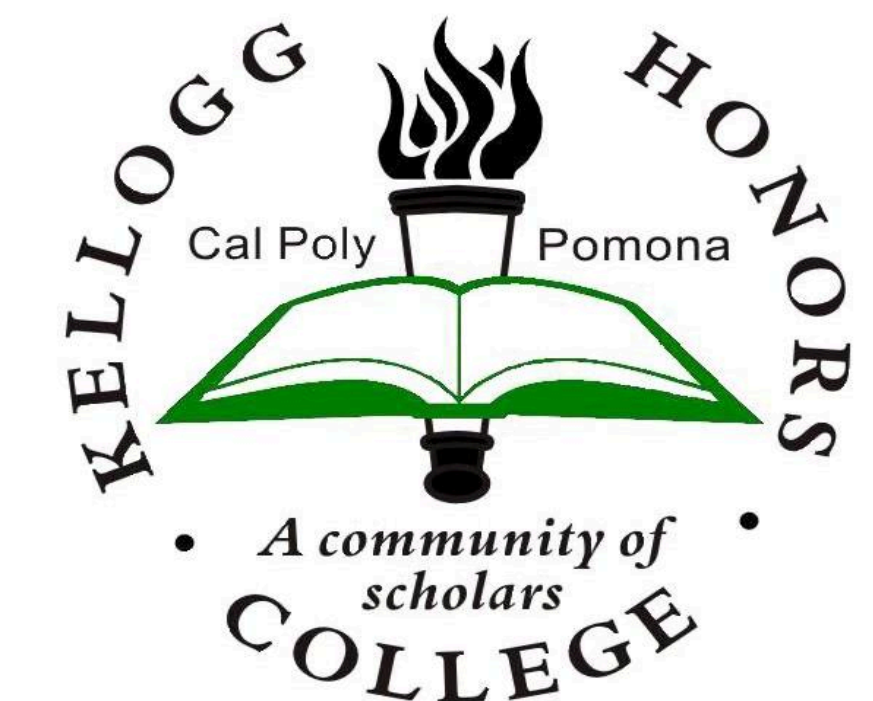# Spanish Heritage Language Processing: Using Rosetta Stone to impact Heritage Spanish

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Introduction

What is a Heritage Language Speaker?
- A Heritage Language Speaker (HLS) is an individual who is typically exposed to their family's language and the country's majority language.
- HLS are, to some degree, bilingual.

Why is this important?
- In the United States of America, different minority languages are treated as "foreign", especially in academic settings. Thus, the United States School System develops programs to "Americanize" heritage speakers by transforming fluent speakers of foreign languages into monolingual English speakers (Cummins, 1995). Consequently, heritage language speakers understand from a young age that school is an English-only zone and develop shame in their linguistic and cultural language (Cummins, 1995).

How does this impact the individual?
- The child's heritage language begins to undergo gradual attrition over its life-span given few language opportunities for the child to use or become literate in their heritage language.

Previous Research

Polinsky compared child and adult heritage speakers who have a comparable language learning background and that arrived in the country at roughly the same age or were born there (Polinsky, 2011). The results of that study revealed that heritage children perform equivalent to monolingual children, but heritage children outperform heritage adults; therefore, the linguistic knowledge of adult heritage speakers shows significant degradation (Polinsky, 2011). If a language is not properly used, the heritage speaker starts to undergo gradual attrition. As Polinsky described, "In the absence of sustained input and without the influence of the dominant language, their heritage language system undergoes restructuring" (Polinsky, 2011). This means that language is extremely flexible and can undergo dramatic changes to the point where it undergoes gradual attrition. This may explain the pattern of declining bilingualism, and the declining proficiency in the heritage language.

Discussion

This research was inspired to understand more about Heritage Spanish Speakers in hopes of breaking the pattern of declining bilingualism and gain an understanding on the impacts of relearning the minority language using Rosetta Stone. Rosetta Stone was chosen since it is an easy and affordable language program that goes at the same pace as the individual.

Unfortunately, this research had a small sample size since most participants were interested to become part of the study but could not dedicate their time to this research; therefore, we decided to reach out to the Spanish department for students who needed Spanish service hours. This allowed us to get more participants but there were some complications afterword.

An important part to discuss is the feeling of regret. All participants, except one, talked to the researcher about their journey(s) being bilinguals. Many participants wished their parents thought them Spanish as they felt awkward speaking their first language with an accent or limited words. In addition, several brought up the topic of communication problems within their families. Several participants also mentioned the fact that being fluent in both languages would increase their employment opportunities. The one participant who did not talk about regret was a student parent who explained that she will do everything in her power for her child to grow up speaking both languages. Although this researched did show insignificant results, we hope that in the near future with other techniques and better methods, we are able to prove a strong case for bilingualism.

Methods

Participants

The sample (N = 13) consisted of participants who are Heritage Spanish Speakers (HSS) and varied in gender, age, and college grade level. All participants were 18 years or older. Participants were recruited on campus through snowball methodology and flyers. All participants were part of the voluntary samples. Participants were chosen depending on their level of proficiency in Heritage Spanish. In addition, all participants in the experimental group were part of the Spanish learning class in which they participated for service-learning hours.

