Grammar as Concept: The Implementation of the PACE Model in Beginning Spanish Classes

Ewurama Okine
Texas A&M University

Gabriela C. Zapata
University of Nottingham

This study investigates the effectiveness of the PACE approach (Adair-Hauck & Donato, 2002) for grammar teaching in beginning (novice mid/high) second language (L2) Spanish classes. Even though research has reported instructional benefits for PACE in L2 French (Groenveld, 2011), Alutiiq (Branson, 2015), and ESL (Harris, 2017; Ngo, 2018), to the best of the authors' knowledge, no studies have been conducted with beginning L2 Spanish learners. Thus, this work seeks to contribute to the existing literature by focusing on the adoption of the approach in L2 Spanish university classes. The study focused on stem-changing verb forms in the present tense, and it involved the participation of 47 students in a public institution in the Southern United States. The participants were enrolled in two different sections of a first-semester class taught by a PACE-trained instructor. Data were collected through pre- and post-tests consisting of two multiple-choice tasks at the sentence and paragraph levels. Findings showed statistically significant differences between pre-and post-test results, which not only mirror previous studies, but also appeared to point to the effectiveness of the PACE approach for grammar teaching in L2 Spanish classes as well as for L2 use in all modes of communication—interpersonal, interpretive, and presentational.

Keywords: *L2 Spanish, PACE, L2 grammar teaching, modes of communication*

INTRODUCTION

The teaching of grammar in second language (L2) classrooms has been one of the most important research foci in the field of L2 pedagogy in the past decades. According to Richards and Rodgers (2001), different approaches have been proposed and investigated as far back as the 1840s, when translation was used as a tool to focus learners' attention on forms and the rules associated with said forms. With the advent of communicative language teaching (Savignon, 1983, 1987) and, more recently, literacy-based approaches to L2 teaching (Allen & Paesani, 2010; Zapata, 2022), it has become clear there is a need for instruction that will facilitate contextualized, meaningful grammar learning through students' active L2 use for communication and their guided discovery of the connections between meaning and form, instead of rote, decontextualized learning.

To address this need, in 2002, Adair-Hauck and Donato developed a pedagogical approach with a focus on form that relies on the use of texts and students' and instructors' dialogic, collaborative analysis of the relationship between grammar and meaning. The approach is known as PACE—an acronym for its four instructional stages, namely *Presentation*, *Attention*, *Co-Construction*, and *Extension*. The implementation of PACE in L2 instruction has been recommended by Glisan and Donato (2017) as one of the core L2 teaching practices "that are essential for… teachers to enact in their classrooms to support second language learning and development" (p. 1). Because of its reliance on text and learners' collaborative construction of knowledge, PACE offers opportunities for active, contextualized L2 use in all modes of communication—interpersonal (speaking), interpretive (reading and listening/viewing), and presentational (writing) (Glisan & Donato, 2017). The implication here is that the approach can not only facilitate students' guided discovery of the relationship between meaning and form, but it can also play a role in overall L2 development. Additionally, through the use of multimodal stories, L2 teachers can connect instruction to students' lifeworld, communities, and/or experiences, as well as contribute to their growth as multiliterate persons. That is, by choosing materials that are relevant for learners at both the instructional and personal levels that combine various semiotic elements (e.g., linguistic and visual/gestural), practitioners can foster belonging and can promote their students' understanding of multimodal meaning-making (Kalantzis et al., 2016, 2019; Zapata, 2022).

Even though PACE has been deemed an effective instructional tool for grammar teaching in the existing literature, and it is compatible with current literacy-based L2 approaches (Allen & Paesani, 2010; Zapata, 2022) it has not, to the best of the authors' knowledge, been widely adopted in L2 Spanish instruction. For example, the model is not included in current commercial textbooks, which, according to Fernández (2011, p. 165), appear to be "leaving out many of the newer approaches that encourage students to notice and connect form with meaning, …, without offering significant, more innovative alternative[s] to enhance grammar learning" (see also Cubillos, 2014; Sessarego, 2016; Yoon, 2019). Additionally, no studies have yet focused on the implementation of the approach, as developed by Adair-Hauck and Donato (2002) in beginning of Spanish L2 classes.[1]

The purpose of this paper is to fill this gap by investigating the application of PACE in two first-semester L2 Spanish classes in a public university in the Southern United States. The first section of the paper provides an overview of the approach and presents the existing studies on PACE in other languages. The next part introduces the study, including its research focus, participants, the institutional context in which it took place, and data collection and analysis. This is followed by the results of the investigation and their discussion. The final sections address the limitations of this work and conclude it.

