Guided Study and Learning Anxiety Reduction Through Anki

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Outline

- Significance of the Study
- Research Question
- Literature Review
- Research Method
- Research Findings
- Conclusion
- Limitations of the Study
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- Acknowledgements

Significance of the Study

- During my studies in Japan, I had to learn large numbers of kanji, the hardest of the three Japanese character sets, for tests. The one thing that helped me the most was a computer program called "Anki".

- Anki uses a principle called "spaced repetition" (SRS) to help users memorize words. This unique approach organizes your study and makes it more efficient.

- I want to analyze Anki user's opinions on the program, as well as measuring how useful Anki is in decreasing their Japanese learning anxiety.

Research Question

- To what extent does knowing when and what to review using Anki reduce anxiety and assist in learning kanji?

Background Outline

- Language Learning and Anxiety
- What is Anki
- History of Spaced Repetition Systems
  - Ebbinghaus and the Forgetting Curve
  - Spitzer and Spaced Repetition Research
  - Pimsleur and Graduated Recall
  - The Leitner System
- Foreign Language Anxiety Types
- Methods for improving learning

Language Learning and Anxiety

Foreign Language Anxiety:

- The feeling of unease, worry, nervousness and apprehension experienced when learning or using a second or foreign language.
- Anxiety is a strong indicator of academic performance. Anxiety is found to have a detrimental effect on students' confidence, self-esteem and level of participation.

Examples:

- I feel intimidated when I see a whole page of Japanese in front of me.
- I get upset whenever I encounter unknown grammar when reading
- I keep thinking the other students are better at Japanese than I am.
- I feel more tense and nervous in my Japanese class than in my other class.
- I worry about the consequences of failing my Japanese class.
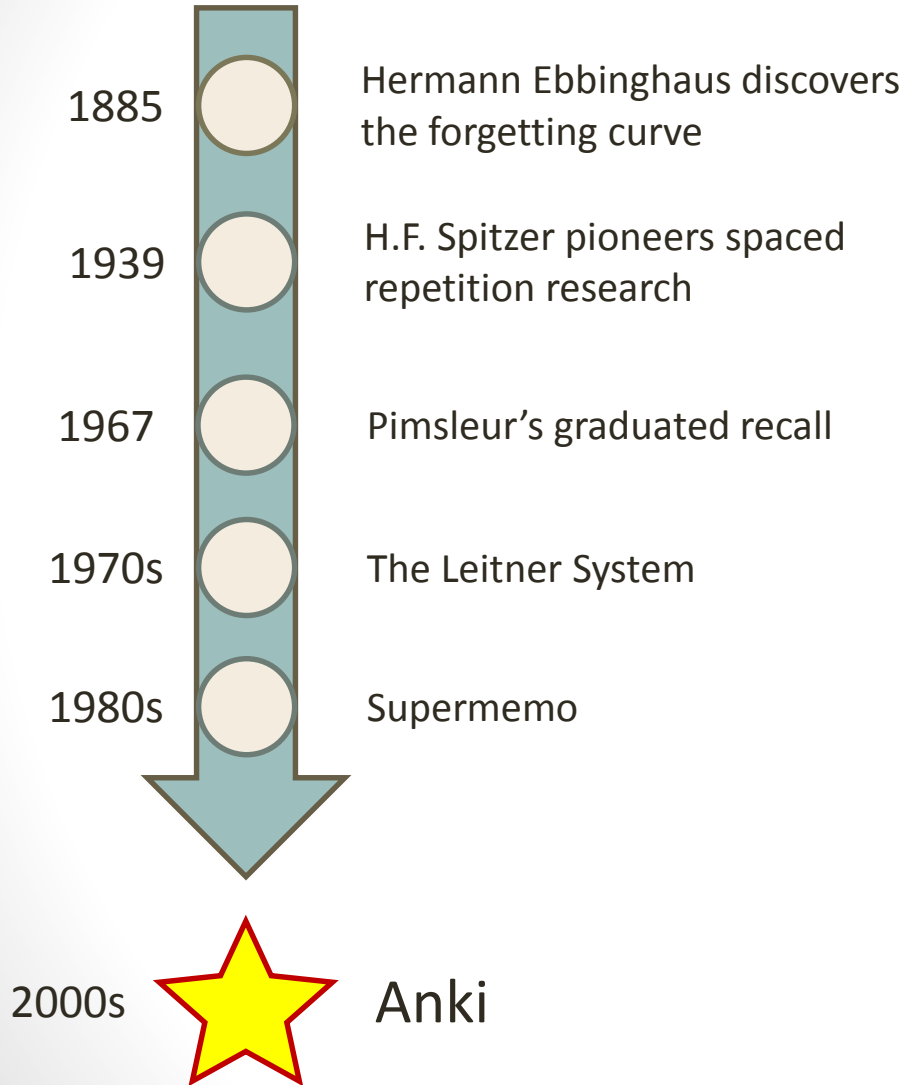
(Saito, Horwitz, & Garza 1999)

