



Analyzing Language and Academic Readiness Skill Development in a Pre-K One-Way DLI Classroom

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Introduction

Dual Language Immersion (DLI) is a type of program that instructs course content to students in two languages to develop bilingualism, meet grade-level achievement goals, and foster cross-cultural understanding and appreciation (Howard et al, 3). These programs are divided into One-way and Two-way based on classroom demographics. One-way refers to programs where students of only one language group are instructed (Collier & Thomas, 2). Meanwhile, Two-way DLI incorporates members of multiple language groups (Howard et al, 3). Previous research on DLI programs have found that “proficiency in one’s home language facilitates and speeds up the acquisition of the dominant language” (Lara-Alecio, Rafael, et al., 39). Furthermore, English Language Learners in DLI programs “significantly [outperform] students enrolled in non-immersion, English-only programs on state-wide reading tests... in 5th and 8th grade” (Serafini, Ellen J., et al., 5) and have the “fewest rates of dropout” (Lara-Alecio, Rafael, et al., 40). These results demonstrate how fostering a child’s home language alongside English has better outcomes than focusing solely on English because language skills are able to carry over.

Fort Bend ISD recently implemented their One-Way Dual Language Program (OWDL) which has phased out the Early Exit Bilingual Education model in Pre-K through 1st Grade. The program aims to teach native Spanish speakers both English and Spanish (FBISD), following the aforementioned One-way model. This study utilizes the Pre-K CIRCLE Progress Monitoring Test developed by UThealth's Children's Learning Institute to provide early childhood teachers knowledge of their students' skill levels and help them individualize instruction (CLI engage). Within a single Pre-K One-way DLI classroom, this study aims to examine how a students' initial ability in English and Spanish changes and affects their school readiness skills for both languages.

Methodology

The data was taken from a Pre-K classroom of 22 students in the FBISD OWDL Program. The teacher provided the class' September 2022 Wave 1 Spanish CIRCLE Test score as well as their March 2023 Wave 2 Spanish & English scores. The Spanish CIRCLE Tests were conducted on CLI engage's online testing platform while the English tests were administered using the printed version. Additionally, the teacher rated the students' language levels from 0-3 during September 2022 and March 2023 for reference against the CIRCLE Test results. The various CIRCLE tests for Vocabulary, Phonology and Mathematics were totaled for analysis. Then each piece of data was compared against each other to find relationships and quantify them using a Pearson Product-Moment Correlation.

