

This is the submitted manuscript of an article published by Taylor & Francis in Early Education and Development on 15 Oct 2020, available online: <http://www.tandfonline.com/10.1080/10409289.2020.1829292>.

Access to this work was provided by the University of Maryland, Baltimore County (UMBC) ScholarWorks@UMBC digital repository on the Maryland Shared Open Access (MD-SOAR) platform.

Please provide feedback

Please support the ScholarWorks@UMBC repository by emailing scholarworks-group@umbc.edu and telling us what having access to this work means to you and why it's important to you. Thank you.

Poverty, Parent Involvement, and Children's Reading Skills: Testing the Compensatory Effect of
the Amount of Classroom Reading Instruction

Brittany Gay, Susan Sonnenschein, Linda Baker, Shuyan Sun
University of Maryland, Baltimore County

September 2020

Early Education and Development, in press

Abstract

Research Findings

Parent involvement is a critical way for children to learn about the importance of education and develop reading skills. Unfortunately, not all low-income parents are able to be involved in their children's education, which can have negative implications for children's reading development. The present study tested if the strength of the relation between low-income parents' involvement and children's reading skills in first grade varied by the amount of classroom reading instruction that children received at school. This study used data from the Early Childhood Longitudinal Study – Kindergarten: 2010 - 2011 (ECLS-K: 2011) to examine the relations between low-income parent involvement in education, amount of classroom reading instruction, and first-grade children's reading skills. Parent involvement was significantly more impactful for children who received less than 2 hours of classroom reading instruction. Additionally, children from poor households scored lower, on average, on reading assessments than children from near-poor households.

Practice or Policy

Parent involvement has a positive impact on children's reading skills, but that impact can be contingent on what occurs within the classroom. This study underscores the need to consider both home and school influences on children's reading skills. Implications for educational practice and policy are discussed.

Poverty, Parent Involvement, and Children's Reading Skills: Testing the Compensatory Effect of the Amount of Classroom Reading Instruction

The ability to read is a critical component of academic and vocational success. As reading skills are crucial both for children's success in school and as adults (e.g., Murnane, Sawhill, & Snow, 2012), identifying what can bolster children's reading skills is of utmost importance. The development of children's reading skills should be studied in context, as is the case with other aspects of development (Bronfenbrenner & Morris, 2006; Lerner, 1991). For young children, the home and school contexts are instrumental in the development of children's reading skills; children are first exposed to reading activities, materials, and instruction within these contexts (Taylor & Pearson, 2004). Practicing reading and being exposed to reading materials are beneficial in the acquisition and development of reading skills (Snow, Burns, & Griffin, 1998). Parents' educational involvement, hereafter referred to as parent involvement, and the amount of reading instruction that children receive at school present opportunities for children to practice reading and be exposed to reading materials.

Income can constrict the quantity and quality of interactions that children receive at home and school, which can contribute to the income-based differences in children's reading skills (Duncan et al., 2014; Votruba-Drzal, Miller, & Coley, 2016; Yeung, Linver, & Brooks-Gunn, 2002). Income-based gaps in reading skills are evident before formal schooling even begins (Duncan, Magnuson, & Votruba-Drzal, 2014; Gershoff, Aber, Raver, & Lennon, 2007; Murnane et al., 2012; Reardon & Portilla, 2016), and often continue or increase as children progress through school (Duncan & Magnuson, 2011). Parent involvement and amount of classroom reading instruction are both important contributors to the development of children's reading skills. However, poverty may constrain parents' ability to be involved in the education of their

children. Thus, the purpose of this study was to examine if the amount of reading instruction provided in children's classrooms compensated for the impact of low-income parent involvement on children's first-grade reading skills.

Parent Involvement

Parent involvement is one way through which parents can show their interest in education to their children, help their children develop reading skills, and promote their children's reading motivation (Gonzalez-DeHass et al., 2005; Grolnick & Slowiaczek, 1994; Hoover-Dempsey & Sandler, 1995; Sonnenschein & Schmidt, 2000). However, the extent to which parents can engage in these activities can be limited by their household income (Conger & Donnellan, 2007; Yeung et al., 2002). According to the family investment model (Conger & Donnellan, 2007), parents experiencing financial strain may be less able to provide materials or engage in activities that promote children's reading skills (Guo & Harris, 2000). In other words, the extent to which families can 'invest' in the education of their children is, to some extent, contingent on the amount of money they have available to support such investments. The provision of reading materials in low-income households can be further complicated by limited library accessibility in impoverished areas (Thorne-Wallington, 2013). Essentially, parents' income can limit the very things that Snow et al. (1998) identified as necessary to foster reading skills. However, when parents can be involved, their involvement is, in general, positively associated with children's reading skills (Barger, Kim, Kuncel, & Pomerantz, 2019; Ma, Shen, Krenn, Hu, & Yuan, 2016).

Dearing and colleagues (2006) found a positive relation between high levels of parent involvement at school and the reading skills of kindergarten children from low-income households. Moreover, parent school-based involvement (e.g., volunteering in the classroom, attending parent-teacher conferences, and attending PTO/PTA meetings) compensated for the

negative effect of low maternal educational attainment on children's reading skills (see also Dearing, McCartney, Weiss, Kreider, & Simpkins, 2004). The children of mothers with less educational attainment scored similarly to children with more educated mothers if their mothers' school involvement was above average. Sénéchal (2006) and Sénéchal and LeFevre (2002) also found that parents' early educational involvement is associated with children's reading skills over the course of elementary school, but their samples were primarily middle-class.

