# SELF-REGULATION AND LITERACY SKILLS: A COMPARATIVE ANALYSIS BETWEEN LATINO ENGLISH LANGUAGE LEARNERS AND ENGLISH MONOLINGUAL LEARNERS

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SELF-REGULATION AND LITERACY SKILLS: A COMPARATIVE ANALYSIS BETWEEN LATINO ENGLISH LANGUAGE LEARNERS AND ENGLISH MONOLINGUAL LEARNERS (75 pp.)

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The increase in enrollment of Latino English language learners (ELLs) in schools within the United States highlights the importance of understanding how learning a second language influences children's development. Previous studies have indicated that learning a second language is associated with higher levels of self-regulation. Similarly, self-regulation has been associated with the acquisition of literacy skills. This study examined the correlation between self-regulation and literacy of Latino ELLs and English monolingual learners (EMLs). The sample was composed of 25 Latino ELLs and 27 EMLs. Children's self-regulation and literacy were assessed using direct assessments. Self-regulation was measured using the Head-Toes-Knees-Shoulder task and the Toy Wrap task. English literacy skills measures of phonemic awareness and letter naming fluency were assessed using two subtests from the Dynamic Indicators of Basic Early Literacy Skills. Moreover, Latino ELLs' phonemic awareness and letter naming fluency in Spanish were assessed using two subtests from the Indicadores Dinámicos del Éxito en la Lectura. The results indicated that EMLs outperformed Latino ELLs in measures of self-regulation and literacy. Moreover, Latino ELLs scored higher in English literacy measures than in Spanish measures. Finally, EMLs' self-regulation scores strongly correlated with letter naming fluency, and Latino ELLs' self-regulation scores significantly correlated with literacy scores in English and Spanish.

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# CHAPTER I

## INTRODUCTION

The National Center for Education Statistics (NCES, 2019), stated that for fall 2017, Spanish was the predominant home language for English language learners (ELLs) enrolled in public schools around the United States, representing the largest group of ELLs by 74.8 percent. Additionally, 76.5 percent of the total ELL population in public schools were Hispanics (Spanish speakers of Latin American descent), followed by Asian students with 10.7 percent. Latino students born in the United States either adopt English or Spanish as their primary language; others relocate with their families at an early age while still developing their native language. Students who already speak a language and are in the process of learning a second language at school are identified as ELLs (García, Kleifgen, and Falchi, 2008).

Due to the increase of ELLs in schools around the United States, several studies have focused on examining how speaking more than one language influences children's development and academic performance (e.g., Hammer et al., 2020; White and Greenfield, 2017). For instance, self-regulation has been examined due to its association with students' academic outcomes. Self-regulation is a multi-skill concept that involves executive function and effortful control (Jones, Bailey, Barnes, and Partee, 2016). Executive function is composed of inhibitory control, working memory, and attention shifting (Jones et al., 2016). Effortful control refers to the ability to manage emotional and behavioral impulses (Lengua, 2009). Through self-regulation, individuals regulate their cognition, behavior, and emotions (Blair and Raver, 2015).

Previous studies with EMLs have indicated that self-regulation improves children's ability to cope with educational demands such as attention, engagement, and memory (e.g., Blair and Raver, 2015). Similarly, other studies have examined how self-regulation influences students' academic outcomes (i.e., math and literacy) by indicating that children with stronger regulatory skills demonstrated better performance on math, letter knowledge, and phonemic awareness tasks (e.g., Day, Connor, and McClelland, 2015; Ponitz, McClelland, Matthews, and Morrison, 2009). Because of the aforementioned increased presence of ELLs in the United States, scholars have expanded the reach of their research studies to examine how learning a second language influences the acquisition of self-regulation and academic skills within diverse student populations.

This study reviews current and relevant literature concerned with Latino ELLs and EMLs' self-regulation and literacy skills, particularly phonemic awareness, and letter naming fluency. Moreover, it also provides the methodological framework employed to gather, analyze, and discuss the data stemming from the assessment of Latino ELLs and EMLs in order to gain a better understanding of how kindergarteners' differences in language backgrounds influence their self-regulation and literacy.

## Problem Statement

Through the acquisition and development of literacy skills, students engage with a diverse range of educational materials and learning activities since early childhood. Preschool and kindergarten education are significantly influential in students' long-term success due to their overall impact on the development of academic skills (Duncan et al., 2007). In kindergarten, ELLs are required to comply with daily classroom activities

while also facing the task of second language acquisition (i.e., English). Compared to their English monolingual counterparts, ELLs, specifically Spanish speakers, tend to be at a higher risk of negative academic outcomes (Lonigan, Allan, Goodrich, Farrington, and Phillips, 2017). However, most published literature that examines children's self-regulation and academic outcomes have been focused on EMLs. With the growing population of ELLs in all academic levels across the country, it has become imperative to understand how learning a second language influences self-regulation and literacy to improve instruction, students' academic achievement, and adaptation in school. Further research is required to better understand this relationship and how it can help in the creation of identification protocols for children with reading difficulties, and the development of educational interventions. This study seeks to add to the current literature on self-regulation and academic skills, specifically literacy, among Latino ELLs and EMLs.

## Purpose of the Study

The present study will analyze kindergarten Latino ELLs and EMLs' self-regulation and literacy skills. Two main goals will guide this study, the first goal is to examine the association between self-regulation and literacy skills among kindergarten Latino ELLs and EMLs between the ages of 5 and 7; the second goal is to assess possible differences in self-regulation and literacy skills of students that are in the process of learning two languages and English monolingual students. Overall, this study intends to contribute to the existing knowledge on the relationship between self-regulation and

literacy skills of students with different language backgrounds. More specifically, the following questions will guide the study:

**Research Questions**

1. Is there a significant difference between Latino ELLs and EMLs' self-regulation assessment scores?
2. Is there a significant difference between Latino ELLs and EMLs on English literacy assessment scores?
3. Is there a significant difference among Latino ELLs' literacy assessment scores in English and Spanish?
4. What is the relationship between self-regulation and literacy skills of Latino ELLs and EMLs?

# CHAPTER II

# LITERATURE REVIEW

This chapter will provide an overview of several components of self-regulation and literacy. Then, it will describe the acquisition of literacy skills among ELLs receiving a formal education in the English language. Finally, the association between self-regulation and literacy will be examined through the review of prior research studies among EMLs and Latino ELLs.

## Components of Self-Regulation

Self-regulation consists of multiples components that control and monitor children's cognition, emotions, and behaviors. Previous literature has related executive function and effortful control as subcomponents of self-regulation (Jones et al., 2016). According to Blair and Raver (2015), self-regulation is influenced by multiple factors that range from genetic to sociocultural; among these factors, executive function and effortful control are higher-level cognitive processes that depend on lower-level components such as working memory, attention and inhibition. Similarly, Liew (2012) explained that inhibition is a construct that overlaps between executive function and effortful control. However, tasks used to gauge executive function and effortful control measure different aspects of inhibitory control. For example, assessments of effortful control inhibition (e.g., Toy Wrap task) require children to wait before engaging in a desired activity (Caughy et al., 2013). In contrast, executive control assessments of inhibition (e.g., Head-Toes-Knees-Shoulders) are more likely to be oriented to the assessment of cognitive processes (Allan, Hume, Allan, Farrington, and Lonigan, 2014).

Although executive function and effortful control involve different regulatory components, both have been linked to individuals' academic outcomes.

## Components of Literacy Skills

Literacy can be broadly understood as an individual's capacity to interpret and express information by means of reading and writing. Considering this, it is the skill-set that the learning process is most dependent on; researchers have placed particular emphasis on its emergence. Rohde (2015), when discussing Emergent Literacy, lists knowledge and abilities related to the alphabet, phonological awareness, symbolic representation, and communication as some of the key concepts whose comprehension children typically build upon from birth to age 5 to learn about the function and process of reading before being able to decode text.

The National Early Literacy Panel (NELP, 2008) enumerated alphabet knowledge, phonological awareness, rapid automatic naming of letters or digits and objects or colors, and phonological memory as factors that predict literacy development. Two of these factors are further examined through this review: phonological awareness, more specifically phonemic awareness, a facet of phonological awareness which encompasses the abilities necessary for the segmentation of words into their constituting sounds and the blending of these sounds into new words (Yeong and Liow, 2012), and rapid automatic naming of letters, which involves the capacity to name random letters (NELP, 2008). These specific subsets of Emergent Literacy diverge considerably between English and Spanish (letters having different names and being related, in various instances, to different phonemes), allowing for less transference of knowledge between

them. Additionally, Emergent Literacy skills have been recognized in prior studies as strong predictors of future reading achievement (e.g., Ciesielski and Creaghead, 2020).

**English Language Learners' Literacy Skills**

ELLs tend to read below grade level and have poor academic outcomes (National Academies of Science, Engineering, and Medicine, 2017). This is likely a consequence of disparity between their experiences and usage of both languages. ELLs pragmatically develop the language used at home while their language of instruction grows in a more structured manner. Interestingly, a stronger foundation in their native language can help Latino ELLs acquire English faster because, as previous studies have indicated, children with better Spanish literacy and vocabulary, show more gains in the development of English reading skills and growth in vocabulary (Leacox and Jackson, 2011; Rinaldi and Paez, 2008).

