Improving Print Knowledge of Bilingual Children through Shared Book Reading and Print Referencing

by Lindsey Brown

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APPROVED:

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Dr. Rebecca Fischer, Professor
Health and Human Performance

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Dr. John Vile
Dean, University Honors College

Abstract

According to several studies bilingual children struggle more with reading in their early school years than their monolingual peers. This research study explores the possibility of helping them improve their print knowledge through print referencing (PR) and shared book reading (SBR). Twelve students ages 4-7 were part of this 8-week research project. They were read to twice weekly using PR and SBR. Before and after the study the students were evaluated and given subtests (Alphabet Recitation, Upper-case Print, Lower-case Print, and Listening Comprehension) from the Brigance Comprehensive Inventory of Basic Skills. It was found that student showed significant improvement for the subtests whose skills were targeted: Upper- and Lower-case Print. Results indicate that bilingual children improve their knowledge of print similarly to monolingual children.

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Introduction

Challenges Faced by Bilingual Children

Bilingual children in America face a unique set of problems, and often the public-school system is not well-prepared to handle them. Approximately twenty percent of school children are bilingual (McCauley et al., 2017). Often the language that bilingual children learn at home is their only language until kindergarten when they are exposed to English for the first time. They must soon learn to think, read, and write in a language they are just beginning to speak (Lindsey et al., 2003). Obviously, this puts them at a significant disadvantage when compared to students whose first language is English and who have been speaking English for three to four years.

Another challenge that children face is more bureaucratic in nature. There is a limited supply of English as a second language (ESL) teachers nationally; in fact, on average there is one ESL teacher per 150 English language learner (ELL) students (U. S. Department of Education, 2016). Additionally, the number of ELLs in public schools increased approximately by one million between 2000 and 2016 nationally (U.S. Department of Education, 2016). The concentration of ELLs was mostly in grades Kindergarten through third (U.S. Department of Education, 2016). This is significant because studies have shown that starting school as an ELL has greater impact on overall success in school (Lindsey et al., 2003). By far the largest group of ELL students are Spanish speaking, at approximately 77% (U.S. Department of Education, 2016). All of these factors negatively impact ELL students. How can young ELL students overcome these difficulties? How can the education system adjust to accommodate for the needs of

bilingual children?

Challenges with the English Language

One challenge for bilingual children in the United States and English-speaking countries is the English language itself. The English language is considered a dense language. Density of a language is measured by the average number of syllables spoken per second and the average information density of each syllable (Kluger, 2011). Information density of syllables is measured by looking at how much meaning is contained in a single syllable, for example “to” versus “joy”. One has little to no meaning while the other has deep meaning (Kluger, 2011). Taking these factors into account English is one of the densest languages, with a score of .91. In contrast, Spanish has a low-density rating of .63. These differences can make adjusting to a new language difficult, especially for children.

Spanish-speaking children that are accustomed to faster, less-dense speech must now adjust to a slower, denser language.

Another issue that bilingual children struggle with is the letter-sound correspondence of the English language. In Spanish there are five vowels and five vowel sounds; however, in English there are five vowels and roughly 14 vowel sounds. Obviously, this poses a significant obstacle for bilingual children, especially when reading or writing.

Not to mention that the vowels are only the beginning. Consonant combinations vary in phonetic expression, for example “ph” makes the “f” sound. These combinations

are numerous and not intuitive for ELLs. This can make written English a special challenge for bilingual children.

Why do Bilingual Children Struggle More Than the Average Monolingual Child with Literacy?

In short, they struggle because of poor oral language skills. Poor oral language skills have been shown to lead to poor literacy among bilingual and monolingual children; however, most monolingual children acquire oral language skills before bilingual children, no matter what language the child is learning (Lucero, 2018). Oral language proficiency may be especially important for predicting reading outcomes among bilingual students because their language skills are distributed across two languages (Kieffer & Vukovic, 2013; Verhoeven & Strömqvist, 2001). Because bilingual students' language skills are split, their vocabularies also tend to be smaller for both languages (Lucero, 2018). All of this puts them at a significant deficit when compared to monolingual students.

Shared Book Reading

There is a myriad of techniques one could use when attempting to improve children's oral language skills. One method that benefits bilingual children is shared book reading (SBR). SBR is simply the act of an adult reading to a group of children. SBR provides special support that is lacking when the child reads on his or her own. This is because an adult's reading can provide more guidance by interacting with children (Pollard-Durodola et al., 2017). This is especially helpful for second language learners

because it allows for genuine reading at a higher level than children can attain on their own (Hyland, 2005).

In a study from Elley (1989), it was found that SBR can significantly improve vocabulary knowledge (both written and spoken) as well. The study observed roughly 140 8-year-olds in New Zealand, where English was their first language. The study focused on children learning vocabulary from SBR alone or SBR with definitions of unknown vocabulary included. Two stories were used over the course of two weeks. Each book was read three times per week. One group received the SBR with definitions for week one, while the other group received SBR alone. Then the following week the groups switched treatments so that the one group (SBR alone) received the treatment (SBR and vocabulary definitions) and vice versa. There was a control group that did not receive any readings and only took the vocabulary tests. Results found that children can learn new vocabulary simply from being read to. Additionally, a teacher's explanation of new vocabulary can double the amount of vocabulary gained when compared to SBR alone.

In a study done by Pratt et al. in 2015, it was shown that SBR helps build foundational skills such as print knowledge. The study focused on Spanish-speaking children with language impairments. Thirteen parent-child pairs were included in this eight- week study that focused on improving print knowledge. Parents read one book three times per week for eight weeks. Each week a different aspect of print was targeted to point out during the readings. During testing, print knowledge was measured by print-concept knowledge, alphabet knowledge and letter-sound knowledge. When measured against the control group, those who received the treatment improved in print knowledge

significantly more. Although both groups improved in print knowledge.

The following information comes from a review done by Zevenbergen and Whitehurst (1999). There is a subsect of SBR that is called dialogic reading (DR). This type of reading refers to the type of scaffolding used during reading. Scaffolding means breaking the content into smaller more manageable pieces for the listener. DR is a type of scaffolding that prompts children from preschool to first grade to improve significantly in their literacy skills. There are two separate guidelines for reading to preschoolers versus first graders. The CROWD technique is targeted at 4-5-year-olds. CROWD stands for completion prompts (fill in the blank questions), recall prompts, open ended prompts (tell me about the story), and distancing prompts (relating the story to the child's life). The other technique that is directed toward younger children is called PEER. PEER stands for prompt (ask question), evaluate (analyze response), expand (repeat their response and add more to it), and repeat (prompt the child to repeat the expanded answer). The review analyzed how DR affected emergent literacy skills (i.e. print awareness, oral language skills, etc.) of children in preschool from low and high economic income groups. When compared to the control group (SBR alone), those who received DR greatly improved their emergent literacy skills. This demonstrates how SBR is helpful in improving literacy; however, more involvement (DR) improves literacy even more.

Print Referencing

Print knowledge is the knowledge of print representing sound and meaning. Print referencing (PR) refers to a strategy that uses verbal and nonverbal signals that draw the child's attention to the written text (Justice & Ezell, 2004). It has been strongly tied to

later literacy skills for both English-speaking and Spanish-speaking children (Pratt, et al., 2015). Among the many strategies to improve print knowledge, PR stands out. Like SBR, print referencing also increases a child's print knowledge (Justice et al., 2009). An example of PR might be tracking words with one's finger while reading them aloud to the child (Justice, et al., 2004).

Research from Lindsey et al. in 2003 shows that PR is important for literacy in Spanish speaking, monolingual children. This study included roughly 300 Spanish-speaking monolingual children in kindergarten. This was a longitudinal study that intervened for four weeks at the beginning and end of kindergarten and again at the end of first grade.

Intervention focused on phonological awareness, print knowledge, and oral language. The study included instruction in both Spanish and English for these targeted skills. The study found that among many factors, print awareness is a main indicator for future reading success, where reading success is measured by letter-word identification, passage comprehension, and ability to pronounce regularly spelled nonsense words. Another study that targets PR more directly is done by Justice et al. in 2009. The study ran for 30 weeks and followed roughly one hundred preschoolers. This study focused on targeting print knowledge in classroom centered instruction. The children were randomly split into a control and experimental group. The experimental group had SBR with a focus on PR, while the control group received SBR alone. Readings were done four times every week. The study's classroom sizes remained small with a teacher-child ratio of 1:8.

Improvement of print knowledge was measured in three ways: print concept, alphabet knowledge, and name writing. The study found that students who received PR

significantly improved in print knowledge over the control group.

There is little information on the effect of PR with respect to bilingual children. Print referencing in previous studies has mainly been used for preschool to first grade aged monolingual children (Justice et al.,2009; Lindsey et al., 2003; Pratt et al., 2014). Investigation into the effects of PR on print knowledge in bilingual children would be a new area of research and could provide much needed information about how bilingual children learn.

Rationale

Ultimately, the underlying cause of poor literacy is poor oral language skills. SBR has been used to improve oral language skills and overall literacy among monolingual children (Elley, 1989). Print referencing has been used to improve monolingual children's literacy but, relatively few studies have focused on the effects of these methods on bilingual children (Justice et al.,2009; Lindsey et al., 2003; Pratt et al., 2014). Therefore, the researcher conducted the following experiment to determine the effects on bilingual children in order to help parents, clinicians, and schoolteachers in their education of bilingual children. Not much research has been done about bilingual children and these strategies, and it would be helpful to know what methods are effective.

Research Question

The current study was designed to examine the effects of SBR and print referencing on print knowledge in bilingual children. The following questions were posed: Will the combination of SBR and PR improve print knowledge of bilingual children? It was hypothesized that shared book reading and print referencing would significantly improve bilingual children's print knowledge.

Methods

Participants

There were twelve students included in the study. Their ages ranged from four to seven years old with an average age of 66 months or approximately 5 years-old (Figures 1.0 and 1.1). Three students were male and nine were female. All students that participated were Spanish-English bilingual. All participants were enrolled in the Extended School Program (ESP) in elementary schools in Murfreesboro, TN. Children were recruited by researchers when parents came to pick up their children from ESP. Students participated by coming to reading sessions, taking pre-tests and post-tests, and completing the Preschool Language Scale.

One of the biggest issues was participant attendance. On average there were 4.75 absences per student out of nineteen total story reading sessions. The most absences from one student were nine and the least number of absences were three.