Although parent involvement in education is important for children's reading skills, not all parents can be involved to the extent that their children may need to be successful. For instance, parents from lower-income households are often less involved than parents from higher income backgrounds (Grolnick, Benjet, Kurowski, & Apostoleris, 1997; Sonnenschein, Stapleton, & Metzger, 2014). Although income itself is most likely not a direct determinant of why parents are involved, it may be a proxy for other variables (Conger & Donnellan, 2007). Time, access to transportation, and the ability to purchase educational materials are just some of the many barriers that low-income parents face that may limit their involvement in their children's education (Hornby & Lafaele, 2011). Because of possible barriers to parent involvement, children from low-income households may need more outside support (e.g., certain amounts of classroom reading instruction) than higher-income children when developing reading skills.

Amount of Classroom Reading Instruction

The National Reading Panel (2000) identified the primary topics that should be included in reading instruction; however, guidelines for the amount of instruction each topic should receive per day were not discussed. Morrison, Bachman, and Connor (2005) noted that, "Instruction may not be effective for many children [because] they do not receive enough of it"

(p. 114). There is no agreement as to the optimal amount of instruction, and recommendations for instruction amount vary with reading curricula (Snow & Matthews, 2016). Some curricula (e.g., Reading First) require that at least 90 minutes of class time be spent on uninterrupted reading instruction, but there is little evidence to support the effectiveness of 90 minutes of reading instruction outside of evaluations tied to specific curricula (Underwood, 2018). In general, the amount of reading instruction that children receive is positively associated with their reading skills (Downer & Pianta, 2006; Magnuson, Ruhm, & Waldfogel, 2007; Connor, Son, Hindman, & Morrison, 2005; Sonnenschein, Stapleton, & Benson, 2010).

Downer and Pianta (2006) examined the relation between amount of reading instruction and children's reading skills with a sample of 832 first-grade children from the NICHD Study of Early Child Care. They found that the amount of time the class spent reading was positively associated with children's reading skills (see also Connor et al., 2005). However, the amount of instruction was measured over the course of two short observational periods, rather than the amount of instruction over the course of an entire school day. Magnuson et al. (2007) and Sonnenschein et al. (2010) both used a large, nationally representative data set, the Early Childhood Longitudinal Study-Kindergarten (ECLS-K), to investigate the relation between the total amount of daily reading instruction and children's reading skills. They both found a significant positive relation between the amount of reading instruction and children's reading skills. In contrast, Cameron et al. (2008) examined the amount of reading instruction first grade children ($N = 108$) received and did not find a significant relation between amount of instruction and children's reading skills.

Although the amount of reading instruction is often positively associated with children's reading skills, it is not the only instructional consideration worth noting. The quality of teachers'

instruction is also important in promoting children's reading development (National Reading Panel, 2000; Pressley et al., 2001; Snow et al., 1998). Connor et al. (2014) examined several aspects of classroom instruction, including instruction content and amount, in the classrooms of 315 children ($N_{classrooms} = 27$). The researchers found no main effect for the amount of instruction children received on their reading skills (i.e., reading comprehension and vocabulary). Rather, greater amounts of instruction were associated with growth in children's reading skills if such instruction was provided in a high-quality classroom learning environment (e.g., organized classrooms with warm, responsive, and supportive teachers). Examining one aspect of the classroom such as amount of reading instruction, as was done in this study, likely does not capture the full impact of this complex context. However, it helps to address whether exposure to reading instruction at school, regardless of the quality of such exposure, may benefit children whose parents may not be able to provide such experiences at home.

Present Study

This study focused on the relations between parent involvement, the amount of classroom reading instruction, and the reading skills of children from low-income families. It is grounded in the family investment model (Conger & Donnellan, 2007; Yeung et al., 2002) and the notion that both the home and the school are impactful in the development of children's reading skills (e.g., bioecological model of development; Bronfenbrenner & Morris, 2006). The amount of reading instruction in this study was examined as a moderator of the relation between low-income parent involvement in education and children's reading skills. As such, this study investigates the amount(s) of classroom reading instruction most beneficial for low-income children with less involved parents, rather than the optimal amount of reading instruction in general. We expected

that lower levels of parent involvement would have less of an impact on children's reading skills for children in classrooms with greater amounts of reading instruction.

Children from low-income households tend to score lower on standardized reading assessments (Reardon & Portilla, 2016) and tend to have less involved parents than higher-income children (Hornby & Lafaele, 2011; Reece, Staudt, & Ogle, 2013). As such, there is a need to investigate factors that could mitigate the negative impact of such circumstances on the reading skills of children from low-income households specifically. We focused on first grade because of its importance for acquiring foundational reading skills (National Reading Panel, 2000; Reardon, Valentino, & Shores, 2012) and its association with long-term outcomes (Cunningham & Stanovich, 1997).

Method

Participants

This study was a secondary data analysis of the public access Early Childhood Longitudinal Study – Kindergarten Cohort: 2010 – 2011 (ECLS-K: 2011; Tourangeau et al., 2015). The ECLS-K: 2011 is a longitudinal, nationally-representative study of the academic and social development of elementary school children in the United States who began kindergarten in 2010. The data consist of direct child assessments, parent interviews, and teacher questionnaires. The core sample of children from the ECLS-K: 2011 ($N \sim 18200$) was recruited in a three-stage process (Tourangeau et al., 2015). Participant data for the present study were limited to first-time first-grade children from low-income households (e.g., households with incomes below 200% of the federal poverty threshold) that were attending public schools in Spring 2012. Children also needed to have been tested in English and have completed the appropriate reading assessments to be included in the study.

The final sample included 4,380 participants. Children were predominantly Hispanic (40%), White (32%), or Black/African American (17%; see Table 1 for demographic information). These percentages are roughly comparable to the percentage of children between the ages of 6 and 11 years living in low-income households in 2011 (Hispanic: 34%, White: 37%, Black/African American: 19%; Addy, Engelhardt, & Skinner, 2013).

