

Motivation and Oral Proficiency Outcomes in App-Based Foreign Language Learning

Dr. Shawn Loewen, Dr. Daniel R. Isbell & Zachary Sporn



÷Babbel

CALICO 2019

Dr. Shawn Loewen

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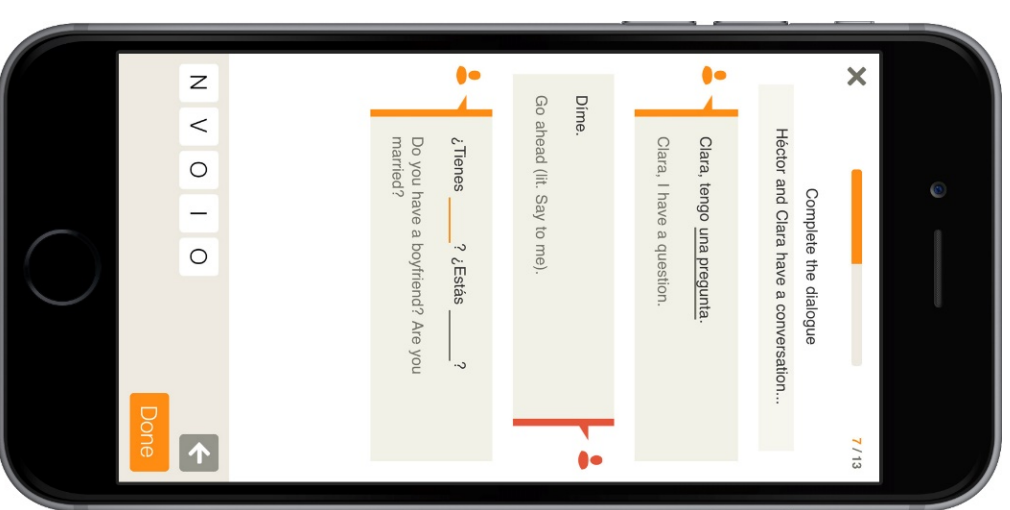
**Second Language Studies Program
Michigan State University**



÷Babbel

- Founded in 2007 in Berlin, Germany
- Premium, subscription-based language learning app and web platform
- Focus **on real-life conversation skills** and **communicative competence**:
Every lesson aligned with CEFR Can Do statements for functional language ability

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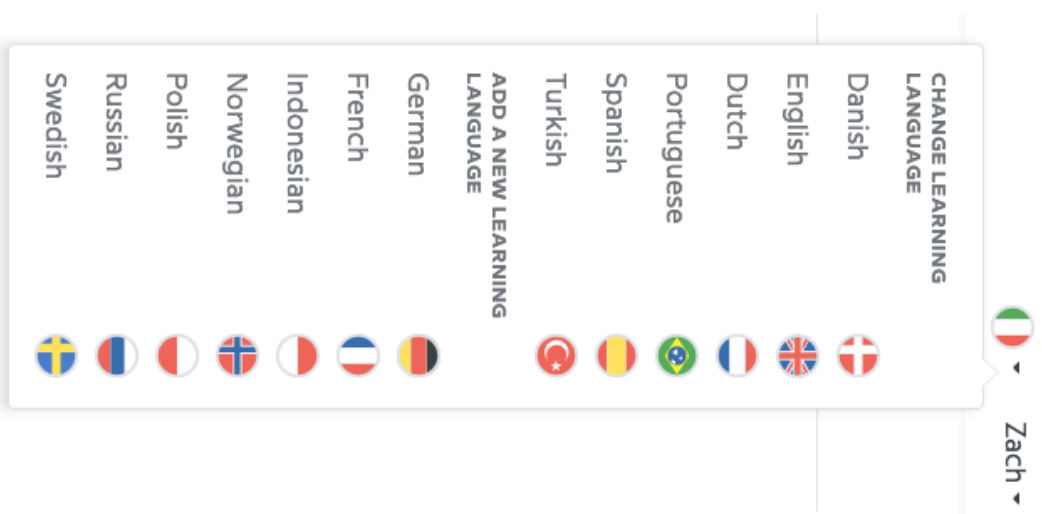


÷Babbel

- 14 learning languages (L2s) accessible via 8 display languages (L1s)
- Localized, not translated:

Courses are designed, scripted and recorded by a team of over 150 teachers, linguists and translators

- Every lesson features dialogues and audio recordings by native speakers with a variety of accents



Babbel's Review Manager feature based on spaced repetition


+Babbel Home My Level More Courses Review Help

Review

Make it stick! ⓘ



46 ready for you

Review 10 now



Your personal vocabulary (46)

All (46)


	
student	Kürt
öğrenci	Kürt

How would you like to review?

- Flashcards
- Listening
- Speaking
- Writing

Vast library of “progressive” and modular content for each language pair


Choose your level



Beginner's Courses

In progress


You can get an easy introduction to Spanish or just consolidate your basic knowledge with the beginner's course. Following the course step-by-step you can quickly gain an understanding of the most important ideas, and you can learn up to an advanced beginner's level of learning.



Grammar

6 courses

Grammar practice in easy, understandable steps. Drills and exercises with clear and concrete examples.





Intermediate Courses


5 courses


Here are some courses to refresh and improve your basic skills. With these in-depth courses you'll practice intensive listening, speaking, reading and writing at a pre-intermediate level of learning.

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Telekom.de


12:47














77 %


Courses
Travel Dialogues

Join Eduardo on his trip to Peru: making small talk with the locals, in the hotel, in the market and around Lima's nightlife. You'll also be with him as he explores the Andes and the jungle. The course is based on an upper beginner's/pre-intermediate level of language learning.

10 lessons

Download all

	El vuelo a Lima	
	En el taxi	
	Llegada al hotel	
	Primera orientación	
	En el mercado	
	¿A qué hora nos encontramos?	

Explicit vocabulary and grammar instruction

+Babbel

Score: 3

1/1

Contact Close

ser or *estar*?

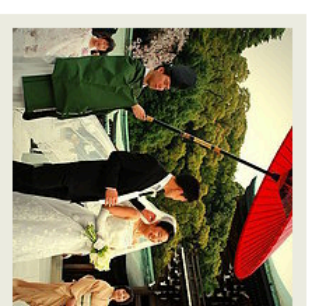
Family relations can be identified with "ser" or "estar".

¿Sois casados? ⇨

Sí, estamos casados. ⇨

¿Estás soltera? ⇨

Soy divorciada. ⓘ ⇨



Continue

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Explicit vocabulary and grammar instruction

+Babbel

Score: 3

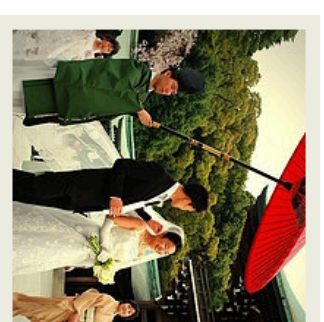
1/1

ser or *estar*?

Family relations can be identified with "ser" or "estar".