---

[1] A recently published study by Davin & Kushki (2022) investigated grammar instruction in Spanish L2 learning from a sociocultural perspective. The work did not use the same version of PACE discussed in the present study, and originally created by Adair-Hauck and Donato (2002), nor did it focus specifically on the approach. Thus, it was not considered in the present study.

LITERATURE REVIEW

The PACE Approach and Its Application in L2 Classes

PACE was developed by Adair-Hauck and Donato in 2002 to offer the field of L2 instruction a practice that would allow for:

> a focus on form… in a meaningful context [that would] make visible to the learner how a particular language form is used for the various modes of communication, how forms construct social and cultural meanings, and how they address larger communicative goals and purposes (Glisan & Donato, 2017, p. 92).

PACE consists of four pedagogical phases—*Presentation*, *Attention*, *Co-construction*, and *Extension*, which Adair-Hauck and Donato (2002) describe as follows. In the first phase, *Presentation*, the teacher foreshadows the grammar lesson by introducing students to a short, oral text, typically a narrative, that incorporates both the L2 and other semiotic elements such as images and audio (e.g., music or sound effects). [2] The instructor's oral narrative constitutes learners' first exposure to the structures of focus in connection to meaning. In the second phase, *Attention*, students participate in a guided discovery of the grammatical patterns tied to the lesson's forms based on the meaning conveyed by them in the chosen text. That is, in this stage, learners work with a written version of the oral text introduced in the previous phase, and the L2 teacher develops pedagogical interventions that allow for the identification of patterns and connections without much difficulty. In this phase, the students' work can also be facilitated by cooperative learning tasks. In the third phase, *Co-construction*, the L2 instructor and learners collaboratively construct the grammatical rules that guide the structures identified in the *Attention* phase, based on the form they exhibit and their connection to the message conveyed. In the fourth and final phase, *Extension*, students attempt to actively use their new forms in interpersonal, interpretive, and/or presentational communication.

Existing research on the adoption of PACE in L2 classes is quite limited; to the best of the authors' knowledge, only four studies have examined the incorporation of the approach as it was developed by Adair-Hauck and Donato (2002). [3] These works have focused on four different languages in both high school and university/adult educational contexts. For example, Groeneveld (2011) conducted a study with 34 English-speaking high school students in French and Dutch language classes. The researcher was in charge of the French course, and another teacher taught the Dutch one. The objective of this work was to investigate whether the application of PACE in six different lessons could help learners identify the grammatical class or syntactic function (i.e., the focus was declarative knowledge). Data were collected through a pretest and a posttest consisting of multiple-choice questions in which the participants were

---

[2] Adair-Hauck and Donato (2002) emphasize that, when choosing a text, L2 practitioners need to consider both connections to the target culture(s), as well as the learners' lifeworld and personal/academic needs.

[3] There is some work (e.g., Davin & Kushki, 2022; Haight et al., 2007; Vogel et al., 2011) that has investigated the use of modified versions of PACE. Other existing publications have provided solely pedagogical information in the form of sample tasks (e.g., Li & Paul, 2019; Miguel & Solana, 2016) or recommendations for the implementation of PACE in combination with other approaches to grammar or L2 teaching (e.g., González-Bueno, 2021).

provided with a sample sentence featuring pronouns, direct objects, verb agreement, or the superlative and were asked to identify the grammatical class or syntactic function. Groeneveld found that there was an overall increase in the participants' accuracy in structure identification between the pre-and post-tests. Additionally, data collected through a final informal evaluation showed that students had enjoyed the implementation of PACE for grammar learning. Despite these positive results, there were problems with this study. For instance, the researcher did not provide much information about the instruments used for data collection (e.g., it was not specified how many items were included in the tests), nor did she clarify if any of the reported differences between the pre-and post-tests were statistically significant.