Procedure

ECLS-K: 2011 data were collected by trained research assistants (Tourangeau et al., 2015). Children were individually administered the reading skills assessment by project staff in the spring of their kindergarten and first-grade years. Parents were interviewed primarily through phone interviews using computer-assisted interview technology during the spring of children's first-grade year (Tourangeau et al., 2015). Parents who preferred to be interviewed in a language other than English were given the option to do so; Spanish-speaking parents were interviewed by bilingual interviewers and parents who spoke other non-English languages were provided an interpreter during the interview. Teachers completed paper and pencil questionnaires during the spring of children's first-grade year.

Measures

Child reading skill. Child reading skill was measured using a composite formed by the ECLS-K: 2011 project team based on children's performance in a two-stage assessment of skills-based and knowledge-based reading skills (Tourangeau et al., 2015). The first stage of the assessment served as a router which determined the difficulty level (low, middle, or high) of the second stage of items. Basic reading skills consisted of letter recognition and beginning/ending sounds whereas knowledge-based reading included vocabulary and reading comprehension skills. Children's reading skills were measured at two time points: the end of kindergarten and

the end of first grade. Children's first-grade reading skills ($M = 66.72$, $SD = 12.94$) were the primary focus of the present study; children's kindergarten reading skills ($M = 47.04$, $SD = 10.65$) were controlled for in all analyses. Reading scores at both time points could range from 0 to 100, with higher scores indicating more advanced reading skills.

Parent involvement. Parent involvement was measured using a composite of nine parent-reported activities. The composite included four home-based items and five school-based items. Home-based involvement items included how often parents helped their child with homework (1 = never, 5 = five or more times a week), read to their child (1 = not at all, 4 = every day), whether they took their child to the library/bookstore (0 = no, 1 = yes), and how frequently their child read to others (1 = never, 4 = every day). School-based involvement items included whether (0 = no, 1 = yes) parents attended: an open house/back-to-school night; a PTA/PTO/Parent-Teacher Organization meeting; a parent-teacher conference/meeting; a school/class event; and volunteered in their child's school/classroom. Since the purpose of this study was to examine parent involvement, regardless of where such involvement took place, home- and school-based items were analyzed as one index to maximize possible reports of involvement (see also Sibley & Dearing, 2014).

Responses to each item were standardized and then averaged together to form a composite ($M_{Composite} = 1.51$, $SD = 0.29$), which was then centered at the mean (Dalal & Zickar, 2012). Higher scores indicate higher amounts of educational involvement (see Table 1 for item-level descriptives). Cronbach's alpha for this measure was .54. Although reliability for the index is less than optimal, this alpha is comparable to what other researchers have found using similar measures (e.g., Bassok et al., 2016; Cooper & Crosnoe, 2007; Durand, 2011; Schulting et al., 2009; Sibley & Dearing, 2014; Sy & Schulenberg, 2005; Yeung, 2009). Although these parent

involvement measures, including the one we used, are not perfect, they are still useful in examining parents' role in education. As Schmitt (1996) argued, there is no general level (such as 0.70) where alpha becomes acceptable and instruments with low alpha values can still prove useful in some circumstances.

Amount of classroom reading instruction. Teachers' responses to the question, "*how much time does the typical child in your class usually work on lessons or projects in reading and language arts,*" were used to determine the amount of classroom reading instruction. Five categories of amount of classroom reading instruction were examined in this study: less than 1.5 hours ($N = 595$), 1.5 to less than 2 hours ($N = 907$), 2 to less than 2.5 hours ($N = 1054$), 2.5 to less than 3 hours ($N = 679$), and 3 hours or more ($N = 644$). Although there were originally eight response categories for this item, three options (less than 0.5 hours; 0.5 to less than 1 hour; and 1 to less than 1.5 hours) were combined into one to better distribute responses across the categories. "Not applicable" responses for amount of reading instruction were excluded from analyses.

Covariates. Variables were controlled at the child, family, and teacher-levels, each chosen because of their relations with the variables of interest in the study. Researchers have found relations between children's race/ethnicity and their reading skills (Reardon et al., 2012) and amounts of parent involvement (Grolnick et al., 1997). Researchers have also found that households with more children tend to exhibit lower levels of parent involvement (Manz, Fantuzzo, & Power, 2004). In addition, first-grade children with less experienced teachers tend to perform more poorly in reading than children with more experienced teachers (Croninger, Rice, Rathbun, & Nishio, 2007). Although other covariates (e.g., parent marital status and level

of education) were initially considered for inclusion, they were not significant and hence removed from the final model for parsimony.

Household poverty level. The U.S. weighted poverty thresholds were used to measure household poverty: 0 = poor (less than 100% of the federal poverty threshold) and 1 = near poor (between 100% and 199% of the federal poverty threshold). The federal poverty thresholds, which are updated annually to account for inflation, are determined using household size and household income (U.S. Census Bureau, 2018). According to the U.S. weighted poverty threshold in 2011, a household of four with an income of less than \$23, 021 was considered poor whereas an income between \$23,021 and \$46,042 was considered near poor. The combination of these two categories (e.g., all incomes below \$46,042 for a household of four in 2011) reflect low-income households. The weighted federal poverty threshold was selected as an indicator of household poverty level as it is the official measure of poverty in the U.S. (NASEM, 2019) and is both commonly used in research and in the determination of eligibility for many governmental programs (Huston, McLoyd, & Garcia Coll, 1994; Roosa, Deng, Nair, & Burrell, 2005). Household poverty level was both a selection criterion, such that households above the 200% poverty threshold were excluded, and a covariate in the present study.

Data Analyses

Analyses were conducted using Statistical Program for the Social Sciences Version 23 (SPSS; IBM, 2015). As the ECLS-K: 2011 sample was not a simple random sample, the Complex Samples procedure in SPSS was used. This required the creation of an analysis plan indicating that the data were collected using a stratified clustered design (stratum: W4CS4P_4TSTR; cluster: W4CS4P_4TPSU). The analysis plan also included a sample weight (weight: W4CS4P_4T0), which was necessary to provide more accurate population estimates

and also account for oversampling and non-response bias (Hahs-Vaughn, 2005; Tourangeau et al., 2015). General linear model (GLM) analyses for complex samples were conducted to investigate the relations between parent involvement, amount of classroom reading instruction, and children's reading skills in first grade. Taking into account the complex sampling design, the study sample represented 1452160 children with design effects between 0.7 and 2.7.