Pre- and Post-Tests

Parents completed a survey after recruitment. Parents were asked to fill out a survey offered in English and Spanish that asked about their child's name, age in months, frequency child is read to at home, language spoken in the home, preferred language of the child, and age of the child when exposed to English. Unfortunately, many parents either incorrectly filled the survey or refused to complete the survey. It is unknown why. As a result, this data was not included in the study.

The Preschool Language Scale (PLS-5) Screening Test (Zimmerman, Steiner &

Pond, 2012) and the Preschool Language Scale (PLS-5) Spanish Screening Test (Zimmerman, Steiner, & Pond, 2012) were administered to all participants. Students who did not pass the Preschool Language Scale were to be excluded from the study. Failure of any section of the Preschool Language Scale resulted in failure of the entire screener. There were six sections that tested language, articulation, comprehensibility, social/interpersonal, fluency, and voice skills. It was meant to be used to determine if students had any language disorders. However, results from the Preschool Language Scale were inconclusive because eight of the twelve students failed. It was decided to include all students in the study.

The Brigance Comprehensive Inventory of Basic Skills was used as a pretest and posttest to mark improvement. Before and after the experiment, all participants were administered the Brigance Comprehensive Inventory of Basic Skills to assess their print knowledge in English. Subtests A-8, A-9, A-10, and C-5a were used to asses children's baseline knowledge of print knowledge and auditory comprehension. The subtests were Alphabet Recitation (AR), Lower-case Print (LP), Upper-case Print (UP), and Listening Comprehension (LC) (Appendix II).

The researchers desired to evaluate children's print knowledge throughout the study using 'print checks' given every week. These checks were small quizzes that asked questions about upper- and lower-case print identification, plot of the story of that week, and identifying print in the environment. Unfortunately, more than half of the children could not read and/or comprehend the print checks. The researcher tried to adjust them to be completely orally given; however, this was not successful either. Ultimately the print checks were removed from the study because the children did not understand the

questions that were asked.

Procedure

Following the pretest, children were read to during the Extended School Program (ESP) two times a week. Five books were used. Each book was read twice, once in the beginning of the week and once at the end of the week for a total of 5 weeks. Every reading consisted of a script that outlined print referencing and dialogic reading elements within each story (Appendix II). The research assistant performed the first reading and the principal researcher performed the second reading.

Books

The five books used in this study were borrowed from the Justice, et al. (2009) study. They were: *Rumble in the Jungle* by Giles Andreae*; My First Day of School* by P. K. Halliman*; There's a Dragon at my School* by Stephen Cartwright, *David gets in Trouble* by David Shannon*; and The Recess Queen* by Alexis O'Neill.

Results

Data before (pretest) and after (posttest) the reading program were obtained from the twelve children who participated in the study. The results were first described by examining pretest and posttest scores.

To determine significance, the Wilcoxon matched-pairs signed-ranks (WC) test was used. This test is appropriate when there are two related samples, and one needs to determine the magnitude of difference between them. The samples were related because of the Pretest/Posttest design. Each participant served as its own control. The Wilcoxon matched-pairs signed-ranks test is most appropriate when data do not fit a normal distribution, which is applicable to this set of data (Daniel, 1978). It is a nonparametric type of test, which is to say that it has the advantage of being conservative in determining significance (Daniel, 1978). Because of the low number of participants, a nonparametric testing was the best choice to avoid a false positive significance result. A .05 significance level was used throughout the study. Significant results were found when comparing Lower case Print (LP) and Upper-case Print (UP).

Preschool Language Scale (PLS-5) Screening Test and Preschool Language Scale Spanish Screening Test

The Preschool Language Scale (PLS-5) Screening Test and Preschool Language Scale Spanish Screening Test were administered to determine if any of the children had a language disorder; failure would remove the child from the study. The Preschool Language Scale evaluated developmental skills specific to each age group. The Preschool

Language Scale consisted of six sections that evaluated language, articulation, comprehensibility, social/interpersonal, fluency, and voice skills. Failure of one section of the Preschool Language Scale meant failure of the entire screener. As can be seen in Table 1.3, 50% of the students failed the language section of the Preschool Language Scale; however, only 16% of the students failed the articulation section. 58% of the students failed the social/interpersonal section of the Preschool Language Scale. All of the students passed the connected speech, fluency, and voice sections.

Brigance Comprehensive Inventory of Basic Skills Pre- and Post-test Scores

The Brigance Comprehensive Inventory of Basic Skills evaluated students' print knowledge. The subtests included Alphabet Recitation (AR), Upper-case Print (UP), Lower-case Print (LP), and Listening Comprehension (LC). Overall average scores improved from pretest to posttest (Table 1.3). Between the pre-test and post-test averages for the Alphabet Recitation subtest there was a four-point improvement and a fourteen percent increase in average scores. For the UP subtest there was a four-point increase and thirteen percent increase between the pre-test and post-test averages. For the LP subtest there was a six-point increase and eighteen percent increase between the pre-test and post-test averages. For the LC there was a half of a point increase and ten percent increase between the pre-test and post-test averages.

Alphabet Recitation Subtest

The first subtest was an Alphabet Recitation subtest (AR) (Figures 1.6 and 1.7). There was a three-point increase between the pre-test and post-test averages.

Additionally, the range of the scores decreased dramatically from 26 to 5 out of 26. Decreased range is an indicator of less variability in student performance. The decreased range here shows that overall, the children moved together toward a perfect score, as opposed to only some students making higher scores. A significant problem with this set of data was that five children scored perfectly on both the pre and post-test (Figure 1.7). Because they entered the study already able to recite the alphabet, the pre-test mean was skewed higher. In other words, their results were noninformative because five pretest scores were perfect. This occurred for other subtests as well.

Upper-case Print Subtest

The second subtest was an Upper-case Print subtest (UP) (Figures 1.8 and 1.9). The Upper-Case Print subtest showed improvement similar to that demonstrated by the Alphabet Recitation subtest. Four children scored a perfect 26 on the pretest and seven children scored a perfect 26 on the posttest. Between the pre-test and post-test averages there was an increased by three points. The range scores decreased by twelve (from 21 to 9) between pre and post-test scores.

Lower-case Print Subtest

The last print related subtest was a Lower-case Print subtest (LP) (Figures 1.10 and 1.11). Student performance showed overall most improvement out of all the subtests (Figure 1.5). Four children scored a perfect 31 on the pretest, and five children scored a perfect 31 on the posttest. Its mean scores from pre-test to post-test increased by six points. The range decreased by thirteen points (from 27 to 14) between pre and post-test

scores.

Listening Comprehension Subtest.

The mean between pre and posttest average scores increased by .75. The scores' range increased from pre to posttest by one point (from four to five) (Figures 1.12,1.13). No child performed perfectly on the pre-test or post-test.

Discussion

Twelve English-Spanish bilingual children ages four through seven years old were participants in the current study. The children participated in a five-week reading study designed to improve print knowledge. After completing the Preschool Language Scale and the Brigance Comprehensive Inventory of Basic Skills subtests (Alphabet Recitation, Lower-case Print, Upper-case Print, and Listening Comprehension), the study began. One book was read twice each week with print referencing and dialogic reading elements implemented. Results showed that there were significant improvements for Upper-case and Lower-case Print subtests.

Confounding Factors

When working with children there can be a number of confounding factors. The primary confounding factor in the current study was the children's irregular attendance. Many children left the story reading session early because their parents had arrived. Over half of the children were very distracted or disruptive for every story reading session. Also, many of the children lost focus during pre or post testing because of a crowded and/or noisy testing environment. Despite these distractions, after the first week of readings the researcher noticed that students recalled the main plot of the story heard previously that week. Many times, the students remembered the print cues during the readings and would answer them before prompted. This shows that overall engagement increased.

Another confounding result was that many of the children scored perfectly on the pretest of the AR, UP, and/or LP subtests. This type of score occurred for every test except the LC. On the AR test there were two students who approached the ceiling. The LP had four students who approached the ceiling. The UP had four students who approached the ceiling. This indicates that a small portion of the children participating in the experiment had already mastered the print skills being targeted. This is always a possibility with a group of children with varied age and skills. The researchers took this into account when calculating significance to avoid a false positive. Future researchers should use more through pre-experiment screening tools to eliminate students that have already mastered the print skills being targeted.

Another confounding factor is the results from the Preschool Language Scale. The results on the Preschool Language Scale were surprising given that the children could take it in either language. Results indicated that students primarily struggled with language and interpersonal skills. The fact that over half failed the language and/or the social interpersonal sections was unexpected. The large number of children that failed the language section could implicate that those children have poor reading skills as well since those two skills are related. It was anticipated that the Preschool Language Scale would not be difficult given that it was age appropriate and administered in the child's preferred language.

The children's scores could have been due to a multitude of factors. The crowded, noisy testing environment could have been one of the factors affecting the Preschool Language Scale results. Concerning the social interpersonal skills, many of the children were young and none had met the researchers before. Children are naturally shy around

new people. The researcher did not see any of the children act antisocial or impersonally after the children had participated in the first week of story reading. This shows perhaps that it was too early to test the children without having met them before. Another reason for the poor interpersonal skills scores could be that the examiners were newly trained on the Preschool Language Scale and needed more experience.

With regard to the language section, language is one of the more difficult areas for bilingual children to master. The researcher had thought the opportunity to take the test in either language would offset the possible language deficits the children possessed. However, only two of the children chose to take the Preschool Language Scale in Spanish. Perhaps this meant many of the children thought they were capable of taking the test solely in English but did not realize that they could not. It could also be that the children had fundamentally poor language skills. Language and reading skills are intertwined; many times, if a child struggles with one, he or she will struggle with the other. More research is required to know conclusively why the language scores were low. An option for future researchers could be to read and/or meet the children a week before pretesting them to allow the children to adjust.

Preschool Language Scale Results Compared to Model Studies

In comparison to previous studies, the results of the Preschool Language Scale are still ambiguous. In the primary study model by Justice, et al. in 2009, a different assessment tool was used. The Clinical Evaluation of Language Fundamentals: Preschool-2 (CELF: P2) was used and is designed for preschool and kindergarten aged children (three to six years old). Justice and her colleagues only used the three subtests

for preintervention assessment which were: sentence structure, word structure, and expressive vocabulary subtests. When Justice et al. used the CELF: P2 to assess the participants, results showed that on average they scored lower than the normative data. Another model study conducted by Pratt et al. in 2015 used the CELF: P2 for preintervention assessment. The researchers found that the children in their study also performed below average.

Both studies (Justice, et al. and Pratt, et al.) evaluated monolingual children. Between the current study and previous studies, it appears that both monolingual and bilingual children did below average normative data for these similar screening tools. This suggest that bilingual and monolingual children may have more in common than previously thought. Because the bilingual children from the current study performed similarly to monolingual children from previous studies, there is an implication that only language and reading skills affect scores.