Branson (2015) carried out the second study with high school students that focused on the incorporation of PACE in L2 classes. This work took place in Alaska, and the linguistic focus was Alutiiq, one of the Native languages of the state. The researcher employed PACE to teach participants the past tense, and by resorting to stories directly connected to the Kodiak Alutiiq-speaking community in the Presentation phase, she also reinforced cultural values in traditional storytelling in this endangered language. The scholar in charge of this work mentioned the use of pre-and post-tests in her work. Nevertheless, like Groeneveld (2011), she did not provide enough information about data collection and analysis or specific results. That is, when discussing her findings, Branson reported that the participants in the study appeared to have enjoyed PACE as an instructional intervention, and they had broadened their cultural knowledge. Additionally, the researcher posited that the approach had not been as effective as expected in terms of L2 grammar learning. However, as previously mentioned, no empirical data were offered.

The third study that has explored the use of PACE for L2 teaching is Harris's (2017), which worked with six university ESL students. The structures of focus were the prepositions *in*, *through*, *on*, *along*, *at*, and *past*, and their use in presentational communication (L2 writing). The researcher created a series of PACE interventions during a three-week period and investigated the pedagogical effects of the approach through the analysis of the participants' use of the target prepositions in their writing at the end of the three-week instructional phase. The results showed that all participants were able to accurately use the prepositions *in* and *on*, but still struggled with the rest of the target structures, mostly omitting them. Harris believed that, even if the students in the study had not been able to incorporate some of the target structures into their presentational communication, different aspects of their work in the co-construction phase had revealed a better understanding of the relationship between meaning and form. That is, evidence for this understanding had been the multimodal collaborative products that the learners had created to express textually, visually, and gesturally the rules guiding these prepositions. Even though this work was more comprehensive than the two studies previously discussed, the researcher failed to provide information about data collection and analysis or empirical results.

The fourth and most recent study on PACE was carried out by Ngo (2018), who worked with 10 adult Vietnamese students enrolled in an online ESL program. The researcher employed PACE in eight virtual classes to teach participants sentence structure, subject-verb agreement, verb tenses, nouns, adjectives and adverbs, irregular adverbs, comparison, and pronouns. Data were based on the participants' impressions of PACE (recorded in class diary entries) and the results of a pre-and post-test administered, respectively, at the beginning and end of the study. These tests consisted of 20 items: 10 multiple-choice sentences and 10 incomplete statements. The qualitative analysis of the students' diaries showed that most learners felt more confident in

their L2 use in interpretive and presentational communication (writing) after their exposure to PACE. To determine the effectiveness of PACE for grammar learning, Ngo calculated the differences between the participants' correct answers in the tests completed at the beginning and end of the instructional period, reporting improvement in 7 of the 10 participants' L2 grammar knowledge. Nevertheless, no statistical analyses were offered by the researcher, and, therefore, it is not possible to determine if the differences reported were statistically significant.

The works presented in this section appeared to have had a largely instructional focus and therefore did not offer in-depth information on data sources and the analysis on which the findings were based. Nevertheless, the studies have provided some evidence of the effectiveness of PACE for grammar teaching in L2 classes. This paper seeks to contribute to the existing literature on PACE (as conceived by Adair-Hauck and Donato, 2002) by focusing on a population not thus far investigated—L2 Spanish university students. The next sections of the article introduce the present study.

Research Question

The objective of this study was to contribute to the existing literature on the adoption of PACE (Adair-Hauck & Donato, 2002) for the teaching of grammar in L2 classes. In particular, this work sought to answer the following research question:

RQ: Does the application of PACE as originally conceived by Adair-Hauck and Donato (2002) for grammar teaching in beginning L2 Spanish university classes contribute to the development of university students' declarative knowledge of stem-changing verbs in the present tense?

In the next sections of the paper, we describe the participants, instruments, and methods of data collection and analysis that were employed to investigate the research question, as well as the instructional context in which the study was carried out. This is followed by the presentation and discussion of results.

