UNIVERSITY OF CALIFORNIA
RIVERSIDE

Home-Based Literacy Interventions for English Language Learners: A Review of the Literature

A Thesis submitted in partial satisfaction
of the requirements for the degree of

Master of Arts

in

Education

by

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December 2017

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ABSTRACT OF THE THESIS

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University of California, Riverside, December 2017
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A large number of students do not achieve proficient levels in reading achievement. Further, an even higher percentage of students who are English language learners (ELLs) fail to reach reading proficiency across the nation – an achievement gap that has been consistent for decades (NAEP, 2015). With the ELL population continuously growing annually, it is important to focus efforts for improving skills of these students. Factors in the home environment, including parental involvement, are essential supports for children given that early literacy skill acquisition is predictive of emergent literacy skills, including oral language (Farver, Xu, Eppe, Lonigan, 2006; Farver, Xu, Lonigan, & Eppe, 2013). This paper will review the literature on home-based literacy interventions for ELLs and their families. Specifically, information will be gathered in order to form conclusions about the types of home-based literacy interventions in the research literature that are most effective. Further, this review will review existing cultural adaptations

implemented in home-based interventions for ELL families and will discuss the cultural implications.

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Home-Based Literacy Interventions and English Language Learners: A Review of the Literature

Literacy development is central to the success of children in school. However, a considerable number of students in the United States do not achieve necessary reading skills; only one-third of all fourth and eighth graders reach proficiency levels in reading achievement (National Assessment of Educational Progress [NAEP], 2015). Further, when reviewing scores specifically for the English language learner (ELL) population, low reading scores are more prevalent, with only 8% of fourth graders and 4% of eight graders reading at or above proficiency (NAEP, 2015). ELLs consistently score lower than non-ELLs on national reading achievement assessments, a gap that has remained consistent for decades (NAEP). Even after several years of schooling in the United States, students who are ELLs continue to experience this achievement gap compared to their non-ELL peers (Ballantyne, Sanderman, D'Emilio, & McLaughlin, 2008).

Despite the statistics that show ELLs lag behind their peers, they continue to be understudied. In addition, studies that include ELLs are often grouped along with those that generally consider students who are *at-risk* or *language minorities*, without taking into account their previous experiences with language or literacy (Gutierrez, Zepeda, & Castro, 2010), which can be problematic when attempting to draw conclusions about the practices that benefit ELLs, as there are many differences and factors to consider. It is essential that research in literacy practices that improve reading achievement be emphasized, especially for at-risk populations, such as ELLs.

Emergent Literacy and the Home Environment

Research has consistently shown that emergent, foundational literacy skills in young children are related to later literacy achievement (National Early Literacy Panel, 2009). Emergent literacy is a term that refers to the concept that children's reading skills start early and are defined as the set of skills that are precursors to reading and writing (NELP, 2009; Teale & Sulzby, 1986; Whitehurst & Lonigan, 1998). Alternatively, before emergent literacy became prevalent, it was more typical that a child began reading instruction at the start of formal schooling. Given the correlates of emergent literacy in previous research, the National Early Lieracy Panel, or NELP, (2009) investigated what skills were necessary for future literacy outcomes in a large-scale report that analyzed the literature through multiple meta-analytic investigations. It was reported that between birth and kindergarten age—when children typically spend much time with a parent or caregiver—early conventional literacy skills develop (i.e., alphabet knowledge, phonological awareness, rapid automatic naming, writing, and phonological memory), which are strongly related to later conventional literacy skills, even when controlling for IQ or socioeconomic status (SES; NELP, 2009). Other skills identified by the NELP were the following: concepts about print, print knowledge, reading readiness, oral language, and visual processing.

The *Matthew effect* (Stanovich, 1986), the hypothesis that the "rich-get-richer and poor-get-poorer," in reading achievement further illustrates how students that begin as poor readers will further experience problems in reading achievement as they get older. Children who begin preschool or kindergarten with prior experience in reading are more

prepared and are less likely to experience difficulties in reading (Lonigan, Burgess, & Anthony, 2000; Scarborough, Dobrich, & Hager, 1991). Hart and Risley (1995) conducted a seminal study that found that oral language development was related SES: by the time children of higher SES were four, they had been exposed to an estimate of 45 million words, while those that were of lower SES had only been exposed to an estimate of 13 million words. In another study, students who were struggling by the end of first grade were more likely to continue to read at poor reading levels in the fourth grade (Juel, 1988). These and other findings suggest that the early years are critical in setting the stage for reading in children, which is a time when children spend most of their day at home with caregivers.

Parents or caregivers are often children's first teachers and a number of factors in the home environment can help or hinder the development of early literacy skills of children in general (Purcell-Gates, 1996; Senechal, 2006; Senechal & LeFevre, 2002). Different home literacy-related activities and interactions, such as reading, number of books in the home, teaching of the alphabet and their sounds, trips that can stimulate language (e.g., visits to the public library), or even helping with homework for those children already in school, provide opportunities for children to learn skills in reading and have been found to be related to literacy outcomes (Burgess, Hecht, & Lonigan, 2002; Tichnor-Wagner, Garwood, Bratsch-Hines, & Vernon-Feagans, 2015). Other factors such as having access and exposure to literacy materials, books, or a computer in the home are also related to foundational literacy skills (Senechal & LeFevre, 2002; Tichnor-Wagner et al., 2015). Research on home literacy activities and reading skills, such as vocabulary,

language (i.e., expressive, receptive language), alphabet knowledge, and decoding of words, have indicated that these home practices are predictive of literacy skills (Burgess et al., 2002; Froiland, Powell, & Diamond, 2014; Roberts, Jurgens, & Burchinal, 2005). Similar findings have been highlighted for children from culturally and linguistically diverse (CLD) backgrounds who are ELLs; some studies have found that home literacy practices make an impact on literacy skills in both English and the home language (Farver, Xu, Lonigan, & Eppe, 2013; Lewis, Sandilos, Hammer, Sawyer, & Mendez, 2016).

These findings suggest the importance of parent involvement in developing early reading skills in their children. Thus, there has been a major focus in intervention efforts to increase home-literacy practices in the literature. The NELP (2009) report, which is a highly referenced study that has strong implications for non-ELLs, evaluated home and parent programs where parents or caregivers implemented strategies with their children and found statistically significant effects on early literacy skills. Although studies on the NELP report do not consider ELLs specifically and can make it difficult to generalize to this population (Gutierrez et al., 2010), research has shown that influences in the home and parental involvement are related to literacy outcomes of non-ELLs and ELLs (Epstein, 2011; Farver et al., 2013; Senechal, 2006; Tichnor-Wagner et al., 2015).

Risk Indicators for ELLs

The importance of emergent literacy acquisition also relates to children who read or are read to at home in languages other than English (Ballantyne et al., 2008). However, young children who are ELLs or come from CLD families are at an increased risk for

reading difficulties at kindergarten entry and throughout formal schooling (August & Shanahan, 2008; Ballantyne et al., 2008). Along with learning a language that is different than the mainstream language prior to entering kindergarten, these children also are more likely to experience other risk factors such as low socioeconomic status, low parent educational level, or even healthcare disparities (Ballantyne et al., 2008). In addition, children of certain minority groups are less likely to attend preschool than their White counterparts. For instance, according to the National Institute for Early Education Research, three and four-year-old Hispanic children had lower rates of preschool attendance than any other group (as cited in Ballantyne et al., 2008).

Given that children spend a large amount of time at home with a parent or caregiver prior to the start of formal schooling, the home environment is very important when considering certain factors, such as early reading experiences or opportunities that can contribute to or impede emergent literacy skill acquisition. Parents who do not speak English are less likely to read books to their young children when comparing with families where parents speak English (O'Donnell, 2008). This is apparent even though many CLD parents hold high aspirations for their children and have a strong desire for them to achieve in school and learn English (August & Shanahan, 2006; Worthy & Rodriguez-Galindo, 2006). Some studies also suggest that resources in the home, or lack thereof, may have some influence on the home literacy environment in this population (Farver et al., 2013). Other studies have found other home-related characteristics, such as SES, parent involvement, and parent encouragement of literacy skills to be associated

with school readiness (i.e., oral language skills and social functioning; Farver, Xu, Eppe, & Lonigan, 2006).

Home-Based Literacy Programs

Given the importance of home literacy practices on children's reading and academic outcomes, a multitude of home- and family-based programs have been developed and implemented in schools that are focused on increasing outcomes of children (Auerbach & Collier, 2012). Senechal and Young (2008) conducted a meta-analysis that investigated the effects of parent involvement interventions that are implemented for the purpose of increasing reading acquisition of children in kindergarten through third grade. The authors evaluated 14 studies that met selection criteria and found that overall, the studies yielded moderately large effects. Further analysis in the study showed that interventions where parents are encouraged to teach their children specific skills were much more effective than those where parents read to their child or listened to their child read. It was also found that the interventions were just as effective for children with reading difficulties as they were for typical peers.