Procedure

The study was a pre-post between-group design. There were two groups in this research: a Control Group and an experimental group (who will learn Spanish through Rosetta Stone ADVANTAGE program). Participants who were tested in the Control Group did not utilize the Rosetta Stone Program. The Control Group was tested two times throughout the Fall Semester 2018. The first testing session took place on week three and the participants were given a Verbal Fluency Test, a Grammar Test through Diploma de Español como Lengua Extranjera (DELE), Linguistic Battery and Cognitive Battery, also known as OSPAN. The second session was done on week eleven and the participants were asked to perform the same tests as the first session. A Verbal Fluency Test is a test to measure the participant's recall memory. For example, participants were asked to name as many animals as they can in 15 seconds in Spanish, then to repeat the exercise in a different category, but in English. Overall, there were eight different categories: clothing items, animals, fruits, vegetables, professions, colors, body parts, and musical instruments. There were two random groups the participants could be placed: A1/A2 or B1/B2. For the A1/A2 participants, the English categories were: body parts, colors, fruits, & professions. For the A1/A2 participants, the Spanish categories were: animals, clothing, musical instruments, & vegetables. For the A1/A2 participants, the English categories were: body parts, colors, fruits, & professions For the B1/B2 participants, the English categories were: animals, clothing, musical instruments, & vegetables. For the B1/B2 participants, the Spanish categories were: body parts, colors, fruits, & professions. The Linguistic Battery and Cognitive Battery tests, also known as OSPAN, are computerized tests which records the participant's cognitive ability--mental capacity and the extent in which it's used. This test has two parts: the math portion and the memorization portion. The participant will have to first solve a math problem and then they were given an alphabetical letter. This procedure continues until OSPAN tests participants by asking them to recall, in order of the words presented, all the letters that were given to them. Diploma de Español como Lengua Extranjera (DELE) is a Spanish grammar test that contains 50 multiple choice questions. The questions vary from asking participants about which word(s) needs an accent, the definition of a word, or adding a word that best fits in the sentence. Participants in the experimental group (the Rosetta Stone Program Group), learned and practiced their Spanish through Rosetta Stone for five weeks. Rosetta Stone ADVANTAGE program had participants take two pre-test to place them in the correct level. Overall, there were three levels with three categories each. The levels were beginner, intermediate, and advanced. In the beginner level, categories such as introduction and ordering were given to the participants. In the intermediate level, categories such as clothing items and careers were given to the participants. Lastly, in the advanced level, categories such as business terms were given to participants. Participants were required to practice Rosetta Stone for three hours each week for three weeks. Participants in the experimental group were tested two times: around week five and around week eleven to complete the Verbal Fluency Test, a Grammar Test through Diploma de Español como Lengua Extranjera (DELE), Linguistic Battery and Cognitive Battery (OSPAN). All participants who agreed to participate in the research received consent forms prior to the start of the study. After the post-test participants only in the Rosetta Group were audio recorded and asked four questions. Question one, "What was your experience with Rosetta Stone." Question two, "How did this research impacted you, if any." Question three, "Have you seen any improvements since Rosetta Stone; if so, which ones." The last question was, "Any feedback." This question was especially important as it allowed the participants to talk negatively or positively about the research and give the researcher an inside perspective of how to improve in the future. To ensure confidentiality, participant names were removed from interviews prior to data entry, and the interviews will be identified only by a number code. The information from the interviews were stored in a locked computer in which only the main researcher and faculty adviser will have access.

Results

Scoring

The scoring on our research was utilized through Excel to code all the data for DELE and Verbal Fluency. We used a two-samples T-Test and CI to analyzed the data for Pre (SPN/ENG) and Post (SPN/ENG).

Descriptive Statistics

All participants described themselves as latino/latina and were 18 years or older. All participants were from different ethnicities. In the pre-test, there were thirteen individuals (n = 13). In the post test, there were ten individuals (n = 10).

Inferential Statistics

In the two-sample T-Test for English and Spanish verbal fluency, we compared the pre-test with the post-test for both the control group and the experimental group. In the English pre-test, the mean was 25.38 (M = 25.38, SD = 9.07). For the English post-test, the mean was 22.9 (M = 22.9, SD = 11.2). The test for estimation of difference was conducted. There was a 95% CI for difference (11.67). The T-value for both the English test was .57 (T = .57) and the P-Value was .576 (P = .576); therefore, the p > .05 and there was no significant difference. We failed to reject the null: H_0: $\mu_1 - \mu_2 = 0$. In the two-sample T-test for the Spanish pre-test, the mean was 19.23 (M = 19.23, SD = 6.64). For the post-test, the mean was 18 (M = 18, SD = 4.64). The test for estimation of difference was conducted. There was a 95% CI for difference (6.14). The T-value for both the Spanish test was .52 and the P-Value was .607; therefore, the p > .05 and there was no significant difference. We failed to reject the null hypothesis: H_0: $\mu_1 - \mu_2 = 0$.

Audio Recordings

We conducted audio recordings for the experimental group to record their satisfaction rate. When asked about "What was your experience with Rosetta Stone" three participants said that Rosetta Stone was too easy for them and that they would have preferred a more challenging environment. When asked to explain more details, two said that they wished they could choose higher categories to learn more about medical or business terms instead of learning basic Spanish words such as mesa (table) or pelota (ball). Two participants explained that they wish that Rosetta Stone explained more grammar rules and less emphasis on repetition for the word(s). In addition, one participant explained that she did not liked the puzzles and was glad when she found out she could skip it. In question two, "How did this research impacted you, if any" two participants explained that they did not see much difference in their cognitive skills. Two participants said they enjoyed Rosetta Stone because it allowed them to learn vocabulary from different parts of Latin America. In the third question, "Have you seen any improvements since Rosetta Stone; if so, which ones," two participants said that they felt more curious to explore the Spanish language and that it was refreshing to relearn some Spanish words. Two participants said they did not see any cognitive changes with this research, but that finals (a week of testing for students) may have been a bigger priority for them than this research. The last question was about any feedback. All participants said they enjoyed being part of this research.

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