



Cognate Therapy Using Academic Vocabulary Words for Bilingual Students

G. Skokna, B.A. & B. Gorman, Ph. D. CCC-SLP

Department of Communication Sciences and Disorders
Elmhurst College – Elmhurst, IL



ABSTRACT

The number of dual language learners in elementary schools is steadily increasing, and key to their academic success is their acquisition of academic language. However, speculation remains regarding how best to support vocabulary learning within this population of students, including the efficacy of cognate intervention. Therefore, the goal of this experimental intervention study was to determine if cognate instruction of academic vocabulary words in English would facilitate expressive cognate retrieval in Spanish for school-age dual language learners. Results indicated that all participants showed significantly increased performance levels for accurate cognate retrieval in Spanish during the intervention phase, in comparison to baseline levels. Implications for clinical practice and future research are discussed.

PURPOSE

The current study was designed to examine if cognate instruction delivered predominately in English using academic vocabulary words as cognates facilitate expressive cognate retrieval in Spanish, despite the fact that these words are less concrete, less picturable, and not used frequently in daily discourse as are the cognates typically used in research.

MATERIALS & METHODS

- **Research Design:** Single-subject, multiple baseline design. *Baselines were not staggered, due to time constraints
- **Setting:** Baseline sessions were conducted individually. Intervention sessions were held in small groups of two to three students, unless a student was absent for one of the intervention sessions, in which case the make-up session was held individually. All sessions were held at an after-school community center.

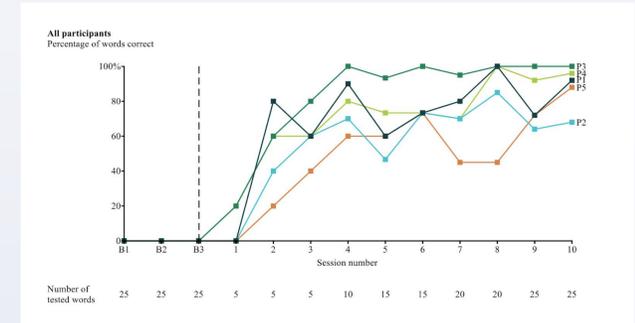
MATERIALS & METHODS

- **Participants:** Participants were recruited using convenience sampling from a community center that provides educational support and social activities to elementary and middle school students through after-school and summer program. The community center has an established working relationship with Elmhurst College. All 5 participants were enrolled in the after-school program, were bilingual Spanish-English speaking students of Mexican heritage, and reportedly did not have a hearing impairment, neurodevelopmental disorder, or significant sensory impairment.

	Gender	Age	Grade	Language Experience	Pattern of Language Acquisition
Participant 1	F	11	5 th	Bilingual English Dominant	Simultaneous
Participant 2	F	11	5 th	Balanced Bilingual	Sequential
Participant 3	M	11	5 th	Bilingual Spanish Dominant	Sequential
Participant 4	F	11	5 th	Balanced Bilingual	Sequential
Participant 5	F	10	4 th	Bilingual Spanish Dominant	Sequential