In another meta-analysis that also investigated the effects of family literacy programs, van Steensel, McElvany, Kurvers, and Herppich (2011) found 30 studies that investigated these interventions with children in preschool and older. The authors found that family literacy programs overall had a small significant effect, which differs from the effects found by Senechal and Young (2008). They also examined studies that implemented interventions that were comprehension-focused or code-focused and found very small differences in effects between both types of programs. In addition, further

moderator analyses investigated the effects on program characteristics such as program activity (i.e., shared book reading, teaching of specific skills), staff quality (i.e., interventionists/teachers who provide training to parents), whether the program included home visits and/or group meetings, whether books were provided, location (i.e., home only or home and center), and the duration of the program (i.e., less than five months or five months and over). Sample characteristics that were also analyzed included risk status and age group (i.e., before formal education or formal education). No significant effects were found for program or sample characteristics.

Although these studies provided valuable information about the effectiveness of home-based literacy programs in general, they do not provide any information on the effectiveness of similar programs for CLD children and families. One review and meta-analysis evaluates the research on home interventions for young children of diverse backgrounds (Manz, Hughes, Barnabas, Bracaliello, & Ginsburg-Block, 2010). The article reviews 31 home-based early literacy intervention studies and further analyzed effect sizes of 14 of those studies. The purpose of the review and meta-analysis was to evaluate how much the current literature applies to children who come from low-income, ethnic minority, or linguistically diverse (e.g., non-English speaking) families. The findings in this study highlight the need for more research that is targeted towards CLD learners. Manz et al. (2010) found that only about half of all the studies included information about ethnicity or language for their child samples. In addition, in the studies that did report these participant characteristics, ethnic minority children and ELLs were significantly underrepresented.

The meta-analysis in Manz et al. (2010) provided findings on the effectiveness of family literacy interventions in 14 of the 31 studies reviewed by calculating Cohen's d effect sizes. The authors found that studies that included participants who were primarily Caucasian yielded high effects with an overall effect size of .64. Further, when evaluating studies that included participants who were primarily ethnic minorities, the authors found that these studies yielded small effects with an overall effect size of .16. The authors concluded that more research is necessary that reports on ethnic and native language status. Limitations addressed were that not only were few CLD children were represented, which strongly limited conclusions, but also that psychometrically sound measures that are validated for specific cultures were also rarely reported, creating further difficulty in generalizing the findings. Although the purpose of the analyses in Manz et al. was to analyze and synthesize the effects of the literature on home- and family-based literacy interventions on children with diverse backgrounds, this study was not focused on studies with ELLs and the criteria for inclusion were very broad.

Purpose

Considering the vast amount of research and data available supporting home-based literacy interventions for non-ELLs and the limited available research on these interventions for ELLs and CLD populations, this systematic review will address the following research questions:

(1) What types of home-based literacy interventions for ELLs are common in the literature?

(2) Do studies on home-based literacy interventions for ELLs report cultural adaptations?

(3) In studies with a comparison group, are home-based literacy interventions for ELLs found to be effective or positively related to literacy outcomes?

Method

For this systematic review, a computer search using the online databases of PsycINFO, ERIC, and Education Source using the following keywords alone or in combination: *family literacy intervention*, home literacy intervention*, family literacy program*, home literacy program*, home-based literacy, home-based reading intervention*, home-based reading program, home storybook reading, emergent literacy program*, parent*, family, caregiver, mother*, father*, parent* implemented, parent* as teacher*, English language learner*, English learner*, second language learner*, culturally and linguistically diverse,* and/or *dual language learner**. In addition, references from the included studies from the database search were reviewed for inclusion of more studies. This review was limited to studies that are published in scholarly journals or completed dissertations between 1995 and 2016. The search was further limited by evaluating studies according to the following criteria:

(1) Studies must involve children in preschool through second grade or ages 30 to 96 months.

(2) Studies must involve interventions for children who are ELLs, identify as speaking a language other than English, or identify as learning a second language

(i.e., second language learners, dual language learners, language minority children, bilingual learners).

(3) Studies must involve training or consulting with parent(s) or caregiver(s) for the purpose of providing support/activities in literacy in the home environment (e.g., providing resources, literacy education for parents, etc.).

(4) Studies must include data based on literacy or language outcomes of child participants.

(5) Studies must be published in a peer-reviewed journal.

(6) Studies must be written in English.

(7) In order to review the effectiveness of home-based literacy programs, studies that include a comparison group (i.e., experimental and quasi-experimental designs) are further reviewed.

The studies identified were further examined for the following characteristics: type of intervention implemented (i.e., storybook reading, provision of materials for home, adult literacy), purpose/goals of intervention, study design, primary language, income status, age of child participants and gender, interventionist responsible for implementation, amount of training necessary for interventionist, number of training/meetings between parents and interventionist, amount of time required for parents to meet with child, length of the intervention (e.g., number of sessions or weeks), language used for intervention, materials and how they were selected, which (if any) cultural or language adaptations were made for the intervention (see Table 1 for definitions applied to these categories).

Results

The literature database search yielded 140 studies. For each relevant study identified, abstracts were reviewed to further narrow the search using the search criteria. Following the review of abstracts, repeated articles were removed and the remaining studies were read in depth. Only 15 published studies and no dissertations met the criteria for inclusion in this review. Of these studies, 11 used an experimental or quasi-experimental design. Most studies identified initially that did not meet criteria were excluded due to the following: missing child outcome data, not meeting the age requirement, participants not identified as learning a second language, no actual training for parents, or no implementation by parents in the home setting.

Interrater Agreement

Interrater agreement was measured for selection of studies and coding of study characteristics by the author and a current graduate student. For coding of studies, 25% of the studies were analyzed by a second coder (n=4). Agreement between raters for coding was 100% and 93.3% for study inclusion.

Sample Characteristics

Studies identified for this review included very diverse sample characteristics (see Table 2). Sample sizes varied across studies, ranging from 2 to 319 participants (M = 64.3, SD = 84.0). Most participating children in the studies reviewed were in early childhood or preschool programs. About 67% of the studies included children in preschool, with the youngest at around two and half years old (29.75 months). Only 33% included children in kindergarten. One study included a sample that ranged from

preschool to second grade (M age = 66.76), while the rest did not include any children in first or second grade. Ages in months ranged from 29.75 to 67.20 months. Three of the 15 studies did not report age in months or years and only reported grade-levels. Gender was reported for all but one study. Three studies did not represent of boys and girls equally, with girls being underrepresented in these three studies. Gender was equally represented in all other studies.

In all studies, participants were learning how to speak English. Most studies reported that Spanish was the primary language, with the remainder reporting a diverse set of backgrounds. Eight studies (53%) reported Spanish as the primary language (L1), with two other studies reporting that the majority of families participating indicated Spanish as their L1. The remainder of the studies included families that indicated L1 to be one of 22 different languages (see Table 2). Regarding participating students' disability status, most studies did not report whether participants were at risk for reading problems, receiving services at any tier, or have a learning disability, which may be due to the age group being targeted. Two studies reported that students were receiving speech and language services and one study indicated that the sample included both participants who had an identified disability and those who were in general education. Two studies specified that children with disabilities were not included in their study while the rest did not report the disability status of the participants or whether the participants were selected based on need or risk (67%).

Seven studies indicated that the parents of the families participating in the study received no more than a high school diploma. Five studies did not report this information,

one reported that all families participating were highly educated, and one indicated that the sample was educationally diverse. A majority (67%) of the studies included families of a low SES background, which was defined by income status or parent reports of receiving free or reduced lunch at school.

What Types of Home-based Literacy Interventions and Their Characteristics Are Common in the Literature?

All 15 studies identified for review presented unique interventions, with most interventions emphasizing a storybook reading component (73%). Half of those studies (45%) indicated that parents were trained in dialogic book reading practices for the intervention. Additionally, 40% of the studies only used storybook reading, with or without dialogic reading practices and without any other components. The remaining included a combination of components. Interventions that did not emphasize storybook reading were focused on one or more of the following components: the provision of resources, teaching of specific emergent literacy skills, encouragement of activities that may promote literacy development, teaching of adult literacy for parents, or encouragement of general parental engagement (Table 3). The extensiveness of the programs ranged from having very little involvement with the participating families to more comprehensive programs with extensive communication and involvement from the principal investigators or other staff.

The number of training sessions or meetings the parents received prior or during the intervention varied across all studies (Table 3). For instance, Hancock (2002) reported only one meeting between parents and teachers where the study was explained,

instructions were given, and parents signed a contract to indicate they will read to their children daily. Huennekens and Xu (2010) and Lim and Cole (2002) also reported only meeting with parents for one session where instructions were provided. St. Clair and Jackson (2006), on the other hand, offered 25 parent sessions throughout a period of one full school year, where teachers and other staff met with parents often. The median number of parent sessions before or during intervention, where a parent or caregiver met with a support-person or staff member involved in the intervention is 7 sessions (SD = 8.48).