Results

Greater amounts of reading instruction were hypothesized to buffer the impact of low parent involvement on children's first-grade reading skills. Amount of classroom reading instruction, parent involvement, child race/ethnicity, household poverty level, child kindergarten reading skills, number of siblings, teachers' years of teaching experience, and interaction between parent involvement and the amount of classroom reading instruction were entered into the model. Main effects for all variables under consideration were requested, as was the interaction between parent involvement and the amount of classroom reading instruction.

The overall model accounted for 60.2% of the variance in children's reading skills. Although not related to the primary research question, the level of household poverty significantly predicted children's reading skills, such that children from near poor households performed significantly better on the reading skills assessment than did poor children (see Table 2). As hypothesized, an interaction between parent involvement and amount of reading instruction was present ($Wald F(4,105) = 2.81, p = .03$). This finding indicates that the effects of parent involvement in education on reading skills varied by the amount of instruction.

A series of additional GLM analyses were run to probe the interaction between parent involvement in education and the amount of classroom reading instruction at different amounts of reading instruction. These analyses tested the strength of the relation between the predictor

(parent involvement) and the outcome (children's reading skills) at different levels of the moderator (amount of reading instruction; Robinson, Tomek, & Schumacker, 2013). In other words, analyses were conducted at each of the five levels of amount of reading instruction.

Results indicated that for children who received 2 or more hours of instruction, parent involvement did not predict reading skills (see Table 3 and Figure 1). For children who received less than 2 hours of instruction, the relation between parent involvement and reading skills was statistically significant. More specifically, at less than 1.5 hours of instruction, the slope was $b = 5.24$, $t(108) = 3.96$, $p < .001$, and at 1.5 to less than 2 hours of instruction, the slope was $b = 3.90$, $t(108) = 3.99$, $p < .001$. These results indicate that parent involvement may be most beneficial for children receiving less than 2 hours of reading instruction at school.

Discussion

This study investigated the relations between parent involvement, amount of classroom reading instruction, and children's reading skills. The amount of reading instruction moderated the relation between parent involvement and children's reading skills. Greater amounts of instruction (e.g., more than 2 hours a day) did not impact the relation between parent involvement in education and children's reading skills. Conversely, the relation between parent involvement and children's reading skills was stronger for children who received less than 2 hours of instruction per day at school. These results underscore the importance of considering both the home and school contexts of children from low-income households and the significance of parents' investments in the education of their children.

Results indicate that children who do not receive ample amounts of reading instruction in the classroom benefit the most from having educationally involved parents. This finding suggests

that the effectiveness of some forms of intervention associated with children's reading skills, such as parent involvement, is dependent on what occurs within the classroom.

As such, teachers who provide smaller amounts of instruction in their classrooms, in this case less than 2 hours a day, may benefit from collaborating with parents or, if available, family engagement specialists to help children succeed (e.g., Lazar & Slostad, 1999). According to Mapp and Kuttner (2013), family-school partnerships consist of family and school members' involvement, but also their collaboration with each other for the best interest of the child (see also Epstein, 1995). Collaborations between teachers and parents may help maximize the possible impact of parent involvement, which could be particularly important with families from low-income households given the barriers these parents may face to being involved (Fan, Li, & Sandoval, 2018; Hornby & Blackwell, 2018). Income may constrain the extent to which parents' can invest in their children's education (Conger & Donnellan, 2007); however, such investments do still occur and could be capitalized on.

Although the involvement of low-income parents is important, and home-school partnerships should be encouraged, increasing the mean level of parents' involvement may not be feasible (Dearing, Kreider, & Weiss, 2008). As such, findings may point to a need for schools to provide at least two hours of instruction for children from low-income households, especially if parents in these schools are not able to be highly involved in their children's education. It is also possible that increasing the quality of instruction (see Pianta, Downer, & Hamre, 2016) would suffice in instances where schools are unable to alter the amount of instruction provided in the classroom on a daily basis. The quality of reading instruction was not measured by the ECLS-K:2011 and thus unable to be investigated in this study.

Household Poverty Level

Although investigating the relation between poverty level and reading skills was not a primary focus of this study, findings related to poor and near poor households warrant discussion. We found that the level of household poverty was a significant predictor of children's reading skills in each of the analyses that were conducted, even though the sample was limited to low-income households. Children from near poor households tended to have higher reading scores than their counterparts from poor households. This finding is similar to results found by Chien and Mistry (2013). Chien and Mistry (2013) also found a negative relation between parent involvement and cost of living for children from poor households but found no relation between these constructs for children from low- and higher-income households. One possible explanation of this finding is the robust effect of family economic capital on children's reading skills (e.g., Yeung et al., 2002). Referring back to the family investment model (Conger & Donnellan, 2007), parents experiencing financial strain may be less able to provide resources or engage in activities that promote children's reading skills (Guo & Harris, 2000; Yeung et al., 2002). Although low-income households likely experience more economic strain compared to households above the federal poverty level, the amount of resources families in poor and near poor households have available to invest in their children could vary. It is plausible for parents from poor households to be under a greater amount of financial strain than parents from near poor households because of the differences in income and for those differences to impact children's reading skills.

It is common for the category of low income not to be parsed (Huston et al., 1994; Roosa et al., 2005); however, our results and other extant literature suggest that such an endeavor may be necessary to better understand how income could affect children's reading skills. Although this area of inquiry was beyond the scope of the present study, future research would benefit from using more refined indicators of household income (e.g., cost-of-living combined with

income-to-needs ratios; Chien & Mistry, 2013), as opposed to more global measures (e.g., federal poverty thresholds).