Results

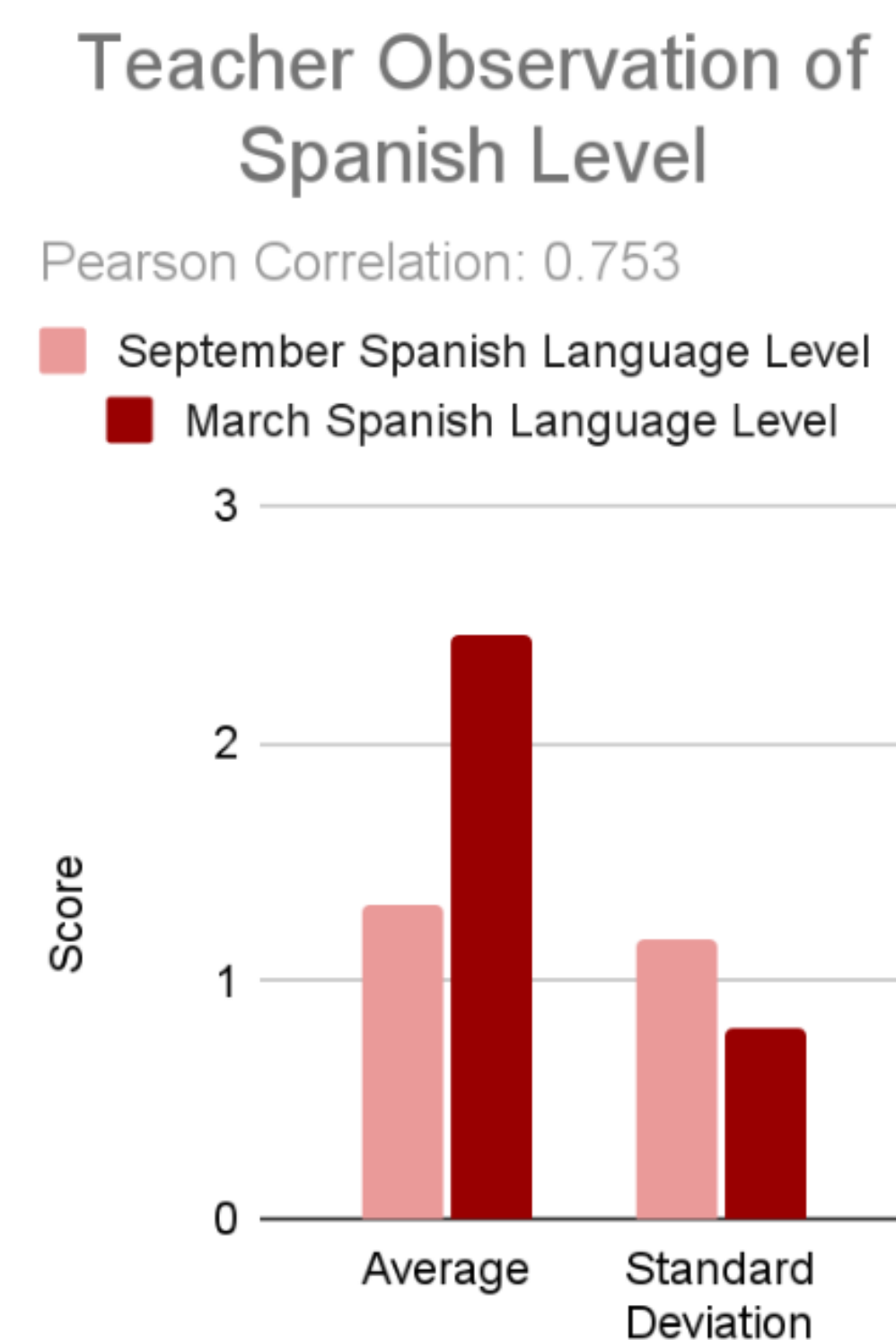


Figure 1

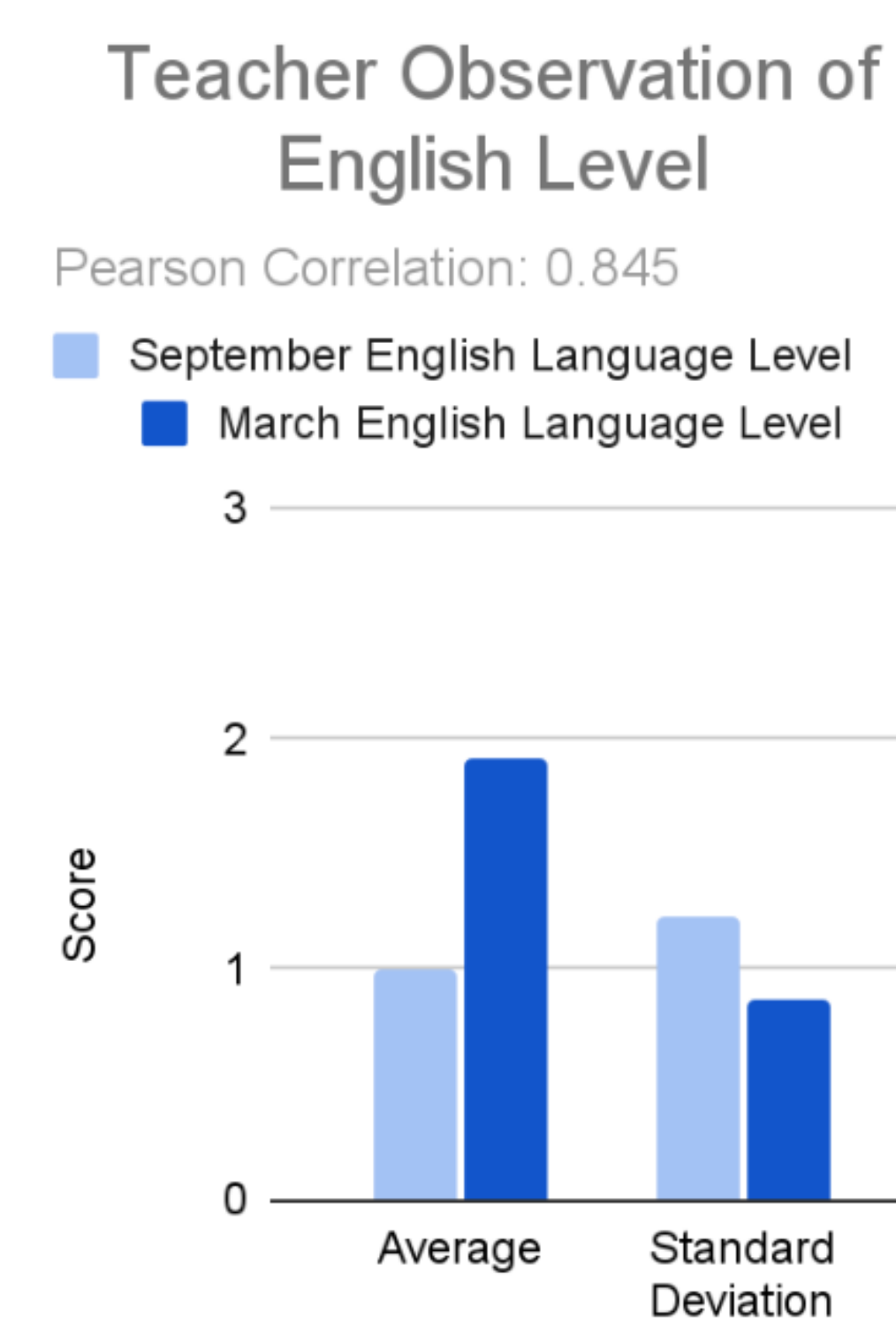


Figure 2

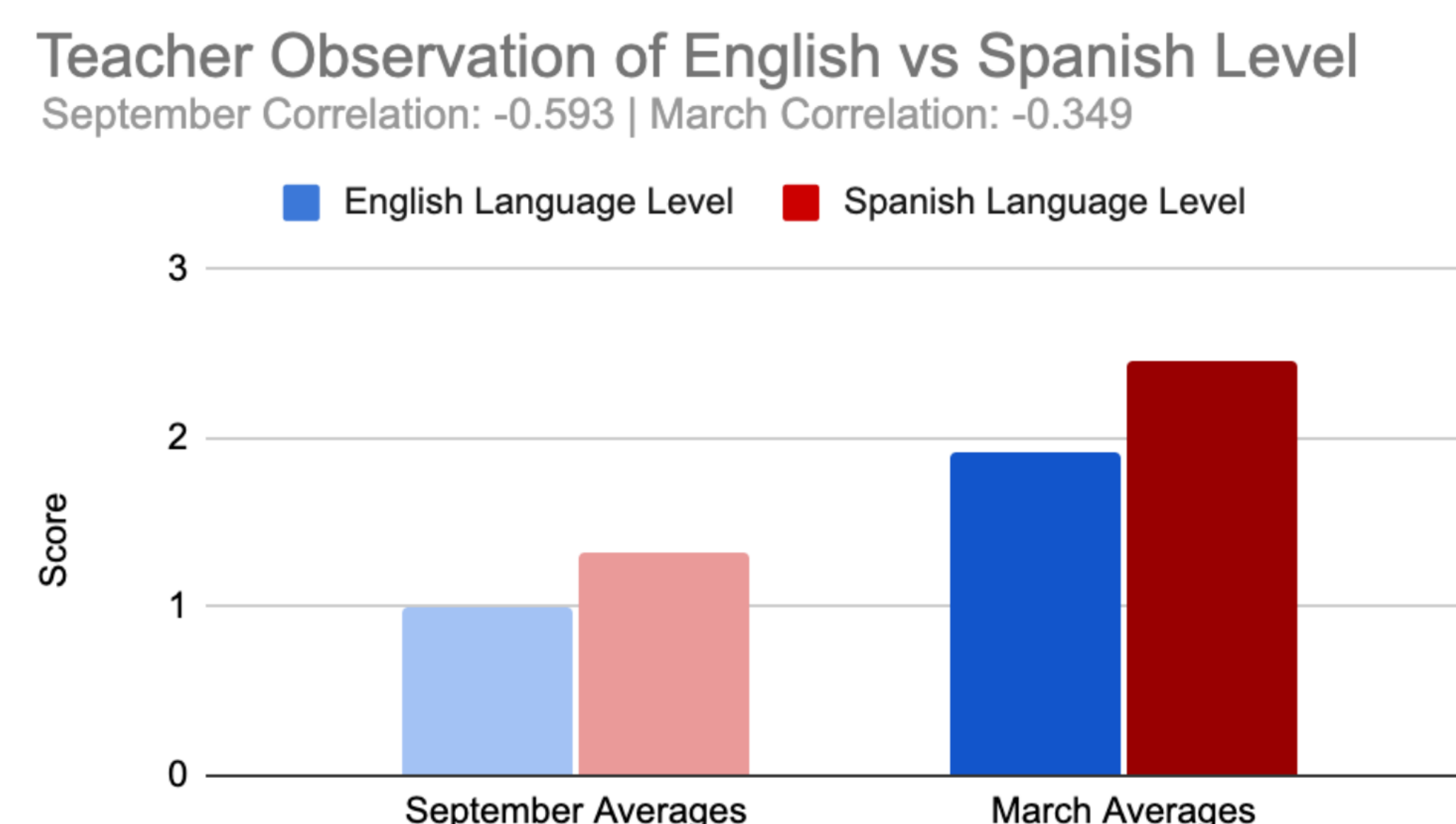