In addition to the number of parent sessions, duration and intensity of the intervention were reviewed (Table 3). Across studies, children received intervention at different levels of intensity and duration. In studies where the weekly amount and duration of intervention was reported, intervention ranged from one day per week for eight weeks (Boyce et al., 2010) to five days per week for 15 weeks (Hancock, 2002). Six of 15 studies did not report how often parents were expected to engage with their child and use the strategies taught. Two of these studies implemented intervention for at least one full year. The intervention implemented in Van Tujil, Leseman, and Rispens (2001) lasted the longest at two full school years in duration (i.e., 60 weeks, 30 weeks each year). The two studies lasting at least one year were the most comprehensive and involved interventions as part of state-funded programs, which were more extensive in the training of parents along with included attendance of preschool.

Most interventions (73%) provided books for the family to take home and keep. In most studies, this was done to ensure families had access to similar books to read at

home as part of the intervention. A fourth of the studies provided materials that would facilitate fidelity and engagement of specified activities. In terms of book selection, the choice of the book varied. Five studies allowed the parents to select the books to read to their children, three studies indicated that the books being used in the classroom curriculum were the ones provided for home, two studies indicated that teachers and researcher selected the books to provide for the home component, and the remaining did not report the process of book selection.

Among the skills that were targeted in the studies reviewed were oral language skills, including oral language-use and specific target vocabulary words, print awareness, phonological awareness, and general literacy. Only about half (52%) of all outcomes measured in the studies consisted of assessments that were norm-referenced, standardized, and manualized (Table 4). The remaining outcomes were study-specific, with many of them involving frequency counts of words in recorded language samples or researcher-developed vocabulary lists. Of the outcomes measures, the majority of them measured oral language and vocabulary skills (77%), 16% measured general literacy skills or reading ability, and only 6% measured phonemic awareness skills. Additionally, of those studies that used norm-referenced, standardized measures, half of them reported measures in English, while the other half reported literacy outcomes in both English and Spanish. Those studies with languages other than Spanish or English did not report standardized tests in L1 or those adapted for those populations, with some having to use assessments created by the investigators.

Studies were further reviewed in order to determine the quality of the research designs used (Table 5). Approximately half of all studies identified for review followed a quasi-experimental design, which does not include random assignment of participants into groups. Only a quarter of the studies employed an experimental design or randomized controlled trial. One study used a single-case design with only two participants, while the remaining studies (20%) used pre-post designs in their analyses. Of the studies that included a control group, about half indicated the control groups engaged in business-as-usual, while the remaining engaged in a different form of intervention or instruction (Table 5).

Social validity information of the interventions implemented was collected in less than half of the studies (40%), in which parents or teachers were asked about their experiences and opinions of the interventions and their thoughts on the effectiveness of the interventions and activities on their children's literacy outcomes (Table 5). Some form of treatment fidelity check was reported on most studies (80%; i.e., video observation, live observation, self-report parent logs or checklists, or phone calls to check in and remind families of activities). It should be noted, however, that only 33% of those studies checked fidelity through observation, with many not indicating whether or not this was done systematically or informally. For instance, Boyce et al. (2010) measured fidelity systematically by using existing rating scales, which were not specific to the intervention itself, to measure parent and child engagement of videotaped sessions. Two studies checked fidelity at the end of the intervention where interventionists rated each participating family on attendance and the interventionist's opinion about the parents'

implementation of literacy activities at home. Another three studies did not report any form of treatment fidelity (Hancock, 2002; Harper, Platt, & Pelletier, 2011; Roberts, 2008).

Do Studies on Home-based Literacy Interventions For ELLs Report Cultural Adaptations?

While a majority of the studies were conducted in the United States, three of them were conducted outside of the US (i.e., Canada, Netherlands). In all studies, children and their families were learning English as their second language. Cultural adaptations are typically poorly defined in studies with CLD participants (August & Shanahan, 2006). For the purpose of this review, cultural adaptations are defined as changes or additions to an intervention or curriculum for the purpose of meeting the needs of participants who are learning a second language. Studies in this review presented with several cultural adaptations, ranging from providing materials and instructions in L1 to using more family-friendly language during instructions or lessons (Table 3).

In this review, most studies implemented interventions in L1, which in most cases was the language that parents or caregivers were most comfortable speaking and reading in. About 53% of interventions used L1 alone, and another 20% of them used both L1 and L2. One study (St. Clair & Jackson, 2006) did not report which language was used for the actual intervention. The remaining studies used L2 for intervention, which is attributed to the heterogeneous nature of the sample. The three studies that used L2 included participants of very diverse backgrounds and languages with fewer resources. For instance, Harper et al. (2011) reported the use of eight different languages (i.e.,

Hindu, Punjabi, Mandarin, Cantonese, Spanish, Croatian, Arabic, and Farsi). O'Brien et al. (2014) reported nine different languages being represented, and Purcell-Gates et al. (2012) reported two different languages other than Spanish. It is possible that bilingual staff or materials were not available for all languages. Harper et al. reported that interventionists were not bilingual and unable to represent all eight languages for their sample, while O'Brien et al. reported that bilingual staff members were available for questions and clarification. Purcell-Gates et al. did not report whether bilingual staff or materials were available to participants.

Other culturally appropriate adaptations were reported in the reviewed studies. In one study, Hirst, Hannon, and Nutbrown (2010) ensured that culturally relevant topics were included in the parent curriculum. Additionally, the interventionists made themselves culturally aware of events and holidays that may be of importance for the families, and remained sensitive when scheduling lessons or meetings with the families. They also made changes to the intervention in order to meet the needs of the families. For instance, Hirst et al. included picture books as part of their materials in order to support parents who did not know how to read. Additionally, when they realized parents were telling stories in their native language, they began providing books in that language in order for families to feel more comfortable. Other materials that were used in the interventions, such as toys and crafts, were purchased locally in order to make them familiar to the children and families. During visits, the investigators who led these visits incorporated the families' culture and religion. At the start of the intervention, much of the discussion during home visits included talks around the festival of *Eid*, which is

referred to as the "festival marking the end of Ramadan, the Islamic holy month of fasting" (Hirst et al., 2010, p. 195). Additionally, visits were scheduled around prayer times, considering that it may be important for the families to be able to attend prayer. Hirst et al. highlighted how their team intentionally took several steps in order to become more familiarized with the community and culture of that population. The same authors even conducted a previous informal study in order to become more informed of the literacy practices at home in that particular community (Hirst, 1998). Similar to Hirst (1998), Lim and Cole (2002) also implemented an intervention where picture books without words were provided to Korean families. Interestingly, the investigators noted that mothers were concerned about some of the cultural relevance in the Korean picture books that were provided, indicating that some of the content would not have made sense with their children's experiences in the US. This further highlights the need for culturally relevant materials when conducting research and implementing interventions.

Other attempts at meeting the needs of families in a culturally relevant manner are demonstrated in Ijalba (2015) and Boyce et al. (2010) by individualizing the books used in the interventions. In the former study, the researcher was involved in creating the curriculum and materials (e.g., books) by first asking participating mothers about the different themes that influence the communication they have with their children (Ijalba, 2015). The author created six books in Spanish that related to the themes identified with the mothers in the intervention. The author created books surrounding the interests identified as an effort to make them desirable and interesting to the family. Boyce et al. took a slightly different approach by allowing parents to create the books that were to be

used during intervention. This way, the intervention focused on strengths that the parents already had. Topics of these books varied and depended on the family's interests, making each family's intervention somewhat unique. By adapting a typical book reading intervention in this manner, children and families were not only be able to have access to reading materials, but the reading materials were also likely to be more relatable and interesting to these families. Further, this approach respected the parents' narrative style and levels of literacy skills, considering that families may have had varying literacy skill levels (Boyce et al., 2015).

In Studies With A Comparison Group, Are Home-Based Literacy Interventions For Ells Found To Be Effective Or Positively Related To Literacy Outcomes?

Of the 15 studies reviewed, 11 of them had a comparison group, with only four using a randomized controlled design. This is an important consideration, as causal inferences should be taken with caution when assignment into groups is not randomized. However, findings from these studies may provide valuable information for future research. Given the differences across studies and intervention strategies, studies are grouped and reviewed based on the following themes: (1) storybook reading and dialogic reading, (2) state-funded programs, and (3) literacy activities. Studies were categorized under *storybook reading and dialogic reading* if the intervention involved parents reading books to their children at home. Those categorized under *state-funded programs* involved interventions that were part of larger programs that were funded by the state and were more comprehensive (e.g., including a component where the parents were taught English literacy skills directly so that they can use their skills at home with their

children). Studies under *literacy activities* involved interventions where parents were asked to engage in specific literacy activities, other than reading books, at home.

Storybook Reading Interventions

Previous research has found strong relations between storybook reading and literacy skills (Bus et al., 1995; Senechal & LeFevre, 2002; Senechal & Young, 2008). Less research has focused on this relationship for children who are ELLs. Most studies identified for this review involved interventions where the parents are instructed to read storybooks to their children. In some cases, more specific training was provided to parents so that certain strategies can further enhance the effectiveness of the interventions.

