



Comparing the Effects of Blocking and Interleaving Schedules on Student Learning of the Usage of Imperfect and Preterite Spanish Grammar Tenses

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Introduction

- The preterite and imperfect tenses are past tenses in the Spanish language without exact English equivalents, presenting difficulty for student learning.
- The order that material is presented can impact learning outcomes. Blocked schedules present materials by category (e.g., presents all items of category A, then all items of category B), whereas interleaved schedules alternate items of each category (e.g., presents item from A, followed by item from B, followed by item from A, etc.)
- Prior research suggests that interleaved schedules of practice benefit foreign language grammar learning (Nakata & Suzuki, 2019; Pan et al., 2019).
- Other evidence suggests that blocked schedules of practice are more effective for learning pronunciation (Carpenter & Mueller, 2013).
- **Objective:** Investigate and compare the effects of blocking and interleaving schedules on student learning of the preterite and imperfect tenses, using novel methods.

Method

- **Participants:** N = 118 TCU undergraduates (blocked group: n = 62, interleaved group: n = 56), average age: 19.79 years

Prior Knowledge Pre-Test (8 sentences)

Practice Phase (80 sentences: 40 preterite, 40 imperfect)

Blocked Group

Interleaved Group

Preterite

Imperfect

Preterite

Imperfect

40x

40x

1x

1x

40x

5 - minute distractor task

Testing Phase

Non-Transfer Test:
Same 80 Verbs/Sentences as
Practice (in random order)

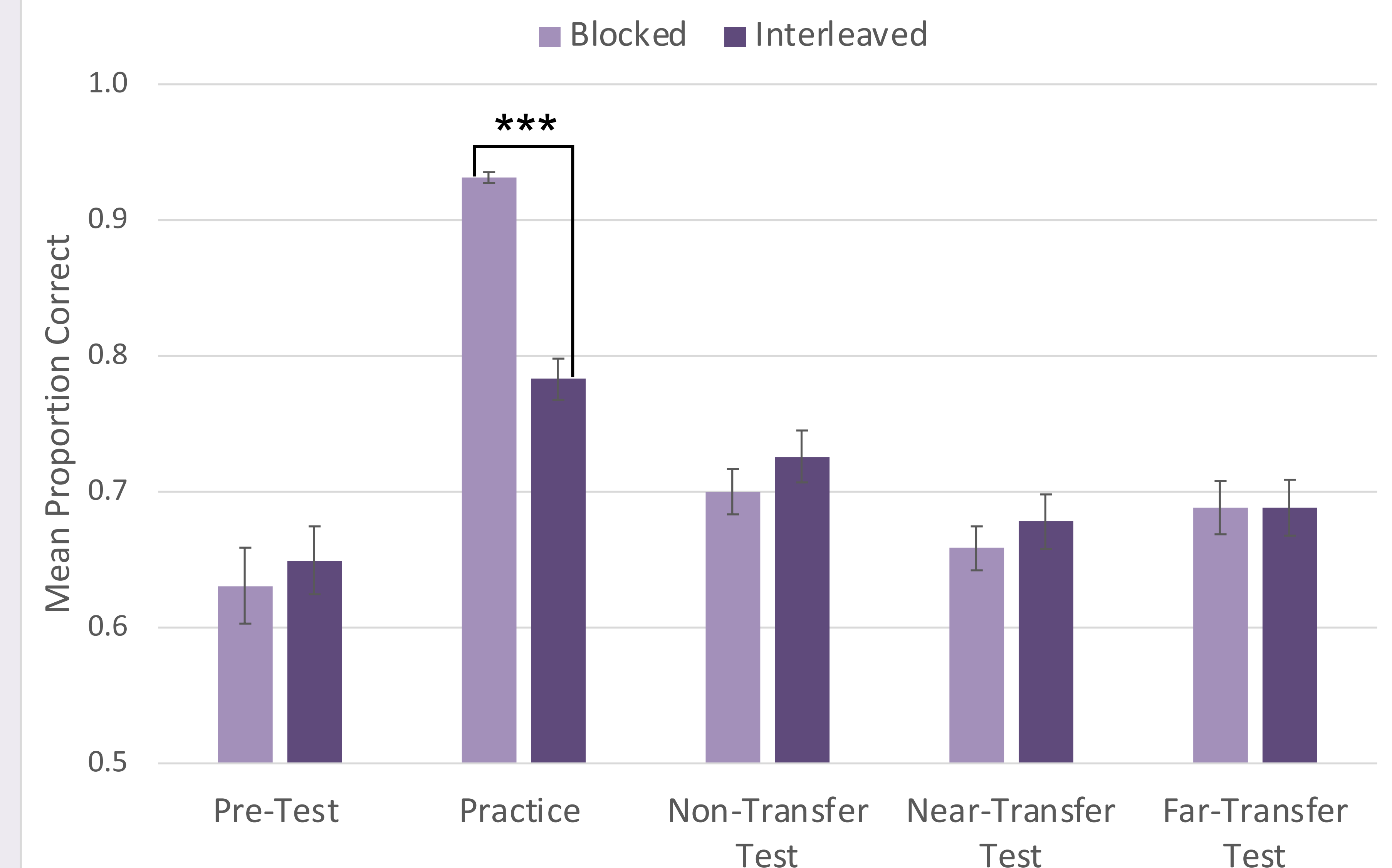
Near-Transfer Test:
40 Novel Verbs/Sentences
(in random order)

Far-Transfer Test: Cinderella Passage

Tense Rules Test

Results

Student Performance



- All values were significantly higher than chance performance (0.5), $ps < 0.001$
- 14 additional participants were not included in analyses, as they indicated English was not their first language

Average Time Spent (seconds)

| | Answering Pretest Questions | Answering Practice Questions | Processing Feedback during Practice | Answering Non-Transfer Test Questions | Answering Near-Transfer Test Questions | Answering Far-Transfer Test Questions | Answering Tense Rules Test Questions |
|-------------------|-----------------------------|------------------------------|-------------------------------------|---------------------------------------|--|---------------------------------------|--------------------------------------|
| Blocked Group | 4.91 | 2.91 | 1.45 | 3.53 | 3.39 | 133.15 | 32.86 |
| Interleaved Group | 4.65 | 4.08 | 1.60 | 3.41 | 3.50 | 126.73 | 32.09 |

Discussion & Future Directions

- Whereas blocked and interleaved groups did not significantly differ in their test performance, both groups significantly improved compared to pre-test outcomes, thus **indicating that learning did take place.**
- Pedagogical implications for the Spanish classroom
- **Future research** should:
 - Account/control for the time spent processing feedback
 - Investigate outcomes for students of the Spanish language
 - Translate materials into Spanish