Brigance Comprehensive Inventory of Basic Skills Pre- and Post-test Results

Results of Lower-case Print and Upper-case Print Subtests

The researcher found significance in the two print directed tests, Lower-case Print and Upper-case Print, using the Wilcoxon matched-pairs signed-ranks test. This result confirmed that even a short intervention that is print focused can yield positive results. The results for Alphabet Recitation and Listening Comprehension were insignificant, most likely because neither AR nor LC were targeted in the story reading scripts. This demonstrated that while short intervention can yield positive results for targeted skills, nontargeted skills do not necessarily improve as well.

Three Types of Students

In this study three groups of children emerged when the scores were analyzed. The first group is children who improved their scores between pretests and posttest (students 2, 3, 4, 5, 6, 8, 10, and 11). The second group is students who scored perfectly on the pretests and posttest (students 1 and 7). The third group is students who scored worse or the same (but not perfect) between pre-test and post-test (students 9 and 12). These overall trends focused on the three subtests: Alphabet Recitation, Upper-case Print, and Lower-case Print subtests. The Listening Comprehension subtest was excluded from these categorizations because it was not a targeted skill.

Overall, it appears that many of the children struggled with the Alphabet Recitation and Listening Comprehension. These skills were not targeted but were included to see if there was any improvement. Additionally, these subtests were the first and last given. It would have been better to have randomly ordered the tests. It has already been established that overall many children did poorly on the LC. As far as the AR, it is likely these children simply did not want to recite the alphabet, not for lack of ability. The researcher observed that these children, when prompted to say or sing the alphabet, shook their head, crossed their arms, and refused to after many prompts. The children were aware that they were not being graded and would not be penalized for bad scores. The children may not have been motivated to improve their score on these tests and did not give them much effort. It is unknown why some children scored poorly.

Comparative Studies

This study aimed to model one of Justice and her colleague's studies, which analyzed print knowledge in children (Justice et al., 2009). The thirty-week longitudinal study used print referencing during normal shared book reading times in the classroom. The study looked at roughly one hundred monolingual preschoolers who were of typical development. Teachers read stories using print referencing four times a week with two print targets per story. There was a control group (just shared book reading or SBR) and an experimental group (shared book reading and print referencing or PR). The study found significant improvement in print knowledge for the children in the experimental group compared to the control group.

The researcher modeled much of the current study after Justice et al. (2009) to determine if a shorter intervention could yield significant results in bilingual children. In contrast, the current study was a 5-week program with one group (experimental SBR and PR) due to small sample size. There were twelve Spanish-English bilingual students ranging from Preschool age to 1st grade. While in Justice's study, different stories were read each time, the current study repeated one story twice each week before moving to the next story the following week. Justice used print concept knowledge, alphabet knowledge, and name- writing ability to measure print knowledge. In contrast, the current study looked at print identification in Upper- and Lower-case and Alphabet Recitation. While these measures are closely related (if not the same in some cases), the name-writing ability was not tested in this study. This is because some measurements were adjusted because of the increased age range of the students. Justice's study found significant improvement in all three measures (print concept knowledge, alphabet

knowledge, and name-writing ability) after treatment. By comparison two measures of the current study were found significant (Lower-case and Upper-case Print); however, these were the targeted measures. Therefore, the current study supports Justice et al. (2009).

Another study by Pratt et al. in 2015 looked at parent-child dyads of Spanish-speaking children with a language impairment. This study followed thirteen parent-child pairs in Mexico. There was a control and experimental group. The program lasted eight weeks and focused on improving print knowledge. This study measured print knowledge based on three tests: print concept knowledge, alphabet knowledge, and letter-sound knowledge. The study found significant improvements for those in the experimental groups.

Comparatively, the current study had more children and did not focus on parent-child pairs, but rather individual children. The children in this study were bilingual and did not have any language impairments. However, the two studies are similar in that the readings focused solely on PR and measured print knowledge improvement similarly. Pratt's study found that, like the current study, children had highly variable skills with some reaching the ceiling and others with limited skills. Pratt's study found significant improvements for print- concept knowledge and alphabet knowledge, but not for letter-sound correspondence.

Comparatively, the current study found significance for Upper-case and Lower-case Print knowledge, which can be compared to the alphabet knowledge subtest in Pratt's study.

Future Research/Implications

Future research should focus on controlling the environment for testing, reading, and recruiting children more strictly since that was a major confounding factor in the current study. Additionally, researchers should meet the participants once before beginning a screening test to allow them to adjust to meeting a new person. Ideally any children that scored perfectly on a pretest measure should be eliminated from the study. A larger sample size would also be beneficial.

Implications of the current study suggest that bilingual children and monolingual children are not as different as other studies have suggested. Results from the current study look very similar to previous studies conducted by Justice et al. (2009) and Pratt et al. (2015). These studies along with the current study observed children having varied responses to print knowledge instruction, with a significant portion of participants improving after treatment. This study implicates that simply focusing on print knowledge during instruction time can improve print skills in bilingual and monolingual children alike.

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Appendix I

Script for *David Gets in Trouble* by David Shannon

Researcher: “Hello class! My name is_____and I’m going to be reading a book to you guys today! I want everyone to pay close attention to what I say because I may ask you some questions about it later. Everyone please keep your hands and feet to yourself and sit quietly. Ok let’s start [ground rules] [holds up book so children can see] This book is called ‘David Gets in Trouble’ [orientation] What do you guys think this book is about?

Children: [various responses]

Researcher: Very good! Let’s find out why David gets in trouble! ‘When David gets in trouble, he always says…No! It’s not my fault! [tracking the print while reading] ‘I didn’t mean to!’ [pointing to ‘didn’t’] This says ‘didn’t’ like did not. ‘It was an accident’ [points to ‘accident’] Do you guys know what this word says?

Children: “accident”

Researcher: “Wow! You guys are so smart! Let’s find out what happens next. ‘Do I have to?’ What does David not want to do?

Children: eat his breakfast

Researcher: Awesome! that’s right. ‘I forgot!’ What did David forget?” Children: “his pants!”

Researcher: “what does forget mean?” Children: [various responses]

Researcher: ‘My dog at my homework!’ Has anyone ever had their dog eat their homework? My friend did. ‘I couldn’t help it’ Can anybody tell me what this says? [gesturing to bottom banner reading ‘Dickens Elementary School]

Children: [various responses]

Researcher: “Very good! You guys probably have signs like this outside of your schools ‘I was hungry!’ [gestures to doggy yums bag] What does this say?”

Children: various responses

Researcher: “Does that mean David is eating dog food?! Gross! ‘but she likes it!’ [points to ‘likes’] Do cats like or dislike when you pull their tail?

Children: “Dislike!”

Researcher: “That’s right! ‘It slipped!’ [points to ‘slipped’] What is this word? Children:

“Slipped”

Researcher: “What does slipped mean?” Children: [various responses]

Researcher: “Yes! It’s like when you’re at recess and playing on the monkey bars, but you can’t hold on so you slip and fall by accident ‘But Dad says it!’ [points to soap bar] Can anybody read these letters for me?

Children: “S O A…]

Researcher: “What do you think that spells?” Children: “Soap!”

Researcher: Yes! Good job spelling! Has anyone ever had their mouth washed out with soap for saying something bad?

Children: [various responses]

Researcher: “Me too! ‘Excuse me!’ Why is David doing something bad here?” Children:

[various responses]

Researcher: That’s right, even though he is saying excuse me, he is still burping too loud! [turns to 12th page] ‘No, it wasn’t me!’ What do you guys think? Did he eat that cake?”

Children: “Yes!”

Researcher: David is lying again. ‘Yes! It was me!’ [points to underlined ‘was’] William, what letter does this word start with?”

Children: “W”

Researcher: “Wow, ‘W’ just like your name William! ‘I’m sorry’ ‘I love you, mom’ [points to ‘mom’] What letter does this word start with?”

Children: “M”

Researcher: “Very good! That’s the end of our story! Thank you all for paying attention and participating!”

Appendix II

❖A-8 Recites Alphabet

Skill: Recites the alphabet.

Student Record Book: Page 3.

Class Record Book: Page 7.

Assessment Method: Individual oral response.

Materials: None.

Discontinue: After determining the number of letters the student can recite without error.

Time: Your discretion.

Accuracy: Give credit for all letters recited before the first error.

Notes:

1. **Different Skill Levels of Reciting the Alphabet:** Students usually progress through levels in reciting the alphabet. The following skill levels can frequently be identified:
   - singing "The ABC Song"
   - rote memorization only
   - definite knowledge of the alphabet

   You may wish to observe and make note of the skill level in the *Student Record Book*.
2. **Credit for the Alphabet Song:** Many students sing "The ABC Song" when asked to recite the alphabet or ABCs. You may wish to give credit if the student responds by singing the alphabet song well—sings/sounds each letter separately and distinctly.
3. **Supplemental Skill Sequence:** The skill of providing letters that follow and precede specific letters is a higher-level skill than reciting the alphabet. See A-8Sa, Tells Following Letter, and A-8Sb, Tells Preceding Letter, on page 50 if you wish to assess and record these skills.
4. **Grade-Level Notations:** The grade-level notations listed in the *Student Record Book* reflect the findings of the 1998 validation study.

DIRECTIONS

This assessment is made by asking the student to recite the alphabet.

Say: **I want you to say the ABCs.**

If the student does not seem to understand,

Say: **Can you say the ABCs? A, B, C, D, . . .**

Pause for the student's response.

If you plan to derive standard scores including percentiles on this assessment, you must adhere strictly to the DIRECTIONS given. Give credit for letters student recites or sings prior to the first error.
BASAL: None.
CEILING: None.

Notes: *(continued)*

5. **Correlated BRIGANCE® Prescriptive Teaching Material:** Pages 199–203 of the *BRIGANCE Prescriptive Readiness: Strategies and Practice.*
6. **References:** (See Bibliography, pages 446–49.)
   Brigance (1991): 187 Brigance (1992): 28

OBJECTIVE

By ____(date)____, when requested to do so, ____(student's name)____ will correctly recite ____(quantity)____ of the twenty-six letters of the alphabet.

❖A-9 READS UPPERCASE LETTERS

SKILLS: Recognizes and names uppercase letters.

STUDENT RECORD BOOK: Page 3.

CLASS RECORD BOOK: Page 7.

ASSESSMENT METHOD: Individual oral response.

MATERIALS: S-18.