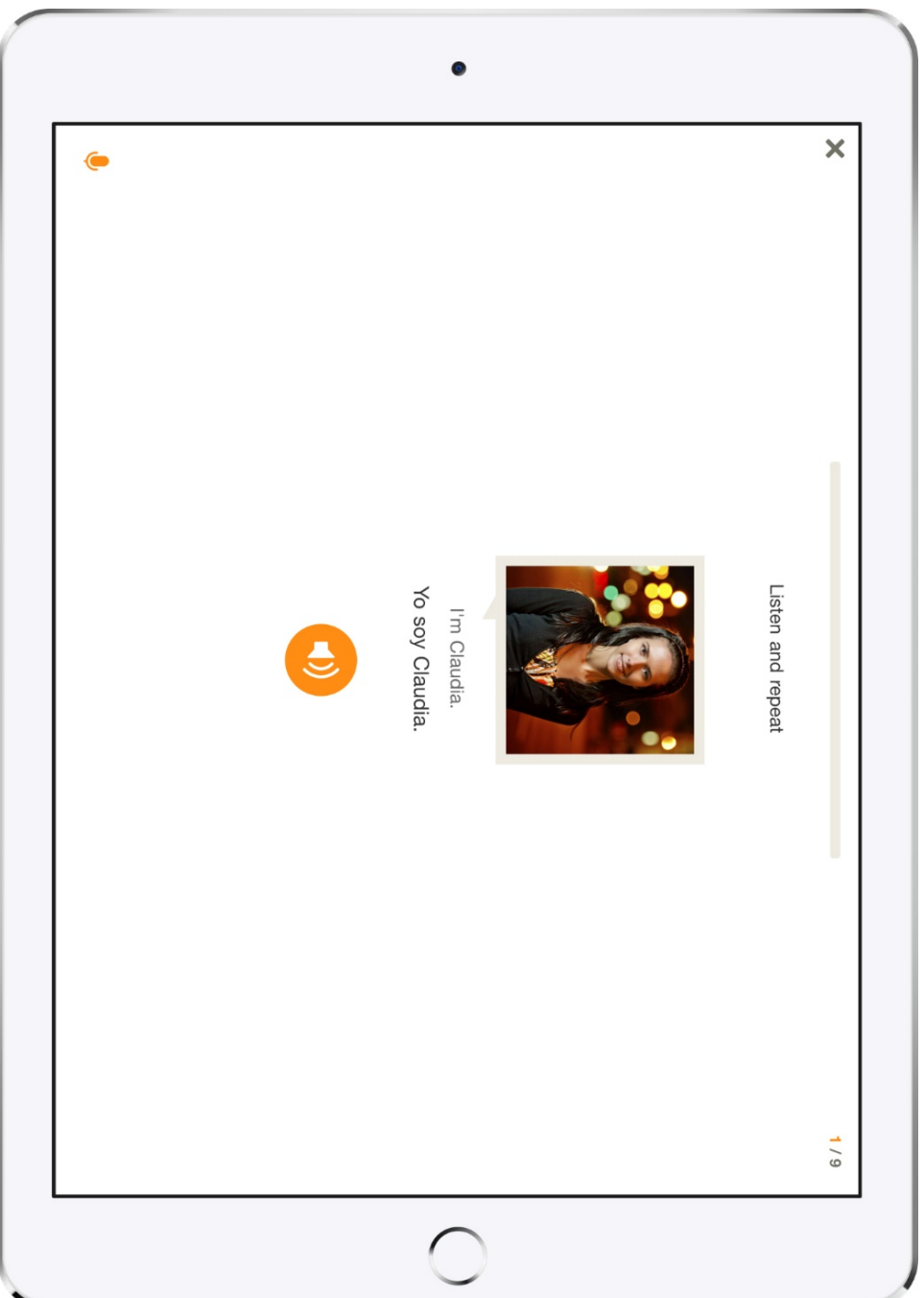
By using *ser* you emphasise the permanence of the situation. With *estar* you give an impression of something that is in the moment.

¿Sois
Sí, es
¿Esta
Soy divorciada. ① ⇌



Continue

Babbel's ASR provides feedback on pronunciation and intonation



Initial Research Questions

1. What linguistic gains are made by English native speaker university students who exclusively use Babbel for autonomous study of Spanish as a second language (L2)? Both pre- and post-tests consist of:
 - **an ACTFL Oral Proficiency Interview-computer version speaking test**
 - a vocabulary test (based on LexTale ESP)
 - a grammar test
2. Is there a relationship between how learners use Babbel, their self-reported motivation and gains, if any, on test scores?

- Week 4 – Progress Survey

- Week 8 – Progress Survey

Pretests

(Jan.15 - 30)

Babbel Study

(Jan. – April)

Posttests

(April 15 – 30)

- Language lab
- Quasi-individual
- Babbel Introduction

- 10 – 15 minutes per day
- Self-paced
- Weekly progress emails

- Language lab
- In groups
- \$75
- Babbel subscription

App usage analytics provided by Babbel included but not limited to:

- Minutes of study
- Days of study
- Names and total number of Spanish lessons completed
- Use of Review Manager feature

Data regarding app participants' app usage gathered by Babbel, but corresponding objective measures (i.e., pre- and post-test scores) were exclusive to MSU

Participants

- MSU undergraduate students
- Recruited in Jan. 2018 by
 - Visiting TESOL and linguistics classes
 - Posted Flyers
 - Snowball recruitment

Want to learn Spanish in just 15 minutes a day?

We are recruiting participants for a research project in partnership with **+Babbel**, a leading online language learning website.

As part of this study, you will...

- take a Spanish grammar test, vocabulary test, and speaking test
- study Spanish on Babbel for 12 weeks, studying about 15 minutes a day
- answer some short surveys about your progress
- take the same tests again after the 12 weeks of study
- participate in interviews with the researchers about your experience

As a reward for participating, you will...

- learn some Spanish! *¡Ole!*
- receive a 1 year subscription to Babbel (www.babbel.com)
- receive a \$75 Amazon gift card after completing the project

Interested? We hope so! We are looking for participants who...

- speak English as a first language
- are **not** advanced or native/bilingual in Spanish (complete beginners through intermediates are OK! – some high school Spanish doesn't disqualify you)
- are not currently taking Spanish courses at MSU

Contact us if you want to join or have any questions: isbellida@msu.edu
We have several sessions planned for initial testing and can work with your schedule.