METHOD

Participants

The participants in this study were enrolled in two sections of an L2 beginning Spanish class in a public university in the southern United States during the Spring 2020 semester. The total enrolment was 47 students who had been placed in the class because they did not have any previous experience with the language. Forty-four of the 47 enrolled learners participated in all the phases of the study. Thirty-five of these participants were female and 9, male. All of these students, except for one, were between 18 and 24 years of age. Forty-two participants had received their schooling in English, 1 in Tagalog, and 1 in Chinese, and all of them characterized their Spanish proficiency as minimal. Most of the participants (89%) mentioned fulfilling the university's language requirement as the main reason for studying Spanish.

The two participating sections were taught by a female graduate teaching assistant in a Hispanic Linguistics doctoral program. Her classes were chosen for this study for a variety of reasons. First, the instructor received comprehensive (one semester) L2 methodology training, including the use of PACE. Also, classroom observations had shown that her teaching style was not only student-centered and highly innovative, but also exceeded expectations in the implementation of high-leverage teaching practices (the use of PACE is considered one of these practices) (Glisan & Donato, 2017), and the four phases of the method.

Instructional Context

The PACE lesson conducted with the study participants focused on Spanish stem-changing verbs in the present indicative tense. These verbs undergo three classes of inflectional transformations within their stem (*e →ie*, *e →i*, and *o →ue*), or the syllable containing the stressed *e* or *o* vowel in the infinitive form (Bowden et al., 2011). In the *Presentation* phase, two pre-narrative collaborative activities were developed by the instructor to review key vocabulary items in the text and to activate students' schemata (both thematically and linguistically) (Carrell, 1984; Rumelhart, 1980). The first was a conversation task that introduced students to the topic of the narrative—a story connected to the popular, worldwide lodging company *Airbnb*. The participants were asked to discuss the social practices and expectations attached to the use of this service, sharing their knowledge of and personal experiences with it. In the second task, learners tried to guess the meaning of key vocabulary terms in the text before it was presented with the help of contextualized examples (i.e., words were presented in a sentence-level context). The objective of this step was to facilitate the easy recognition and comprehension of keywords and phrases during the instructor's narration of the story.

After the two pre-narrative tasks, the text was narrated by the instructor accompanied by images with the Creative Commons licenses CC BY-SA and CC BY-SA-NC. A content comprehension task, with seven questions, concluded the *Presentation* phase. In the *Attention* phase, the participants received a written copy of the text. Resorting to text enhancement to draw learners' attention to form (Doughty & Williams, 1998; Wong, 2005), the instructor asked students to identify common traits in the highlighted stem-changing verbs. In the *Co-construction* phase, the participants worked in groups of three and categorized the verbs they had identified in the previous phase based on similar stem-changing patterns (i.e., *-ie-*, *-i-*, or *-ue-*). In the next step, the instructor took the information elicited from the students, and together with them, developed the grammar rules guiding stem-changing verbs. Once this activity had been completed, the participants attempted a cloze test to practice the structures they had just analyzed. To wrap up the PACE lesson, in the *Extension* phase, the students engaged in an interpersonal and presentational task that involved the use of the newly learned verbs in a discussion and class presentation on possible scenarios to continue the narrated story.

Instruments

This study was designed to follow a pre-, post-, and delayed post-test design. However, due to disruptions to instruction brought about by the COVID-19 pandemic, the planned delayed post-test could not be administered. Thus, the findings in this study are based on the results of

the pre-and post-tests. This design was deemed appropriate by the investigators because it had been chosen in two of the four existing studies on PACE for the teaching of L2 grammar (Groeneveld, 2011; Ngo, 2018).

The first source of data in the study was a biographical and language questionnaire with six questions that focused on the participants' gender, age, language of schooling, self-reported proficiency level in Spanish, and reason for being enrolled in their Spanish class. The second set of instruments consisted of a pre-and a post-test. Both tests included two multiple-choice tasks with 15 items each and three options per blank. 10 of the 30 total items (five in each multiple-choice task) were target forms, while the remaining 20 focused on structures to which students had been exposed and used earlier in the semester. The first task in both the pre-and post-tests consisted of 15 sentences, and the second one was a short paragraph with 15 incomplete sentences. The content of both tasks in the pre-and post-tests was the same, and it incorporated vocabulary and topics with which students were familiar and had been discussed in class. Item examples are presented as follows:[4]

