

# Does Duolingo “Trump” University-Level Language Learning?

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Duolingo is a web-based self-paced language teaching program that guides students step-by-step through a sequence of tasks, largely based on translation. It is clearly aimed at conscious learning, although some subconscious acquisition of language is inevitable, as students hear and read samples of the language.

The Duolingo website (<http://www.duolingo.com>) claims that Duolingo is “scientifically proven”: “An independent study found that Duolingo trumps university-level language learning.” That study is Vesselinov and Grego (2012), funded by Duolingo.

Vesselinov and Grego, however, do not claim that Duolingo is better or worse than any other language course, but restrict their analysis to progress made on Duolingo by volunteer subjects who responded to an ad on the internet.

Subjects were asked to use Duolingo for 30 hours and to take a standardized test, the WebCAPE, a multiple-choice test that is clearly form-based (<http://cflc.bard.edu/test/>).

## **The subjects**

Participants in their study were not typical of university students: Their average age was 35, 69% were college graduates and many had graduate degrees.

The mean time dedicated to Duolingo was 22 hours, but there was substantial variation: 25% of the subjects completed eight hours or less, with one student doing only two hours. Some students did much more than the average, with one student completing 133 hours. The standard deviation around the mean of 22 hours was large, 20.4 hours. There was a high drop-out rate: Only 90 of the 156 subjects who started the program lasted until the end.

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## **The results**

Vesselinov and Grego report that their students gained at a mean rate of 8.1 points on a standardized test for each hour of study. There was, however, substantial variability in rate: the standard deviation was 12.1. Vesselinov and Grego reported the median rate of development as well as the mean: The median is a measure of the average that is less influenced by extreme scores: The median rate was 3.9 points per hour.

Those who said they were studying Spanish for personal interest or school did much worse than those with a more focused purpose, business or travel (26 of the 88 whose scores were used on the final exam). In fact, the differences among the groups were astonishing (table 1):

Table 1: Reason for Study and Rate of Learning

reason for study	n	rate (mean)
Travel	10	17.6
business/work	16	11.4
personal interest or school	62	5.7

From: Vesselinov and Grego (table 11).

Rate = points gained on standardized test per hour

In summary, Vesselinov and Grego clearly show that there is a great deal of variability in time dedicated and progress when volunteers do an online, self-paced foreign language class that focuses on conscious learning of rules and vocabulary.

### Does Duolingo “trump” university level language classes?

Vesselinov and Grego, as noted above, calculated a mean gain of 8.1 points per hour (and a median gain of 3.9 points per hour). At a rate of 8.1 points per hour, it would take a beginner 34 hours to do the equivalent of one semester of college Spanish, based on  $34 * 8.1 = 275$ ; 270 is the minimum score needed on the WebCAPE to enter the second semester. It is difficult, however, to compare this to typical university foreign language instruction in which students are often not volunteers, are typically less motivated, are younger and less experienced, and there is little or no chance for students to proceed at their own pace.

#### *Students' reactions*

Of the 88 who completed the program, 66 completed an exit survey, and of these 66, 78.8% said they “agreed” or “strongly agreed” that they were “satisfied with Duolingo.”

This is impressive, but we must consider that this was the view of 66 out of the 156 who started the program; of course, we do not know the reasons of the other 90 for dropping out of the program.

#### *Acquisition versus Learning*

Both Duolingo and most foreign language instruction are based on conscious learning, as was the test used in Vesselinov and Grego. There is a great deal of evidence showing that conscious learning does not produce true language competence. Among this evidence is the consistent finding that methods that promote subconscious language acquisition are far more effective than traditional methods on communicative tests and are slightly more effective or just as effective on tests of grammar (Krashen, 1982, 2003). Efficiency studies of the impact of comprehensible input (gains per unit of time) also reveal a superiority for acquisition-oriented methods over skill-based methods (Mason, 2004; 2011; Mason, Vanata, Jander,, Borsch, and Krashen, 2009).

It will be of interest to see the effect and the efficiency of self-paced, easily accessible courses that focus on encouraging language acquisition, as contrasted with language learning. (Rosetta Stone does not fit this description. For discussion, see Krashen, 2012).

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