Participants

- Median age = 22
- Average of 2 previous Spanish classes
- No current Spanish students

BUT

- Previous Spanish study okay

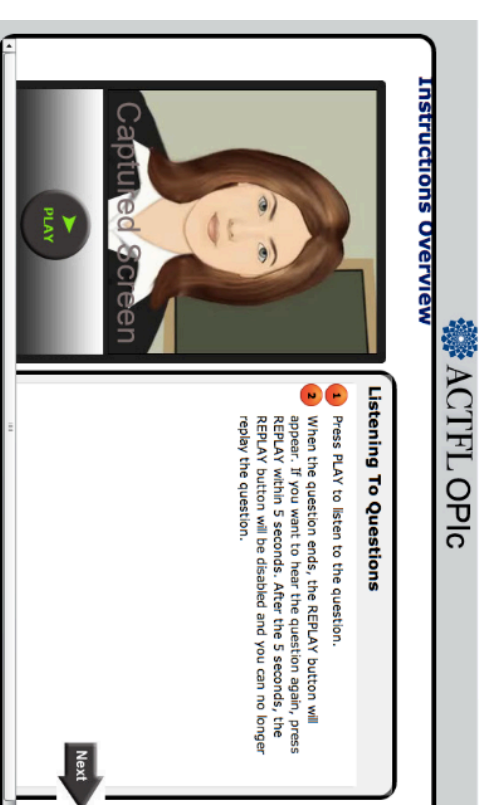
Participants

- 83 participants recruited and pretested
- 54 post-tested based on
 - At least 3 hours of total study
 - Weekly average of at least 20 minutes
 - No gaps of 4 or more weeks
- Attrition rate of roughly 30%
- This attrition rate is far lower than that of up to 97% encountered in other studies involving mobile apps: Nielsen, 2011; Vesselinov & Greco, 2016; Despain, 2003; Van Deusen-Scholl, 2015; Lord, 2015

ACTFL Oral Proficiency Interview-computer (OPIC)

- The ACTFL LTI OPIC® is a digital Oral Proficiency Interview (OPI), in which the test-taker answers prompts delivered via computer. It provides valid and reliable oral proficiency testing on a large scale.
- Questions are delivered via virtual avatar through a computer program,
- Taken on demand, and at a time convenient to the candidate and proctor.
- Speech sample double-rated by trained assessors according to the [ACTFL](#) guidelines in order to assign a rating.
- Highly correlated with OPI ratings for Spanish (Thompson et al., 2016).

Thompson, G., Cox, T. & Knapp, N. (2016) Comparing the OPI and the OPIC: The effect of test method on oral proficiency scores and student preferences. *Foreign Language Annals*, 49(1), 75-92.

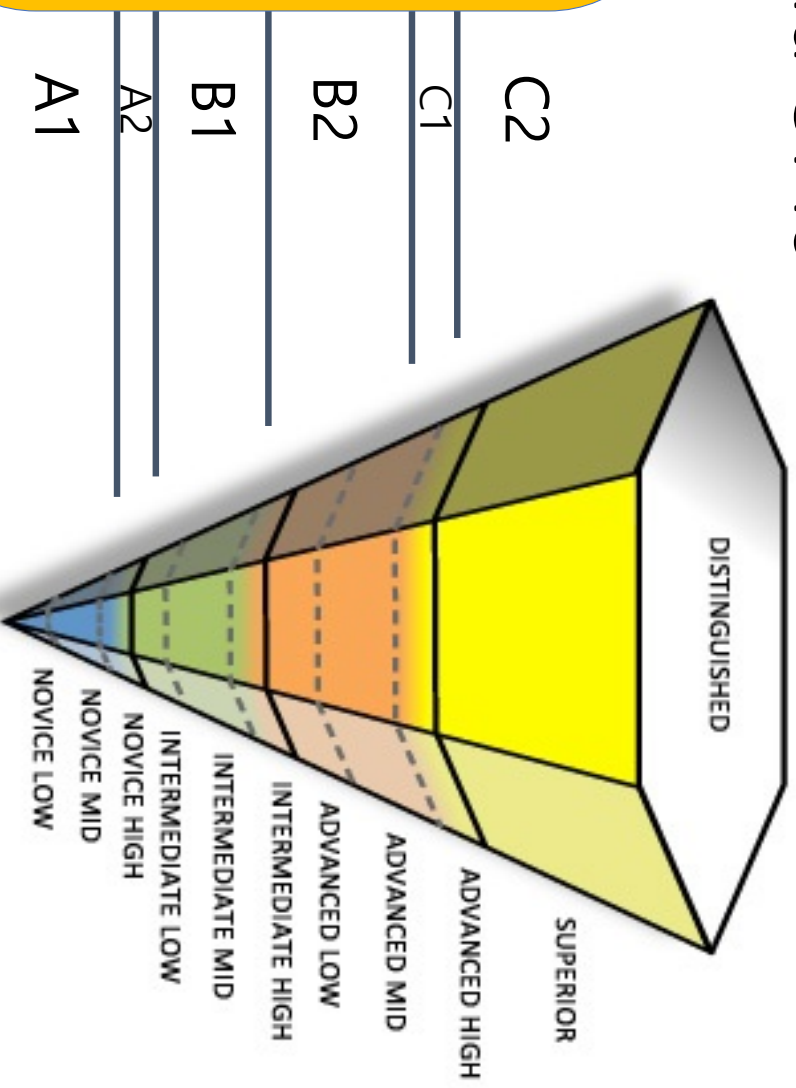


ACTFL Guidelines and OPIc score rubric

Guidelines present levels of proficiency as **ranges** and describe **what an individual can do** at each level.

...[The Guidelines] are an instrument for the evaluation of **functional language ability**.

ACTFL, 2014, p. 3



Why measure oral proficiency gains of a cohort of (mostly) novice level language learners?

Babbel focuses on oral communication skills: “**Speak** the language like you always wanted to.”

BUT...

Doubt exists in CALL literature as to whether meaningful development of oral abilities is possible in the context of commercial online language learning platforms (e.g., Lord, 2015).

Rubio & Hacking (2019) : proficiency tests may not be optimal at the Novice level

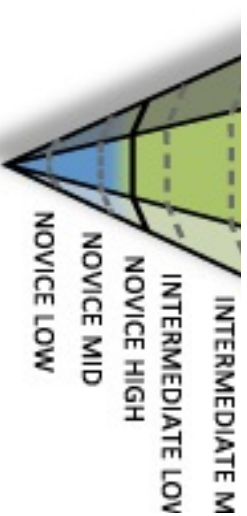
Nonetheless , we believe it **is essential for apps like Babbel to provide transparency on learners' potential proficiency outcomes**

Lord, G. (2015). “I don’t know how to use words in Spanish”: Rosetta Stone and learner proficiency outcomes. *Modern Language Journal*, 99(2), 401-405.

Rubio, F. & Hacking, J. (2019). Proficiency vs. performance: What do the tests show? In P. Winke & S. Gass (Eds.), *Foreign language proficiency in higher education*, 137-152. Educational Linguistics, 37. Dordrecht: Springer.

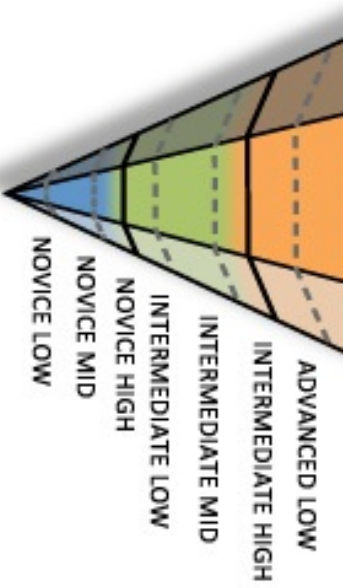
Novice

- Can communicate short messages on highly predictable, everyday topics that affect them directly.
- Use isolated words and phrases that have been encountered, memorized, and recalled.
- May be difficult to understand, even by sympathetic interlocutors.



Intermediate

- Have the ability to create with language when talking about familiar topics related to their daily life.
- Can recombine learned material to express personal meaning.
- Produce sentence-level language, typically in present time.