Additionally, studies have indicated that ELLs between the ages of 3 and 5, enrolled in childcare or schools, tend to make more gains in English than in their native language. This phenomenon is perhaps best understood in the context of instruction language. Gandara, Losen, August, Uriate, Gomez, and Hopkins (2010, as cited in Hwang, Mancilla-Martinez, McClain, Oh, and Flores, 2020) explained that the vast majority of ELLs are exclusively instructed in English, indicating an important link between instruction and development of literacy skills, and, curiously, a divorce between language acquisition and actual literacy. Paez, Tabors, and López (2007) stated that assessment scores of English and Spanish language and literacy skills among Spanish-English preschool dual language learners did not vary during the fall of the academic

year; however, scores in English increased significantly when assessed in the spring while Spanish scores indicated minimal or negligible gains in language and literacy.

Furthermore, there may be additional underlying factors that influence the acquisition and development of language skills in ELLs. For instance, Hammer et al. (2020) pointed out that while ELLs' language skills tend to be below what is expected of EMLs, the prevalence of low-income households among ELLs' families and usage of assessments normed for EMLs may have a considerable incidence on the resulting scores.

## Self-Regulation and Literacy Skills

Zelazo and Carlson (2012) stated that children experience rapid development of self-regulation through the initial school years. When children transition from unstructured home education to formal schooling, self-regulation becomes an important developmental marker (Bohlmann, Maier, and Palacios, 2015) that influences students' academic outcomes. Numerous studies have indicated that self-regulation influences the development of academic skills. Blair and Diamond (2008) suggested that executive function, a component of self-regulation, facilitates learning by fostering appropriate behaviors in the classroom (e.g., following direction and paying attention). Furthermore, it has been noted that students with better self-regulation are more adapted to school and engage more effectively in learning activities (Blair and Raver, 2015). Contrarily, students with inadequate self-regulation are at greater risk of obtaining low academic achievement (Blair and Razza, 2007).

Most research studies that examine the association between self-regulation and academic skills, such as literacy, have adopted a longitudinal approach. For example,

Skibbe, Montroy, Bowles, and Morrison (2019) studied how self-regulation related to students' language and literacy skills (i.e., decoding, reading comprehension, phonological awareness, and vocabulary) from preschool to second grade. The authors concluded that children with higher levels of self-regulation demonstrated literacy achievement (i.e., higher scores on vocabulary assessments and faster development of phonological awareness) in preschool, kindergarten, and elementary school. Similarly, McClelland et al. (2007) stated that self-regulation predicted later development in literacy and math. Additionally, the researchers mentioned that from fall to spring children with better self-regulation had more gain in literacy, vocabulary, and math than children with lower self-regulation.

Moreover, results from other studies have indicated mixed results in regard to the correlation between self-regulation and measures in math and literacy. For example, Blair, Ursache, Greenberg, Vernon-Feagans, and the Family Life Project Investigators (2015) performed a longitudinal assessment of 1292 children's self-regulation, math (problem-solving), and reading (letter-word knowledge). The findings indicated a moderate association between children's self-regulation and measures in math and reading tasks before school entry. However, when children reached age 60 months, results indicated a stronger relationship between self-regulation and math. Contrarily, effects on reading, specifically letter naming knowledge were reduced completely. Blair et al. (2015) proposed that differences between the relationship of self-regulation and measures in math and reading were due to the cognitive demands required to perform each task (e.g., math tasks require more cognitive active processing, hence children need

greater self-regulation to achieve their goal). In regard to literacy skills, once children master the identification of letters, sounds, and sight words, the active cognitive processing is lower since the task only requires accessing knowledge. Fuhs, Nesbitt, Farran, and Dong (2014) suggested that the stronger correlation between math and measures of self-regulation could be caused by early educational demands in which children engage more independently with math content, hence requiring more executive function than with literacy content, in which the teacher exhibit greater instruction.

Similarly, Lonigan, Allan, and Phillips (2017) studied the relationship between self-regulation (measures of executive function and attention) and early literacy skills (phonological awareness and print knowledge) among preschoolers. The findings of the study highlighted the association between self-regulation and literacy skills at the beginning of the preschool year. In contrast, with previous findings, the study of Lonigan, Allan, and Phillips (2017) did not indicated a greater association between self-regulation and literacy skills that required higher cognitive processing (i.e., phonological awareness). Instead, self-regulation scores were associated with growth in a letter naming and letter sounds task.

**Latino English Language Learners' Self-Regulation and Literacy Skills**

The majority of studies that assess the relationship between self-regulation and literacy skills have been focused on EMLs. Typically, Latino students are included as a small percentage of the study's population, but no distinctions are made concerning their spoken language. However, in recent years there has been a growth in research studies centered on assessing ELLs' self-regulation. These research studies implement measures

in English and Spanish versions in order to properly assess ELLs' developmental markers, specifically measures related to academic performance (e.g., self-regulation, language, literacy, and math).

The association between language and self-regulation of ELLs has been previously studied due to its significance in understanding how learning a second language influences children's acquisition of regulatory behaviors and academic skills (e.g., Bohlmann et al., 2015; Palermo, Mikulski, and Conejo, 2017). Among the research findings with ELLs, it has been emphasized that learning more than one language is associated with improvement in children's development of executive functions (Esposito, Baker-Ward, and Mueller, 2013). Children with better self-regulation show more gains in their language and literacy. For instance, Palermo et al. (2017) assessed Spanish-English preschoolers' self-regulation (i.e., executive function and effortful control), language and letter-word naming, and found that measures of self-regulation were related with children's acquisition of English vocabulary and their ability to name letters and words. Similarly, Lonigan, Lerner, Goodrich, Farrington, and Allan (2016) indicated that measures of language and literacy skills were positively correlated with measures of self-regulation (inhibitory control and working memory).

Fewer studies have been conducted concerning the comparison of self-regulation components and literacy skills between EMLs and Latino ELLs. Some of the research studies found in the current literature have assessed students' self-regulation and literacy through different periods. For instance, Lonigan, Allan, Goodrich, et al. (2017) longitudinally assessed how inhibitory control related to Spanish speaking and English-

speaking preschool students' language, literacy, and math outcomes. The findings indicated that inhibitory control was associated with academic outcomes for English and Spanish speaking children at the end of the preschool year. Likewise, by assessing academic skills in English and Spanish, Lonigan, Allan, Goodrich, et al. (2017) concluded that children inhibitory control presented a similar function across English and Spanish language due to its relationship with phonological awareness, math, and literacy.

Furthermore, studies with older children have examined the relationship between self-regulation and complex skills associated with early literacy skills (e.g., reading comprehension). Barber et al. (2020) conducted a study comparing reading comprehension and executive function between EMLs and ELLs from first to fourth grade. The results indicated that ELLs obtained lower scores than EMLs in reading comprehension, word decoding, oral language, and vocabulary. Additionally, it was found that ELLs obtained significantly lower scores than EMLs on executive control measures. The findings of this study contradict previous findings that associate learning a second language with higher levels of self-regulation (e.g., Calvo and Bialystok, 2014).

In conclusion, the available literature indicates that self-regulation relates to literacy skills. Previous studies have stated that children with higher self-regulation tend to perform better at school since they engage more in learning activities. Regarding Latino ELLs, the literature provides mixed findings of how learning a second language influence their self-regulation skill. This study seeks to examine the possible correlation between literacy skills and self-regulation: comparing and contrasting phonemic awareness and letter naming fluency, and executive function of Latino ELLs and EMLs.

# CHAPTER III

# METHODOLOGY

## Participants

Data from a sample of 52 kindergarten students was collected for this study: 25 Latino ELLs and 27 EMLs between the ages of 5 and 7 ($M$ = 5.87; $SD$ = 0.47). All children were recruited from three Northeast Ohio private schools. The sample included 24 girls (46.15%) and 28 boys (53.85%) and was composed of 57.69% Latin Americans, 9.6% White Americans, 13.46% Black/African Americans, and 19.23% noted multiple classifications. While most Latino English language learners were born in Latin American countries (68%), some others were born in the United States (32%). The majority of participants in the other classification were considered English monolinguals because their native and home language was English.

To classify participants as Latino ELLs or EMLs, parents or caregivers filled out a demographic questionnaire in which they provided information about the child's prior educational and language background. Moreover, interactions with each child before completing the assessments were taken into consideration in the language identification process. Students that were not between the ages of 5 and 7 and did not speak any of the target languages (i.e., Spanish and/or English) were excluded from the study.

## Parental Consent Packets

Before collecting data, a total of 95 parental consent packets were sent with the aid of school personnel. The packets consisted of the consent forms with a brief description of the study and a demographic questionnaire. Both forms were available in

English and Spanish. From the packets sent home, 52 parents approved their child's participation in the study by returning the signed consent form and a demographic questionnaire. Before conducting the assessments, verbal assent was obtained from each participant.