Boyce et al. (2010) were interested in meeting the needs of a migrant worker population by implementing a shared book reading intervention with books that were created by the parents themselves. Boyce et al. randomly assigned participants from a Head Start program (mean age = 41.43 months) to be part of either the intervention or a business-as-usual control group. The total sample included 75 Spanish-speaking families from three different Head Start sites. This study measured language-production using the Child Language Data Exchange System (MacWhinney, 2000), in which two-minute language samples were recorded, transcribed, and analyzed for total number of words (TNW) and total number of different words (TDW) observed per child participant. Children in the intervention group had a significant increase in the number of TNW's and a medium effect size was reported (partial $\eta^2 = .10$) in favor of the intervention group. Similarly, children in the intervention group had a significant increase in the number of

TDW and a medium effect size (partial $\eta^2 = .07$). This study suggests that encouraging parents to talk and read more to their children in a culturally relevant manner can increase language production in young children. While these results are promising, this study could have provided more valuable information had the authors considered including children's literacy skills using standardized measures.

Hancock (2002) investigated the effects of the exposure to books in L1 on the pre-literacy skills of native-Spanish speaking children. They hypothesized that providing books in Spanish to a treatment group of native-Spanish speaking children is more effective at improving pre-literacy skills than providing equivalent books in English to a control group. A sample of 77 children in kindergarten participated in this study, where 26 native Spanish speakers served as the intervention group, 25 native Spanish speakers served as the first control group, and another 25 served as an English-only control group in order to compare the effects to monolingual children. In this particular study, parents were not instructed to provide reading strategies and were not involved in training. However, investigators measured parents' reading skills prior to beginning intervention in order to ensure that they had the ability to read books to their children. Parents agreed to participate in the study and read a book to their children every weekday for 15 weeks by signing a contract and submitting reading logs. The intervention group received books in Spanish, while both control groups received books in English.

Pre-literacy skills were measured using the Test of Early Reading Ability Second Edition (TERA-2), a measure of print-related skills (i.e., alphabet knowledge, conventions of print, and meaning of print.), after receiving intervention. The study did

not measure pre-literacy scores at pre-test; therefore, Analysis of Variance (ANOVA) was used to analyze differences in scores between the intervention group and the two control groups. Post-scores of literacy skills between the intervention group and the Spanish-speaking control group were statistically different and had a large effect size (ES = 0.73). Further, the difference between the intervention group score and the English-speaking control group score was not statistically significant and yielded a small effect size (ES = 0.03). This finding is particularly interesting, given that both groups that received books in their native language scored similarly at the end of the study. While the findings should be interpreted with caution due to the limited research design, the results are promising and should encourage researchers to further examine the language of materials provided at home (Hancock, 2002).

Lim and Cole (2002) implemented a picture book intervention with native-Korean speaking families. A total of 21 preschool-aged children (M age = 39.6 months) participated in the study, with 11 children receiving intervention and 10 placed in a control group. Parents in the control group received one hour of general emergent literacy instruction while parents in the treatment group received one hour of picture book interaction training, which included strategies from dialogic reading in Whitehurst et al. (1988), as well as strategies from Dale et al. (1996) and Cole and Maddox (1996; as cited in Lim & Cole, 2002). Some of these strategies included commenting, providing questions and allowing children to answer, and adding more to a given answer. Mothers were instructed to read using the provided picture books every day for 10-15 minutes. The entire intervention lasted 4 weeks.

Lim and Cole (2002) measured language performance using Mean Length of Utterance (MLU), Total Number of Utterances (TNU), and Total Number of Unique Words (TNUW), which were coded from 10-minute language samples between participating mothers and children. The results indicated that the group (intervention and control) by time (pre- and post-test) interaction was significant for all three language-performance indicators. Those in the intervention group made significant gains, with the findings suggesting a large effect (ES = 1.8). A small effect size was reported for the control group (ES = -0.1). As a result of the intervention, ELL children increased their vocabulary, talked more, and engaged in longer utterances.

In another study conducted outside of the US, 16 3-year-old children and their families participated in a literacy intervention (Hirst et al., 2010). The children were identified as ELLs and spoke either Mirpuri Punjabi or Urdu, which are native to Pakistan. The study took place in England in a Pakistani community. The purpose of the intervention was to be able to provide books and support in early literacy while respecting the families' "culture, religion, languages, and writing systems" (Hirst et al., 2010, p. 187). Families agreed to a one-year commitment for the program

Children were assessed using the Sheffield Early Literacy Development Profile (SELDP; Nutbrown, 1997), which measures print-related skills (i.e., knowledge of print, books, writing, and letter recognition). The actual intervention followed the ORIM framework by Hannon and Nutbrown (1997) which is a framework where *opportunities* for book sharing are offered, there is *recognition* by a parent of the ways a book can be shared, *interaction* occurs between the parent and child, and the parent *models* book

sharing through oral language (as cited in Hirst et al., 2010). Weekly home visits by the investigators focused on at least one of the following: environmental print, books, early writing, or oral language. Participants received books and materials as needed for the remainder of the project, which lasted one full year.

Results in Hirst et al. (2010) indicated that the intervention group made significantly higher gains (pre-test M = 20.9; post-test M = 36.3) than did the control group (pre-test M = 22.2; post-test M = 25.3) in print-related skills. Hirst et al. attributed the positive effects in this study to the bilingual approach and the cultural awareness activities that took place, which are mentioned above. The investigator referred to these steps as an "appreciation of religious and sociocultural literacy practices" which may have provided a boost in the intervention and could have been responsible for the effects. In addition to the effects in literacy skills, siblings became very involved in the intervention and mothers reported that they felt the intervention was valuable and that they felt they could contribute to their children's literacy because of the intervention (Hirst et al., 2010).

Ijalba (2015) conducted an experimental study with 24 preschool children and their mothers in which a literacy intervention was implemented in Spanish (L1) with half of the sample. All children in this study were previously identified as having language delays, were attending a special-needs school where they received speech and language services on a regular basis, and received instruction in English. All families took part in an introductory meeting that emphasized the importance of literacy and involvement/stimulation at home. However, half of the sample was randomly assigned to

a waitlist control group while the other half participated in the intervention where parents attended parent education meetings. In this study, mothers were instructed to engage in language-literacy stimulation activities by first reading one of six books, which were created based on the participating mothers' interests for this study, with their children and providing opportunities for them to learn through real-life activities, such as play or daily routines at home, in order to reinforce the words beings learned during storybook reading. Through conversation about the stories and activities, different concepts were introduced to the children.

This study investigated the effects of the intervention on language and vocabulary using the following measures: MBCDI-Spanish (mother-reported vocabulary), Preschool Language Scale Fourth Edition (PLS-4; early language and literacy skills) Spanish, and the Expressive One Word Picture Vocabulary Test Fourth Edition (EOWPVT-4; expressive vocabulary) in Spanish and English. Effects were tested for each of the measures. According to scores on the MBCDI-Spanish, which are mothers' reports of children's vocabulary, interaction effects between time and condition were significant and suggested that the intervention group had a significant increase in words on the MBCDI-Spanish, while the control group did not. For scores on the PLS-4 Spanish, receptive language scores did not yield significant differences after the intervention, indicating that there were no differences in scores between the intervention group and control group. However, expressive language scores on this measure did yield significant differences; the intervention group scores significantly increased after the intervention, while the control group scores did not. Scores on the EOWPVT-4 significantly increased

in both English and Spanish. Interaction effects indicated that the intervention group made significant gains in Spanish and English scores, while the control group did not. This study suggests that home literacy intervention in the native language (Spanish) can help increase expressive language skills in both English and Spanish in preschool children with language delays. The lack of receptive language increase was attributed to the duration of the study (16 weeks) and a general measure used to assess receptive language. The small sample size in this study limits the findings; however, the investigators still encourage keeping intervention groups small and individualized in order to make appropriate accommodations and meet the needs of the participants in a feasible manner (Ijalba, 2015).

Dialogic Reading. Half of the studies that implemented storybook reading interventions trained parents in dialogic reading practices. Dialogic book reading is an intervention developed by Whitehurst and colleagues (1988) in which parents are instructed to read to their children and have a conversation together about the book being read. Dialogic book reading encourages parents to ask questions about the story (i.e., open-ended questions and function/attribute questions), scaffold their children's answers, and have them eventually become the story-tellers and be able to engage in more interactive conversation about the story (Whitehurst et al., 1988).

Harper and colleagues (2011) conducted a study with 132 ELL and non-ELL children in Kindergarten (mean age = 58.14 months). These participants varied in L1 and all were considered ELLs in Canada. The following languages were represented in the sample: Punjabi, Urdu, Hindi, Cantonese, Mandarin, Vietnamese, Spanish, Croatian,

Serbian, Arabic, Farsi, and Pashto. A treatment group of 96 children and their parents participated in a family literacy program for nine weeks, where parents of the children attended a weekly meeting during the participants' school lunch. The program followed a curriculum by Doyle, Hipfner-Boucher, and Pelletier (2008), that included sessions where parents learned about different ways they could help with their children's language and literacy development (as cited in Harper et al., 2011). In addition, both the parents and children engaged in activities that promoted these skills during each session. Each session covered a topic (e.g., *Choosing Books for Young Children, Talk to Your Child, Thinking About Words and Sounds*, etc.). In one lesson, *Narrative and Storytelling*, parents were taught dialogic reading strategies in order to encourage parents to use similar strategies at home, although these strategies were not monitored. Due to the diverse set of participants in this study, the lessons were conducted in English and no materials were provided in the native language.