CALICO 2011



Grammar Test

- 30 identification and error correction items
- One point for identification
- One point for correction
- 60 points total
- Reliability, $\alpha = .93$

Spanish Grammar Test

Error Correction

Each sentence below contains **one** grammatical error. For each sentence, you will:

- **Find and underline the error.** Even if you do not know why it is wrong or how to fix it, you can still underline it. If you have no idea what the error is, you can skip the question.
- **Write the corrected form on the line.** Try your best, but if you have no idea how to correct the error, you may leave it blank.

Example:

0. Adriana <u>están</u> feliz.	<div>Underline the error</div>	
<div><u>está</u></div>	<div>Write the correct form</div>	

1. Son las tres con cuarto, ¡ya es tarde!

y

+2

2. Lamento que María esté enfermo.

está

enferma

0

Vocabulary Test

- Based on LexTALE-Esp (Izura, Cuetos, & Brysbaert, 2014)
- Vocabulary recognition
- 60 real words
- 30 non-words
- 60 points total
- Reliability, $\alpha = .87$

Spanish Vocabulary Test

Word Recognition

For this test, you will see a list of 90 words that look “Spanish”. Only some of them are real words. Please indicate all the words you know. It’s okay if you don’t know the *exact* definition, but you should be familiar with the word. Be careful, however: Errors are penalized. So, if you indicate you know a fake word, your score will be lowered.

All you have to do is tick the box next to the words you know. If, for instance, in the example below you recognize “sí”, “sacapuntas”, “bien”, and “casa”, you indicate this as follows:

Estímulo	Palabra?
Depiste	
sí	✓
coné	
calpar	
joten	
sacapuntas	✓

Estímulo	Palabra?
priba	
pelasula	
bien	✓
casa	✓
lejo	
pretantas	

In total, the test should only take a few minutes to complete. Please turn the page to start the

test.

Motivation Questionnaire:

ASSESSED BOTH
INTEREST IN
SPANISH...

3. I am interested in learning Spanish. (Circle one)					
Strongly	Disagree	Somewhat	Neither	<u>Somewhat</u>	Agree
Disagree		Disagree	Agree nor	<u>Agree</u>	Strongly
			Disagree		Agree

AND INTEREST IN
BABEL

4. I am interested in using Babel. (Circle one)					
Strongly	Disagree	Somewhat	Neither	Somewhat	<u>Strongly</u>
Disagree		Disagree	Agree nor	Agree	<u>Agree</u>
			Disagree		

Cumulative Study Hours

- Mean for all participants = 11.6 hours
- Median = 9.7 hours
- Minimum = 2.3 hours
- Maximum = 27.7 hours

OPlc

Posttest

Pretest						
	Novice Low	Novice Mid	Novice High	Int Low	Int Mid	Int High
Novice Low	17	12	3	1		
Novice Mid		2	6	1		
Novice High		1		3	1	
Int Low				1	2	
Int Mid					1	2
Int High			CALICO 2019			1

OPlc

Posttest

Pretest						
	Novice Low	Novice Mid	Novice High	Int Low	Int Mid	Int High
Novice Low	17	12	3	1		
Novice Mid		2	6	1		
Novice High		1		3	1	
Int Low				1	2	
Int Mid					1	2
Int High			CALICO 2019			1

OPlc

Posttest

Pretest

	Novice Low	Novice Mid	Novice High	Int Low	Int Mid	Int High
Novice Low	17	12	3	1		
Novice Mid		2	6	1		
Novice High		1		3	1	
Int Low				1	2	
Int Mid					1	2
Int High			CALICO 2019			1

OPlc

Posttest

Pretest						
	Novice Low	Novice Mid	Novice High	Int Low	Int Mid	Int High
Novice Low	17	12	3	1		
Novice Mid		2	6	1		
Novice High		1		3	1	
Int Low				1	2	
Int Mid					1	2
Int High			CALICO 2019			1

31

OPlc

Posttest

Pretest

	Novice Low	Novice Mid	Novice High	Int Low	Int Mid	Int High
Novice Low	17	12	3	1		
Novice Mid		2	6	1		
Novice High		1		3	1	
Int Low				1	2	
Int Mid					1	2
Int High						1

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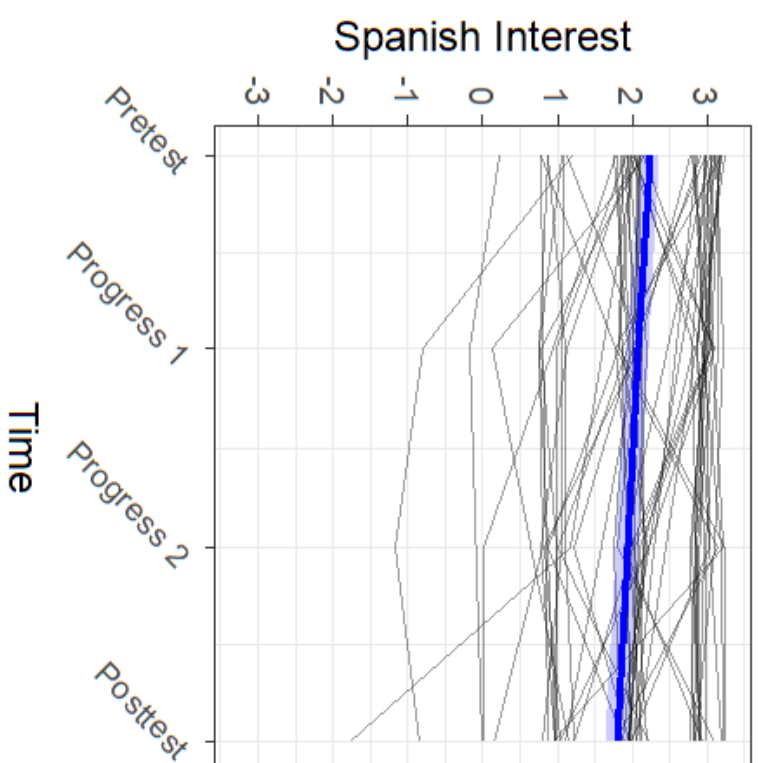
OPIC Change