DISCONTINUE: Your discretion.

TIME: Your discretion.

ACCURACY: Give credit for each correct response.

NOTES:

1. **Possible Observations:** As the student names the letters on S-18, you may wish to observe and make note of the following:
   a. Visual Problems: Does the student appear to have visual problems? These might be indicated by squinting, redness of eyes, an unusual tilt of the head, or a tendency to lose his/her place on the page.
   b. Visual-Perception Problems: Does the student appear to have visual-perception problems? These might be indicated by his/her tendency to confuse letters such as *E* and *F*; *O* and *Q*; *V*, *W*, *M*, and *N*; or *S* and *Z*. It may be helpful to note any visual-perception problems in the *Student Record Book*.
2. **Alternate Assessment of Receptive Skill:** If the student cannot give the names of the uppercase letters (expressive skill), you can ask the student to point to each letter as you name it (receptive skill).

STUDENT-PAGE FORMAT FOR S-18

PreK O	A	D	G	Q	B	
P	C	E	L	T	I	
F	J	N	M	R	H	U
V	W	Y K.0 X	K.4 Z	K	K.8 S 1.0	

DIRECTIONS

This assessment is made by asking the student to name the uppercase letters on S-18.

Point to each letter on S-18, beginning with the letter *O*, and

Ask: **What letter is this?** or
What is the name of this letter?

Pause after each request to allow for the student's response.

If you plan to derive standard scores including percentiles on this assessment, you must adhere strictly to the DIRECTIONS given. Give credit only for letters that the student names. No BASAL or CEILING. All items must be administered.

NOTES: *(continued)*

3. **Screen If Necessary:** If it appears that the student is having difficulty focusing on one letter at a time because of visual stimuli from the entire page, you may wish to cut a "window" in a sheet of paper and cover the other letters.
4. **Grade-Level Notations:** The grade-level notations listed in the STUDENT-PAGE FORMAT and in the *Student Record Book* reflect the findings of the 1998 Validation Study.
5. **Best Predictor of Reading Success:** Numerous research findings have suggested that knowledge of letter names prior to the beginning of reading instruction is the best predictor of first-grade reading success, regardless of the reading method used. Some of these research findings include: Bond and Dykstra (1967), Silvaroli (1965), Jansky and deHirsch (1972), and Kisholm and Knafle (1975).
6. **Which Should Be Assessed/Taught First, Uppercase or Lowercase?** A review of materials did not suggest any consistency in the introduction of uppercase and lowercase letters. Seven programs reviewed by the author introduced the uppercase and lowercase letters simultaneously.
7. **Correlated BRIGANCE® Prescriptive Teaching Material:** Pages 205–24 of the *BRIGANCE Prescriptive Readiness: Strategies and Practice.*

(continues)

O	A	D	G	Q	B
P	C	E	L	T	I
F	J	N	M	R	H	U
V	W	Y	X	Z	K	S

✦❖A-10 READS LOWERCASE LETTERS

SKILLS: Recognizes and names lowercase letters.

STUDENT RECORD BOOK: Page 3.

CLASS RECORD BOOK: Page 7.

ASSESSMENT METHOD: Individual oral response.

MATERIALS: S-21.

DISCONTINUE: Your discretion.

TIME: Your discretion.

ACCURACY: Give credit for each correct response.

NOTES:

1. **Possible Observations:** As the student names the letters on S-21, you may wish to observe and make note of the following:
   a. Visual Problems: Does the student appear to have visual problems? These might be indicated by squinting, redness of eyes, an unusual tilt of the head, or a tendency to lose his/her place on the page.
   b. Visual-Perception Problems: Does the student appear to have visual-perception problems? These might be indicated by his/her tendency to confuse letters such as *b* and *d*, *p* and *q*, or *n* and *u*. It may be helpful to note any visual-perception problems in the *Student Record Book*.
2. **Alternate Assessment of Receptive Skill:** If the student cannot give the names of the lowercase letters (expressive skill), you can ask the student to point to each letter as you name it (receptive skill).

STUDENT-PAGE FORMAT FOR S-21

PreK o	a *a*	d	g *g*	q *q*	b	
p	c	e	l K.0 l	t *t*	K-4 i	
f	j	n	m	r	h	u
K.8 v	w	y	x	z	k	s 1.0

DIRECTIONS

This assessment is made by asking the student to name the lowercase letters on S-21.

Point to each letter on S-21, beginning with the letter *o*, and

Ask: **What letter is this?** or
What is the name of this letter?

Pause after each request to allow for the student's response.

If you plan to derive standard scores including percentiles on this assessment, you must adhere strictly to the DIRECTIONS given. Give credit only for letters that the student names. No BASAL or CEILING. All items must be administered.

NOTES: *(continued)*

3. **Screen If Necessary:** If it appears that the student is having difficulty focusing on one letter at a time because of visual stimuli from the entire page, you may wish to cut a "window" in a sheet of paper and cover the other letters.
4. **Alternate Forms of *a, g, q, l,* and *t*:** Two forms of the letters *a, g, q, l,* and *t* are included in this assessment. For instructional purposes, it is imperative that the student learn to recognize both forms. You may wish to note in the *Student Record Book* if the student knows one form of a letter but not the other.
5. **Grade-Level Notations:** The grade-level notations listed in the STUDENT-PAGE FORMAT and in the *Student Record Book* reflect the findings of the 1998 validation study.
6. **Best Predictor of Reading Success:** Numerous research findings have suggested that knowledge of letter names prior to the beginning of reading instruction is the best predictor of first-grade reading success, regardless of the reading method used. Some of these research findings include: Bond and Dykstra (1967), Silvaroli (1965), Jansky and deHirsch (1972), and Kisholm and Knafle (1975).
7. **Which Should Be Assessed/Taught First, Uppercase or Lowercase?** A review of materials did not suggest any consistency in the introduction of uppercase and lowercase letters. Seven programs reviewed by the author introduced the lowercase and uppercase letters simultaneously.

(continues)

o	a a	d	g g	q q	b	
p	c	e	l l	t t	i	
f	j	n	m	r	h	u
v	w	y	x	z	k	s

C-5 Listening Comprehension Grade-Placement Test

Skill: Listens to a selection with a designated readability level and responds orally to five comprehension questions.

Student Record Book: Page 8.

Class Record Book: Page 16.

Assessment Method: Individual oral response.

Materials: Selections and questions from first-grade through ninth-grade levels, pages 98–109.

Discontinue: Your discretion, or after failing to score with at least 80% comprehension accuracy for two consecutive levels.

Time: Your discretion.

Accuracy: At least 4/5 (80%) accuracy for each grade level.

Student responses may vary. Give credit if the student's answers are reasonable and show understanding. An example of a typical acceptable response is given with each question. Students are not required to include every possible detail in their responses.

If needed, you may ask a follow-up question to encourage the student to clarify or to be more specific in order to evaluate the response. However, the follow-up question should not give clues.

If the student responds to the first four questions correctly, credit may be given without asking the last question.

Notes:

1. **Two Forms:** Two reading passages, Form A and Form B, are included for each level in this assessment. Either Form can be used if only one assessment is to be made. If pretesting and post testing are planned, one Form can be used for the pretest and the alternate Form for the post test.

   Also, if the validity of the results obtained from administering one Form is questionable, the alternate Form can be administered to confirm the validity of the results.

   For grade levels seven through nine, the content of the article for Form A is general information. The content of the article for Form B is related to health and science.

DIRECTIONS

This assessment is made by asking the student to listen carefully as you read a passage and then respond orally to five questions you ask about the passage. See passages and questions on pages 98–109.

After selecting the passage at the grade level you think will be the most appropriate to initiate the assessment (the highest grade you anticipate the student can respond to successfully),

Say: **I'm going to read a short story (article). I want you to listen carefully as I read it. Then I will ask you some questions about what I have read.**

Read the passage at a comfortable rate for the student and in an appropriate tone of voice. After reading the passage, ask the five questions, pausing after each for the student's response.

If necessary, repeat the question, but do not reread the passage. If the student's response is still unclear, ask follow-up questions for clarification, but do not give clues.

If the validity of the results from administering the first Form for a grade level is questionable, confirm the validity by using the alternate Form for the respective grade level.

Continue the assessment at higher or lower grade levels until you determine the highest grade level at which the student can respond with 80% accuracy.

See **NOTES** on pages 96–97.

Notes: *(continued)*

2. **Reading the Selections Beforehand:** It is recommended you read the selection to yourself before reading it aloud to the student. Being familiar with the story beforehand will help to ensure proper rate of reading and tone of voice.

(continues)

C-5a Listens and Comprehends at Lower First-Grade Level

Directions: See pages 96–97 for **DIRECTIONS** and **NOTES**.

FORM A

Jenny ran to the bus stop. She was in a hurry. She did not want to miss the bus. But Jenny was too late. It was gone. Now she would have to walk home.

1. **Why did Jenny run?**
   (She didn't want to miss the bus.)
2. **Why did Jenny miss the bus?**
   (She was too late; The bus had gone; She didn't run fast enough.)
3. **What would Jenny have to do because she missed the bus?**
   (walk home)
4. **What is a bus stop?**
   (The place where the bus stops for people to get on/off it)
5. **What would be a good name for this story?**
   (Running for the Bus; Jenny Missed Her Bus)

FORM B

"Hello. How are you?"

"Who said that?" asked Juan. He thought he was the only one home. He looked all around. Could it be his bird? Then Juan laughed. It was only the TV.

1. **Where was Juan?**
   (at home)
2. **What did Juan do when he heard someone talking?**
   (He looked around; He laughed.)
3. **Who was home with Juan?**
   (nobody)
4. **Why did Juan laugh?**
   (He thought someone or a bird was talking, but it was only the TV.)
5. **What would be a good name for this story?**
   (Juan Heard/Hears Voices; The TV Scares/Surprises Juan)

OBJECTIVE

By ___(date)___, when a selection with a lower first-grade, textbook-criterioned vocabulary of thirty-four words and five questions are read aloud, ___(student's name)___ will listen and respond orally to the questions with at least 4/5 (80%) comprehension accuracy.