Figure 3

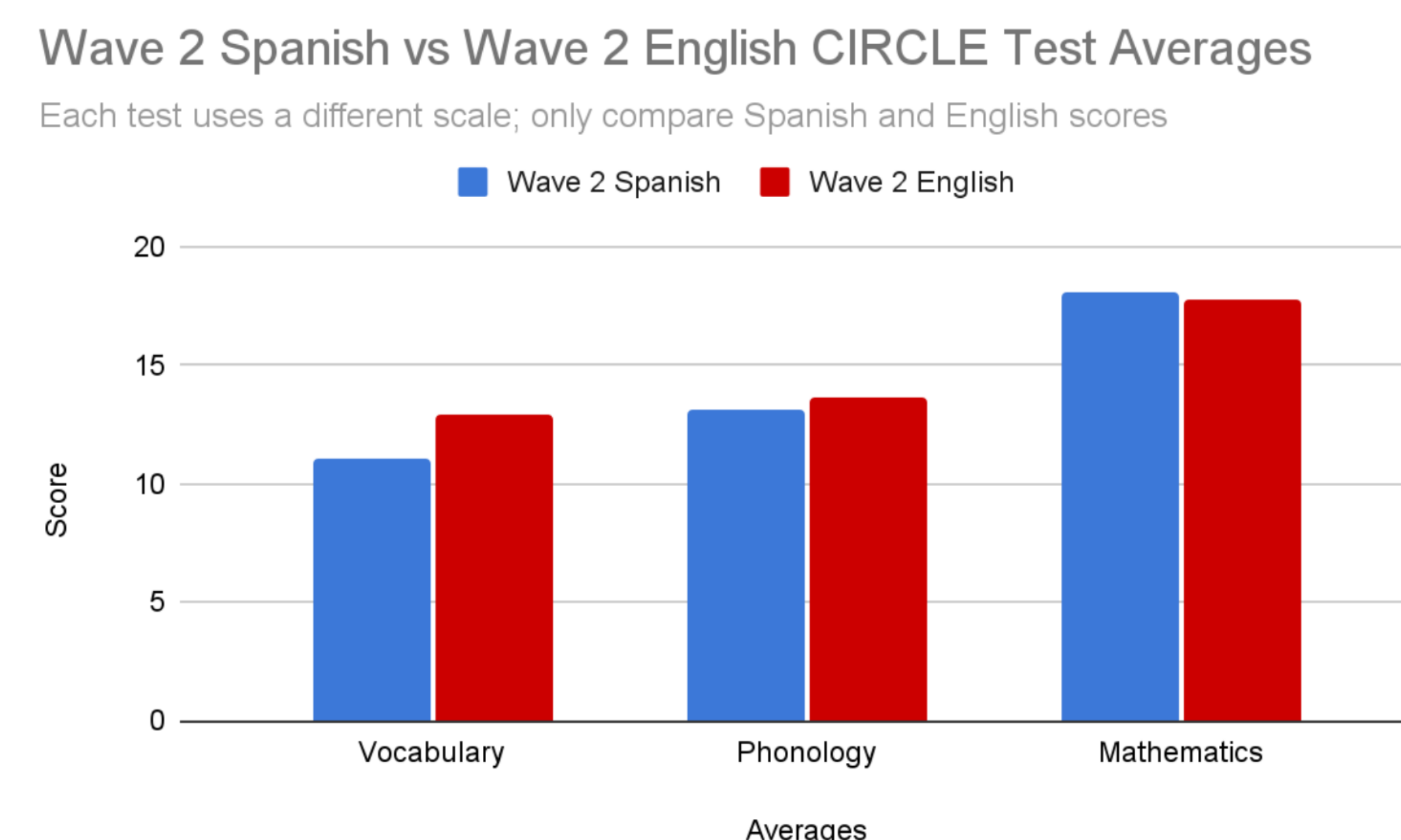


Figure 4

Teacher Observation of Language Level Criteria (Figures 1-4).

0 - Cannot understand simple directions/phrases

1 - Understands directions with visuals, can produce short words and phrases

2 - Understands directions, can produce simple sentences

3 - Understands directions; can speak in full sentences, provide details, and ask for clarification