Change	n	%
-1	1	2
0	21	39
+1	26	48
+2	5	9
+3	1	2

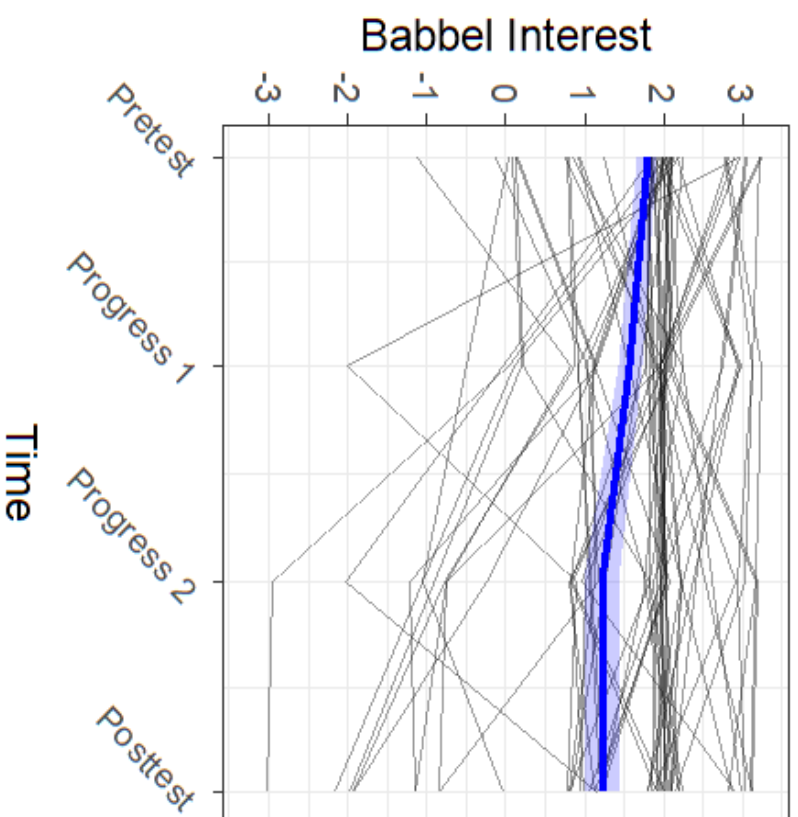
Average Grammar & Vocabulary Score Increase