## Measures

This study assessed Latino ELLs and EMLs' self-regulation and literacy skills by implementing different types of research instruments. First, a demographic questionnaire was used with the purpose of collecting general information about the participants' educational and language background. Then, children completed direct assessments that measured their executive function, inhibitory control, phonemic awareness, and rapid automatic naming of letters.

### Demographic Questionnaire

Students' identification details, language, and educational background were collected through a short questionnaire that was sent in conjunction with parental consent forms. Parents that authorized the child's participation in the study were required to fill out a questionnaire composed of nine questions divided into three sections. The first section collected information regarding the parent/caregiver and the participant date of birth, birthplace, and ethnicity. In the second section of the questionnaire, parents provided information about the languages used at home, the language the child first acquired, and the language used more by the child at home. The last section was focused on the child's educational background in which parents responded to questions related to the child's previous formal education. To facilitate the coding process, numeric values

were assigned to answers from the questionnaire (e.g., child's birthplace was coded as Latin American country=1, or United States=2).

**Literacy Skills**

Children's English literacy skills were assessed using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). The DIBELS is an assessment used to evaluates K-8 children's literacy skills. For kindergarten students, examiners can use seven subtests from the DIBELS: First Sound Fluency (FSF), Phoneme Segmentation Fluency (PSF), Nonsense Word Fluency (NWF), Word Reading Fluency (WRF), Oral Reading Fluency (ORF) Word Reading Fluency (WRF), Letter Naming Fluency (LNF). Each assessment has a duration of one minute and most of the subtests can be applied 3 times per school year. In the present study, raw scores from two subtests were used to assess kindergarten literacy skills: Phoneme Segmentation Fluency and Letter Naming Fluency. PSF measures the ability to segment phonemes of orally presented words. LNF is used to assess reading risk and knowledge of upper- and lower-case letters. In the PSF subtest, children are instructed to identify the phonemes in words said by the examiner, 1 point is given for every correct answer and 0 points for every wrong answer. During the LNF assessment children are required to identify upper- and lower-case letters, 1 point is given for every correct answer and 0 points for every wrong answer.

Additionally, Latino ELLs' Spanish phonemic awareness and letter naming fluency were also assessed using the subtests of Fluidez en Nombrar Letras (FNL) and Fluidez en la Segmentación de Fonemas (FSF) from the Indicadores Dinámicos del Éxito en la Lectura (IDEL). The subtests are completed in the same format and the subtest

from the DIBELS. Comparably with the DIBELS, the IDEL assesses children's phonological awareness, alphabetic principle, reading accuracy and fluency, vocabulary, and reading comprehension. Importantly, the IDEL is not a translation of the DIBEL, instead, it considers the linguistic structure of the Spanish language.

**Self-Regulation**

Executive function was measured using the Head-Toes-Knees-Shoulder task (HTKS) (Ponitz et al., 2009). The HTKS has been used with preschool to third-grade students (Connor et al., 2010; McClelland et al., 2007). Scores in the HTKS task have revealed a significant construct validity with parent rating of attention, inhibitory control, and teachers' rating of behavioral regulation for kindergarteners (Ponitz et al., 2009). Similarly, it has been indicated that the HTKS task is a valid measure for the assessment of diverse populations (McClelland et al., 2007). The HTKS is divided into two parts, each part has 10 trials. For each part, children are instructed to give an opposite response for each command. For example, touching their toes when asked to touch their heads. In the first part, two commands are used: "touch your head" and "touch your toes". In the second part, two more commands are added: "touch your knees" and "touch your shoulders". Correct responses earned 2 points; self-corrected responses earned 1 point; and choosing the incorrect answer earned 0 points. Children could earn a total of 40 points; 20 points for each part. The HTKS can be applied in English and Spanish. Several studies with Latino ELLs have used the assessment as a measure of self-regulation (Day et al., 2015; Hernández et al., 2018).

Additionally, children's inhibitory control was assessed using the Toy Wrap task from the Preschool Self-Regulation Assessment (PSRA) (Smith-Donald, Raver, Hayes, and Richardson, 2007). Rimm-Kaufman, Curby, Grimm, Nathanson, and Brock (2009) assessed inhibitory control of kindergarteners between the ages of 4.7 to 6.24 using four subtests from the PSRA. The authors used an adapted version of the Toy Wrap task to measure self-regulation in older children by placing them in a 180º position instead of a 90º position away from the table. In this study, the task was administered at the end of the session. In the first phase of the task, children were told to turn their chair 180º from the table and wait without peeking while the examiner wrapped a toy noisily for 60 seconds. Peek time was coded according to the time each child lasted without peeking; if the child did not turn around, the 60s were recorded. During the second phase, children were instructed to wait while cleaning the working area for 60 seconds. The examiner recorded 60 seconds if the child was able to wait without touching the wrapped gift.

## Procedure

The participants completed the assessments during the Spring semester of 2020. A bilingual examiner assessed the participants' self-regulation and literacy skills. Children were assessed individually in one session that took place in a quiet room in each school. The duration of each session differed depending on the child's spoken language. Sessions with EMLs lasted approximately 20 minutes. Assessment of Latino ELLs lasted approximately 25 minutes since they were required to complete Spanish measures of phonological awareness and letter naming fluency. Similarly, the order in which children were assessed varied depending on their spoken language. English monolingual students

completed the assessments in the following order: DIBELS, HTKS, and Toy Wrap task; Latino ELLs were assessed in the following order: DIBELS, HTKS, IDEL, and Toy Wrap task. At the end of the session, each child was compensated with a toy. Due to the Covid-19 pandemic, additional data collection waves were not possible since schools closed one week after collecting the existing data set.

## Data Analysis

All analyses were conducted using SPSS Software. Descriptive statistical analyses were performed on the scores obtained by Latino ELLs and EMLs on the assessments of HTKS, PSF, and LNF. Additional Latino ELLs scores on the FSF and FNL subtests were also descriptively analyzed. Each table provides the mean and standard deviation for each measure being assessed. An alpha level of .05 was used for all statistical tests. One-way ANOVA was conducted to test mean differences in students' scores of HTKS, PSF, and LNF. Additionally, a paired sample t-test was conducted in order to assess mean differences in Latino ELLs' literacy scores in English and Spanish. Furthermore, bivariate correlational analysis, Spearman's rho correlation, was conducted to gauge the relationship between self-regulation and literacy skills of Latino ELLs and EMLs. It must be mentioned that results from the Toy Wrap task were excluded from the analysis since participants in both groups obtained high-end scores in the measure.

# CHAPTER IV

# RESULTS

This chapter describes the results of the study based on the scores obtained by Latino ELLs and EMLs in measures of self-regulation and literacy skills. To answer the first and second research questions differences between the mean score on the measures of self-regulation, phonemic awareness, and letter naming fluency were analyzed using a one-way ANOVA. The third research question was answered using a paired sample t-test that allowed the examination of the mean difference between Latino ELLs' scores on literacy assessments in English and Spanish. Finally, to answer the fourth research question a Spearman's rho correlation analysis was conducted with each group (i.e., Latino ELLs and EMLs). EMLs' scores on the HTKS, PSF, and LNF and Latino ELLs' scores on the HTKS, PSF, LNF, FSF, and FNL were assessed in order to identify the relationship between measures. The positive or negative correlation strength was determined based on the following parameters: $.1 < | r | < .3$ small/weak correlation, $.3 < | r | < .5$ medium/moderate correlation, $.5 < | r |$ large/strong correlation (Cohen, 1988).

## Difference between Latino ELLs and EMLs' Self-Regulation Scores

To examine the differences between Latino ELLs and EMLs' self-regulation, a one-way ANOVA was conducted. The descriptive statistics and one-way ANOVA results related to students' HTKS scores across the two groups are reported in Table 1. The EMLs group was associated with a higher mean level of self-regulation scores ($M$ = 33.48, $SD$ = 5.272) and the Latino ELLs group was associated with a lower mean level of self-regulation scores ($M$ = 25.64, $SD$ = 11.221). The results reveal that among the

participants ($N = 52$), there was a statistically significant difference between EMLs and Latino ELLs' scores on the HTKS measure, $F(1,50) = 10.658$, $p < .01$. These results indicate that during the spring of 2020, kindergarten EMLs displayed better self-regulation skills than Latino ELLs.

Table 1

*Descriptive Statistics and One-Way ANOVA for LELLs and EMLs' Self-Regulation Scores*

| Measure | LELLs | | EMLs | | *F* |
|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | |
| HTKS | 25.64 | 11.221 | 33.48 | 5.272 | 10.658** |

*Note.* LELL=Latino English language learners; EML=English language learners; HTKS=Head-Toes-Knees-Shoulders
**$p < .01$.