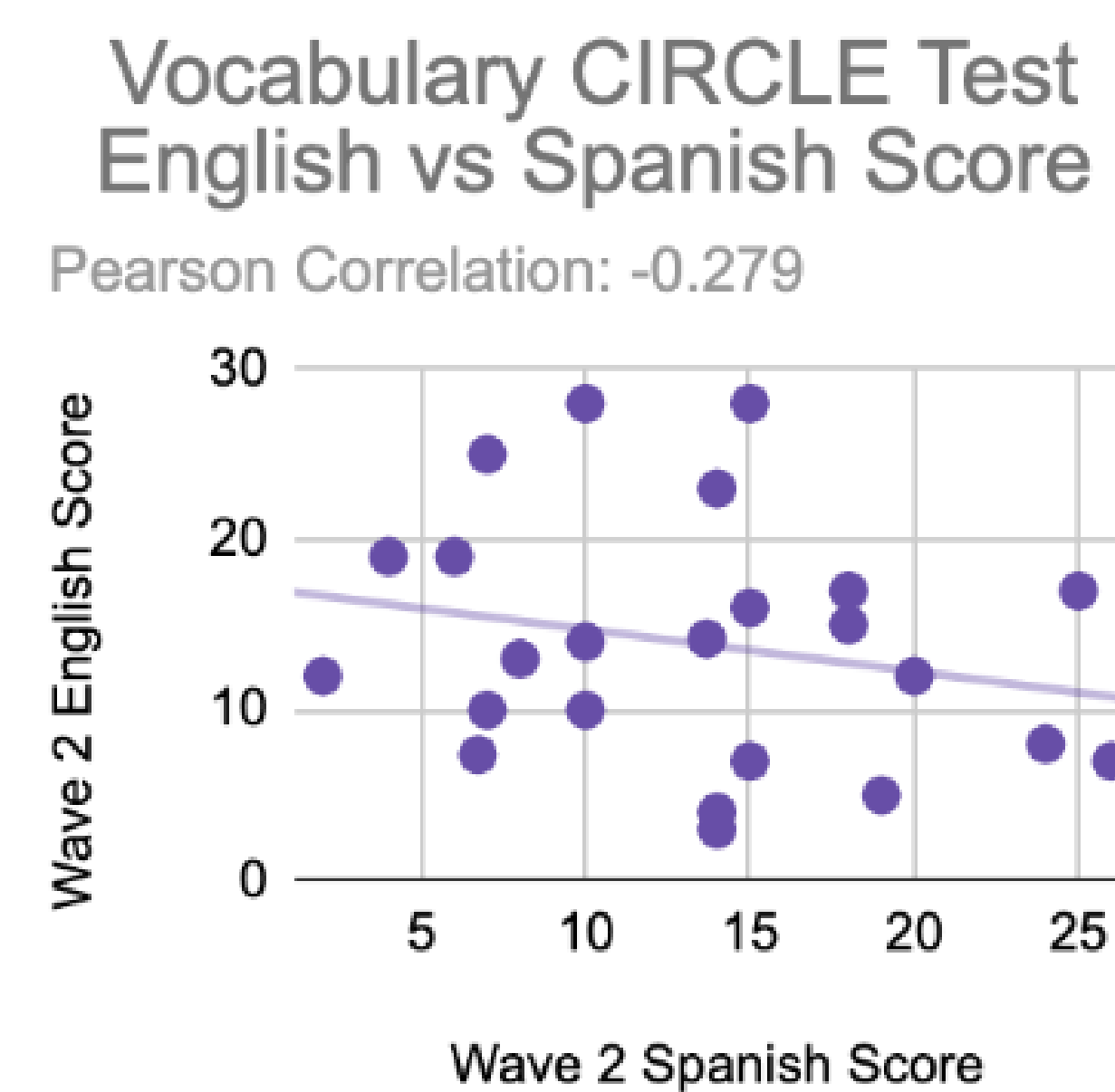


Figure 5

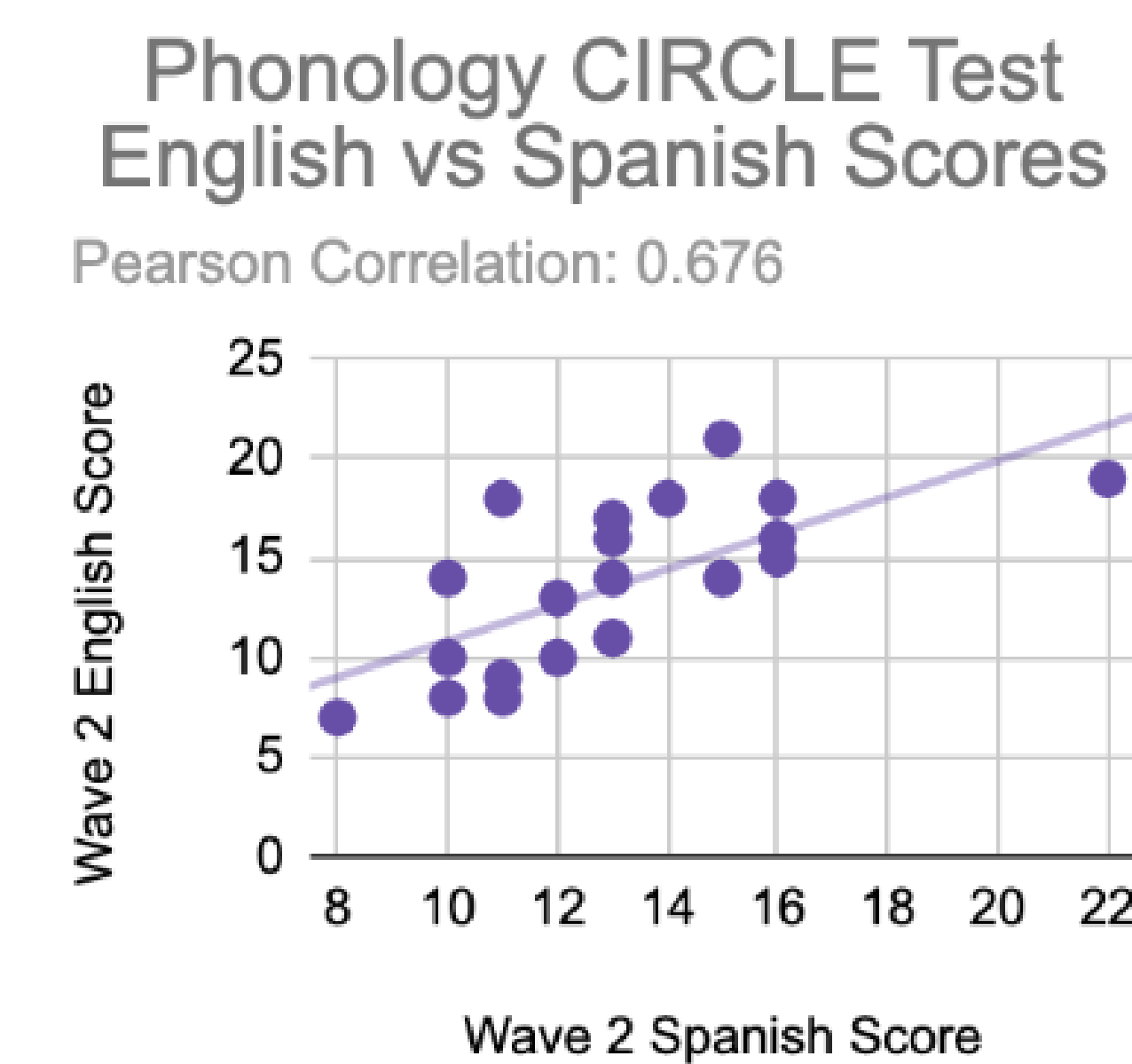


Figure 6

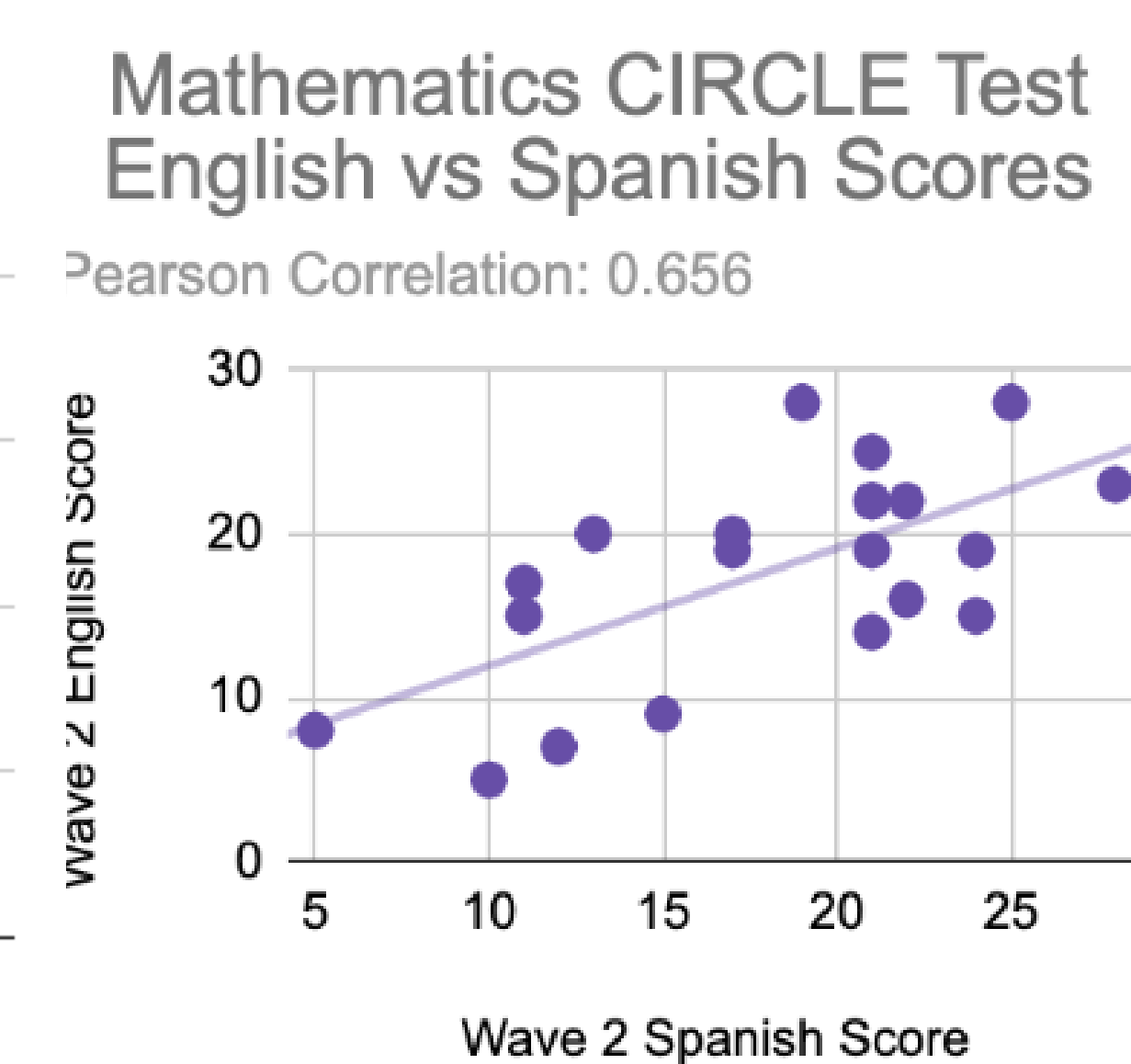


Figure 7

Findings

- Figures 1 and 2 show that the Standard Deviation in observed language level decreased for both languages over time while the averages for both languages increased by around 1 level on the observation scale.
- Figure 3 displays a consistently higher average Spanish level over time but also notes how the negative correlation between Spanish and English levels decreased over time (-0.593 to -0.349).
- Figure 4 demonstrates the similarity between Wave 2 English and Spanish CIRCLE test scores.
- Figure 5 found that English and Spanish CIRCLE Test scores were negatively correlated (-0.279) for Vocabulary which was similar to that of the March average observed language levels (-0.349) in Figure 3. Meanwhile, the two languages were positively correlated for Phonology (0.676) and Mathematics (0.656) in Figures 6 & 7.