1. Sentence level

1a. Mi mamá _____ solamente cinco horas por día. Siempre está muy ocupada.
   a. dorme   b. dormir   c. duerme
2a. Yo _____ a las 11:00 todos los días.
   a. almorzo   b. almorzar   c. almuerzo

2. Contextualized

…También este lugar 3. _____ muchos años, más de ciento veinte, pero la mamá de María 4. _____ este tipo de casas porque 5. _____ renovarlas y expresar su creatividad. María no 6. _____ como su mamá: esta casa le da mucho miedo (fear)…
   3. a) tene   b) tener   c) tiene
   4. a) prefere   b) prefiere   c) preferir
   5. a) puede   b) pode   c) poder
   6. a) opino   b) opina   c) opinar

Procedures

Data collection took place during a four-day week of instruction in the Spring 2020 semester, just before the COVID-19 shutdown, while the participating classes were still taught face-to-face. The biographical questionnaire and pre-test were administered on day 1, and the next two days were devoted to the PACE lesson (each lesson was 50 minutes long). On day 4, the participants completed the post-test, and their answers were transferred to an Excel sheet by a graduate research assistant not involved with the study. Each correct option in the pre-and post-tests was given a value of 1, and incorrect ones were recorded as 0. The results were first analyzed using descriptive statistics. However, since the outcome variable was binary (i.e., correct vs. incorrect), and the relevant distribution was not Gaussian, the resulting pre-and post-

---

[4] The instructional unit and data collection instruments are available from the authors upon request.

test values were also analyzed with R version 4.0.2 (R Core Team, 2023) using a mixed-effects logistic regression (Agresti, 2002), with the lme4 package (Version 1.1-23; Bates et al., 2015) with Participant and Item as crossed random effects (the overall model is presented in Table 2 in the Results section). This analysis allowed for the determination of statistically significant differences.

RESULTS

The results of the descriptive statistical analysis (Table 1) show differences between the pre-and post-tests in both tasks, sentence-level and contextualized. The percent and average number of correct answers in both tasks were lower in the pre-test than in the post-test, which suggests learners were able to identify the correct options at a higher rate after they had worked with PACE. Also, the standard deviation values indicate less variability with respect to the average number of correct answers in both tasks in the post-test. These differences were statistically significant for both the sentence level and paragraph tasks. The results of the overall model comparing the pre-and post-tests are presented in Table 2.
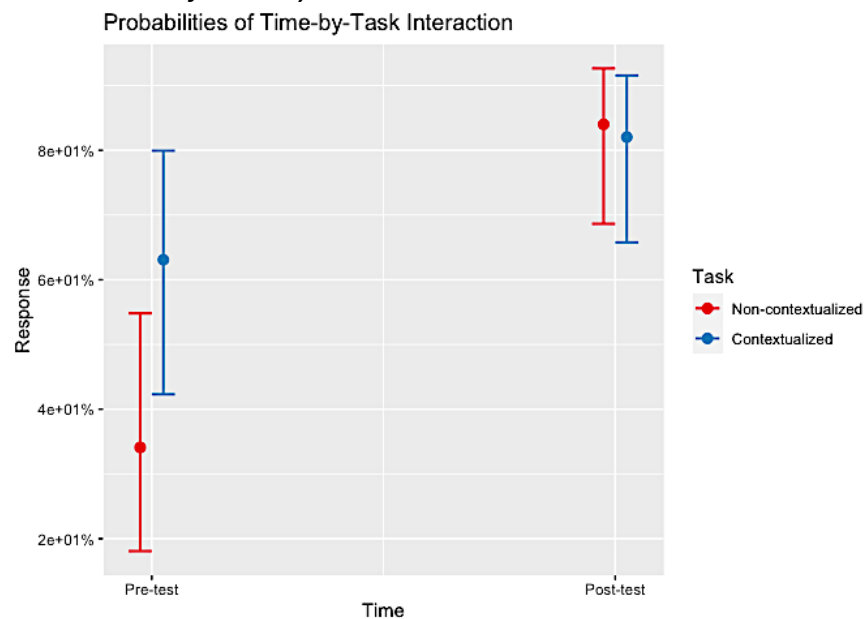
Table 1
Descriptive Statistics Results for Pre- and Post-Tests