Early reading skills were measured before and after the intervention using the TERA-3, an updated version of the TERA-2 at the time, which measures alphabet knowledge, conventions of print, and meaning of print. Harper et al. (2011) conducted four separate repeated measures analyses in order to examine the effects of the intervention on the TERA-3 total score and the effects on the following subtests: Alphabet, Conventions, Meaning. The results presented with medium to large effects sizes. First, there was a significant interaction between time (i.e., pretest and posttest), group (i.e., treatment and control) and language (i.e., ELL and non-ELL). The ELL treatment (intervention) group made significantly higher gains in the raw score of the

TERA-3 than did the non-ELL treatment group (ES = 0.09) and the ELL control group (ES = 0.11). ELL treatment group made significantly higher gains in the Alphabet subtest score than did the ELL control group (ES = 0.08), while the non-ELL control group made larger gains than the ELL control group (ES = 0.13). The results of the Conventions of Print subtest presented with a significant interaction between time and language, indicating that ELLs made larger gains than non-ELLs in the treatment group (ES = 0.07) and the control group (ES = 0.20). The ELL treatment group made significantly high gains on the Meaning subtest in comparison to the non-ELL treatment group and the ELL control group (ES = 0.11). These results are promising and provide positive results in a group of highly diverse individuals in terms of L1.

Tysbina and Eriks-Brophy (2010) conducted a study using a quasi-experimental design that investigated the effectiveness of a dialogic book reading intervention on target vocabulary words for a group of bilingual preschool children with vocabulary delays. Adding to the literature on dialogic book reading, Tysbina and Eriks-Brophy were interested in the effects of the intervention if it was provided directly to participating children by both the principal investigators and parents in L1 and L2, respectively. The study included 12 children who were on a waiting list to receive speech and language services (mean age = 29.75 months). These children were identified as bilingual by parents' reports of Spanish spoken in the home and exposure to English at day care. Overall vocabulary was measured before and after the intervention using the MacArthur-Bates Communicative Development Inventories (MBCDI) in English and Spanish. In

addition, target vocabulary lists were created for each participant, which was also measured before and after intervention.

According to the results of the study, children's target vocabulary score significantly increased after receiving intervention, while the control group did not make the same gains, which yielded large effect sizes (ES = 1.2 for English words; ES = 1.8 for Spanish words). However, overall vocabulary yielded small effect sizes (ES = 0.4 for English words; ES = 0.1 for Spanish words). Significant differences were not detected between the intervention group and the waitlist control group in this case. The study suggests that while children may learn specific target words, their overall vocabulary may not benefit from the intervention. The authors attributed these results to limited statistical power, treatment intensity, and strategies used for the intervention (Tysbina and Eriks-Brophy, 2010).

State-Funded Programs

The following studies investigate the findings of two comprehensive Even Start programs. Even Start is a state-funded early childhood education program that aims at improving literacy outcomes for children that are at-risk for low literacy. One of the aims of Even Start programs is to provide adult education for parents and caregivers in order to improve their literacy skills and better support their children. State-funded programs like Even Start are typically more comprehensive and long-term (e.g., run for a full school year as opposed to shorter programs).

Ryan (2005) evaluated the effectiveness of an Even Start program on literacy outcomes of Latino preschool students compared to students that are not part of the Even

Start program in the district's Title I preschool program. The Manchester Even Start program investigated in this study is a comprehensive preschool program that provides education with bilingual teachers (i.e., bilingual teachers in their classrooms to integrate Spanish when students required support), home visits, and support for parents of children enrolled in the program. Parent-child interactive literacy activities were required (e.g., trips to the library, Thanksgiving dinner, etc.) and lessons from children's preschool classes were reinforced with parents during visits. As part of the comprehensive program, parents were also required to take English language and literacy classes in order to improve parents' literacy skills, making this intervention more extensive. These were taken twice a week throughout the entire program.

Early literacy skills were measured using the Phonological Awareness Literacy Screening (PALS) preschool assessment total raw score (Ryan, 2005). A regression model was used to find how predictive pre-test scores were of post-test scores on the PALS. When controlling for pre-test scores, being part of the Even Start program was associated with having higher scores than those of students who were in the Title I program. Twenty-six percent of the variance in PALS post-test scores were account for by the model, with large effects (ES = .77). These results indicate that being part of the Even Start program was correlated with scores on the PALS, which measured phonological awareness and early literacy skills. Interestingly, preschool attendance and number of home visits were positively correlated with higher scores, while attendance of the English literacy classes (for parents) and completion of literacy activities was

negatively related with higher scores. These findings were non-significant, but may suggest that these program components should be studied further.

St. Clair and Jackson (2006) conducted a quasi-experimental study that examined the effects of family participation in a parent education program on language and general literacy outcomes of kindergarten students. A sample of 14 families received the intervention, while a control group of 15 families received a different intervention (i.e., English books sent home for reading). All families spoke Spanish as their first language, except for one family which spoke Vietnamese. Similar to Ryan (2005), the intervention was part of an Even Start kindergarten program for migrant families where resources and parent trainings (i.e., adult education) were provided to participating families. Further, this program was different by providing unique resources, such as educational video games (i.e., Play Station Light Span Achieve Now educational software), educational tablets (i.e., Leapfrog Leap Pads), books, and other literacy materials. Several activities and materials that supplemented the students' kindergarten curriculum were also included.

In order to analyze the intervention's effectiveness, St. Clair and Jackson (2006) measured language skills in English using the Woodcock-Muñoz Language Survey (WMLS) at the end of the first year of intervention and then again at the end of the second year of intervention. At the end of the first year, which was the end of Kindergarten, students in the intervention group scored higher across all subtests of the WMLS (i.e., Picture Vocabulary, Verbal Reasoning, Letter-Word Identification, and Writing). However, none of these subtest scores were significantly higher according to

their analysis. At the end of the second year in the study, students in the intervention group scored even higher across all subtests and across the broad score of the WMLS. These differences were statistically significant, indicating that the intervention group did make significant gains compared to the control group after two years of the intervention.

Interventions that Encourage Literacy Activities

Some research has indicated that having parents teach their children specific skills and engaging in literacy activities may be similarly related to positive literacy outcomes (Senechal & Young, 2008). The following studies were also comprehensive, but included specific instructions for parents to engage in literacy activities with their children. These may have involved literacy activities using skills that were taught to parents by the interventionists or real-world activities, such as conversation and language, with the purpose of enhancing literacy-related behaviors.

As mentioned above, Ryan (2005) studied the effects of a comprehensive intervention that was integrated with the participating children's preschool and curriculum. In addition to a focus on adult literacy skills, families were encouraged to engage in specific literacy activities, which aimed at increasing literacy-related experiences for the children in the study. The program interventionists assigned each of these activities to families every two months. Some examples described in Ryan (2005) included a trip to the library and a trip to a farm.

O'Brien and colleagues (2014) implemented a family literacy program with a quasi-experimental design and a total sample of 158 parent-child dyads. Of that sample, 104 were placed into a treatment group, while 54 were placed into a control group. All

children, preschool through second grade, who participated in the study were ELLs with limited English proficiency; the native languages represented in the sample included Spanish, Somali, Creole, Vietnamese, Amharic, Khmer, Kirundi, Kinyarwanda, and Tamil, with the majority of the sample receiving intervention being native-Spanish speakers (84%). This particular study had a heavy focus on instruction of English literacy for parents, with an outcome goal of improved English literacy for parents and children. Although the program had a "lending library" that allowed families to borrow books in different languages, the ones provided as part of the intervention were all in English. However, the English instruction sessions for parents were conducted in L1, but taught L2 (English) literacy in order to encourage understanding. Home literacy events, described as opportunities at home during usual routines, were encouraged in this study in order to provide children with authentic experiences and opportunities to learn in their daily lives. Interventionists taught parents about these specific literacy and language activities during sessions in which parents also developed literacy skills.

Outcome measures in this study included the Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4; O'Brien et al., 2014), which measures receptive vocabulary and concept knowledge. The English Phonological Awareness Literacy Screening (PALS) tool was used to assess phonological awareness skills in the preschool and kindergarten participants (i.e., beginning sound awareness and rhyme awareness for preschool children; individual beginning sounds awareness and individual rhyme awareness for kindergarten children). Results for vocabulary scores (PPVT-4) indicated that children in the treatment group who scored the lowest pretest scores made larger gains in vocabulary

compared to the control group. Children with the lowest scores on the PPVT-4 made the most significant gains, which suggests that the intervention narrowed the vocabulary gap for students with lowest initial scores. Results for the phonological awareness scores (PALS) indicated that gains in phonological awareness scores were significant across pretest language levels and gains were highest for participants in the treatment group. Unlike the results for PPVT-4 outcomes, the three vocabulary groups (i.e., low, middle, and high levels of vocabulary) made similar gains in phonological awareness.