**Difference between Latino ELLs and EMLs' Literacy Scores**

A One-Way ANOVA was performed to examine differences between Latino ELLs and EMLs' English literacy measures of PSF and LNF. Descriptive statistics and one-way ANOVA results associated with students' literacy scores across the two groups of participants are reported in Table 2. Results for the PSF measure, indicated a significant difference between EMLs' mean scores ($M = 20.04$, $SD = 17.725$) and Latino ELLs' mean scores ($M = 9.76$, $SD = 14.330$), $F(1,50) = 5.234$, $p < .05$. In regard to the LNF measure, results revealed that EMLs' mean scores ($M = 32.93$, $SD = 18.888$) were significantly different from Latino ELLs' mean scores ($M = 17.80$, $SD = 19.679$), $F(1,50) = 7.997$, $p < .01$. Taken together the results demonstrate that EMLs outperformed Latino

ELLs in English literacy measures of PSF and LNF, indicating that in general EMLs showed better phonemic awareness and letter naming fluency abilities than Latino ELLs.

Table 2

*Descriptive Statistics and One-Way ANOVA for LELLs and EMLs' English Literacy Scores*

| Measure | LELLs | | EMLs | | *F* |
|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | |
| PSF | 9.76 | 14.330 | 20.04 | 17.725 | 5.234* |
| LNF | 17.80 | 19.679 | 32.93 | 18.888 | 7.997** |

*Note.* LELL=Latino English language learners; EML=English language learners; PSF= Phoneme Segmentation Fluency; LNF=Letter Naming Fluency
*$p < .05$. **$p < .01$.

## Differences among Latino ELLs' Literacy Assessment Scores in English and Spanish

A paired sample t-test was used to compare Latino ELLs' ($n = 25$) mean scores on English and Spanish literacy assessments of phonemic awareness and letter naming fluency. Descriptive statistics and t-test results associated with Latino ELLs' literacy scores across the PSF and FSF measures are provided in Table 3. Similarly, Table 4 provides descriptive statistics and t-test results associated with Latino ELLs' literacy scores across the LNF and FNL measures.

Latino ELLs had marginally higher mean scores on the PSF subtest ($M = 9.76$, $SD = 14.330$) than in the FSF subtest ($M = 6.52$, $SD = 9.386$). On average, PSF scores were 3.24 points higher than FSF scores (95% CI [-.141,6.621]). Thus, the paired

sample t-test showed that Latino ELLs' PSF and FSF scores were not significantly different, $t(24) = 1.978$, $p > .05$ (see Table 3). These results suggest that during the spring of 2020, kindergarten Latino ELLs demonstrated a similar level of performance on the English and Spanish phonemic awareness tasks.

Table 3

*Descriptive Statistics and Paired Sample T-Test for LELLs' Phonemic Segmentation Fluency Scores in English and Spanish*

| PSF | | FSF | | *t* |
|---|---|---|---|---|
| *M* | *SD* | *M* | *SD* | |
| 9.76 | 14.330 | 6.52 | 9.386 | 1.978 |

*Note.* PSF= Phoneme Segmentation Fluency; FSF= Fluidez en la Segmentación de Fonemas
*p>.05.*

The results in Table 4 indicated that Latino ELLs' mean scores on the LNF subtest ($M = 17.80$, $SD = 19.679$) were higher than the mean scores on the FNL subtest ($M = 7.80$, $SD = 8.588$). On average LNF scores were 10 points higher than FNL scores (95% CI [3.793,16.207]). The paired sample t-test showed that the mean scores obtained by Latino ELLS in FNL and LNF assessments differed significantly, $t(24) = 3.325$, $p < .01$. These findings suggest that Latino ELLs receiving mostly English instruction in school knew more letters in English than in Spanish.

Table 4

*Descriptive Statistics and Paired Sample T-Test for LELLs' Letter Naming Fluency Scores in English and Spanish*

| LNF | | FNL | | |
|---|---|---|---|---|
| | | | | *t* |
| *M* | *SD* | *M* | *SD* | |
| 17.80 | 19.679 | 7.80 | 8.588 | 3.325** |

*Note.* LNF=Letter Naming Fluency; FNL= Fluidez en Nombrar Letras
** $p < .01$.

## Relationship between Latino ELLs and EMLs' Self-Regulation and Literacy Skills Assessment Scores

A Spearman's rho correlation was conducted to examine the relationship between HTKS scores and PSF and LNF scores among EMLs ($n = 27$). Descriptive statistics and correlation results between the three measures are displayed in Table 5. The results revealed a non-significant moderate relationship between the HTKS task and the PSF subtest, $r_s(25) = .375$, $p > .05$. Moreover, LNF scores were strongly and significantly associated to HTKS scores, $r_s(25) = .564$, $p < .01$. It can be seen that kindergarten EMLs' self-regulation measure had a stronger association with the literacy measure of letter naming fluency than with phonemic awareness.

Table 5

*Correlations between EMLs' Self-Regulation and English Literacy Measures*

| Measure | M | SD | 1 | 2 | 3 |
|---|---|---|---|---|---|
| 1. HTKS | 33.48 | 5.272 | - | | |
| 2. PSF | 20.04 | 17.725 | .357 | - | |
| 3. LNF | 32.93 | 18.888 | .564** | .451* | - |

*Note.* HTKS=Head-Toes-Knees-Shoulders; PSF= Phoneme Segmentation Fluency; LNF=Letter Naming Fluency
*$p < .05$. **$p < .01$.

Similarly, the association between Latino ELLs ($n = 25$) measures of self-regulation (HTKS) and literacy skills (PSF, LNF, FSF, and FNL) was assessed with Spearman's rho correlation analysis. Descriptive statistics and correlation results between the five measures are display in Table 6. The results indicated that children's HTKS scores had a significantly strong relationship with FSF scores, $r_s$ (23) = .690, $p < .01$, PSF scores, $r_s$ (23) = .682, $p < .01$, and LNF scores, $r_s$ (23) = .582, $p < .01$. Additionally, HTKS was significantly moderately correlated with FNL, $r_s$ (23) = .479, $p < .05$.

Table 6

*Correlations between LELLs' Self-Regulation and Literacy Measures in English and Spanish*

| Measure | M | SD | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| 1. HTKS | 25.64 | 11.221 | - | | | | |
| 2. PSF | 9.76 | 14.330 | .682** | - | | | |
| 3. LNF | 17.80 | 19.679 | .582** | .702** | - | | |
| 4. FSF | 6.52 | 9.386 | .690** | .715** | .612** | - | |
| 5. FNL | 7.80 | 8.588 | .479* | .556** | .422* | .540** | - |

*Note.* HTKS=Head-Toes-Knees-Shoulders; PSF= Phoneme Segmentation Fluency; LNF=Letter Naming Fluency
*$p < .05$. **$p < .01$.

# CHAPTER V

# DISCUSSION

The purpose of this study was to extend previous literature on how the differences in language backgrounds between kindergarten EMLs and Latino ELLs could influence their self-regulation and literacy skills, specifically letter naming and phonemic awareness. Overall, the results indicated that EMLs scored higher on measures of self-regulation and literacy scores than Latino ELLs. Moreover, the correlation between measures of self-regulation and literacy varied among groups. EMLs' scores on the HTKS task indicated a stronger correlation with LNF than PSF. Latinos ELLs' correlational analysis showed that scores in the HTKS task were strongly associated with scores on the PSF, LNF, and FSF. Regarding scores on the FNL subtest, the correlation with HTKS scores was moderate. Understanding these results serves the purpose of addressing academic difficulties that students with different language backgrounds may encounter in school.

This chapter includes a more in-depth discussion of the obtained results and how they relate to the literature on Latino ELLs and EMLs' self-regulation and literacy. Furthermore, the chapter concludes with a discussion of the limitations, future directions, and conclusions regarding the study.

## Differences in Self-Regulation Mean Scores

EMLs achieved higher scores on the HTKS than Latino ELLs. An unexpected result considering that the literature supports the notion that learning a second language is associated with a higher level of self-regulation. It has been stated that the task of

inhibiting one's language requires more executive function, hence ELLs have more opportunities to develop working memory, attention, and inhibition (Bialystok and Martin, 2004). Conversely, recent studies with ELLs and EMLs have indicated significantly lower scores on executive function for ELLs (e.g., Arizmendi et al., 2018; Barber et al., 2020). Possibly, the mixed results regarding executive function among EMLs and ELLs may be related to their level of language proficiency. For instance, Palermo et al. (2016) indicated that Spanish-speaking children with higher proficiency in Spanish and English vocabularies exhibited greater executive functions and effortful control abilities than children who were predominant in either English or Spanish. In the present study Latino ELLs were still within their first six months of schooling, making their exposition and formal instruction in English recent and disconnected from their home environments were Spanish is almost exclusively used. Further examination is needed to understand if the level of language proficiency in both languages influence self-regulation scores in Latino ELLs and how these results compare with their monolingual counterparts.