	% Correct Answers	**Mean**	**SD**
Pre-Test (sentence level)	38%	16	10.23
Pre-Test (contextualized)	59%	26	5.64
Post-Test (sentence level)	76%	33	7.53
Post-Test (contextualized)	75%	33	2.28

Table 2

Results of Overall Model Comparing Pre- and Post-Tests

Predictors	Response		
	Odds Ratio	**CI**	**p**
(Intercept)	0.52	0.22 – 1.21	0.129
Time (post-test)	10.16	6.04-17.08	<0.001
Task (contextualized)	3.30	1.13-9.66	0.029
Time [Post-test] * Task [Contextualized]	0.26	0.13 – 0.52	<0.001
Random Effects			
σ^2	3.29		
$\tau_{00\ Participant}$	1.68		
$\tau_{00\ Item}$	0.61		
ICC	0.41		
$N_{Participant}$	44		
N_{Item}	10		
Observations	880		
Marginal R^2 / Conditional R^2	0.134 / 0.489		

Additionally, the findings suggest that even though participants performed better in the paragraph, contextualized task in the pre-test, in the post-test, there was improvement in both tasks, with students exhibiting better performance in the non-contextualized task (Figure 1).

Figure 1

Probabilities of Time-by-Task Interaction

Probabilities of Time-by-Task Interaction

Analysis also revealed that some verbs might have affected the overall results. For example, *almorzar* (to have lunch; example 2a in instrument section) appeared to have performed differently than the other test items in the pre-test (34 students chose the correct option). This could have been caused by participants' previous exposure to the noun *almuerzo*, which has the same form as the verb used in the study's instruments. Nevertheless, the inclusion of this verb did not seem to have affected the overall results significantly (Table 3).

Table 3
*Results of Overall Model Without the Item **Almorzar***

Predictors	Response		
	Odds Ratio	CI	*p*
Time (post-test)	12.42	7.05-21.87	<.001
Task (contextualized)	5.87	2.72-12.68	<.001

DISCUSSION

The results of this study suggest that PACE can have a beneficial effect on the development of L2 Spanish learners' declarative knowledge or conceptual understanding of the rules guiding stem-changing forms, which mirrors the findings reported by Groeneveld (2011) and Ngo (2018). However, the present work offers a more comprehensive statistical analysis than previous investigations, and it also appears to point to the role that context might play in L2 learning. That is, the data analysis revealed that participants performed better in the contextualized task in both the pre-and post-tests, which might point to the beneficial effects of context for L2 learning that have been reported in previous studies (e.g., Beheydt, 1987; Bolger & Zapata, 2011). This is the case when the context used is transparent enough to offer students a clear semantic environment for them to accurately infer what a word or structure might be referring to (Frantzen, 2003). In the case of this work, the passage in the pre-and post-tests was based on a story connected to the topic with which students were working (houses; a person moving to a new house) and included previously learned L2 vocabulary. Thus, thematic and linguistic familiarity might have helped the participants in the completion of the task and might have resulted in a more accurate performance in the pre-test than in the sentence-level portion of the test (Figure 1). Also, the reported standard deviation values (Table 1) suggest a more consistent performance among the participating students in the contextualized paragraph task in both pre-and post-tests, which might point to learners' reliance on context for the determination of their choices.

PACE also benefitted the participants by providing them with opportunities for active L2 use in the interpretive, interpersonal, and presentational modes of communication. For example, learners were exposed to an authentic text both in oral and written form, which was complemented by three other semiotic modes (visual, gestural, and auditory), and they were able to use the L2 for comprehension and interpretation. Students then employed the target

language (in combination with their mother tongue) to co-construct rules collaboratively with both peers and instructor and to discover connections between meaning and form. Additionally, in the extension phase, the participants worked in groups resorting to the L2 to discuss, write, and orally present possible conclusions to the story told in the presentation stage. Clearly, this approach to grammar was not based on isolated, decontextualized practices; instead, it offered beginning Spanish students chances for L2 use in controlled, but meaningful (in terms of student needs, topic, and tasks) instructional interventions. Finally, like previous work, based on the participating instructor's informal observations, the learners in this work appeared to have enjoyed the approach, which transpired in the active behavior and L2 use they exhibited in all of the PACE phases.