Appendix III

Student Demographics

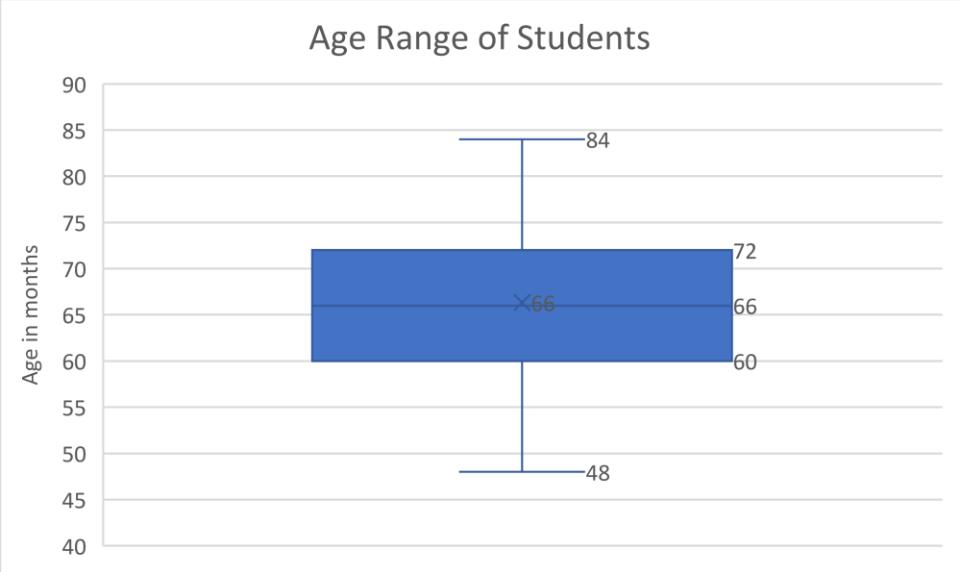


Figure 1.0: Age range of students

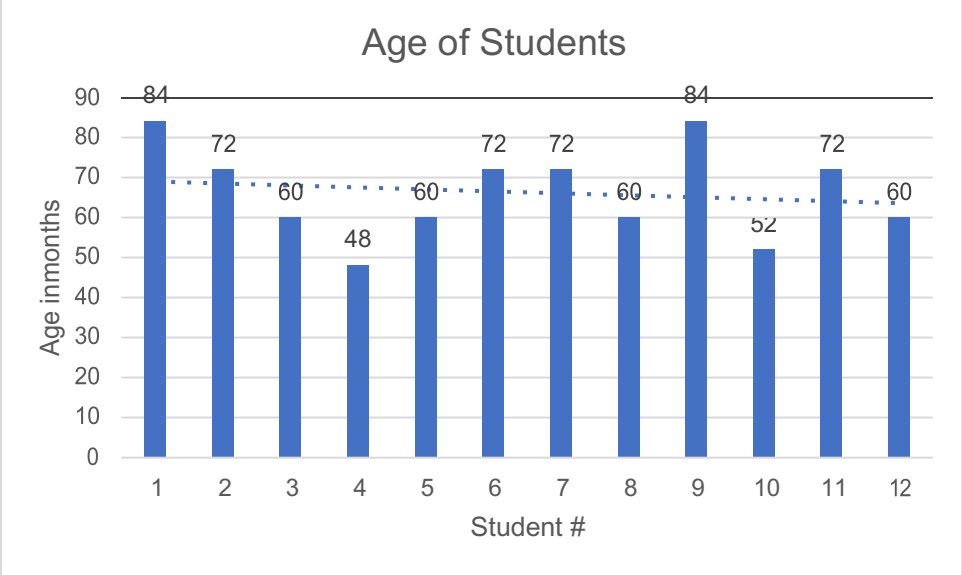


Figure 1.1: Age of individual students by months

ID #	Age (months)	PLS English or Spanish	?PLS Lang.	PLS Artic	PLS C.S.	PLS S/I	PLS Fluecy	PLS Voice
1	84	English	P	P	most	F	no atyp	no atyp
2	72	English	F	F	most	F	no atyp	no atyp
3	60	English	F	F	most	F	no atyp	no atyp
4	48	English	P	P	most	P	no atyp	no atyp
5	60	Spanish	P	p	some	F	no atyp	no atyp
6	72	English	P	P	most	P	no atyp	no atyp
7	72	English	F	P	most	F	no atyp	no atyp
8	60	English	P	P	most	P	no atyp	no atyp
9	84	English	F	P	most	F	no atyp	no atyp
10	52	Spanish	F	P	some	P	no atyp	no atyp
11	72	English	P	P	most	P	no atyp	no atyp
12	60	English	F	P	most	F	no atyp	no atyp

Table 1.3: Preschool Language Scale scores for individual sections
Legend: PLS Lang.=PLS language section; P=pass; F=fail; PLS C.S.=PLS connected speech (comprehensibility); PLS S/I= PLS social/ interpersonal; no atyp= no atypical behavior