- **Stimuli:** Fifty different Spanish-English cognates were tested during baseline sessions to determine already known vs. unknown words among the participants. From those 50 words, 25 were selected to be used as the stimuli during the intervention sessions. Words already familiar to the children were eliminated, while words unknown by all five participants during all three baseline sessions were selected as stimuli.
 - Verification of a cognate: Kohnert's Crosslinguistic Overlap Scale for Phonology (COSP; Kohnert et al., 2004) was used to calculate a score for each of the 50 stimuli. Scores are calculated on a scale of 0 to 10, with 0 being no phonological overlap between English and Spanish, and 10 being the most amount of phonological overlap. A word is considered a cognate if it has a value of 6 or more, and the strength of the cognate increases as the numerical value increases. For example, the word "eliminate" in English and "eliminar" in Spanish would have a score of 9 and, therefore, be considered a strong cognate.
 - Verification of an academic word: Words were chosen as stimuli if the word or its root were included in the Academic Word List (AWL; Coxhead, 2000), a list of 570 of the most common academic words used across academic disciplines. Of the 25 words used in the study, 22 of the words were found within the AWL. The other three words were deemed as appropriate academic words by the research mentor.
 - Example stimuli: contrast/contrastar, adapt/adaptar, and infer/inferir
- **Baseline Sessions:** Three baseline sessions were conducted. The interventionist read out loud to the participant the definition in Spanish of a Spanish cognate word. The child was asked to verbalize the name of the correct word in Spanish that matched that definition. This was replicated for all 50 cognates per baseline session. Answers provided by the child were scored as correct if the child named the correct word independently in Spanish; responses were counted as incorrect if the child named an incorrect Spanish word, provided the correct word in English, or did not provide an answer. Baseline sessions never occurred on consecutive days.
- **Intervention Sessions:** The 25 stimuli were randomly divided into five sets of five words. Each of the word sets was then randomly assigned to a week. The intervention phase lasted five weeks, for a total of 10 intervention sessions for each participant. Sessions were approximately 30 minutes long and were held twice a week. The primary language of instruction was English. The interventionist used both languages to present the cognates, naturally. Participants were allowed to utilize both languages, also known as translanguaging (Otheguy et al., 2015), and thereby utilize their full repertoire of language knowledge to participate.
 - Five PowerPoint presentations were created by the principal investigator – one PowerPoint/week - and contained the five target words, their Spanish cognate, the definitions of the words, and examples of sentences using the target words. Computer assistance was utilized to allow for the use of visual and audio effects to make the learning more interactive and engaging.
 - Instruction used explicit teaching of correct pronunciation and meaning of the targeted cognates, and employed several evidence-based vocabulary learning strategies: multiple exposures to the words in differing sentences/contexts, multiple opportunities to use and write the words in sentences and make connections between the target words and the child's own experiences, and phonological strategies such as syllable segmentation and word rehearsal (Butler et al., 2010; German, 2002; Hougen, 2014)
- **Data Collection:** At the end of all sessions, post-intervention data was collected using a procedure similar to that used during baseline sessions to determine retention and if knowledge of the cognates taught that day transferred from English to Spanish. The children were provided a sheet of paper with the five target words from that week listed in Spanish in boxes in a random order. The interventionist tested one word set at a time, giving the child the proper sheet for the corresponding week's words before testing each set. When testing, the interventionist read the definition of the target word in Spanish to the child and the child indicated (i.e., by verbally stating or pointing on their sheet) which word matched the definition. Responses were scored as correct if they were produced independently (no clinician cueing) and in Spanish.

RESULTS



ADDITIONAL MEASURES OF SUCCESS

- The intervention also appeared to be effective in supporting the children's phonological awareness skills. For example, when discussing the cognate *distribution/distribución* during the fourth week of the intervention phase, Participant 5 commented on the similarities and differences between the Spanish and English phonemes, pointing out that "It's almost the same thing, just at the end... [the Spanish word] has the '-ción.'" Similar comments were made by the other participants for differing treatment words (e.g., *benefit/beneficiar*, *dimension/dimensión*, *classify/clasificar*).
- Participant 3 demonstrated transcendence of improved cognate awareness to non-targeted words; he stated, "Oh wait. Isn't *cognate* a cognate with its own word?" (i.e., the cognate of *cognate* in Spanish is *cognado*).

CONCLUSIONS

This study is a pilot study and is the first to demonstrate the efficacy of enhancing vocabulary knowledge for dual language learner (DLL) children for academic words through cognate-based instruction, as evidenced by the improvement across all participants in providing the correct cognate for a given definition upon commencement and throughout duration of the study. Additionally, the improved performance of Participant 2 despite her reported literacy difficulties suggests that cognate instruction focusing on academic words would likely benefit bilingual children who also have language and/or literacy difficulties. Moreover, these findings are consistent with those of Kambanaros et al. (2017) which explored the impact of a cognate-based intervention in relation to specific language impairment (SLI) for a school-aged trilingual girl. However, future studies are needed and should focus on exploring the generalization of the skill to non-treated cognates, as well as examine the children's ability to maintain knowledge of the newly acquired words weeks or months after intervention has concluded.

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