Conclusion

The present study extended extant literature by examining the differential impact of parent involvement on children's reading skills based on the amount of reading instruction that children received at school. Results indicated that children in classrooms with less than two hours of instruction benefited the most from having involved parents. This finding suggests that schools serving children from low-income households, whose parents are often less able to be educationally involved, should consider offering at least 2 hours of daily reading instruction. Alternatively, home-school partnerships could be strengthened to best support the development of children's reading skills.

Limitations and Future Directions

There are a few limitations to the present study that should be noted. One limitation is that the scope of the measures is limited by the items and response options included in the ECLS-K: 2011. The items included in the measure of parent involvement, for instance, captured typical indicators of educational involvement often examined in extant research (e.g., volunteering at school), but did not capture culturally specific practices. Parents' parenting style and academic socialization, the broad umbrella under which parent involvement falls, can vary by culture (Bempechat et al., 1999; Darling & Steinberg, 1993). As such, it is possible that ethnically diverse parents in the sample were involved in ways that were not captured by the items used in this study.

Zarate (2007) noted that Latino parents mentioned aspects of academic activities and non-academic activities (e.g., communicating with, encouraging, and providing advice to

children) when defining parent involvement (see also McWayne et al., 2013). In addition, Iruka et al. (2012) analyzed data from the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B) and found that the premise of the family investment model, including the provision of cognitively enriching activities, aligned best with white (European American) parents of preschool-aged children as opposed to parents from other racial backgrounds. However, parents' knowledge of their role in their children's reading development may alter with increased contact with the school system and its personnel (Hoover-Dempsey et al., 2005), suggesting Iruka et al.'s (2012) finding warrants further investigation with elementary-aged students. Although the limitation regarding culturally specific involvement activities is common to other research using nationally collected data, such as the Family and Child Experiences Survey (FACES; Ansari & Gershoff, 2016), it is still worth noting because the full array of how parents could be involved may not have been captured in the present study. Given the increasing diversity of schools in the United States, however, future research should incorporate a wider variety of involvement activities, such as those mentioned by Zarate (2007) and McWayne et al. (2013) into assessments of parent involvement.

Another limitation with using the ECLS-K: 2011 is apparent in how amount of classroom reading instruction was assessed. Teachers responded to the question "How much time does the typical child in your class usually work on lessons or projects in reading and language arts." Answers to this question may depend on teachers' interpretations of the question and answers may reflect the amount of time a child spends doing reading activities within the classroom, not necessarily the amount of direct instruction that is offered. Although children are exposed to reading and likely honing their reading skills while working on reading lessons/projects and during direct instruction, the impact of each on children's reading skills could be different.

One possible area of future inquiry is to examine if the practices of parents or teachers differ based on the amount of reading instruction that is provided in the classroom. It may be possible that teachers who offer lesser amounts of classroom reading instruction send reading activities home for parents to work on with their children. Conversely, if parents are aware of the amount of instruction their children receive at school and have beliefs about the optimal amount of reading instruction, they could alter the extent of their involvement based on the amount of instruction that occurs within the classroom. Findings from such an investigation could have implications for how to improve home-school partnerships to best promote children's reading skills.

References

- Addy, S., Engelhardt, W., & Skinner, C. (2013). *Basic facts about low-income children: Children aged 6 through 11 years, 2011*. New York: National Center for Children in Poverty, Columbia University Mailman School of Public Health.
- Ansari, A., & Gershoff, E. (2014). Parent involvement in Head Start and children's development: Indirect effects through parenting. *Journal of Marriage and Family*, 78, 562-579. doi: 10.1111/jomf.12266
- Barger, M. M., Kim, E. M., Kuncel, N. R., & Pomerantz, E. M. (2019). The relation between parents' involvement in children's schooling and children's adjustment: A meta-analysis. *Psychological Bulletin*, 145, 855-890. <http://dx.doi.org/10.1037/bul0000201>
- Bassok, D., Finch, J. E., Lee, R., Reardon, S., F., & Waldfogel, J. (2016). Socioeconomic gaps in early childhood experiences: 1998 to 2010. *AERA Open*, 2(3), 1-22.
- Bempechat, J., Graham, S. E., & Jimenez, N. V. (1999). The socialization of achievement in poor and minority students. *Journal of Cross-Cultural Psychology*, 30(2), 139-158. <https://doi.org/10.1177/0022022199030002001>
- Bronfenbrenner, U., & Morris, P. (2006). The bioecological model of human development. (6th ed.). In R. M. Lerner and W. Damon (Eds.), *Handbook of child psychology: Theoretical models of human development, Vol. 1* (pp. 793-828). Hoboken, NJ: John Wiley & Sons.
- Cameron, C. E., Connor, C. M., & Morrison, F. J. (2008). Effects of classroom organization on letter-word reading in first grade. *Journal of School Psychology*, 46, 173-192. doi: 10.1016/j.jsp.2007.03.002

- Chien, N., & Mistry, R. S. (2013). Geographic variations in cost of living: Associations with family and child well-being. *Child Development, 84*, 209-225. Doi: 10.1111/j.1467-8624.2012.01846.x
- Conger, R. D., & Donnellan, M. B. (2007). An interactionist perspective on the socioeconomic context of human development. *Annual Review of Psychology, 58*, 175-199. doi: 10.1146/annurev.psych.58.110405.085551
- Connor, C. M., Son, S.-H., Hindman, A. H., & Morrison, F. J. (2005). Teacher qualifications, classroom practices, family characteristics, and preschool experience: Complex effects on first graders' vocabulary and early reading outcomes. *Journal of School Psychology, 43*, 343-375. Doi: 10.1016/j.jsp.2005.06.001
- Cooper, C. E., & Crosnoe, R. (2007). The engagement in schooling of economically disadvantaged parents and children. *Youth & Society, 38*, 372-391. Doi: 10.1177/0044118X06289999
- Croninger, R. G., Rice, J. K., Rathbun, A. & Nishio, M. (2007). Teacher qualifications and early learning: Effects of certification, degree, and experience on first-grade student achievement. *Economics of Education Review, 26*, 312-324. Doi: 10.1016/j.econedurev.2005.05.008
- Cunningham, A. E., & Stanovich, K. E. (1997). Early reading acquisition and its relation to reading experience and ability 10 years later. *Developmental Psychology, 33*, 934-945.
- Dalal, D. K., & Zickar, M. J. (2012). Some common myths about centering predictor variables in moderated multiple regression and polynomial regression. *Organizational Research Methods, 15*(3), 339-362. <https://doi.org/10.1177/1094428111430540>

- Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin*, 113, 487-496.
- Dearing, E., Kreider, H., Simpkins, S., & Weiss, H. B. (2006). Family involvement in school and low-income children's literacy: Longitudinal associations between and within families. *Journal of Educational Psychology*, 98, 653-664. Doi: 10.1037/0022-0663.98.4.653
- Dearing, E., Kreider, H., & Weiss, H. B. (2008). Increased family involvement in school predicts improved child teacher relationships and feelings about school for low-income children. *Marriage & Family Review*, 43, 226 – 254.
- Dearing, E., McCartney, K., Weiss, H. B., Kreider, H., & Simpkins, S. (2004). The promotive effects of family educational involvement for low-income children's literacy. *Journal of School Psychology*, 42, 445-460. Doi: 10.1016/j.jsp.2004.07.002
- Downer, J. T., & Pianta, R. C. (2006). Academic and cognitive functioning in first grade: Associations with earlier home and child care predictors and with concurrent home and classroom experiences. *School Psychology Review*, 35, 11-30. Doi: 10.1046/j.1467-8624.2003.00629.x
- Duncan, G. J., & Magnuson, K. (2011). The nature and impact of early achievement skills, attention skills, and behavior problems. In G. J. Duncan & R. J. Murnane (Eds.), *Whither opportunity: Rising inequality, schools, and children's life chances* (pp. 47-69). New York, NY: Russell Sage.
- Duncan, G. J., Magnuson, K., & Votruba-Drzal, E. (2014). Boosting family income to promote child development. *The Future of Children*, 24, 99-120. Doi: 10.1353/foc.2014.0008
- Durand, T. M. (2011). Latino parental involvement in kindergarten: Findings from the Early Childhood Longitudinal Study. *Hispanic Journal of Behavioral Science*, 33(4), 469-489.

- Epstein, J. L. (1995). School/family/community partnerships: Caring for the children we share. *Phi Delta Kappan*, 76, 701-712.
- Fan, W., Li, N., & Sandoval, J. R. (2018). A reformulated model of barriers to parental involvement in education: Comment on Hornby and Lafaele (2011). *Educational Review*, 70, 120-127. <https://doi.org/10.1080/00131911.2018.1388614>
- Gershoff, E. T., Aber, J. L., Raver, C. C., & Lennon, M. C. (2007). Income is not enough: Incorporating material hardship into models of income associations with parenting and child development. *Child Development*, 78, 70-95. Doi: 10.1111/j.1467-8624.2007.00986.xFguo
- Gonzalez-DeHass, A. R., Willems, P. P., & Holbein, M. R. D. (2005). Examining the relationship between parental involvement and student motivation. *Educational Psychology Review*, 17(2), 99-123. Doi: 10.1007/s10648-005-3949-7
- Grolnick, W. S., Benjet, C., Kurowski, C. O., & Apostoleris, N. H. (1997). Predictors of parent involvement in children's schooling. *Journal of Educational Psychology*, 89, 538-548.
- Grolnick, W. S., & Slowiaczek, M. L. (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model. *Child Development*, 65, 237-252.
- Guo, G., & Harris, K. M. (2000). The mechanisms mediating the effects of poverty on children's intellectual development. *Demography*, 37, 431-447. Doi: 10.1353/dem.2000.0005
- Hahs-Vaughn, D. L. (2005). A primer for using and understanding weights with national datasets. *The Journal of Experimental Education*, 73, 221-248.
<http://dx.doi.org/10.3200/JEXE.73.3.221-248>

- Hoover-Dempsey, K. V., & Sandler, H. M. (1995). Parental involvement in children's education: Why does it make a difference? *Teachers College Record*, 97, 310-331.
- Hoover-Dempsey, K. V., Walker, J. M. T., Sandler, H. M., Whetsel, D., Green, C. L., Wilkins, A. S., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *The Elementary school Journal*, 106, 105-130.
- Hornby, G., & Blackwell, I. (2018). Barriers to parental involvement in education: An update. *Educational Review*, 70, 109-119. Doi: 10.1080/00131911.2018.1388612
- Hornby, G., & Lafaele, R. (2011). Barriers to parental involvement in education: An explanatory model. *Educational Review*, 63, 37-52. Doi: 10.1080/00131911.2010.488049
- Huston, A. C., McLoyd, V. C., & Garcia Coll, C. (1994). Children and poverty: Issues in contemporary research. *Child Development*, 65, 275-282.
- IBM Corp. (2015). IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp.
- Iruka, I. U., LaForett, D. R., & Odom, E. C. (2012). Examining the validity of the family investment and stress models and relationship to children's school readiness across five cultural groups. *Journal of Family Psychology*, 26(3), 359-370.
<https://psycnet.apa.org/doi/10.1037/a0028290>
- Lazar, A., & Slostad, F. (1999). How to overcome obstacles to parent-teacher partnerships. *The Clearing House*, 72(4), 206-210.
- Lerner, R. M. (1991). Changing organism-context relations as the basic process of development: A developmental contextual perspective. *Developmental Psychology*, 27, 27-32. Doi: 10.1037/0012-1649.27.1.27
- Ma, X., Shen, J., Krenn, H. Y., Hu, S., & Yuan, J. (2016). A meta-analysis of the relationship between learning outcomes and parental involvement during early childhood education

