschoolers

Your request to continue the research project listed above involving human subjects has been approved by the Human Subjects Committee. If your project has not been completed by 9/7/2011, you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the committee.

If you submitted a proposed consent form with your renewal request, the approved stamped consent form is attached to this re-approval notice. Only the stamped version of the consent form may be used in recruiting of research subjects. You are reminded that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report in writing, any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor are reminded of their responsibility for being informed concerning research projects involving human subjects in their department. They are advised to review the protocols as often as necessary to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

Cc:
HSC No. 2010.4901

INFORMED CONSENT FORM

Title: ASSESSMENT OF MOTIVATION FOR LITERACY IN PRESCHOOLERS

Investigator: LAURA E. HUME

We are asking you and your child to participate in a research project. The purpose of this research project is to examine motivation for literacy in preschool children. This project will help develop a way to assess motivation for literacy in preschoolers and determine the importance of motivation to the development of early literacy skills.

If you decide to participate in this phase of the project, your part in the project may include:

1. Completing questionnaires that ask for information about your child's reading habits, developmental history, and preferences for different activities.

Should you decide to participate, your child's part in the project may include:

1. Participate in the assessment of motivation for literacy and the assessment of early literacy skills. These assessments will be conducted by trained project personnel at your child's preschool. The tasks are similar to typical activities in the early childcare setting and involve placing pictures of toys into piles, identifying letters and letter sounds, saying the resulting word after sounds are added or eliminated, and identifying and describing pictures. Children typically enjoy these tasks. We will not continue a task if your child indicates that he or she does not want to participate. Children will receive a small age-appropriate reward (e.g., toy, stickers) for their participation. We anticipate that each assessment will require no more than 1 hour of your child's time over a few shorter sessions.

Your participation will result in the following benefits:

1. You will be informed of your child's assessment results if you request such a summary. These results will allow for a broad determination of how your child's early literacy skills are developing relative to age expectations.
2. The information that we gather from this project will be used to try to better understand motivation for literacy in preschool children and develop ways that educators can measure this in a valid fashion. It will help determine if motivation for literacy is linked to early literacy skills. This information may be used to help children who are lagging behind in the development of early literacy-related skills. Data from this project may be used to help parents and preschools cooperate to enhance children's development.

We know of no risks associated with your or your child's participation in this project.

Your participation is completely voluntary. You do not have to participate if you do not want to. Your decision whether to participate or not will have no effects on any other treatment or services to which you are entitled from Florida State University or your child's preschool. You

may change your mind and withdraw from this project at any time without penalty. There are no risks associated with withdrawal from this project.

All information obtained as a result of this project will be kept confidential, to the extent allowed by law. Confidentiality will be ensured in the following ways: In public reports of the results of this project, we will only report results that have been averaged over large numbers of children. No individual child or family will ever be identified publicly. Assessments of your child's skills are solely for research purposes. These assessments and other information gathered on your family and child will be kept in a locked file storage area in research offices at the Department of Psychology at Florida State University, identified only by a code, and will not be available to your child's school or to any other person or institution unless you ask us in writing to do so. All materials will be retained for a period of 5 years following completion of the project.

If at any time you have questions about this project, please contact Laura E. Hume at the Department of Psychology, Florida State University. A description of the group results of this project will be sent to you upon request. If you have questions about your rights as a participant in this project, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Office of the Vice President for Research, at (850) 644-8633.

If you agree to participate in this research project, please sign and print your name and the name of your child below. Your signature indicates that you have read the information provided above, or have had it read to you, and that you have decided to participate.

A copy of this consent form has been offered to you.

_____	_____
Signature and printed name of parent or legal guardian	Today's Date
_____	_____
Printed name of child of Birth	Child's Date

Please include the following information so that we can contact you regarding project results.

_____	_____	_____
Street Address	City	State
Zip		
Home Phone: _____	Work Phone: _____	

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BIOGRAPHICAL SKETCH

Laura E. Hume was born on December 22, 1983 in Louisville, KY. After graduating from Transylvania University in 2006 with a Bachelor's degree in Psychology she worked as a research assistant at the University of Alabama then came to graduate school at Florida State University. She is currently a Predoctoral Interdisciplinary Research Training fellow at the Florida Center for Reading Research and plans to continue working towards a PhD in Clinical Psychology.