## Differences in Literacy Mean Scores

The results indicated that EMLs' scores in the English literacy measures were significantly higher than Latino ELLs' scores. Latino ELLs' lower scores in the literacy assessments may be caused by their lack of practice, in the acquisition of English language and literacy. Bedore, Peña, Fiestas, and Lugo-Neris (2020), suggested that ELLs tend to present lower literacy skills than EMLs due to lack of practice and divided exposure to the language (e.g., ELLs learning food terms in Spanish and shapes in

English) which causes decreased automatization and production of grammatical elements. Possibly most Latino ELLs learning is performed at school, and there is no continuity at home since the language spoken by them and other family members is Spanish, this reduces their learning opportunities. In contrast, EMLs are constantly exposed to the English language and have more opportunities for acquiring literacy skills. Lastly, Latino ELLs enter formal schooling without the same level of English proficiency of most EMLs, hindering their ability to follow instructions and consequently delaying their acquisition of literacy skills.

### Latino ELLs' Spanish and English Literacy Skills

Results indicated that Latino ELLs had higher scores on English literacy assessments than in Spanish. Significant mean differences were presented in letter naming fluency assessment scores and, while still higher in the English assessment, no significant differences were identified in the scores for the phonemic awareness assessments. This can be attributed to Latino ELLs' lack of formal Spanish education and the empirical process driven by the need to communicate with Spanish speakers within the household through which they acquire and improve upon their emergent literacy Spanish skills. Furthermore, studies with ELLs have indicated that children receiving formal English schooling, increase their English literacy skills, in contrast, minimal or no gains are made in Spanish (e.g., Paez et al., 2007).

### Correlation between Self-Regulation and Literacy

Separate correlational analyses were conducted for EMLs and Latino ELLs' measures of self-regulation and literacy. EMLs' results indicated a significantly strong

correlation between self-regulation and letter naming fluency, and a non-significant moderate correlation between phonemic awareness and self-regulation. Previous studies have reported mixed findings regarding the correlation of self-regulation and literacy skills, specifically phonemic awareness, and letter naming fluency (e.g., Blair et al. 2015; Lonigan, Allan, and Phillips, 2017). The stronger correlation between self-regulation and letter naming fluency may be related to the type of assessments that were administrated. The LNF subtest allowed children to have a visual aid that focused their attention and help them retrieved prior knowledge, while the PSF subtest, in contrast, required children to recall the phonemes of words mentioned by the examiner. Futures studies should examine how different literacy skills assessment procedures correlate with self-regulation measures. For example, assessing children's phonemic awareness using different types of assessments and correlating their scores with self-regulation assessment scores.

The correlational analysis of Latino ELLs indicated a strong association between self-regulation and measures of phonemic awareness in English and Spanish, and letter naming fluency in English, and a moderate, yet still significant association between letter naming fluency in Spanish and self-regulation. The stronger correlation between self-regulation and English literacy assessments of phonemic awareness and letter naming fluency is related to the English education Latino ELLs are receiving. Children at school require self-regulation to follow teachers' instruction and learn the lesson content related to literacy skills (e.g., repeating letters of the alphabet after the teacher). Additionally, the strong correlation between self-regulation and phonemic awareness in Spanish may

be caused by the extensive use of spoken interactions (which may include commands and instructions) in Latino ELLs' households. Phonemic awareness is a literacy skill that can be developed empirically, making frequent domestic use of the language appropriate enough for its acquisition and growth in this respect. In contrast, letter naming fluency requires the retrieval of specific knowledge (i.e., the names of letters) acquired through formal schooling, which Latino ELLs are not receiving in the Spanish language.

## Limitations and Future Directions

Although the current study had several strengths such as the use of self-regulation and literacy measures in English and Spanish, the contributions of this study should be considered in light of its limitations. The study was conducted with a small sample due to difficulties gaining access to larger populations of kindergarten Latino ELLs and EMLs and obtaining parental consent within the available ones. According to Kadam and Bhalerao (2010) results from studies with few participants cannot be generalized because they do not represent the target population. Additionally, scores in the Toy Wrap task were leaned toward the ceiling effect, which Garin (2014) described as the tendency of participants scoring towards the high end of a measure. Data collected from the Toy Wrap task were excluded from further analyses since no variance was found between the scores of EMLs and Latino ELLs. Since the Toy Wrap task data were excluded from the study, only the HTKS results were used to assess self-regulation. Consequently, limiting the study to only one assessment of self-regulation interferes with the purpose of comparing scores within different types of self-regulation measurements. Although the HTKS assessment has revealed a significant construct validity with other measures of

self-regulation among kindergarteners (Ponitz et al., 2009). Future studies should implement additional instruments and modalities when assessing self-regulation (e.g., observational behavior assessments and parent/teacher evaluations).

This study's findings indicate that there is a link between formal language instruction and empirical development of language (or in the case of ELLs, languages) to executive functions which could be further studied to better understand the process of learning a second language and self-regulation. Furthermore, future research studies should examine the relationship between the level of language proficiency and self-regulation among ELLs with different ages of acquisition of a second language. Moreover, it is important to study the effect of different literacy skills assessment procedures on the correlation of the scores they produce with self-regulation.

## Conclusion

This study examined the relationship between self-regulation and literacy skills of kindergarten Latino ELLs and EMLs, and how these measures differ. Its findings indicate that EMLs and Latino ELLs' scores of self-regulation and literacy were significantly different, with EMLs' mean scores being higher in all measures. Additionally, Latino ELLs' literacy measures evidence a significant difference between letter naming fluency in English and Spanish, and a non-significant difference between phonemic awareness in English and Spanish. Correlational analyses were performed for each group's scores. EMLs' scores in the self-regulation assessment indicate a significant association with letter naming fluency and a non-significant moderate correlation with phonemic awareness. Latino ELLs' self-regulation scores evidence a

significantly strong correlation with scores on phonemic awareness assessments in both languages, letter naming fluency in English, and a moderate correlation with letter naming fluency in Spanish.

Understanding how self-regulation relates to students' academic skills can serve in the creation or modification of protocols focused on identifying learning difficulties and areas to target through educational interventions. Due to the variety of students with different language backgrounds, it is important to consider how their acquisition of academic skills vary in comparison with EMLs (e.g., the difficulties experienced by Latino ELLs when adapting to academic demands while learning a second language).

# APPENDICES

# APPENDIX A

# LETTER OF SUPPORT

## Appendix A

## Letter of Support

[School's name]

Re: Self-regulation and literacy skills: a comparative analysis between Latino English language learners and English monolingual learners

Dear Sara Paredes,

The [school's name] is aware of your proposed research project. We understand that the involvement of our school in assisting you to accomplish this project includes approaching participants, assessing students, and facilitating additional information from the participants.

As the Principal of [school's name] I am able to approve research at this site, I have read through your research proposal and support the involvement of our school in this project and look forward to working with you.

Should you have any questions, please contact me at [email address]

Sincerely,

[School principal's name]

Principal

## APPENDIX B

## PARENTAL CONSENT FORM (ENGLISH VERSION)

## Appendix B

## Parental Consent Form (English Version)

### Informed Consent to Participate in the Research Study

**Study Title:** Self-regulation and literacy skills: a comparative analysis between Latino English language learners and English monolingual learners

**Investigators:** Dr. Bradley Morris and Sara Paredes

Your child is being invited to participate in a research study. This consent form will provide you with information on the research project, what your child will need to do, and the associated risks and benefits of the research. Your child's participation is voluntary. Please read this form carefully. It is important that you ask questions and fully understands the research in order to make an informed decision. You will receive a copy of this document to take with you.

**Purpose:** The purpose of the study is to examine the relation between literacy skills and self-regulation of EML and Latino ELL.

**Procedures**: The parent/guardian will need to fill out a demographic questionnaire. Your child's participation will require him/her to complete some literacy and self-regulation assessments. The procedure should take approximately twenty-five minutes.

**Benefits:** This research will not benefit you or your child directly. However, your child's participation in this study will help us to better understand how language influence self-regulation and literacy skills.

**Risks and Discomforts:** There are no anticipated risks beyond those encountered in everyday life.

**Privacy and Confidentiality:** Your child's study related information will be kept confidential within the limits of the law. Any identifying information will be kept in a secure location and only the researchers will have access to the data. Research participants will not be identified in any publication or presentation of research results; only aggregate data will be used.

**Compensation:** Yours child's participation will be compensated with a toy or educational material at the end of the session.

**Voluntary Participation:** Taking part in this research study is entirely up to you and your child. You and/or your child may choose not to participate or may discontinue their participation at any time without penalty or loss of benefits to which he/she is otherwise

entitled. Participation or non-participation will have no effect on your child's grade in the classroom.

**Contact Information:** If you have any questions or concerns about this research, you may contact Dr. Bradley Morris at 330.672.0590 or Sara Paredes at 407.391.4063. This project has been approved by the Kent State University Institutional Review Board. If you have any questions about your rights as a research participant or complaints about the research, you may call the IRB at 330.672.2704.

**Consent Statement and Signature:** I have read this consent form and have had the opportunity to have my questions answered to my satisfaction. I voluntarily agree to grant permission for my child to participate in this study. I understand that a copy of this consent will be provided to me for future reference.