Appendix IV

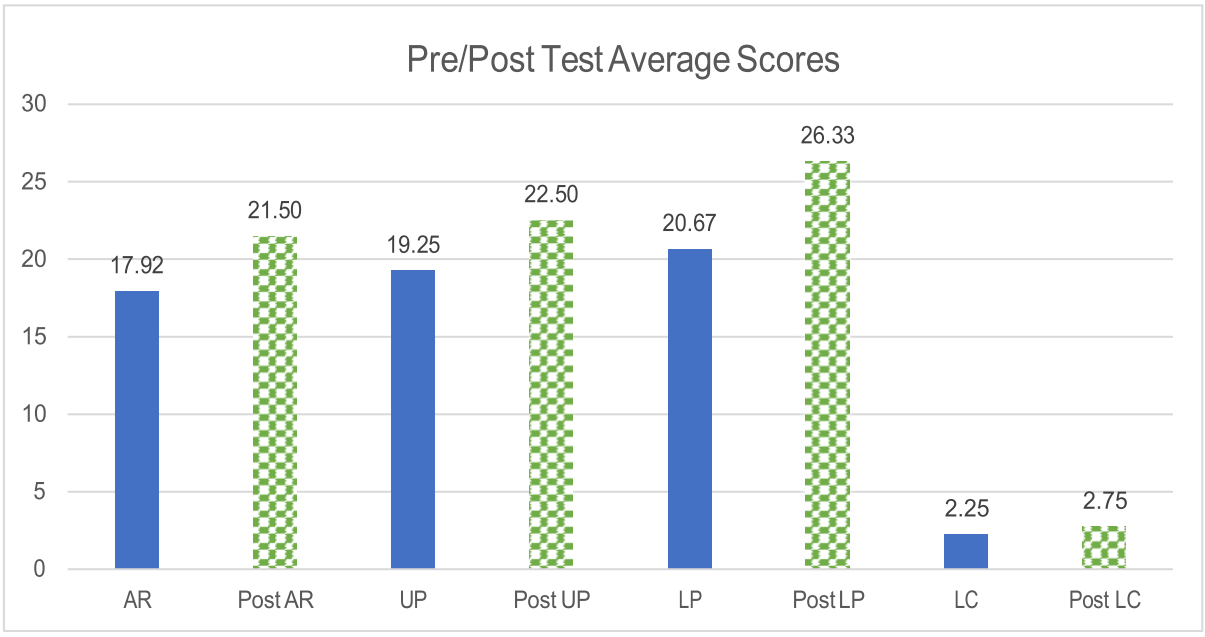


Figure 1.4: Pre- and post-test Average Raw Scores

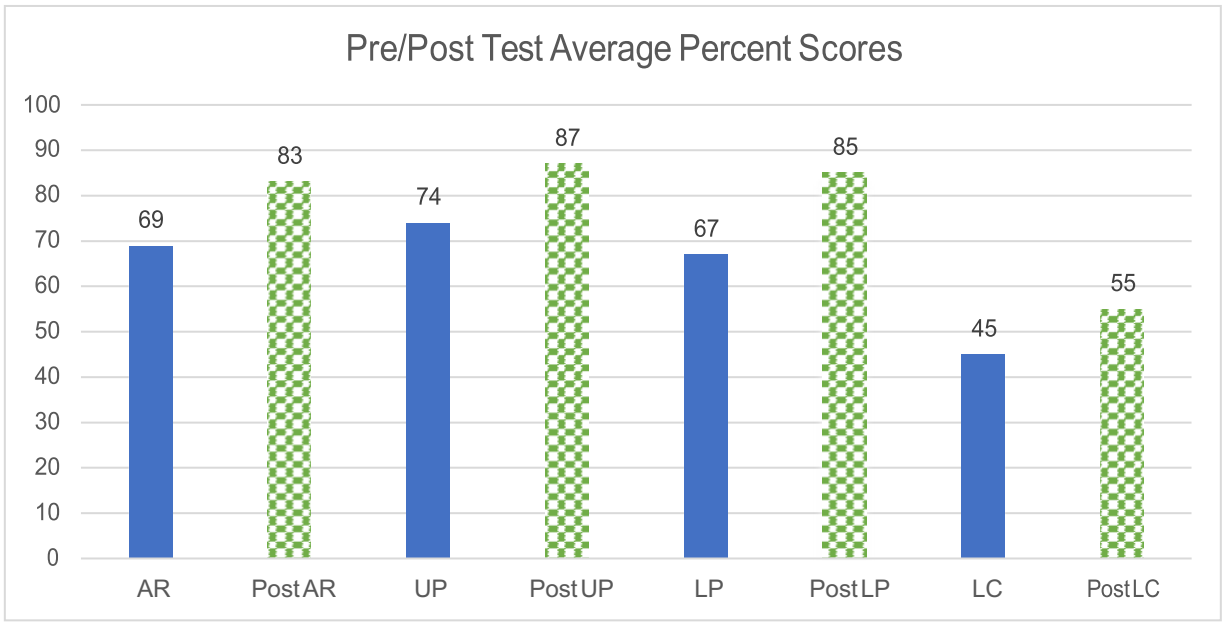


Figure 1.5: Pre- and post-test Average Percent Scores for Each Test

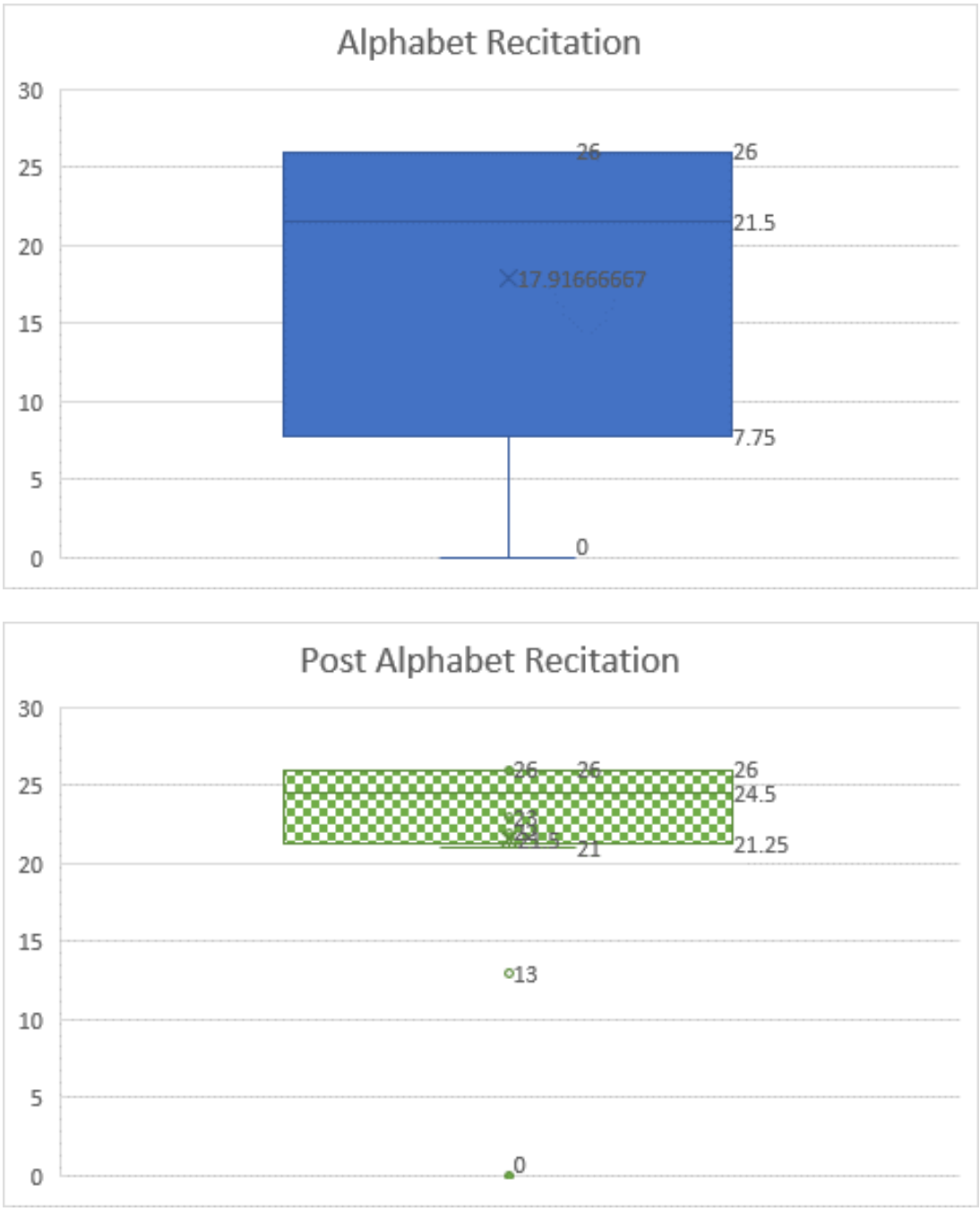
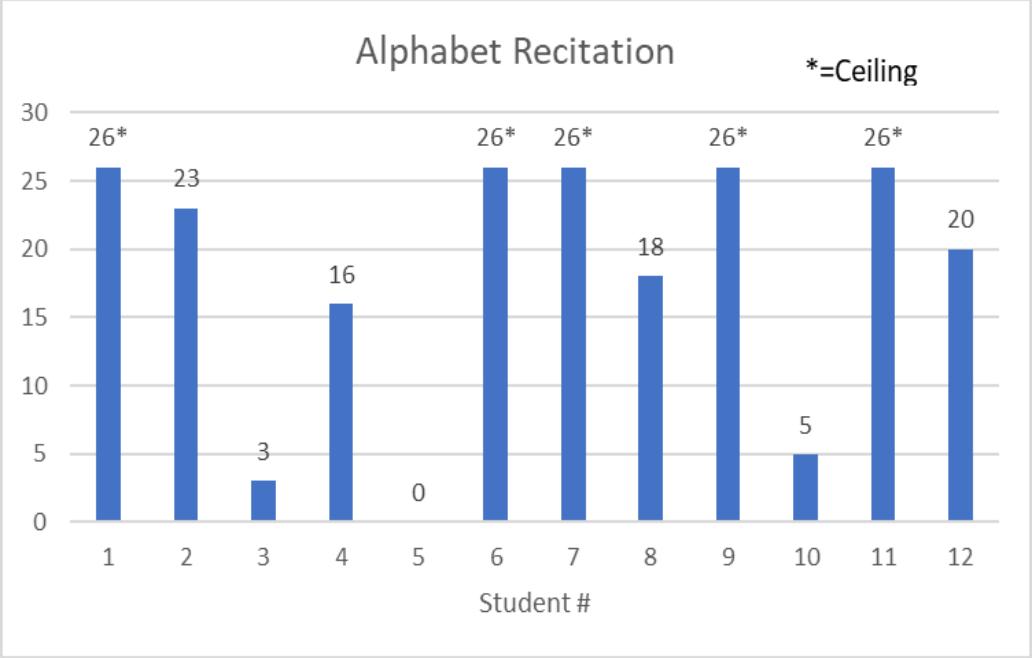


Figure 1.6: Pre/Post test box and whisker scores for Alphabet Recitation subtest



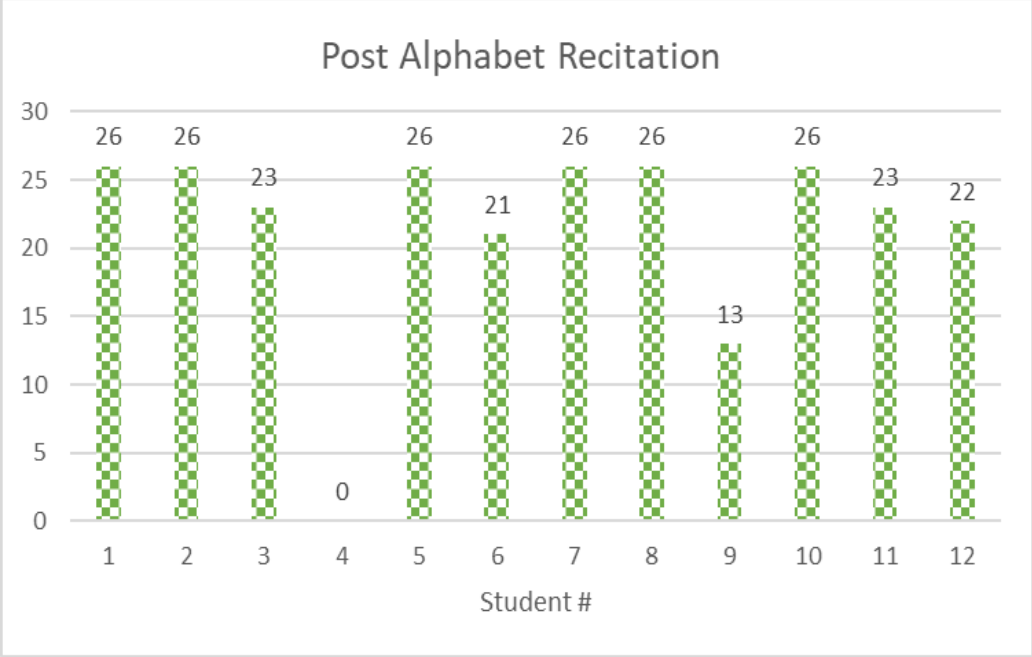


Figure 1.7: Pre/Post Test scores for Alphabet Recitation for individual students

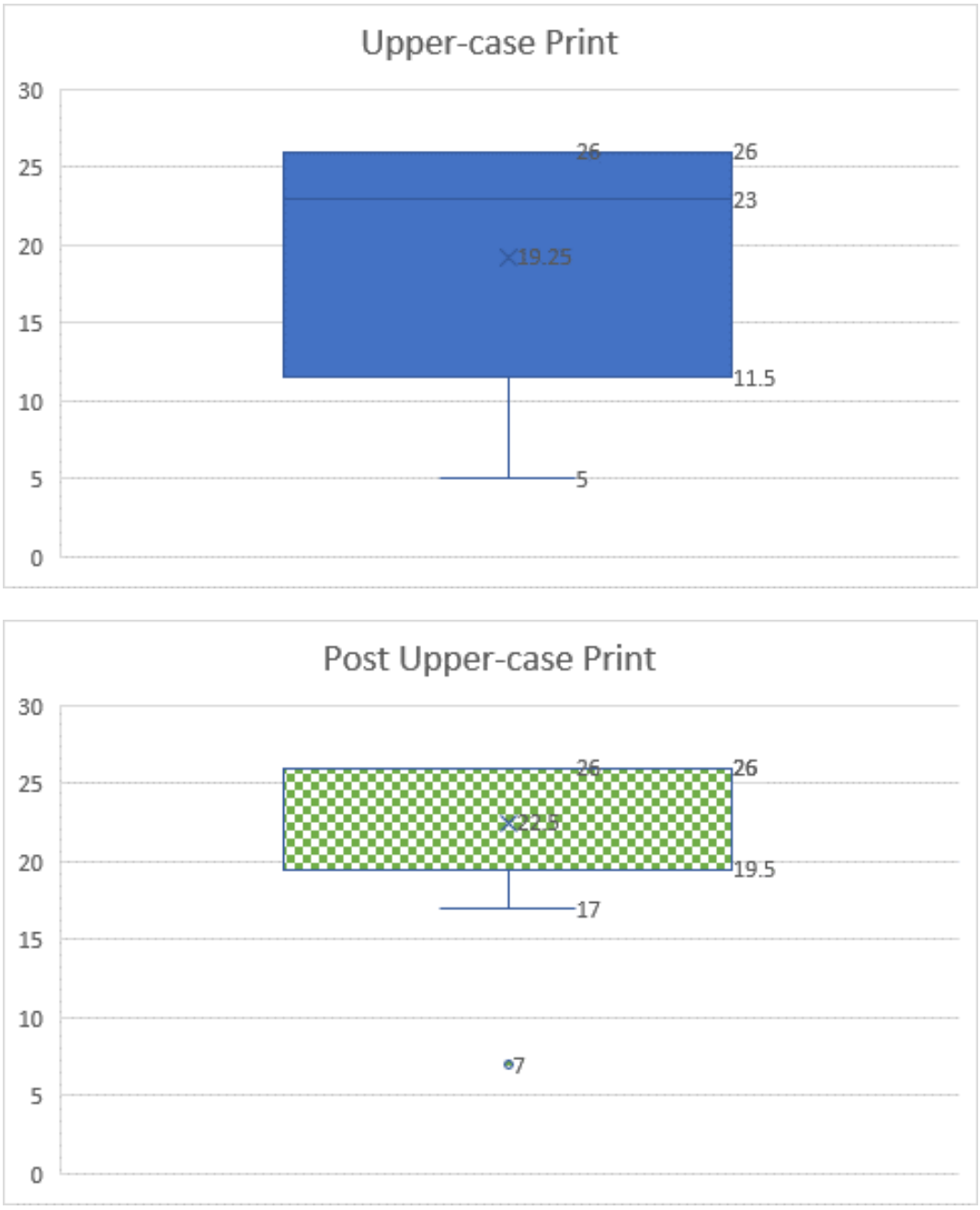
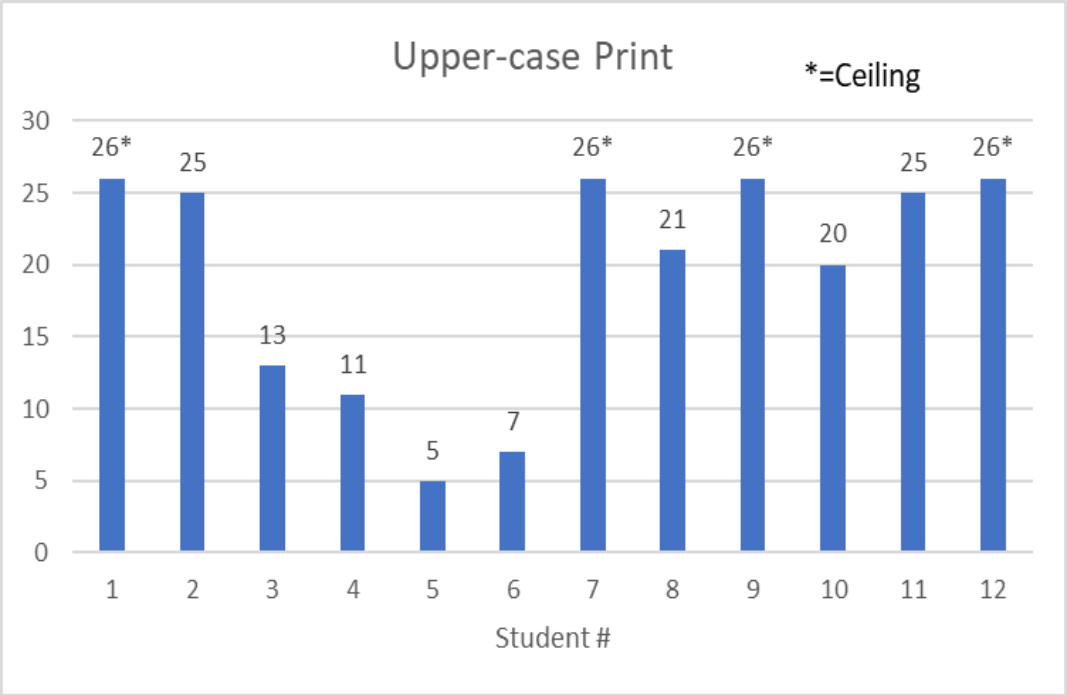