Limitations and Suggestions for Future Research

The most important limitation of this work lies in its sources of data. Even though the researchers planned to include a delayed post-test and interviews with participating students, this plan was thwarted by COVID-19, which not only disrupted face-to-face classes but also brought high anxiety to students and instructors. In an educational environment characterized by uncertainty and fear, it was not deemed appropriate to continue with the study as planned. Future research, however, should incorporate other sources of data such as interviews, think-aloud protocols, and the analysis of students' products to provide more comprehensive evidence in support of PACE for L2 grammar teaching. A second limitation is the lack of comparison between PACE and other approaches for grammar teaching. Although this was not what the researchers originally intended for this work, it would be interesting to investigate whether PACE can offer the same or more effective benefits than other ways of incorporating grammar into L2 classes. A final limitation is connected to some of the items that were included in the pre-test, such as *almorzar*. When developing the instruments for this study, the authors did not consider the possibility that, even though the verb had not been formally introduced in class, students might have encountered it before. Therefore, in future research, the frequency of certain verbs and learners' possible exposure to them might be considered a factor that could affect results.

CONCLUSION

This study sought to contribute to the scarce empirical literature on PACE in L2 classes by focusing on Spanish and an L2 student population not studied previously. Even though the researchers were not able to complete the study as intended due to the COVID-19 mandatory quarantine, this work still offered evidence for the effectiveness of the approach for the development of L2 beginning Spanish learners' declarative knowledge of stem-changing verbs in the present tense. Additionally, the incorporation of PACE offered the participating learners the opportunity to use the L2 in interpretive, interpersonal, and presentational communication to discuss a topic related to their lifeworld and lived experiences. Also, students' exposure to and analysis of an authentic, multimodal text might have contributed to their growth as multiliterate L2 speakers and appeared to have positively influenced their level of class participation. Therefore, despite its limitations, this study could be regarded as a first step in the much-needed

investigation of PACE in L2 Spanish instruction. Since this approach is considered a core practice in L2 teaching and its reliance on text is compatible with current literacy-based L2 approaches, it is important to continue discovering how it can contribute to L2 development and use.

REFERENCES

Adair-Hauck, B., & Donato, R. (2002). The PACE model: A story-based approach to meaning and form for standards-based language learning. *The French Review, 76*(2), 265–276.

Agresti, A. (2002). *Categorical data analysis* (2nd ed.). Wiley.

Allen, H. W., & Paesani, K. (2010). Exploring the feasibility of a pedagogy of multiliteracies in introductory foreign language courses. *L2 Journal, 2*(1), 119–142. doi:10.5070/L2219064

Beheydt, L. (1987). The semantization of vocabulary in foreign language learning. *System, 15*(1), 55–67. doi:10.1016/0346-251X(87)90048-0

Bates, D., Maechler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software, 67*(1), 1–48. doi:10.18637/jss.v067.i01

Bolger, P. A., & Zapata, G. C. (2011). Semantic categories and context in L2 vocabulary learning. *Language Learning, 61*(2), 614–646. doi:10.1111/j.1467-9922.2010.00624.x

Bowden, H. W., Gelfand, M. P., Sanz, C., & Ullman, M. T. (2010). Verbal inflectional morphology in L1 and L2 Spanish: A frequency effects study examining storage versus composition. *Language learning, 60*(1), 44–87. doi:10.1111/j.1467-9922.2009.00551.x

Branson, C. (2015). *Quliangnanek Litnauwilita - Let's teach through stories* [Unpublished master's thesis]. University of Alaska Fairbanks.

Carrell, P. L. (1984). Evidence of a formal schema in second language comprehension. *Language Learning, 34*(2), 87–112. doi:10.1111/j.1467-1770.1984.tb01005.x

Cubillos, J. H. (2014). Spanish textbooks in the U.S.: Enduring traditions and emerging trends. *Journal of Spanish Language Teaching, 1*(2), 205–225. doi:10.1080/23247797. 2014.970363

Doughty, C., & Williams, J. (1998). *Focus on form in classroom second language acquisition*. Cambridge University Press.