	Pretest	Posttest	Change
Grammar	11.1	20.2	9.2
Vocabulary	12.9	19.6	6.7

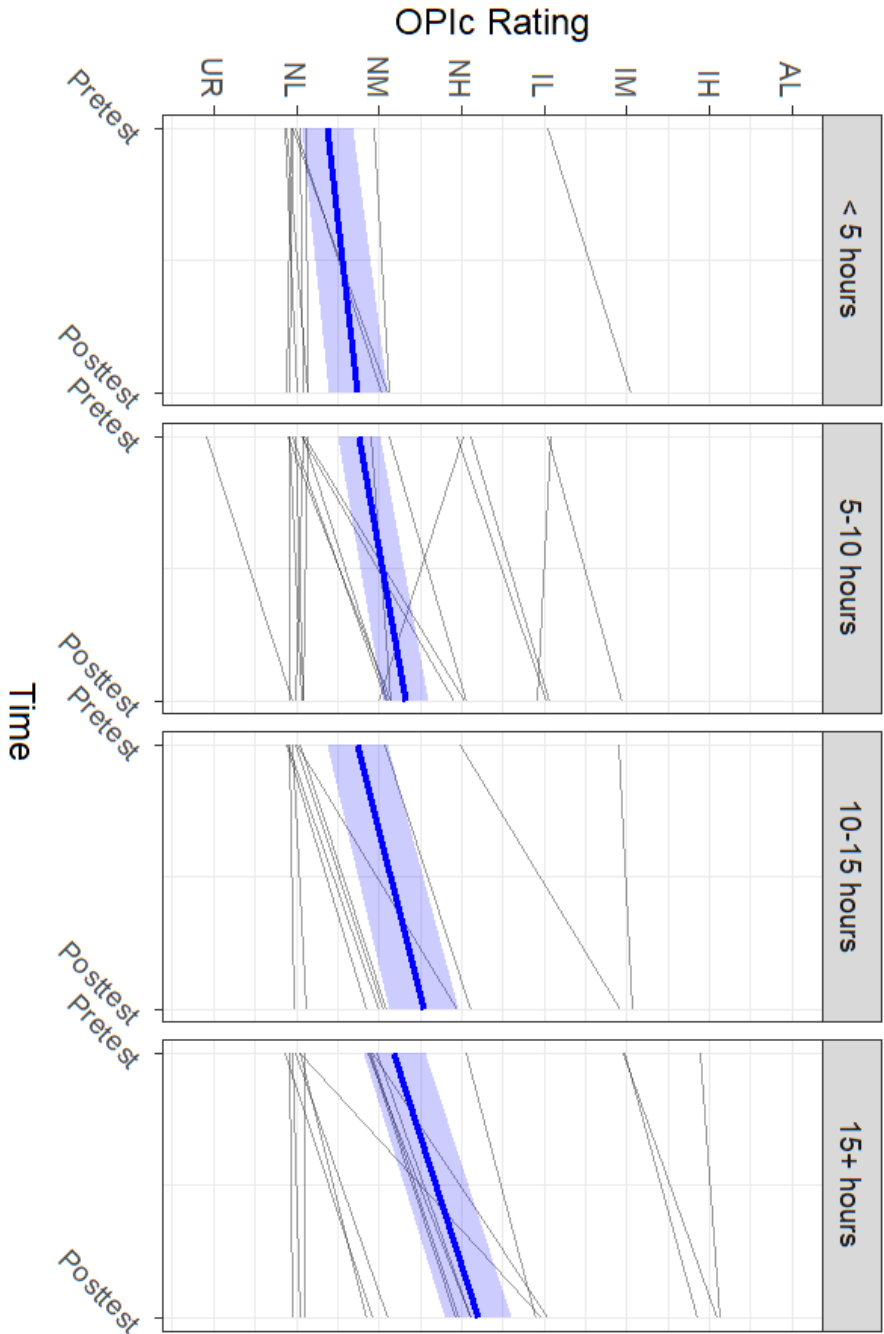
Motivation: Spanish Interest



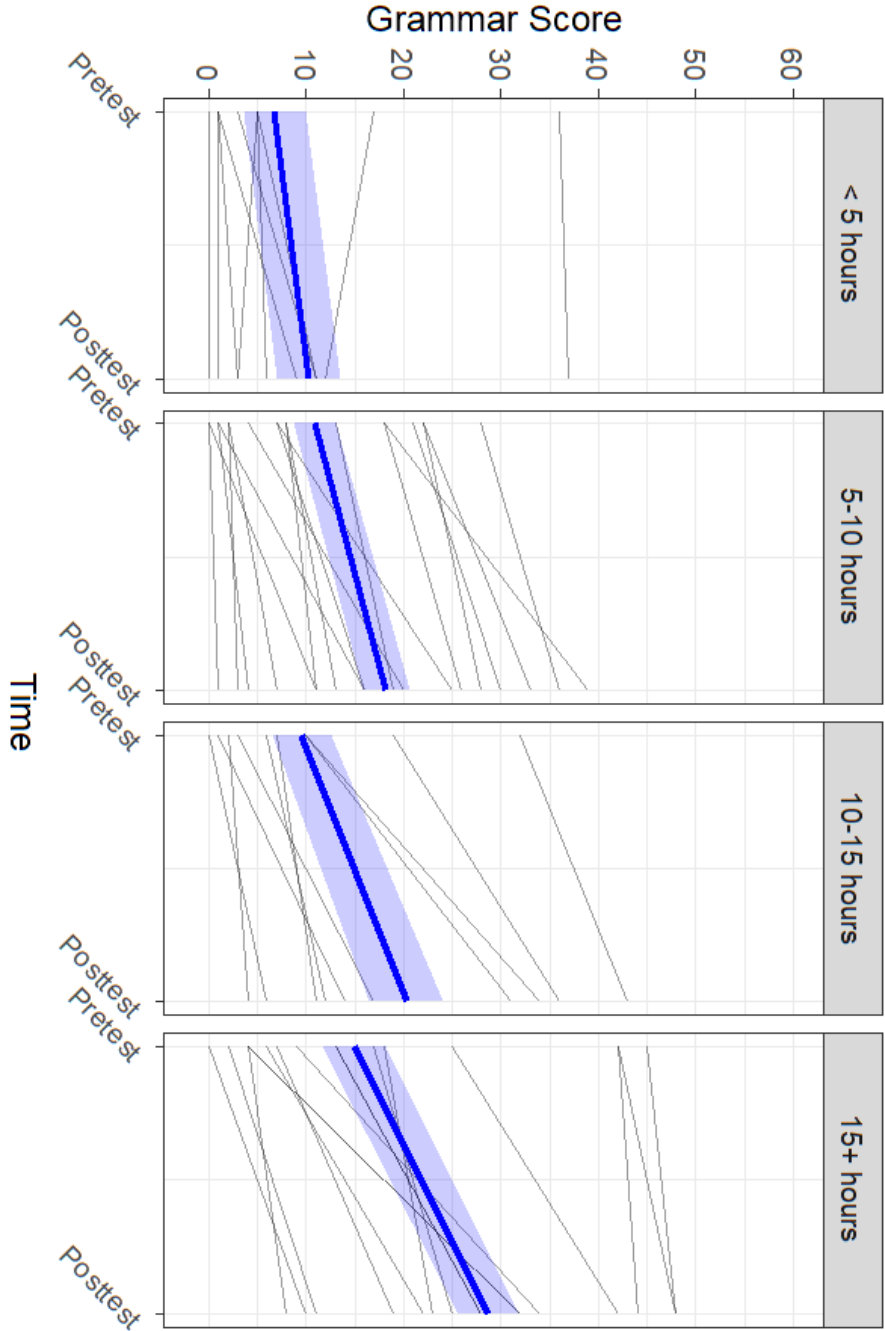
Motivation: Babbel Interest



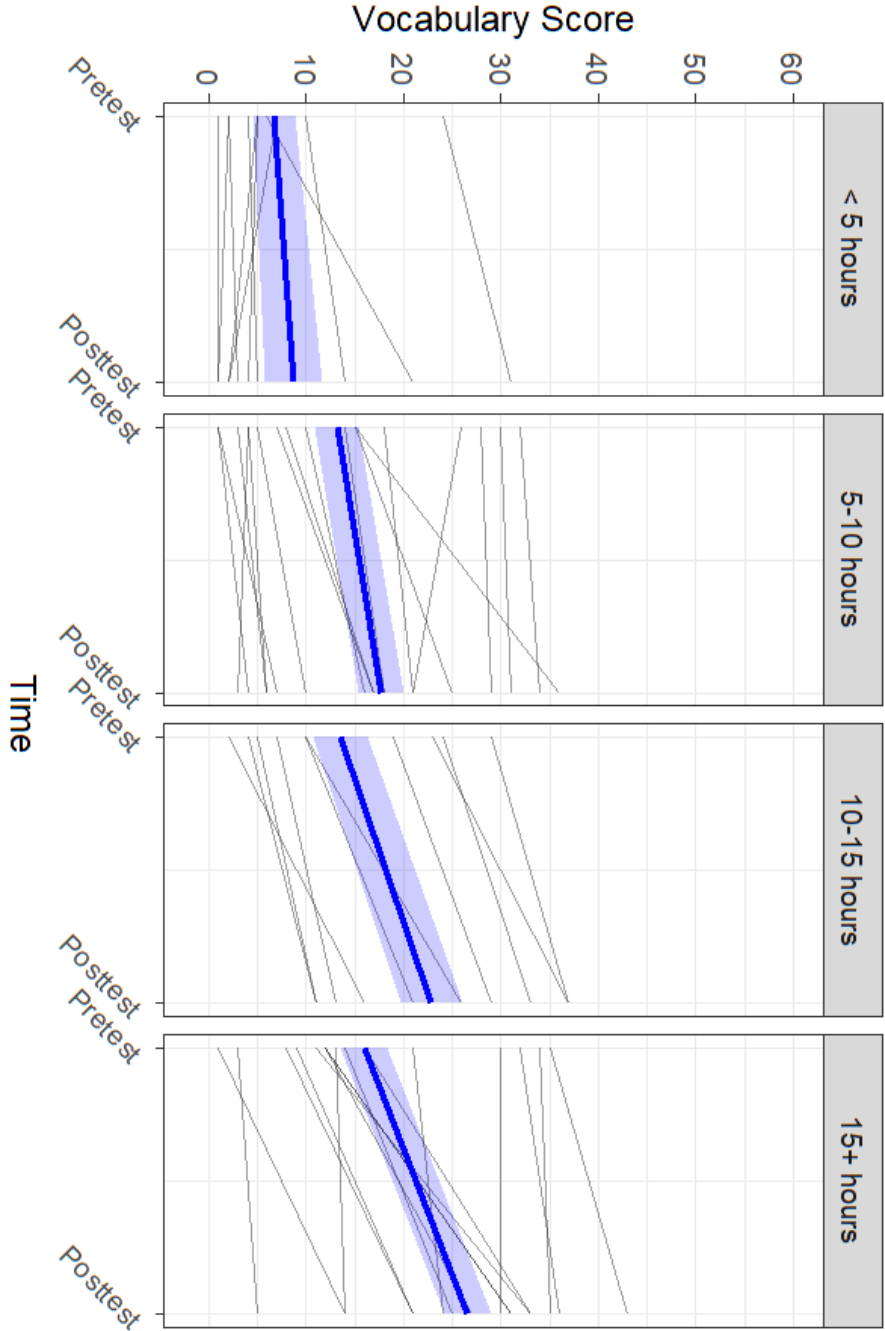
Change in OPIc Score according to hours studied



Change in Grammar Score according to hours studied



Changes in Vocabulary score according to hours studied



Correlations

	OPIC Change	Grammar change	Vocab Change	Spanish Interest	Babbel Interest	Babbel Study Hours
Grammar Change	.54					
Vocab Change	.48	.65				
Spanish Interest	.29	.07	.21			
Babbel Interest	.31	.22	.17	.56		
Babbel Study Hours	.30	.49	.49	.22	.36	
Prior Classroom Learning	.12	-.01	-.11	.30	.16	.06

Limited Mixed Effect Regression Results

- Time was a significant predictor for all three test scores.
- Interest in Spanish was a significant predictor only for OPlc scores.
- Increases in OPlc scores over time were dependent on the amount of time a participant spent on Babbel and also on a participant's overall level of interest in learning Spanish.

Limitations

- Sample size
- Relatively homogeneous population: University students, 75% of initial sample was female
- Intensity of study: participants used the app for less than 1 hour / week on average, with considerable individual variation
- Possible causes for Quitting:
 - Frustration with challenge of Spanish learning
 - Frustration with app
 - Lack of time

Main Findings

- Virtually all study participants made a measurable gain in their grammar and vocabulary knowledge and/or ability to communicate orally in Spanish
- Learning gains in terms of oral proficiency were associated with how much time participants spent using Babbel, but also how interested they were in learning Spanish
- Babbel enables learners to transfer receptive, input-based learning and explicit grammar and vocabulary instruction to oral production at the Novice and Intermediate ACTFL levels

Thanks for your attention.