- and early elementary education. *Educational Psychology Review*, 28, 771-801. doi: 10.1007/s10648-015-9351-1
- Magnuson, K. A., Ruhm, C. & Waldfogel, J. (2007). The persistence of preschool effects: Do subsequent classroom experiences matter? *Early Childhood Research Quarterly*, 22, 18-38. Doi: 10.1016/j.ecresq.2006.10.002
- Manz, P. H., Fantuzzo, J. W., & Power, T. J. (2004). Multidimensional assessment of family involvement among urban elementary students. *Journal of School Psychology*, 42, 461-475. Doi: 10.1016/j.jsp.2004.08.002
- Mapp, K. L., & Kuttner, P. J. (2013). Partners in Education: A Dual Capacity-Building Framework for Family-School Partnerships. Southwest Education Development Laboratory (SEDL). Austin, TX.
- McWayne, C., Melzi, G., Schick, A. R., Kennedy, J. L., & Mundt, K. (2013). Defining family engagement among Latino Head Start parents: A mixed-methods measurement development study. *Early Childhood Research Quarterly*, 28, 593–607. <http://dx.doi.org/10.1016/j.ecresq.2013.03.008>
- Morrison, F., Bachman, H., & Connor, C. (2005). The classroom: Teaching and learning. In *Improving Literacy in America: Guidelines from Research* (pp. 111-135). Yale University Press.
- Murnane, R., Sawhill, I., & Snow, C. (2012). Literacy challenges for the twenty-first century: Introducing the issue. *The Future of Children*, 22(2), 3-15. Doi: 10.1353/foc.2012.0013
- NASEM (2019). *A roadmap to reducing child poverty*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25246>

- National Reading Panel (2000). *Teaching children to read: An evidence-based assessment of the scientific research and literature on reading and its implications for reading instruction: Reports of the subgroups* (NIH Publication No. 00-4754). Washington, DC: National Institute of Child Health and Development.
- Pianta, R., Downer, J., & Hamre, B. (2016). Quality in early education classrooms: Definitions, gaps, and systems. *The Future of Children*, 26(2), 119-137.
<https://doi.org/10.1353/foc.2016.0015>
- Pressley, M., Wharton-McDonald, R., Allington, R., Block, C. C., Morrow, L., Tracey, D., et al. (2001). A study of effective first grade literacy instruction. *Scientific Studies of Reading*, 15, 35–58.
- Reardon, S. F., & Portilla, X. A. (2016). Recent trends in income, racial, and ethnic school readiness gaps at kindergarten entry. *AERA Open*, 2(3), 1-18. Doi: 10.1177/2332858416657343
- Reardon, S. F., Valentino, R. A., & Shores, K. A. (2012). Patterns of literacy among U.S. students. *The Future of Children*, 22(2), 17-37. Doi: 10.1353/foc.2012.0015
- Reece, C. A., Staudt, M., & Ogle, A. (2013). Lessons learned from a neighborhood-based collaboration to increase parent engagement. *School Community Journal*, 23, 207-226.
- Robinson, C. D., Tomek, S., & Schumacker, R. E. (2013). Tests of moderation effects: Difference in simple slopes versus the interaction term. *Multiple Linear Regression Viewpoints*, 39, 16-24.
- Roosa, M. W., Deng, S., Nair, R. L., & Burrell, G. L. (2005). Measures for studying poverty in family and child research. *Journal of Marriage and Family*, 67, 971-988.

- Schulting, A. B., Malone, P. S., & Dodge, K. A. (2009). The effect of school-based kindergarten transition policies and practices on child academic outcomes. *Developmental Psychology*, 41(6), 860-871.
- Schmitt, N. (1996). Uses and abuses of coefficient alpha. *Psychological Assessment*, 8(4), 350–353. doi:[10.1037/1040-3590.8.4.350](https://doi.org/10.1037/1040-3590.8.4.350)
- Sénéchal, M. (2006). Testing the Home Literacy Model: Parent involvement in kindergarten is differentially related to grade 4 reading comprehension, fluency, spelling, and reading for pleasure. *Scientific Studies of Reading*, 10, 59-87.
- Sénéchal, M., & LeFevre, J.-A. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development*, 73, 445-460.
- Sibley, E., & Dearing, E. (2014). Family educational involvement and child achievement in early elementary school for American-born and immigrant families. *Psychology in the Schools*, 51(8), 814-831.
- Snow, C. E., Burns, M. S., & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, D.C.: National Academy Press.
- Snow, C. E., & Matthews, T. J. (2016). Reading and language in the early grades. *The Future of Children*, 26(2), 57-74.
- Sonnenschein, S. & Schmidt, D. (2000). Fostering home and community connections to support children's reading development. In L. Baker, M.J. Dreher, & J.T. Guthrie (Eds.), *Engaging young readers: Promoting achievement and motivation* (pp. 264-284). NY: Guilford.