Figure 1.8: *Pre/Post test box and whisker scores for Upper-case Print subtest*



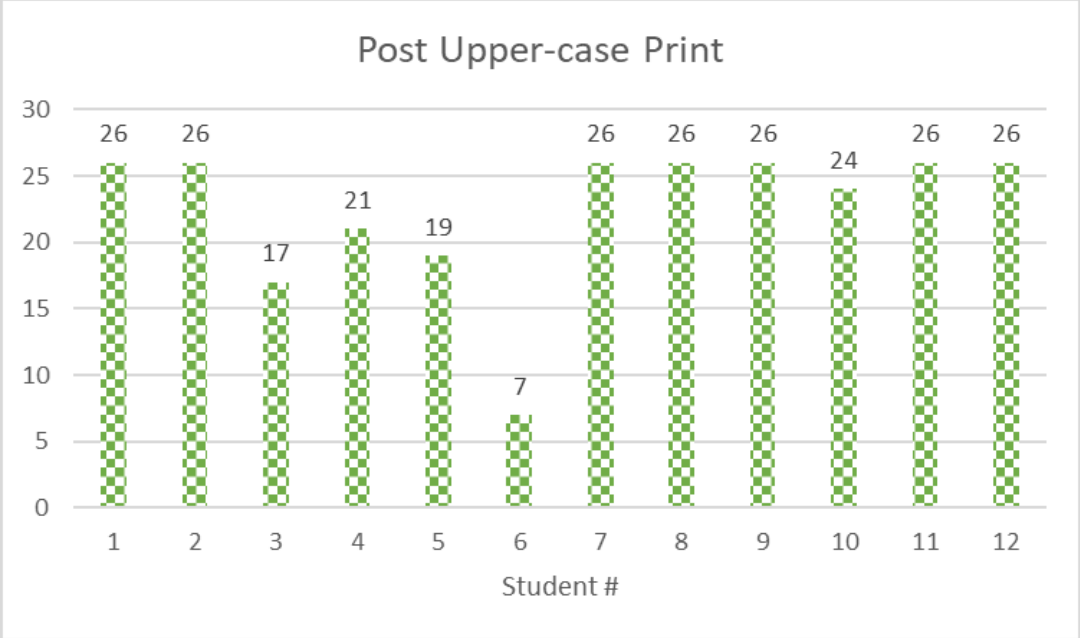


Figure 1.9: *Pre- and post-test Scores for Individual Students For Upper-case Print subtest*