_____ _____

**Parental Signature** **Date**

# APPENDIX C

# PARENTAL CONSENT FORM (SPANISH VERSION)

## Appendix C

## Parental Consent Form (Spanish Version)

## Consentimiento Informado para Participar en la Investigación

**Título del estudio:** Autorregulación y habilidades de alfabetización: un análisis comparativo entre estudiantes Latinos aprendiendo inglés y estudiantes monolingües de inglés

**Investigadores** Dr. Bradley Morris y Sara Paredes

Su hijo(a) está siendo invitado(a) a participar en una investigación. Este formulario de consentimiento le proporcionará información sobre el proyecto de investigación, lo que su hijo(a) deberá hacer y los riesgos y beneficios asociados de la investigación. La participación de su hijo(a) es voluntaria. Por favor lea este formulario cuidadosamente. Es importante que haga preguntas y comprenda completamente la investigación para tomar una decisión informada. Recibirá una copia de este documento para llevar con usted.

**Propósito**: El propósito del estudio es examinar la relación entre las habilidades de alfabetización y la autorregulación de los estudiantes monolingües de inglés y estudiantes Latinos aprendiendo inglés.

**Procedimientos**: El padre/tutor deberá completar un cuestionario demográfico. La participación de su hijo(a) requerirá que él/ella complete algunas evaluaciones de alfabetización y autorregulación. El procedimiento tomara aproximadamente veinticinco minutos.

**Beneficios**: Esta investigación no lo(la) beneficiará a usted ni a su hijo(a) directamente. Sin embargo, la participación de su hijo(a) en este estudio nos ayudará a comprender mejor cómo el aprendizaje de un segundo idioma influye en el desarrollo de la autorregulación y las habilidades de lectura.

**Riesgos e Incomodidades**: No hay riesgos anticipados más allá de los que se encuentran en la vida cotidiana.

**Privacidad y Confidencialidad**: La información relacionada con el estudio de su hijo(a) se mantendrá confidencial dentro de los límites de la ley. Cualquier información de identificación se mantendrá en un lugar seguro y solo los investigadores tendrán acceso a

los datos. Los participantes de la investigación no serán identificados en ninguna publicación o presentación de resultados de la investigación; solo se usarán datos agregados.

**Compensación**: La participación de su hijo(a) será compensada con un juguete o material educativo al final de la sesión.

**Participación Voluntaria**: Participar en este estudio de investigación depende totalmente de usted y de su hijo(a). Usted y/o su hijo(a) pueden optar por no participar o suspender su participación en cualquier momento sin penalización o pérdida de los beneficios a los que tiene derecho. La participación o no participación no tendrá ningún efecto en la calificación de su hijo(a) en el aula.

**Información de contacto**: Si tiene alguna pregunta o inquietud sobre esta investigación, puede comunicarse con el Dr. Bradley Morris al 330.672.0590 o con Sara Paredes al 407.391.4063. Este proyecto ha sido aprobado por la Junta de Revisión Institucional de la Universidad Estatal de Kent. Si tiene alguna pregunta sobre sus derechos como participante de la investigación o quejas sobre la investigación, puede llamar a IRB al 330.672.2704.

**Declaración de Consentimiento y Firma**: He leído este formulario de consentimiento y he tenido la oportunidad de que mis preguntas sean respondidas a mi entera satisfacción. Acepto voluntariamente otorgar permiso para que mi hijo(a) participe en este estudio. Entiendo que se me proporcionará una copia de este consentimiento para futura referencia.

_____ _____

**Firma del padre/madre** **Fecha**

# APPENDIX D

# INFORMED CONSENT REQUIREMENTS FOR MINORS (ENGLISH VERSION)

## Appendix D

## Informed Consent Requirements for Minors (English Version)

**Title:** Self-regulation and literacy skills: a comparative analysis between Latino ELL and EML

**Procedure for obtaining assent from children:**

1. **Hi,** [child's name].
2. **My name is _____, and I am trying to learn more about** your reading skills and how do you perform when you work in your assignments.
3. **I would like you to** do some activities with me. First you will complete two reading tasks in which you will have to recognize and name some letters. Then you will do other activities that will test your attention and how you follow directions.
4. **Do you want to do this?**
5. **Do you have any questions before we start?**
6. **If you want to stop at any time just tell me.**

# APPENDIX E

# INFORMED CONSENT REQUIREMENTS FOR MINORS (SPANISH VERSION)

## Appendix E

## Informed Consent Requirements for Minors (Spanish Version)

**Título:** Autorregulación y habilidades de alfabetización: un análisis comparativo entre estudiantes Latinos aprendiendo inglés y estudiantes monolingües de inglés

**Procedimiento para obtener consentimiento de los niños(as):**

1. **Hola,** [nombre del niño(a)].

2. **Mi nombre es _____, y estoy tratando de aprender más sobre** tus habilidades de lectura y cómo te desempeñas cuando haces tus tareas.

3. **Me gustaría que hicieras** algunas actividades conmigo. Primero completaras dos actividades de lectura en las que deberás reconocer y nombrar algunas letras. Luego harás otras actividades que pondrán a prueba tu atención y cómo sigue instrucciones.

4. **¿Quieres hacer esto?**

5. **¿Tiene alguna pregunta antes de comenzar?**

6. **Si quieres parar en cualquier momento solo dímelo.**

# APPENDIX F

# DEMOGRAPHIC QUESTIONNAIRE (ENGLISH VERSION)

## Appendix F

## Demographic Questionnaire (English Version)

**Title:** Self-regulation and literacy skills: a comparative analysis between Latino ELL and EML

**Instructions:** Please complete the following demographic information. Note that all information will be kept completely confidential and will serve only for research purposes. Any identifying information will be kept in a secure location and only the researchers will have access to the data. Research participants will not be identified in any publication or presentation of research results; only aggregate data will be used.

**Identification details**

Your relationship to the child enrolled at school?

Mother ____ Father ____ Other (specify) _____

Child's date of birth: _____

Child's birthplace: _____

Child's ethnicity:

Asian _____ African American _____ Latino/Hispanic _____ White American _____

Alaskan Native _____ Other (specify) _____

**Language background**

What languages are used at home? _____

What language did your child learn first? _____

What language does your child use the most at home? _____

**Educational background**

Has your child ever received formal education outside of the United States? Yes ____ No ____

If yes, how many years/months? _____

If yes, what was the language of instruction? _____

Does your child have any prior education in the United States? Yes ____ No ____

If yes, when did your child first attended a school in the United States? _____

# APPENDIX G

# DEMOGRAPHIC QUESTIONNAIRE (SPANISH VERSION)

## Appendix G

## Demographic Questionnaire (Spanish Version)

**Título:** Autorregulación y habilidades de alfabetización: un análisis comparativo entre estudiantes latinos aprendiendo inglés y estudiantes monolingües de inglés

**Instrucciones:** Complete la siguiente información demográfica. Tenga en cuenta que toda la información se mantendrá completamente confidencial y servirá solo para fines de investigación. Cualquier información de identificación se mantendrá en un lugar seguro y solo los investigadores tendrán acceso a los datos. Los participantes de la investigación no serán identificados en ninguna publicación o presentación de resultados de la investigación; solo se usarán datos agregados.

**Detalles de identificación**

¿Su relación con el niño(a) matriculado en la escuela?

Madre ____ Padre ____ Otro (especifique) _____

Fecha de nacimiento de su hijo(a): _____

Lugar de nacimiento de su hijo(a): _____

Grupo étnico del niño:

Asiático _____ Afroamericano _____ Latino/Hispano _____ Blanco Americano _____

Nativo de Alaska _____ Otro (especificar) _____

**Antecedentes del idioma**

¿Qué idiomas se usan en casa? _____

¿Qué idioma aprendió primero su hijo(a)? _____

¿Qué idioma usa más su hijo(a) en casa? _____

**Antecedentes educativos**

¿Alguna vez su hijo(a) recibió educación formal fuera de los Estados Unidos? Si__No __

En caso afirmativo, ¿cuántos años/meses? _____

En caso afirmativo, ¿cuál era el idioma de instrucción? _____

¿Tiene su hijo(a) alguna educación previa en los Estados Unidos? Si___ No ____

En caso afirmativo, ¿Cuándo asistió su hijo(a) por primera vez a una escuela en los Estados Unidos? _____

# APPENDIX H

# HTKS (ENGLISH VERSION)

# Appendix H

## HTKS (English Version)

If the child produces the correct response immediately, score the item "2". If they self-correct (*see bottom of page 2) right away, without prompting, score the item "1". If they do not touch the correct part of their body at all, score the item "0".