A more recent quasi-experimental study conducted in the Netherlands investigated the effects of an intervention with four to six-year-olds (van Tujil et al., 2015). The study by van Tujil et al. (2015) is unique in that participants were from Turkish and Moroccan immigrant families and their L2 was Dutch. This study provides insight on the effectiveness of home literacy programs for children learning a second language that is not English. Three-hundred and nineteen children participated in the study; 205 were assigned to the intervention while 114 were assigned to a business-as-usual control group.

The intervention was long-term (i.e., two school years), comprehensive, and measured several outcomes (i.e., cognition, number and mathematical concepts, language, and socioemotional outcomes). For the purpose of this review, only outcomes in language skills will be presented. The intervention itself consisted of a series of activities and instructions that are provided to mothers of the children in the intervention group on a biweekly basis led by paraprofessional aides. The instructions were provided in simple language and paired with matching illustrations in order to account for those

mothers who may not feel comfortable reading. During the weekly parent sessions, parents were given materials and instructions to engage in daily literacy activities, of about 20 minutes each, with their children. All materials were made to be visually appealing to both the mothers and children. One way that the intervention was adapted to the culture was that the paraprofessionals were actually from the same community as the participating mothers, spoke the same languages, and were also mothers, providing a connection between them. Mothers also attended a monthly support group where their general questions were answered. Mothers were given the option to select the language of their intervention materials. Turkish and Moroccan groups were analyzed separately given the differences in their languages. It is interesting to note that the Turkish group chose to use L1 materials, while most of the Moroccan group chose to use L2 materials.

The outcomes used in this study measured active and receptive vocabulary in L1 and Active and receptive vocabulary in L2. Van Tujil et al. (2001) conducted MANCOVA analyses where they included pre-test outcomes as covariates in order to control for those differences. In order to account for intervention fidelity, only the participants who attended 90% of the biweekly and monthly meetings were included in the MANCOVA. Although effect sizes of outcomes increased slightly after excluding participants who did not attend 90% of the meetings, the effects were small for the Turkish group, while no effects existed for the Moroccan group in this particular study. These effects were attributed to the measures used to collect data in this study for these particular cultures/languages that had not previously been included in a study similar to this one.

Discussion

The aim of this review was to examine studies that implemented home-based literacy interventions with ELL families. Specifically, this review examined the types of home-based literacy interventions that are common in the literature and whether those studies reported cultural adaptations. Studies with a comparison group were further reviewed to discuss whether intervention implementation was positively related to literacy outcomes.

Home-Based Literacy Interventions for ELLs

While all studies reviewed aimed to improve literacy outcomes of young children, they all presented home-based literacy interventions that varied in their characteristics (e.g., training, involvement, outcomes, activities, sessions, length, and support). These differences may make it difficult in forming overall conclusions about the type of interventions that are most effective. However, Van Steensel et al. (2011) found that several characteristics in early literacy interventions (e.g., type of program activities, home visits vs. group meetings, provision of books, location, and duration of the program) had no significant effects in literacy outcomes of young children. This may indicate that those specific program differences are not as important as others, such as implementation fidelity. While these individual intervention characteristics may not have yielded significant effects in van Steensel et al. for non-ELLs, different characteristics in interventions for ELL children should still be considered in future research due to the lack of studies tailored to this population.

Although studies presented different components and implemented the interventions differently, most included a storybook reading component. Shared storybook reading has been associated with strong literacy outcomes, such as print and letter knowledge and vocabulary in both non-ELL and ELL children (Bus, Van Ijendorn, & Pelligrini, 1995; Collins, 2005). Additionally, home interventions for non-ELLs that include storybook reading practices have been found to be effective, with some research suggesting that home interventions that focus on the teaching of specific skills (e.g. code-related skills) are more or just as effective (Senechal & Young, 2008). This review suggests that most home interventions for ELLs are implementing programs that use shared storybook reading practices, while fewer studies are focused on the teaching of specific skills. An earlier study investigated the differential effects of storybook reading at home and teaching of specific reading and writing skills, which found that both strategies were effective at improving different outcomes: storybook reading increased oral language skills, while teaching of specific skills increased written language skills (Senechal, Lefevre, Thomas, & Daley, 1998). Due to the lack of this research with ELLs, future research should investigate these differences in families with ELL children in order to better understand what interventions are most effective and for which specific skills.

A common strategy used in several of these studies was dialogic reading. A number of studies have investigated the effects of dialogic reading practices on young children since it was introduced by Whitehurst et al. (1988). Mol et al. (2008) analyzed 16 studies that implemented dialogic reading interventions and found moderate effects, but smaller effects for children who were considered at-risk for language delays and for

children who were older. This brings to question whether dialogic reading practices are appropriate for ELLs, which are also at-risk for reading problems for a number of reasons. Only two studies in this review that investigate dialogic reading interventions included a comparison group, making it very difficult to form conclusions. Nonetheless, the findings suggest that dialogic reading should be further studied in order to better understand its effects on ELL parents and children.

Most studies reviewed did not indicate whether children had a developmental or learning disability or speech and language impairment. The importance of early intervention in the primary grades for remediating reading or language-related problems has been highlighted in the literature (National Early Literacy Panel, 2008). Preschoolers with language problems have lower print knowledge skills than do their typical peers (Justice, Skibbe, McGinty, Piasta, & Petrill, 2011), suggesting the importance of researching interventions that allow children to catch up to their peers. While some research has found children at-risk for reading problems may not reap the full benefits of storybook reading interventions, two of the studies reviewed here found that home-based reading interventions were effective at improving oral language scores of children with language delays who were either receiving speech and language services or on a waiting list to receive such services (Ijalba, 2015; Mol et al., 2008; Tysbina & Eriks-Brophy, 2010).

About half of the studies in this review used outcomes that were norm-referenced. Similarly, Manz et al. (2010) also reported a limited number of studies that measured outcomes from norm-referenced assessments. Further, most studies did not include

information about reliability, validity, or whether the measures were culturally responsive. This is not surprising, given the lack of resources and valid assessments for CLD children. Additionally, many measures are not as sensitive to change for ELL or CLD students (August & Shanahan, 2006). Although Manz et al. did not review studies that specifically targeted ELLs, the authors similarly reported a lack of culturally validated standardized assessments in the studies that included participants who are CLD, indicating that the applicability of the results to those participants may be flawed. Some studies reviewed here included heterogeneous samples, with ELLs from several ethnic backgrounds. While the majority of the ELLs in the United States are Spanish-speaking, several of the studies in this review included participants from diverse backgrounds, with one study reporting up to 9 languages within its sample (O'Brien et al., 2014). It is concerning how many studies have not used culturally validated assessments to measure outcomes for these groups. Efforts should be focused on providing psychometric tools for children of many backgrounds.

Although many studies reported treatment fidelity, very few measured fidelity in a systematic manner. Some studies even used self-report ratings from interventionists to rate how well parents followed recommendations at the end of implementation. While this method includes ratings, these ratings can be very subjective (St. Clair Jackson, 2006; van Tujil et al., 2001). Treatment fidelity is a key component when making conclusions about the effectiveness of interventions (Sanetti & Kratochwill, 2009). Without measuring fidelity, it makes it very difficult to attribute the outcomes to the treatment. Treatment fidelity may be related to treatment outcome and should be included

in outcome studies (Sanetti & Kratochwill, 2009; van Otterloo, van der Leij, & Veldkamp, 2006).

Cultural Adaptations in Home-Based Literacy Interventions for ELLs

The most common adaptation implemented in the interventions of the studies reviewed was the use of primary language (L1). This may have been the most ideal given that most parents were mostly comfortable in speaking their native language to their children. Less common were those studies that took actual cultural norms into consideration (Hirst et al., 2010) and those that tailored the intervention materials specifically for the participating families (Boyce et al., 2010; Ijalba, 2015). Using culturally relevant materials in interventions can boost motivation and engagement in ELLs (Jimenez, 1997; Orosco & O'Connor, 2011). In addition, using ELLs background knowledge and current language skills may help facilitate their learning (August & Shanahan, 2006). While using L1 is very important due to the language barrier between the interventionists and the parents, using culturally relevant materials should also be considered, especially when the expectation is that parents will implement strategies (Delgado-Gaitan, 1996, as cited in Barrera & Bouchereau-Bauer, 2003). Some research has suggested using family stories as part of CLD children's curriculum (Delgado-Gaitan, 1996), which is in line with the strategies used in Boyce et al. (2010) and Ijalba (2015).