- Sonnenschein, S., Stapleton, L. M., & Benson, A. (2010). The relation between the type and amount of instruction and growth in children's reading comprehension. *American Educational Research Journal*, 47, 358-389.
- Sonnenschein, S., Stapleton, L. M., & Metzger, S. R. (2014). What parents know about how well their children are doing in school. *The Journal of Educational Research*, 107, 152-162.
Doi: 10.1080/00220671.2013.788987
- Sy, S. R., & Schulenberg, J. E. (2005). Parent beliefs and children's achievement trajectories during the transition to school in Asian American and European American families. *International Journal of Behavioral Development*, 29, 505-515. Doi: 10.1080/01650250500147329
- Taylor, B. M., & Pearson, P. D. (2004). Research on learning to read – at school, at home, and in the community. *The Elementary School Journal*, 105, 167-181.
<https://www.jstor.org/stable/10.1086/428863>
- Thorne-Wallington, E. (2013). Social contexts of new media literacy: Mapping libraries. *Information Technology and Libraries*, 32(4), 53-65.
- Tourangeau, K., Nord, C., Lê, T., Wallner-Allen, K., Hagedorn, M.C., Leggitt, J., & Najarian, M. (2015). *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), user's manual for the ECLS-K:2011 Kindergarten – first grade data file and electronic codebook, public version* (NCES 2015-078). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Underwood, S. (2018, January). *What is the evidence for an uninterrupted, 90-minute literacy instruction block?* Retrieved from <http://educationnorthwest.org/resources/what-evidence-uninterrupted-90-minute-literacy-instruction-block>

- U.S. Census Bureau. (2018). How the Census Bureau measures poverty. Retrieved from:
<https://www.census.gov/topics/income-poverty/poverty/guidance/poverty-measures.html>
- Votruba-Drzal, E., Miller, P., & Coley, R. L. (2016). Poverty, urbanicity, and children's development of early academic skills. *Child Development Perspectives*, 10, 3-9. Doi: 10.1111/cdep.12152
- Yeung, R. (2009). Are school uniforms a good fit?: Results from the ECLS-K and the NELS. *Educational Policy*, 23, 847-874. Doi: 10.1177/0895904808330170
- Yeung, W. J., Linver, M. R., & Brooks-Gunn, J. (2002). How money matters for young children's development: Parental investment and family processes. *Child Development*, 73, 1861-1879.
- Zarate, M. E. (2007). *Understanding Latino parental involvement in education. Perceptions, expectations, and recommendations*. Los Angeles: Toma's Rivera Policy Institute.

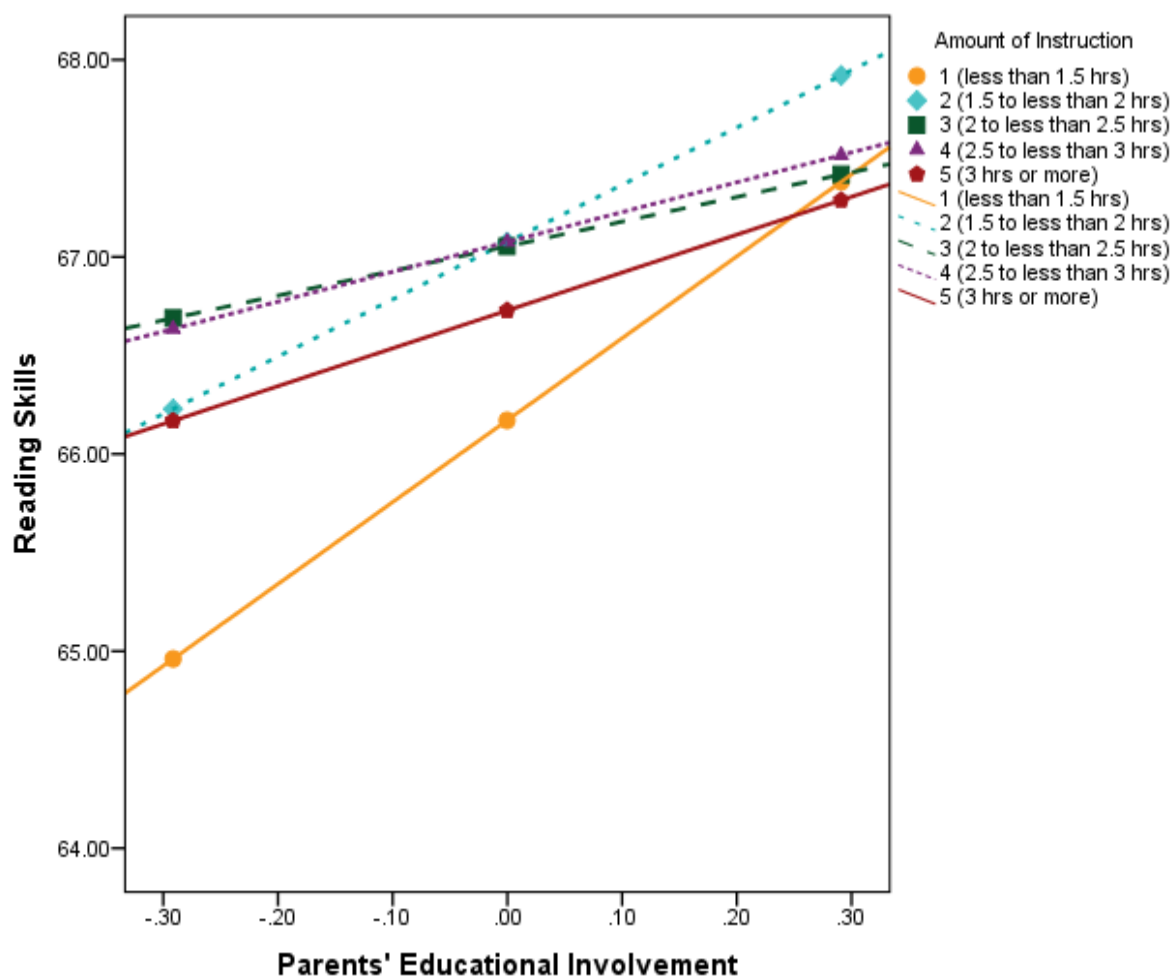


Figure 1. Simple Slopes for the Interaction Between Parents' Educational Involvement and Amount of Instruction Predicting Children's Reading Skills. The y-axis depicts children's scores on a reading assessment; the x-axis represents parents' educational involvement with plot points at the mean (centered) of parent involvement, one standard deviation below the mean of parent involvement, and one standard deviation above the mean of parent involvement.