**Part 1 TRAINING:** (circle child's response)

| | Retraining |
|---|---|
| A1. **What do you do if I say "touch your head"?** 0 (head) 1 2 (toes) | _____ |
| A2. **What do you do if I say "touch your toes"?** 0 (toes) 1 2 (head) | _____ |

**PART I PRACTICE:** (circle child's response)

| | Incorrect | Self-Correct* | Correct | Retraining |
|---|---|---|---|---|
| B1. **Touch your head** | 0 (head) | 1 | 2 (toes) | |
| B2. **Touch your toes** | 0 (toes) | 1 | 2 (head) | |
| B3. **Touch your head** | 0 (head) | 1 | 2 (toes) | _____ |
| B4. **Touch your toes** | 0 (toes) | 1 | 2 (head) | |

**Retraining occurs only 3 times**

**PART I TESTING:** (circle child's response)

| | | Incorrect | Self-Correct* | Correct |
|---|---|---|---|---|
| **21.** | Touch your head | **0 (head)** | **1** | **2 (toes)** |
| **22.** | Touch your toes | **0 (toes)** | **1** | **2 (head)** |
| **23.** | Touch your toes | **0 (toes)** | **1** | **2 (head)** |
| **24.** | Touch your head | **0 (head)** | **1** | **2 (toes)** |
| **25.** | Touch your toes | **0 (toes)** | **1** | **2 (head)** |
| **26.** | Touch your head | **0 (head)** | **1** | **2 (toes)** |
| **27.** | Touch your head | **0 (head)** | **1** | **2 (toes)** |
| **28.** | Touch your toes | **0 (toes)** | **1** | **2 (head)** |
| **29.** | Touch your head | **0 (head)** | **1** | **2 (toes)** |
| **30.** | Touch your toes | **0 (toes)** | **1** | **2 (head)** |

**Total Points:**_____

**Number of 1 responses:**_____

NOTE

***Definition of self-correction**: Mark "self-correct" on both the training and testing portion if the child makes *any discernible* motion toward the *incorrect* answer, but then changes his/her mind and makes the correct response. Pausing to think, not moving, and then responding correctly does *not* count as a self-correction.

**PART II TRAINING:**

**Administer Part II if child responds correctly to 5 or more items on Part I of the task, or if child is in kindergarten or beyond.**

**Circle child's response:**

| | |
|---|---|
| C1. **What do you do if I say "touch your knees?"**<br>0 (knees) 1 2 (shoulders) | **Retraining** _____ |

**PART II PRACTICE:**

| | Incorrect | Self-Correct* | Correct | |
|---|---|---|---|---|
| D1. **Touch your knees** | 0 (knees) | 1 | 2 (shoulders) | **Retraining** |
| D2. **Touch your shoulders** | 0 (shoulders) | 1 | 2 (knees) | |
| D3. **Touch your knees** | 0 (knees) | 1 | 2 (shoulders) | _____ |
| D4. **Touch your shoulders** | 0 (shoulders) | 1 | 2 (knees) | |

**PART II TESTING:** (circle child's response)

| | | Incorrect | Self-Correct | Correct |
|---|---|---|---|---|
| **31.** | Touch your head | **0** | **1** | **2 (toes)** |
| **32.** | Touch your toes | **0** | **1** | **2 (head)** |
| **33.** | Touch your knees | **0** | **1** | **2 (shoulders)** |
| **34.** | Touch your toes | **0** | **1** | **2 (head)** |
| **35.** | Touch your shoulders | **0** | **1** | **2 (knees)** |
| **36.** | Touch your head | **0** | **1** | **2 (toes)** |
| **37.** | Touch your knees | **0** | **1** | **2 (shoulders)** |
| **38.** | Touch your knees | **0** | **1** | **2 (shoulders)** |
| **39.** | Touch your shoulders | **0** | **1** | **2 (knees)** |
| **40.** | Touch your toes | **0** | **1** | **2 (head)** |

**Total Points:**_____

**Number of 1 responses:**_____

# APPENDIX I

# HTKS (SPANISH VERSION)

# Appendix I

## HTKS (Spanish Version)

**Vamos a hacer algo divertido y haremos lo opuesto de lo que yo diga. Cuando te digo, "toca tu cabeza" en vez de tocar tu cabeza quiero que toques tus pies. Y cuando te digo, "toca tus pies" quiero que toques tu cabeza. Asi que estás haciendo algo diferente de lo que yo digo.**

| A1. **¿Qué haces si digo, "toca tu cabeza?"** | | |
|---|---|---|
| 0 (head) | 1 | 2 (feet) |

**********EXPLANATION**********

*If s/he hesitates or responds incorrectly, say and proceed to A2:*

**Recuerda, cuando digo toca tu cabeza, quiero que toques tus pies. Así que vas a hacer algo diferente de lo que yo digo. intentemos de nuevo.**

**********

*If s/he responds correctly, say and proceed to A2:*

**¡Absolutamente correcto!**

| A2. **¿Qué haces si digo "toca tus pies"?** | | |
|---|---|---|
| 0 (toes) | 1 | 2 (head) |

PART I PRACTICE:

| | Incorrect | Self-Correct* | Correct |
|---|---|---|---|
| B1. **Toca tu cabeza** | 0 (head) | 1 | 2 (toes) |
| B2. **Toca tus pies** | 0 (toes) | 1 | 2 (head) |
| B3. **Toca tu cabeza** | 0 (head) | 1 | 2 (toes) |
| B4. **Toca tus pies** | 0 (toes) | 1 | 2 (head) |

PART I TESTING:

**Vamos a seguir jugando este juego, y quiero que tu sigas haciendo lo opuesto de lo que yo digo.**

*If the child does not understand the task, you will have gone through the directions at most four times (once at the beginning, and up to three times in the TRAINING and PRACTICE sections). DO NOT explain again after testing begins.*

| | Incorrect | Self-Correct* | Correct |
|---|---|---|---|
| 21. **Toca tu cabeza** | 0 (head) | 1 | 2 (toes) |
| 22. **Toca tus pies** | 0 (toes) | 1 | 2 (head) |
| 23. **Toca tus pies** | 0 (toes) | 1 | 2 (head) |
| 24. **Toca tu cabeza** | 0 (head) | 1 | 2 (toes) |
| 25. **Toca tus pies** | 0 (toes) | 1 | 2 (head) |
| 26. **Toca tu cabeza** | 0 (head) | 1 | 2 (toes) |
| 27. **Toca tu cabeza** | 0 (head) | 1 | 2 (toes) |
| 28. **Toca tus pies** | 0 (toes) | 1 | 2 (head) |
| 29. **Toca tu cabeza** | 0 (head) | 1 | 2 (toes) |
| 30. **Toca tus pies** | 0 (toes) | 1 | 2 (head) |

PART II TRAINING:
*Administer Part II if child responds correctly to 5 or more items on Part I of the task, or if child is in kindergarten or beyond.*
**Okay,, ya que entiendes esta parte, vamos a añadir otra parte. Ahora, vas a tocar tus hombros y las rodillas. Primero, toca tus hombros.**
*Touch your head; wait for the child to touch his/her shoulders with both hands.*

**Ahora, toca tus rodillas.**
*Repeat with four alternating commands (no demo) until the child has imitated you correctly or it is clear the child does not comprehend the task.*

**Okay, ahora vamos a hacer algo divertido otra vez. Vas a continuar haciendo lo opuesto de lo que yo te digo, igual que como hicimos antes,, pero esta vez, vas a tocar tus rodillas y tus hombros.. Cuando te digo, "toca tus rodillas", vas a tocar tus hombros , y cuando te digo "toca tus hombros ", tocas tus rodillas..**

| C1. **¿Que vas a hacer si digo "toca tus rodillas"?** | | |
|---|---|---|
| 0 (knees) | 1 | 2 (shoulders) |

*If response is correct, say and proceed to D1:*
**Muy bien! Vamos a practicar.**

*If the response is incorrect, say and proceed to D1:*
**Recuerda, cuando te digo "toca tus rodillas", en vez de tocar tus rodillas, tocas tus hombros. Quiero que hagas lo opuesto de lo que yo digo.**

PART II PRACTICE:

| | Incorrect | Self-Correct* | Correct |
|---|---|---|---|
| D1. **Toca tus rodillas** | 0 (knees) | 1 | 2 (shoulders) |
| D2. **Toca tus hombros** | 0 (shoulders) | 1 | 2 (knees) |
| D3. **Toca tus rodillas** | 0 (knees) | 1 | 2 (shoulders) |
| D4. **Toca tus hombros** | 0 (shoulders) | 1 | 2 (knees) |

*If the child gets two or fewer correct, say,*
**Recuerda, si yo digo toca tus rodillas, tu tocas tus hombros, y si yo digo toca tus hombros, tocas tus rodillas quiero que tú hagas lo opuesto de lo que yo digo**.