Fernández, C. (2011). Approaches to grammar instruction in teaching materials: A study in current L2 beginning-level Spanish textbooks. *Hispania, 94*(1), 155–170.

Frantzen, D. (2003). Factors affecting how second language Spanish students derive meaning from context. *Modern Language Journal, 87*(2), 168–199.

Glisan, E. W., & Donato, R. (2017). *Enacting the work of language instruction: High-leverage teaching practices*. ACTFL.

González-Bueno, M. (2021). S-PACE to teach L2 Grammar: Adding structure to the PACE model. *Applied Language Learning, 31*(1–2), 29–49. https://eric.ed.gov/?id=EJ1289689

Groeneveld, A. (2011). Adjective or adverb? Teaching grammar with the PACE model. *Levende Talen Tijdschrift, 12*(3), 24–32.

Harris, E. (2017). *Bringing Twygs to life: PACE based lessons in an adult ESL classroom* [Unpublished master's thesis]. University of Alaska, Fairbanks.

Kalantzis, M., Cope, B., Chan, E., & Dalley-Trim, L. (2016). *Literacies*. Cambridge University Press.

Kalantzis, M., Cope, B., & Zapata, G. C. (2019). *Las alfabetizaciones múltiples: Teoría y práctica*.

Octaedro.

Li, H., & Paul, J. (2019). A usage-based approach to L2 grammar instruction delivered through the PACE model. In C. Shei, M. E. McLellan Zikpi, & D.-L. Chao (Eds.), *The Routledge handbook of Chinese language teaching* (pp. 257–271). Routledge.

Miguel, N. M., & Vázquez Solana, A. (2016). Implementación de la metodología PACE en el aula de alemán L2. In B. Balzer Haus & I. Szumlakowski Morodo (Eds.), *La lengua alemana vista desde dentro y desde fuera: Estudios sobre su sistema, su enseñanza y su recepción Die deutsche Sprache - intern und extern Untersuchungen zu System, Vermittlung una Rezeption* (pp. 201–210).

Ngo, H. (2018). *The use of storytelling in online foreign language learning: A case study of a basic English grammar course provided to Vietnamese adult e-learners* [Unpublished master's thesis]. University of Lapland.

R Core Team. (2023). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria.

Richards, J. C., & Rodgers, T. S. (2001). *Approaches and methods in language teaching*. Cambridge University Press.

Rumelhart, D. E. (1980). Schemata: The building blocks of cognition. In R. J. Spiro, B. C. Bruce, & W. F. Brewer (Eds.), *Theoretical issues in reading comprehension: Perspectives from cognitive psychology, linguistics, artificial intelligence and education* (pp. 33–58). Erlbaum Associates.

Savignon, S. J. (1983). *Communicative competence: Theory and classroom practice*. Addison-Wesley.

Savignon, S. J. (1987). Communicative language teaching. *Theory into Practice*, *26*(4), 235–242. doi:10.1080/00405848709543281

Sessarego, C. (2016). A discourse-pragmatic approach to teaching indicative/subjunctive mood selection in the intermediate Spanish language class: New information versus reformulation. *Hispania, 99*(3), 392–406.

Vogel, S., Herron, C., Cole, S. P., & York, H. (2011). Effectiveness of a guided inductive versus a deductive approach on the learning of grammar in the intermediate-level college French classroom. *Foreign Language Annals, 44*(2), 353–380. doi:10.1111/j.1944-9720.2011.01133.x

Wong, W. (2005). *Input enhancement: From theory and research to the classroom*. McGraw-Hill.

Yoon, J. (2019). Teaching and learning vocabulary as L2: Approaches in Spanish textbooks. *Language Teaching and Educational Research*, *2*(2), 114–131. doi:10.35207/later.647156

Zapata, G. C. (2022). *Learning by design and second language teaching: Theory, research, and practice*. Routledge.

AUTHORS

Ewurama Okine, Doctoral student at Texas A&M University, eokine@tamu.edu.

Gabriela C. Zapata, Ph.D., University of Nottingham, Gabriela.Zapata@nottingham.ac.uk.