Conclusion

Although the Spanish observed language level (Fig. 3) and CIRCLE Test scores (Fig. 4) were higher on average, the difference is only statistically significant in the March Teacher observation. These similar results show that despite this classroom being classified as One-way DL, there is a diverse array of language abilities and a balance between Spanish and English that makes it resemble a Two-way classroom. It appears that because the FBISD OWDL program includes all students with any Spanish spoken at home, there can be a high amount of English dominant students depending on the area.

The decrease in standard deviation in observed language level (Fig. 1 & 2) and lower negative correlation between Spanish and English (Fig. 3) reflects how the classroom's language abilities became closer over time and the way students have been able to improve on their non-dominant language while improving their dominant language.

The similar negative correlation of English and Spanish Vocabulary CIRCLE Test scores (Fig. 5) and March average observed language levels (Fig. 3) displays the important role fluency has on academic Vocabulary skills. Meanwhile, the positive correlation for Phonology and Mathematics CIRCLE Test Scores shows that the skills being tested (Rhyming, Alliteration, Syllable recognition, Counting, and Shape recognition) carry over between languages.

Discussion

An area of weakness in this study is the lack of Wave 1 English CIRCLE Test scores which would have provided more data on academic readiness skills in comparison to the measurements of language levels. Furthermore, the study would have benefited from another objective measurement of the students' language levels as the teacher's observations could be subject to bias. A future study should also compare OWDL language and academic development with a classroom using the previous Early Exit Bilingual Education model because this data was limited to a single classroom.