Questions?

Zach Sporn

Senior Communications Manager, Babbel

zsporn@babbel.com

Back up

Change in OPlc Score according to hours studied

Table 6.
Summary of OPlc score linear mixed-effects regression model.

Fixed Effects	B (SE)	β	p
Intercept	1.17 (0.23)		
Time	-0.10 (0.26)	-0.03	0.70
Classroom Experience	0.31 (0.08)	0.42	<.001
Time x Babel Study Hours	0.03 (0.01)	0.16	0.03
Time x Spanish Interest	0.29 (0.11)	0.19	0.04
Random Effects			
	Variance (SD)		
Participant (intercept)	1.23 (1.11)		
Participant: Time (slope)	0.11 (0.33)		

Model $R^2_{\text{marginal}} = .29$, $R^2_{\text{conditional}} = .91$. χ^2 vs. unconditional model = 43.217, df = 4, p < .001.

Novice

- Can communicate short messages on highly predictable, everyday topics that affect them directly.
- Use isolated words and phrases that have been encountered, memorized, and recalled.
- May be difficult to understand, even by sympathetic interlocutors.

Intermediate

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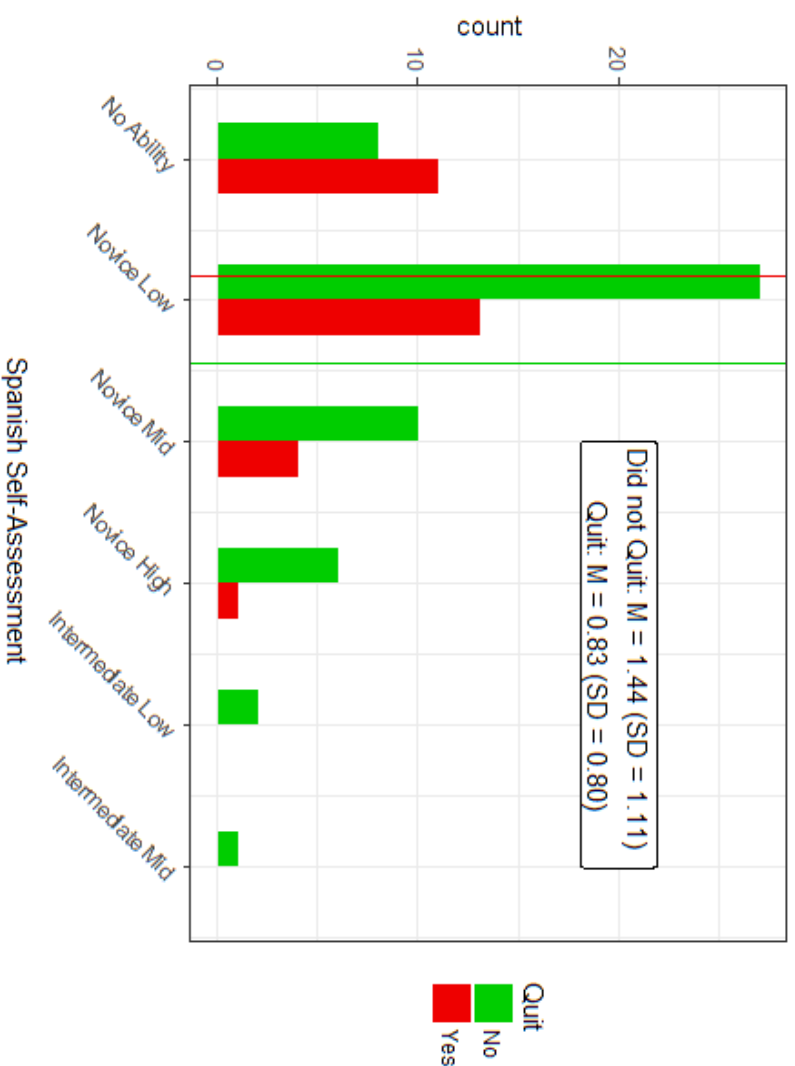
Descriptives – Whole Group (n = 83)

Variable	M	SD	Median
SPN SA	1.23	1.05	1
Sex	75% female		
Year of Birth	1995.21	5.44	1997
SPN Interest	5.23	0.77	5
Babbel Interest	4.84	0.92	5
Classroom Experience (years in HS + courses in university)	1.80	1.88	2
OPic Rating	1.63	1.14	1 (NL)
Vocab Score	10.87	9.43	9
Grammar Score	9.19	10.65	5
Minutes_Total	489.96	457.78	329

Group Comparisons

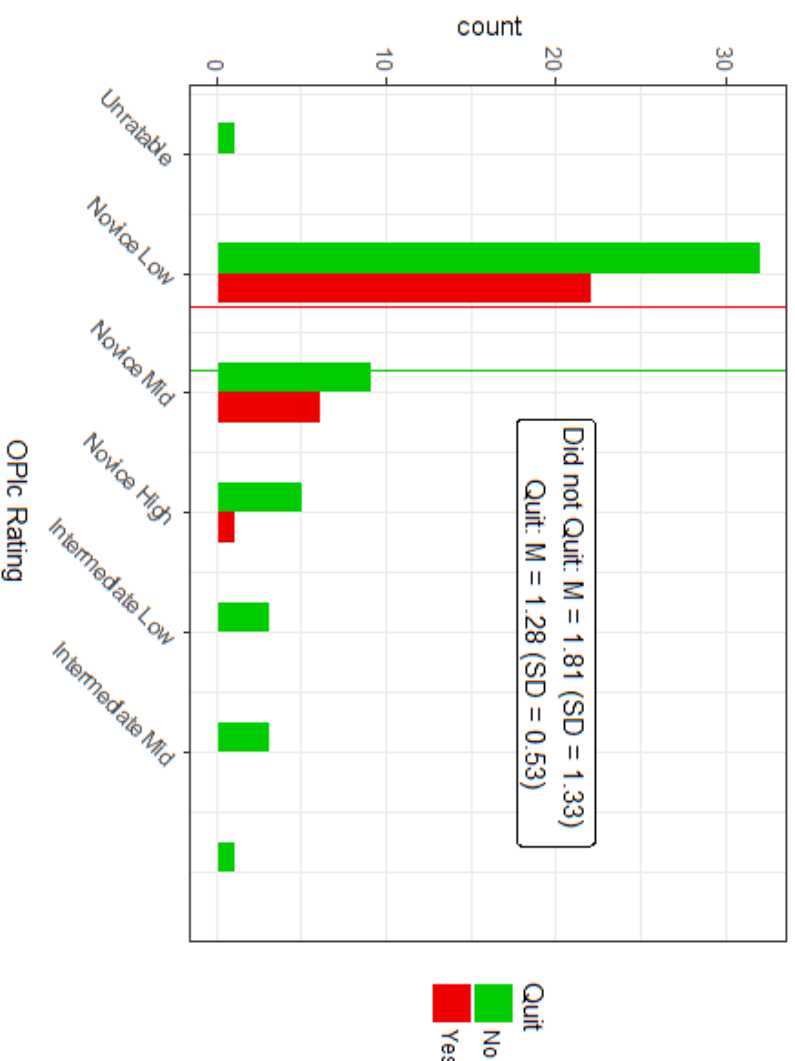
	Did Not Quit (n = 54)			Quit (n = 29)			Mean or Total Difference (Quit – Did Not Quit)		
Variable	M	SD	Median	M	SD	Median	Difference	d	p
SPN SA	1.44	1.11	1	0.83	0.80	1	-0.61	-0.61	0.001
Sex	68% female			86% female			+18% female		
Year of Birth	1994.44	6.54	1996	1996.66	1.54	1997	+2.22	0.41	0.078
SPN Interest	5.24	0.75	5	5.21	0.77	5	-0.03	-0.04	0.850
Babbel Interest	4.80	0.96	5	4.93	0.86	5	+0.13	0.14	0.541
Classroom Experience (years in HS + courses in university)	2.08	2.06	2	1.28	1.38	1	-0.80	-0.43	0.070
OPic Rating	1.81	1.33	1 (NL)	1.28	0.53	1 (NL)	-0.53	-0.48	0.040
Vocab Score	12.89	10.04	10	7.14	6.86	5	-5.75	-0.63	0.007
Grammar Score	11.06	11.79	7	5.72	7.05	2	-5.34	-0.51	0.029
Minutes_Total	696.44	436.37	585	91.75	72.09	74.5	-604.69	-1.69	<.001