Outcomes of Home-Based Literacy Interventions for ELLs

Previous meta-analyses have reported discrepancies in the effectiveness of home-based literacy interventions between Caucasian and CLD children (Manz et al., 2010; Mol et al., 2008), highlighting the importance of evaluating the outcomes and

effectiveness of these interventions more carefully for CLD and ELL children. Of the studies in this review that conducted experimental or quasi-experimental designs, most investigated the effects of storybook reading interventions, while fewer investigated the effects of interventions that encouraged overall literacy-enhancing activities or those that were comprehensive and aimed at teaching parents English literacy skills. The majority of these studies reported medium to large effects in groups that received intervention. While results in these studies are in line with research that suggests early exposure to literacy materials and activities is related to improved literacy outcomes, more research should be done that investigates the effectiveness of studies that are created for and implemented with ELLs in order to draw stronger conclusions about what characteristics are most important.

Limitations

Although this review presents valuable information, it does come with several limitations. First, the number of studies found was limited and when only considering studies that analyze effectiveness on reading outcomes, the number of published, peer-reviewed studies is even lower. This is attributed to the lack of research available in this area. However, it is interesting to note that many of the studies included in this review were conducted within the last 15 years, with most of them published or completed within the last 5-6 years, highlighting that the research on home-based literacy interventions with CLD populations and ELLs may be increasing. The lack of studies identified can also be attributed to the database search. In order to strengthen the search

conducted in this review, more databases and a hand-search of peer-reviewed journals may have yielded more studies to include in this review.

A second limitation in this review is the amount of heterogeneity among the studies. No two interventions discussed in this review were similar. Each study made a unique contribution to the literature involving ELL children and emergent literacy practices at home, which makes it difficult to for claims about the effectiveness of interventions that target this population. Additionally, many different native languages were represented in the studies reviewed and some took place outside of the US, which make the findings even less generalizable to all groups learning English in the US. Meta-analytic designs are commonly used in order to form overall conclusions with greater statistical power and include adjustment procedures for the heterogeneous nature of characteristics in the studies included. However, because of the limited number of studies, a meta-analysis would not have warranted generalizable results.

Future Directions

Given that there are limited, high-quality research studies that investigated the effects of home-based literacy interventions for ELLs and CLD families, it is necessary that more research in this area be conducted with families who speak a language other than English. There is a need for more experimental research in this area in order to make firm claims about the effects of the interventions available. Additionally, these interventions must be validated with ELLs for a number of cultures and languages in order to generalize to those populations. Future research should further examine the

effects of different, specific cultural adaptations in order to identify which are the most effective.

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Table 1
Definitions of Characteristics Examined in Studies

Study, Participants, Design Characteristics	Definition
Author and Year (Citation)	Study citation
Publishing Journal Name (Journal)	Name of Journal
Study design (Design)	• Experimental (E) • Quasi-experimental (QE) • Single-case (SC) • Pre-Post (PP) • NR
Sample size (N)	Number of participants/parent-child dyads
Treatment group size (N Tx)	Number receiving intervention
Control group size (N Cont)	Number in the control group
Type of control group (ContType)	What the control group is instructed to do • Waitlist and receive intervention later (W) • Business as usual (BAU) • Receives different interventions/curriculum (DIFF) • Other (O): • NR
Study location (Locat)	Country where study takes place • US • Other (O) • NR
Primary language of participants (L1)	First language of participants; language in which participants are proficient • English (E) • Spanish (S) • Multiple reported in study (MR) • NR
ELL status name (ELL ID)	Word used to indicate that child participants are English language learners • ELL/English learners • Second language learners • Proficient in L1 (not English)

	• Culturally and linguistically diverse learners
Income status (LowSES)	Were participating families identified as low-income, low SES, or participating in a free/reduced lunch program at school: • Yes • No
Education status of parents	Were participating parent/s identified as having a limited amount of education: • Yes • No
Mean Age of Child Participants (MeanAge)	Child participants' mean age or age range in months (MeanAge)
Child participant grade (Grade)	Grade level or range • No School (NS) • Pre-school (PreK) • Kindergarten (K) • First grade (1) • Second grade (2)
Children that are female (GenChFem)	• Percentage of female participants • NR
Children that are male (GenChMale)	• Percentage of male participants • NR
Type of intervention (IntType)	• Shared-book reading or rereading (SBR; e.g., parent reads books at home with children or children read books at home with parents) • Skills-focused (SF; teaching of specific literacy skills so that parents teach to their children) • Activities-focused (AF; teaching of activities that parents can implement with children that enhance literacy) • Engagement-focused (EF; encouraging or requiring parents to engage more with children in general) • Adult-literacy (AL; focused on improving adult literacy in order to affect child literacy) • NR
Intervention Activities (IntDesc)	Description of intervention

Emergent reading skill focus of intervention (Skill)	• Oral language (OL) • Vocabulary (V) • Phonological awareness (PhA) • Print awareness (PrA) • NR
Child outcome measure type (OutcomeType)	• Standardize, norm-referenced (N) • Study specific/author developed (SS) • NR
Child outcome measure collection (OutcomeMethod)	• Observation (O) • Video/audio recording (VR) • Parent report (PR) • Standardized measure (SM) • Non-standardized measure (M) • NR
Specific outcome measure (OutcomeMeasure)	• Name of the measure used for child literacy or language outcomes • NR
Measure construct (MeasConst)	List the specific skill/s being measured
Language of Intervention (IntLang)	• L1 • L2 • NR
Interventionist/Support (Inter)	Person responsible for providing training, lessons, sessions, or contact with parents • Author/researcher (A) • Graduate student research assistant (GRA) • Undergraduate research assistant (URA) • Credentialed/certified teacher (T) • Other school staff (O) • NR
Amount of training with parents (TrnParentsess)	Number of sessions or meetings between the interventionist and the parent/s (NR if not reported)
Parent training (TrnParent)	What type of level of training did parent/s receive? • Consultation with interventionist (Cons) • Training/instruction sessions (Train) • Letter-only sent home with child (Letter)

Time between parents and children (IntMin)	Time in minutes per session that parent spends with child, recommended by interventionists (NR if not reported)
Length of intervention in weeks (IntWeeks)	Number of weeks that participants were required to commit to for the intervention (NR if not reported)
Length of intervention in days (IntDays)	Number of days per week/sessions that participants were required to commit for the intervention (NR if not reported)
Treatment fidelity type (TxFidelity)	What was reported as a means of tracking fidelity of the intervention between parent and child • Reading log (Log) • Video observations (VO) • Live observations (LO • Phone call reminders/consultation (Ph) • Letter reminders sent home with child (Lett) • Self-report checklist/measure (SR) • Other (O) • NR
Social Validity Measured (SocValid)	Did the study collect social validity data? • Yes • No
Provision of materials (Materials)	What materials were necessary/provided to parents in order to implement intervention with children at home • Books (B) • Activity materials (A) • Resources (e.g., locations where parents can buy bilingual books) (R) • Other (O) • NR
Book selection	How were intervention books selected? • Parents chose books (P) • Interventionist chose books (I) • Researcher/author chose books (R; if researcher is the interventionist, mark both) • Child selected (Ch) • Part of school/classroom curriculum (Class)

	• Survey • Other (O)
Cultural adaptations used (CultAdapt)	What adaptations were provided in the interventions that were in any way tailored to the participants' culture or language? • L1 books (L1 Books) • Activities between parent and child done in L1 (L1 Act) • Materials provided in L1 (L1 Mat) • Instructions provided in L1 (L1 Instruct) • Instruction between interventionist and parents is in L1 (L1 Inst) • Instruction/lesson content for parents included culturally relevant topics/themes other than a translation (CR Inst) • Material used in the intervention (e.g., books) include culturally relevant material (CR Mat) • None (None) • NR

Table 2
Participant Characteristics

Study	M Age in Months (SD)	Grade	% Female	% Male	L1	L2	Disability	Low SES	Low Education
Boyce et al. (2010)	41.43 (10.78)	PreK	44	56	S	E	NR	Yes	Yes
Hancock (2002)	67.2 (NR)	K	51	49	S	E	NR	NR	NR
Harper et al. (2011)	58.14 (6.65)	PreK-K	45	55	Hi, P, M, Ca, S, Cr, A, F	E	NR	No	No
Hirst et al. (2010)	43.8 (1.68)	PreK	50	50	P, U	E	NR	Yes	NR
Huennekens & Xu (2010)	48 (NR)	PreK	50	50	S	E	NR	Yes	Yes
Ijalba (2015)	42.5 (2.30)	PreK	29	71	S	E	Sp/L	Yes	Yes
Jimenez et al. (2006)	NR	NR	19	81	S	E	Mix	Yes	NR
Lim & Cole (2002)	40.08 (NR)	NR	57	43	K	E	Excl	NR	Yes
O'Brien et al. (2014)	66.76 (NR)	PreK - 2	44	56	S (89%), So, Cre, V, Ah, Kh, Ki, Kin, T	E	NR	Yes	Mix
Purcell-Gates et al. (2012)	NR	PreK	NR	NR	Ch, P	E	NR	Yes	Yes
Roberts (2008)	52.13 (3.65)	PreK	51	48	S, Hm	E	NR	Yes	NR