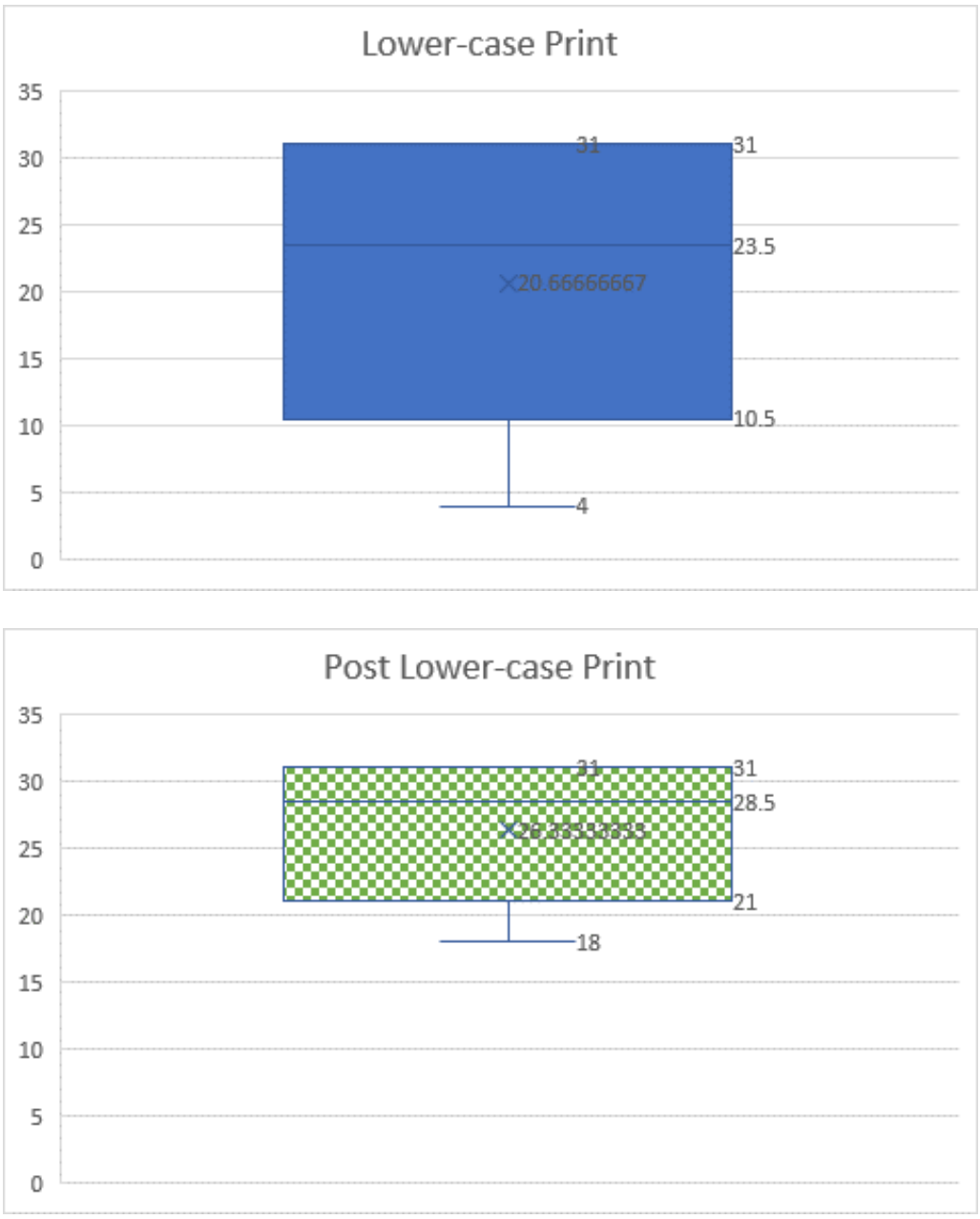


Figure 1.10: Pre/Post test box and whisker scores for Lower-case Print subtest

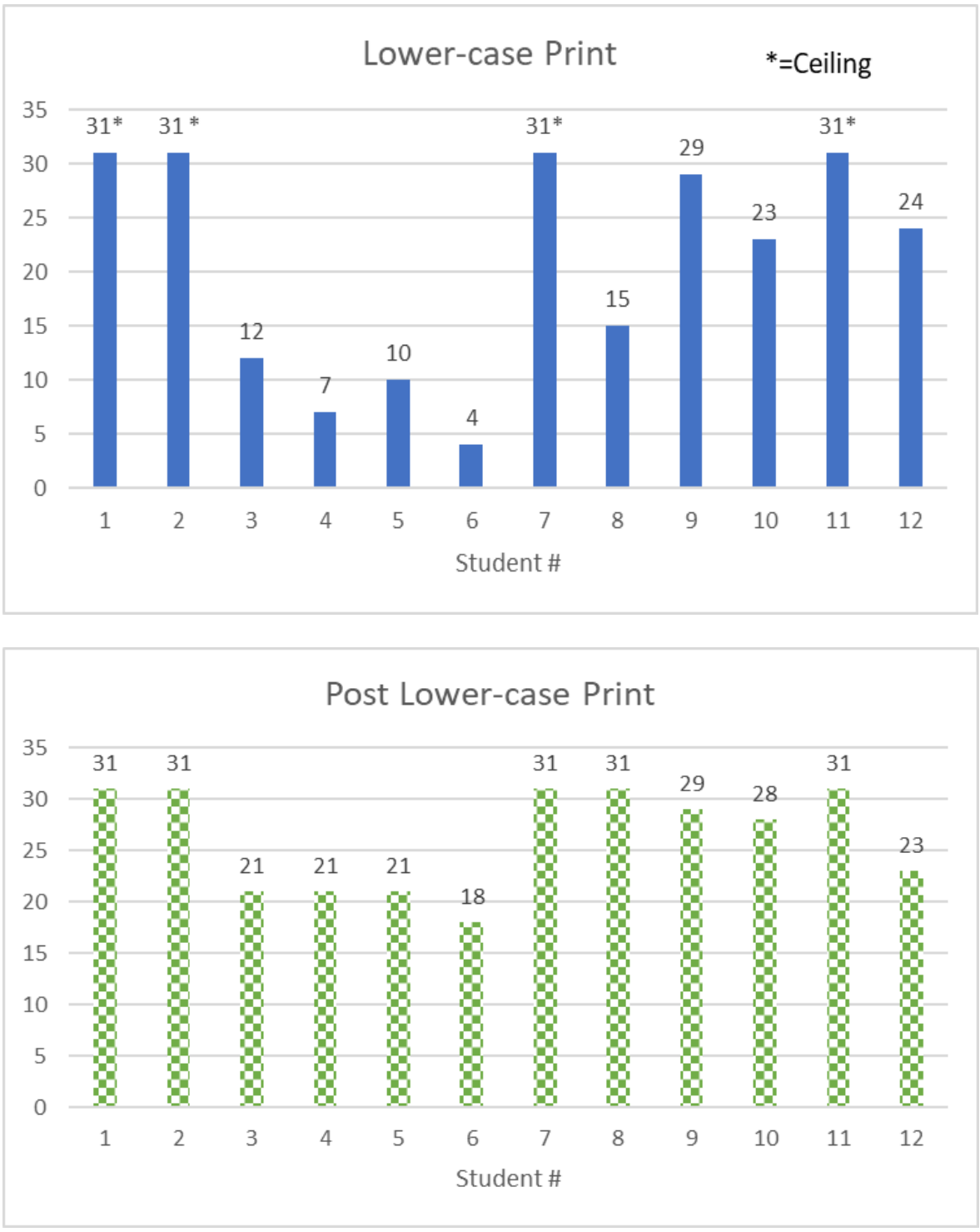


Figure 1.11: Pre- and post-test Scores for Individual Students for Lower-case Print subtest

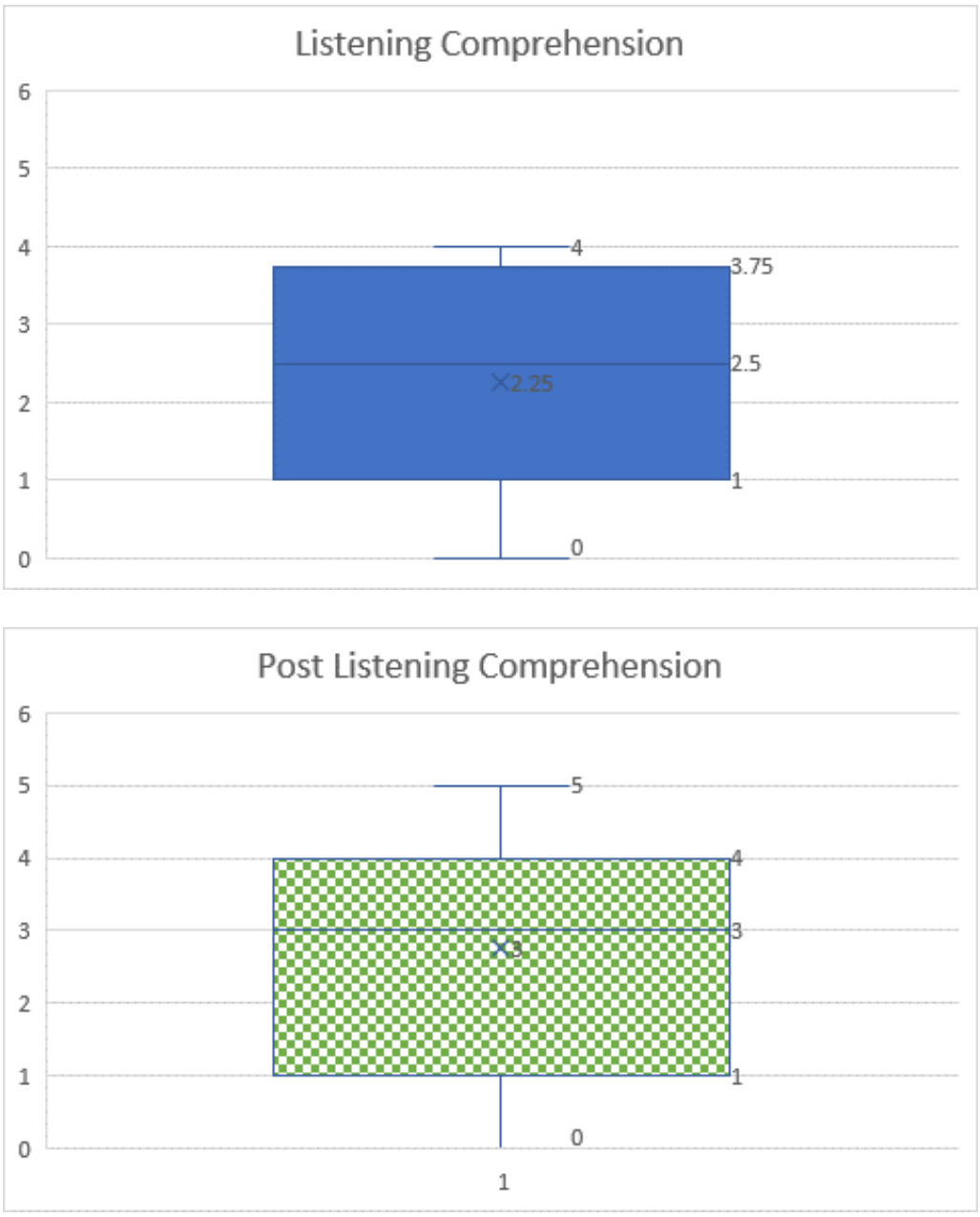


Figure 1.12: Pre- and post-test scores for Listening Comprehension subtest

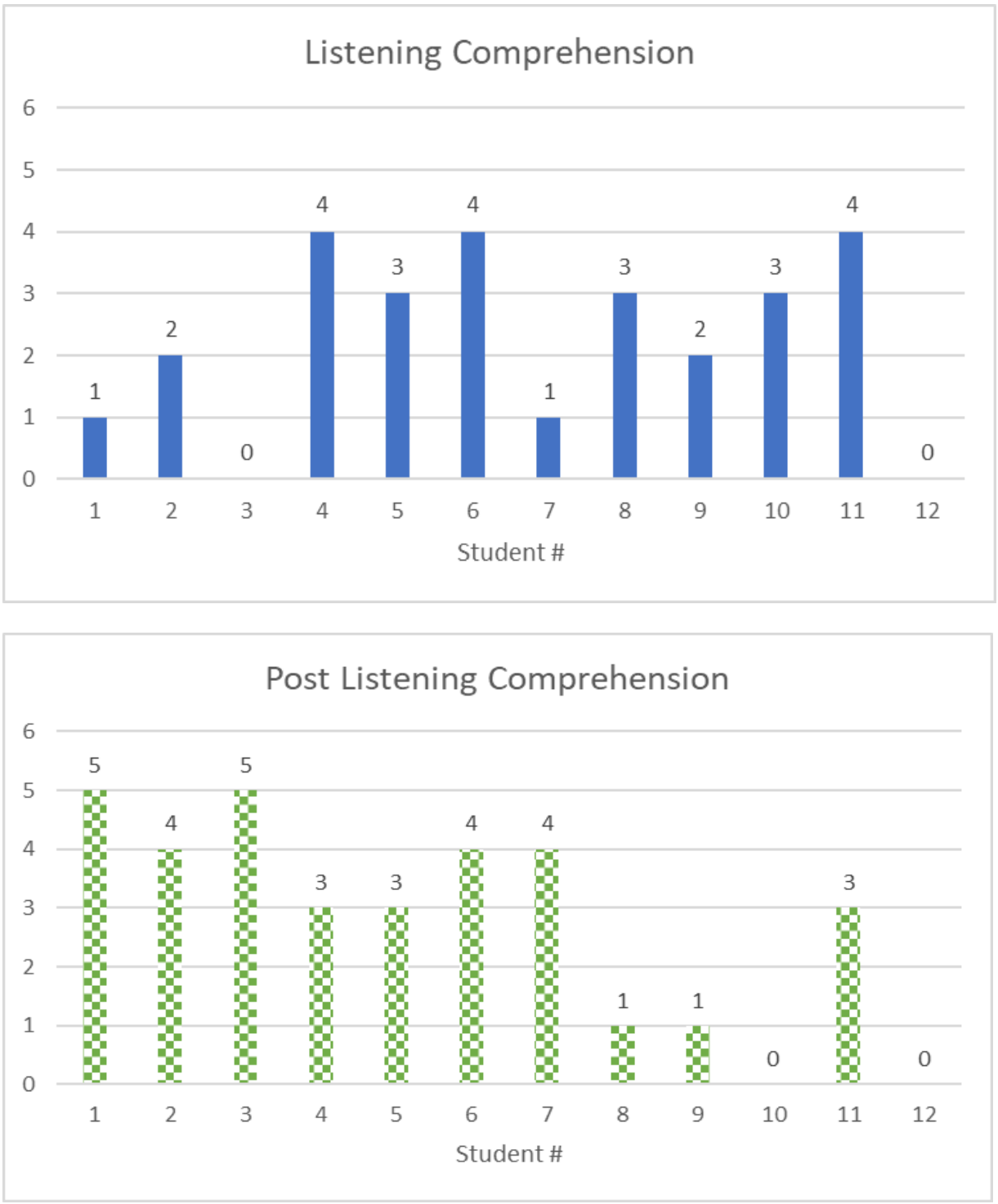


Figure 1.13: Pre- and post-test Scores for Individual Students for Listening Comprehension subtest