Initial Differences: Spanish Self-Assessment



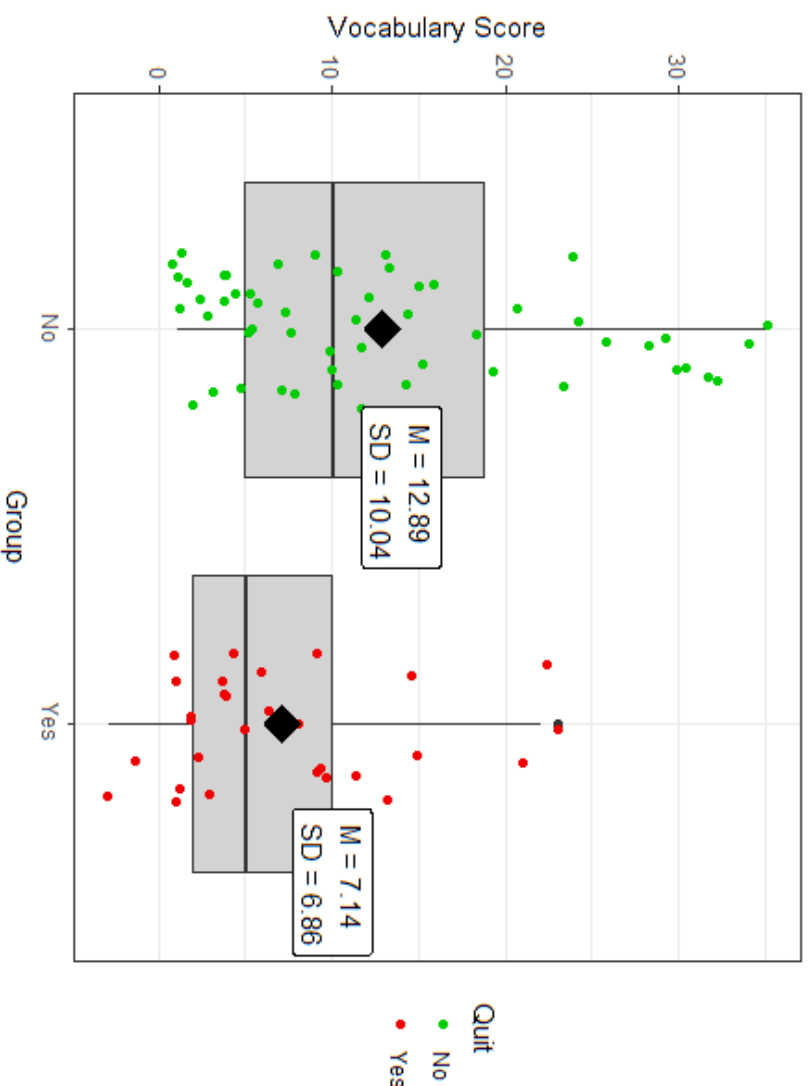
- Difference = -0.61
- $d = -0.61$
- $p = 0.001$

Initial Differences: OPlc Rating



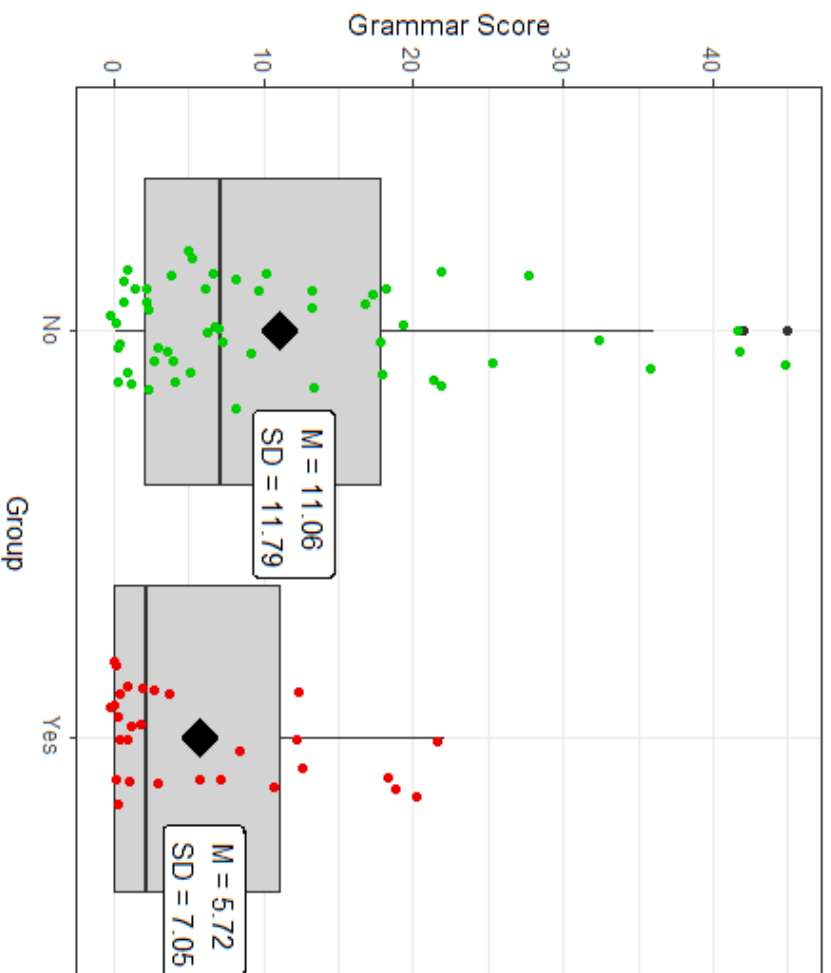
- Difference = -0.53
- $d = -0.48$
- $p = 0.040$

Initial Differences: Vocabulary Score



- Difference = -5.75
- $d = -0.63$
- $p = 0.007$

Initial Differences: Vocabulary Score



- Quit
- No
 - Yes
- Difference = -5.34
 - $d = -0.51$
 - $p = 0.029$