Ryan (2005)	48 (NR)	PreK	48	52	S	E	Excl	Yes	Yes
St. Clair & Jackson (2006)	NR	K	59	41	S	E	NR	Yes	NR
Tysbina & Eriks-Brophy (2010)	29.75 (NR)	PreK	17	83	S	E	Sp/L	Mix	Mix
Van Tujil et al. (2001)	56.8 (3.95)	K	48	52	T, A, B	E	NR	NR	Yes

Note: NR = Not Reported; E = English; S = Spanish; He = Hebrew; Hi = Hindu; P = Punjabi; M = Mandarin; Ca = Cantonese; Cr = Croatian; A = Arabic; F = Farsi; Ch = Chinese; K = Korean; U = Urdu; So = Somali; Cre = Creole; V = Vietnamese; Ah = Ahmaric; Kh = Khmer; Ki = Kirundi; Kin = Kinyarwanda; T = Tamil; Hm = Hmong; Tu = Turkish; B = Berber; Low Education: Yes = Completing high school or less, No = Attended/completed postsecondary school, Mix = multiple education levels; Disability: Excl = Participants with developmental or speech/language delay were excluded, Sp/L = Participants with speech/language delays, Mix = Participants with developmental or speech/language delays included

Table 3
Intervention Characteristics

Study	Intervention Type	Skill focus	Language	Support	Parents Sessions	Days parent works with child per week (length of intervention in weeks)	Provision of Materials	Book Selection	Cultural Adaptations
Boyce et al. (2010)	SBR	OL	L1	O	8	1 (8)	B, O	P	All L1 + CR Inst + CR Mat (homemade books)
Hancock (2002)	SBR	GL	L1	T	1	5 (15)	B	C	L1 Books + L1 Mat + L1 inst
Harper et al. (2011)	SBR-DR, Act, S	PA, Pnt, Alph	L2	O	9	1 (9)	NR	NR	L1 Inst + O (jargon made family friendly)
Hirst et al. (2010)	SBR, Act, R	OL, Pnt, W	L1	A	4 group sessions; 14 home visits	NR (52)	B, AM	P + Ch	All L1 + CR Mat (worked around their prayers, talked about events and

									holidays)
Huennekens & Xu (2010)	SBR-DR	OL	L1	A + O	1	5 (7)	B	C	All L1
Ijalba (2015)	SBR, Act	OL	L1	A + RA	8	5 (6)	B	P	All L1 + CR Mat (books made by authors based on mother's interests)
Jimenez et al. (2006)	SBR-DR	OL	L1	GS + US	5	5 (10)	B	P	All L1 + with some English books, but fam read what they wanted
Lim & Cole (2002)	SBR	OL	L1	A	1	5 (4)	B	P	L1 Mat, L1 lessons (all L1?)
O'Brien et al. (2014)	SBR, Act, AL	OL + PA	L2	GS + US	4	NR (12)	B, AM	NR	CR mat/content (activities-authentic literacy events)
Purcell-Gates et al. (2012)	Act, AL, S	GL	L2	O	24	NR (12)	NR	NR	CR mat/content – activities – real

									world literacy activities
	Roberts (2008)	SBR-DR, Act	OL	Both	T + US	2	NR (12)	B, AM	C + P	L1 Books
	Ryan (2005)	AL, Act, E	GL	Both	T	18	NR (52)	NR	NR	L1 ins + L1 Lessons
	St. Clair & Jackson (2006)	AL, Act	OL + GL	NR	T + O	25	NR (52)	B	T	CR lessons
	Tysbina & Eriks-Brophy (2010)	SBR-DR	OL	Both	A	6	5 (6)	B	T + A	L1 Books + testing in eng and span + CR inst + CR mat
	Van Tujil et al. (2001)	Act, E, R	OL	L1	O	NR	5 (60)	AM	NR	All L1

Note: NR = Not reported; SBR = storybook reading; DR = dialogic reading; Act = activities; S = teaching of skills; R = provision of resources; E = engagement-focused; AL = adult literacy; GL = general literacy; OL = oral language; PA = phonemic awareness; Pnt = print awareness; Alph = alphabet; W = writing; L1 = primary language spoken at home; L2 = second language being learned (i.e., English); A = author/researcher; GS = graduate student assistant; US = undergraduate student assistant; T = credentialed teacher; O = other; B = books, AM = activity materials; P = parents; Ch = child; C = classroom curriculum; CR = culturally relevant; Act = activities; Mat = materials

Table 4
Child Literacy Outcome Measures

Study	Outcome Measure	Measure Type	Skill/s
Boyce et al. (2010)	Total Number of Words (TNW)	SS	OL
	Total Number of Different Words (TDW)	SS	OL
Hancock (2002)	Test of Early Reading Ability (TERA)-2	Norm	GL
Harper et al. (2011)	TERA-3	Norm	GL
Hirst et al. (2010)	Sheffield Early Literacy Developmental Profile	NR	GL
Huennekens & Xu (2010)	Frequency of utterances per minute (UPM)	SS	OL
	Mean length of utterance-word (MLU-W)	SS	OL
	Frequency of Child Initiated Utterances/Responses to Others	SS	OL
Ijalba (2015)	IDHC Spanish	Norm	OL – S
	PLS-4 Spanish	Norm	OL
	EOWPVT-4 Spanish and English	Norm	OL – S + E
	Experimenter Created Vocabulary Test (ECVT)	SS	OL
Jimenez et al. (2006)	TDW	SS	OL
	TNW	SS	OL
	Mean length of turn (MLT)	SS	OL
Lim & Cole (2002)	MLU (words per utterance)	SS	OL
	Number of unique words	SS	OL
O'Brien et al. (2014)	PPVT-4 English	Norm	OL
	PALS English	Norm	PA
Purcell-Gates et al. (2012)	TERA-3	Norm	GL
Roberts (2008)	Vocabulary Test (target words)	SS	OL
	PPVT-3	Norm	OL
	Test de Vocabulario en Imagenes Peabody-Spanish (TVIP-H)	Norm	OL
	Preschool IDEA Oral Language Proficiency Test-English (Pre-IPT)	Norm	OL

Ryan (2005)	Phonological Awareness Literacy Screening (PALS) PreK	Norm	PA
St. Clair & Jackson (2006)	Woodcock-Muñoz Language Survey (WMLS)	Norm	GL
Tysbina & Eriks-Brophy (2010)	Target words	SS	OL
	MacArthur-Bates Communicative Developmental Inventory	Norm	OL
	MacArthur Inventario del Desarollo de Habilidades Comunicativas	Norm	OL – S
	Composite conceptual vocabulary measure	SS	OL
Van Tujil et al. (2001)	Diagnostic Test of Bilingual Development	Norm	OL

Note: NR = Not reported; S = Spanish; E = English; Norm = norm-referenced test; SS = study-specific test; OL = oral language/vocabulary; PA = phonemic awareness; GL = general literacy

Table 5
Study Design Characteristics

Study	Journal/Source	Design	Total *N*	TX *N*	Control *N*	Control Group Type	Treatment Fidelity	Social Validity Collected	Study Location
Boyce et al. (2010)	Early Education and Development	E	75	32	43	BAU	VO	Yes	US
Hancock (2002)	Journal of Research in Childhood Education	QE	77	26	Group 1 = 26 (S) Group 2 = 25 (E)	DIFF	NR	NR	US
Harper et al. (2011)	Early Education and Development	QE	132	96	36	BAU	NR	NR	Canada
Hirst et al. (2010)	Journal of Early Childhood Literacy	E	16	8	8	BAU	LO, Log	Yes	UK
Huennekens & Xu (2010)	Early Childhood Education	SC	2	NA	NA	NA	Log, Ph	Yes	US
Ijalba (2015)	Child Language Teaching and Therapy	E	24	12	12	BAU	Log, SR	Yes	US
Jimenez et al. (2006)	Bilingual Research Journal	PP	16	NA	NA	NA	Log, Ph	NR	US
Lim & Cole (2002)	Bilingual Research Journal	E	21	11	10	DIFF	Log	Yes	US
O'Brien et al.	Journal of	QE	158	108	54	BAU	LO	NR	US

(2014)	Literacy Research					(W)			
Purcell-Gates et al. (2012)	Journal of Literacy Research	PP	14	NA	NA	NA	LO (of training)	NR	Canada
Roberts (2008)	Reading Research Quarterly	PP	33	NA	NA	NA	NR	NR	US
Ryan (2005)	Journal of Research in Childhood Education	QE	37	12	25	BAU	LO (H)	NR	US
St. Clair & Jackson (2006)	School Community Journal	QE	29	14	15	DIFF	O: Post rating by interventionist	NR	US
Tysbina & Eriks-Brophy (2010)	Journal of Communication Disorders	QE	12	6	6	BAU (W)	LO	Yes	US
Van Tujil et al. (2001)	International Journal of Behavioral Development	QE	319	205	114	BAU	O: Post rating by interventionist	NR	Netherlands

Note: NR = Not Reported; S = Spanish; E = English; BAU = Business as usual; DIFF = Different intervention/instruction; W = Waitlist; VO = Video observation; LO = Live observation; Log = Self-report reading log; ATTN = Attendance; Ph = Phone reminder; SR = Self-report checklist/form; H = Home visit; O = Other