*Proceed to Part II test section. Do not explain any parts of the task again.*

PART II TESTING:
**Ya que conoces todas las partes, vamos a ponerlas juntas. Vas a seguir haciendo lo opuesto de lo que yo digo que hagas, pero no vas a saber lo que voy a decir.**

**Hay cuatro partes que te puedo decir.**

**Si digo toca tu cabeza, quiero que toques tus pies.**
**Si digo toca tus pies, quiero que toques tu cabeza.**
**Si digo toca tus rodillas, quiero que toques tus hombros.**
**Si digo toca tus hombros, toca tus rodillas.**

**¿Listo/a? Empezamos.**

| | Incorrect | Self-Correct* | Correct |
|---|---|---|---|
| 31. **Toca tu cabeza** | 0 (head) | 1 | 2 (toes) |
| 32. **Toca tus pies** | 0 (toes) | 1 | 2 (head) |
| 33. **Toca tus rodillas** | 0 (knees) | 1 | 2 (shoulders) |
| 34. **Toca tus pies** | 0 (toes) | 1 | 2 (head) |
| 35. **Toca tus hombros** | 0 (shoulders) | 1 | 2 (knees) |
| 36. **Toca tu cabeza** | 0 (head) | 1 | 2 (toes) |
| 37. **Toca tus rodillas** | 0 (knees) | 1 | 2 (shoulders) |
| 38. **Toca tus rodillas** | 0 (knees) | 1 | 2 (shoulders) |
| 39. **Toca tus hombros** | 0 (shoulders) | 1 | 2 (knees) |
| 40. **Toca tus pies** | 0 (toes) | 1 | 2 (head) |

# APPENDIX J

# TOY WRAP TASK

## Appendix J

## Toy Wrap Task

**Remind the child "no peeking," if necessary.**

"Wrapping" (1 minute)

| | | |
|---|---|---|
| Time elapsed before first peek: _____ | | NEVER PEEKED |
| | **NO** | **YES** |
| Positive/Engages examiner | 0 | 1 |
| (Choose one of the following) | | |
| Child does not peek | | 0 |
| Child peeks once | | 1 |
| Child peeks more than once | | 2 |

Waiting (1 minute):

| | |
|---|---|
| Time elapsed before touches: _____ | NEVER TOUCHES |

| (code each of the following) | **NO** | **YES** |
|---|---|---|
| Positive/Engages examiner | 0 | 1 |
| Defiant/Ignores examiner | 0 | 1 |
| Opens gift early | 0 | 1 |
| Refuses to complete task | 0 | 1 |

**NOTES**

# APPENDIX K

# PHONEMIC SEGMENTATION FLUENCY (PSF)

# Appendix K

## Phonemic Segmentation Fluency (PSF)

**DIBELS 8th Edition *Phonemic Segmentation Fluency*** Benchmark PSF K.Middle

| Examiner script | | Reminders | |
|---|---|---|---|
| **I am going to say a word. After I say it, you tell me all the sounds in the word. So, if I say 'am,' you would say /a/ /m/.**<br><br>**Let's try one** (1 second pause).<br><br>**Tell me the sounds in 'it'.** | | Start timer | After you give the first word. |
| CORRECT<br>Student says /i/ /t/ | **Very good. The sounds in 'it' are /i/ /t/.** | Prompts | Student hesitates: wait 3 seconds; give the next word; score the missed word as incorrect. |
| INCORRECT<br>Student gives any other response | **The sounds in 'it' are /i/ /t/. Your turn. Tell me the sounds in 'it.'** | Discontinue | Student does not get any sounds correct in the first 5 words: discontinue PSF. |
| **OK. Here is your first word.** | | | |

| | | | |
|---|---|---|---|
| new<br>/n/ /oo/ | for<br>/f/ /or/ | who<br>/h/ /oo/ | /6 |
| go<br>/g/ /O/ | of<br>/u/ /v/ | off<br>/o/ /f/ | /6 |
| hot<br>/h/ /o/ /t/ | watch<br>/w/ /o/ /ch/ | look<br>/l/ /uu/ /k/ | /9 |
| gave<br>/g/ /Ā/ /v/ | mean<br>/m/ /Ē/ /n/ | wall<br>/w/ /o/ /l/ | /9 |
| news<br>/n/ /oo/ /z/ | none<br>/n/ /u/ /n/ | gas<br>/g/ /a/ /s/ | /9 |
| king<br>/k/ /i/ /ng/ | had<br>/h/ /a/ /d/ | seen<br>/s/ /Ē/ /n/ | /9 |
| man<br>/m/ /a/ /n/ | loose<br>/l/ /oo/ /s/ | kid<br>/k/ /i/ /d/ | /9 |
| cool<br>/k/ /oo/ /l/ | warm<br>/w/ /or/ /m/ | take<br>/t/ /Ā/ /k/ | /9 |
| road<br>/r/ /O/ /d/ | did<br>/d/ /i/ /d/ | guess<br>/g/ /e/ /s/ | /9 |
| shop<br>/sh/ /o/ /p/ | his<br>/h/ /i/ /z/ | ago<br>/u/ /g/ /O/ | /9 |

Total Correct _____

# APPENDIX L

# FLUIDEZ EN LA SEGMENTACIÓN DE FONEMAS (FSF)

## Appendix L

## Fluidez en la Segmentación de Fonemas (FSF)

Diga estas instrucciones específicas al alumno:
**"Voy a decir una palabra. Después de que la diga, quiero que me digas todos los sonidos que tiene la palabra. Por ejemplo, si yo digo, "oso", tú dices /o/ /s/ /o/. Vamos a probar.** (pausa) **Dime los sonidos en la palabra "mesa".**

RESPUESTA CORRECTA:
Si el alumno dice /m//e//s//a/, usted dice:
**Muy bien. Los sonidos en la palabra "mesa" son /m/ /e/ /s/ /a/.**

RESPUESTA INCORRECTA:
Si el alumno dice cualquier otra respuesta, usted dice,
**Los sonidos en la palabra "mesa" son /m/ /e/ /s/ /a/. Ahora te toca a ti. Dime los sonidos en "mesa".**

**Bien. Aquí viene tu primera palabra.**

| | | | | | |
|---|---|---|---|---|---|
| rojo | /rr/ /o/ \| /j/ /o/ | dar | /d/ /a/ /r/ | ____/7 | ____/2 |
| mucho | /m/ /u/ \| /ch/ /o/ | cada | /k/ /a/ \| /d/ /a/ | ____/8 | ____/4 |
| verás | /b/ /e/ \| /r/ /a/ /s/ | tela | /t/ /e/ \| /l/ /a/ | ____/9 | ____/4 |
| cine | /s/ /i/ \| /n/ /e/ | nieve | /n/ /i/ /e/ \| /b/ /e/ | ____/9 | ____/4 |
| llega | /y/ /e/ \| /g/ /a/ | playa | /p/ /l/ /a/ \| /y/ /a/ | ____/9 | ____/4 |
| nunca | /n/ /u/ /n/ \| /k/ /a/ | ni | /n/ /i/ | ____/7 | ____/2 |
| sal | /s/ /a/ /l/ | fijar | /f/ /i/ \| /j/ /a/ /r/ | ____/8 | ____/2 |
| pino | /p/ /i/ \| /n/ /o/ | lucir | /l/ /u/ \| /s/ /i/ /r/ | ____/9 | ____/4 |
| nata | /n/ /a/ \| /t/ /a/ | sacar | /s/ /a/ \| /k/ /a/ /r/ | ____/9 | ____/4 |
| dejar | /d/ /e/ \| /j/ /a/ /r/ | mal | /m/ /a/ /l/ | ____/8 | ____/2 |
| hija | /i/ \| /j/ /a/ | sopa | /s/ /o/ \| /p/ /a/ | ____/7 | ____/4 |
| villa | /b/ /i/ \| /y/ /a/ | tengo | /t/ /e/ /n/ \| /g/ /o/ | ____/9 | ____/4 |

Todas Las Partes (TLP) _____
Partes silábicas (Síl) _____
(no cuente monosílabos)

Tipos de errores:

# APPENDIX M

# LETTER NAMING FLUENCY (LNF)

**Appendix M**

**Letter Naming Fluency (LNF)**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| t | r | c | g | T | M | B | G | s | v |
| N | U | e | p | A | D | f | C | H | a |
| y | P | F | d | b | R | j | n | I | x |
| i | m | S | O | o | u | E | L | h | k |
| N | j | r | b | x | e | u | A | H | o |
| p | S | L | n | k | M | U | s | g | P |
| i | m | T | D | a | f | I | B | h | v |
| E | G | d | y | R | F | t | c | C | O |
| o | r | m | k | h | v | t | p | c | e |
| g | d | b | s | i | f | a | u | n | y |

# APPENDIX N

# FLUIDEZ EN EL NOMBRAMIENTO DE LETRAS (FNL)

**Appendix N**

**Fluidez en el Nombramiento de Letras (FNL)**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| P | l | L | d | O | l | x | o | Y | z |
| Z | A | t | y | r | p | s | y | T | n |
| u | P | c | ñ | O | b | h | N | a | S |
| H | I | v | X | I | j | t | i | N | z |
| n | Ñ | h | U | Q | G | x | J | o | A |
| g | C | R | c | b | R | C | e | f | i |
| d | Z | B | V | u | F | v | p | Ñ | B |
| V | j | D | L | a | G | m | U | q | q |
| f | s | r | X | m | g | Q | e | T | F |
| E | J | M | ñ | M | H | E | D | S | Y |

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