What is Anki

- Anki is a program that uses smart flashcards. Each time you flip a card, the program asks whether you remembered the answer or not.

- If you forget, the card is scheduled for the following day.
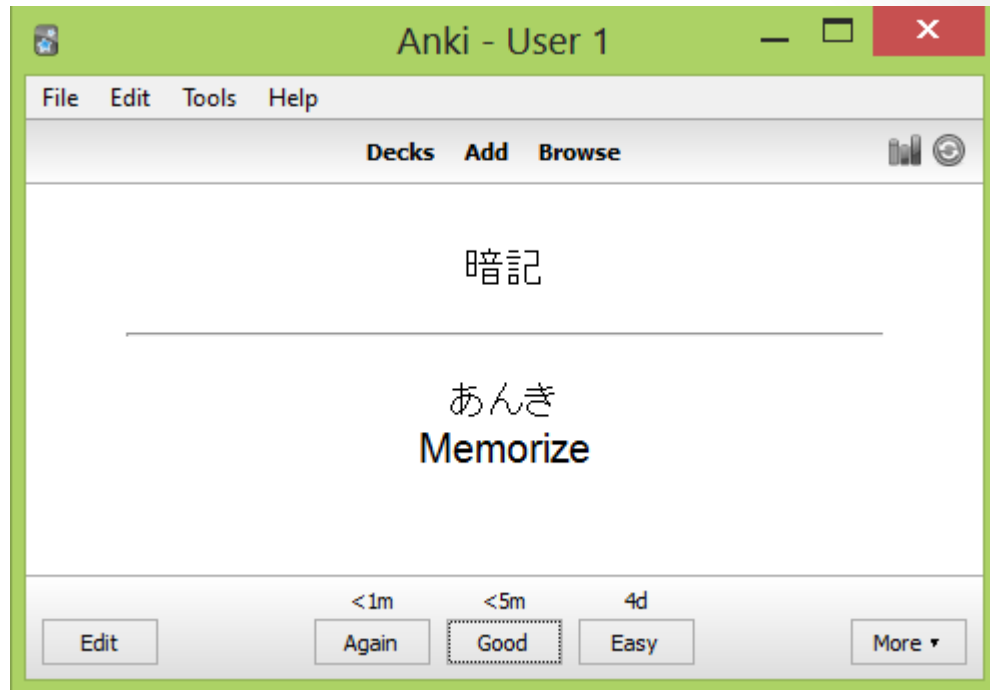
- If you remember, the computer will guess how long it will take you to forget the card, and schedule a review right before that happens. This is called "Spaced Repetition".
- By doing this, Anki ensures you only study cards which are difficult for you. This approach allows you to procedurally learn very large decks of cards, without a huge time commitment.
- Although other programs use spaced repetition, Anki is special because it is well supported, compatible with all major platforms, customizable, and has pre-made decks available online.

History of Spaced Repetition Systems

1885 — Hermann Ebbinghaus discovers the forgetting curve

1939 — H.F. Spitzer pioneers spaced repetition research

1967 — Pimsleur's graduated recall

1970s — The Leitner System

1980s — Supermemo

2000s — Anki

Hermann Ebbinghaus, discoverer of the forgetting curve.

The Forgetting Curve

•Some of the first research into memory and its connection to time was conducted by German scientist Hermann Ebbinghaus.

•"After 24 hours, about one third was always remembered; after 6 days one fourth, and after a whole month fully one fifth of the first work persisted in effect."

(Ebbinghaus, 1885)

•If information is reviewed daily, it becomes much harder to forget. (Green lines)

The Forgetting Curve

Memory

Time remembered (days)

1   2   3   4   5   6
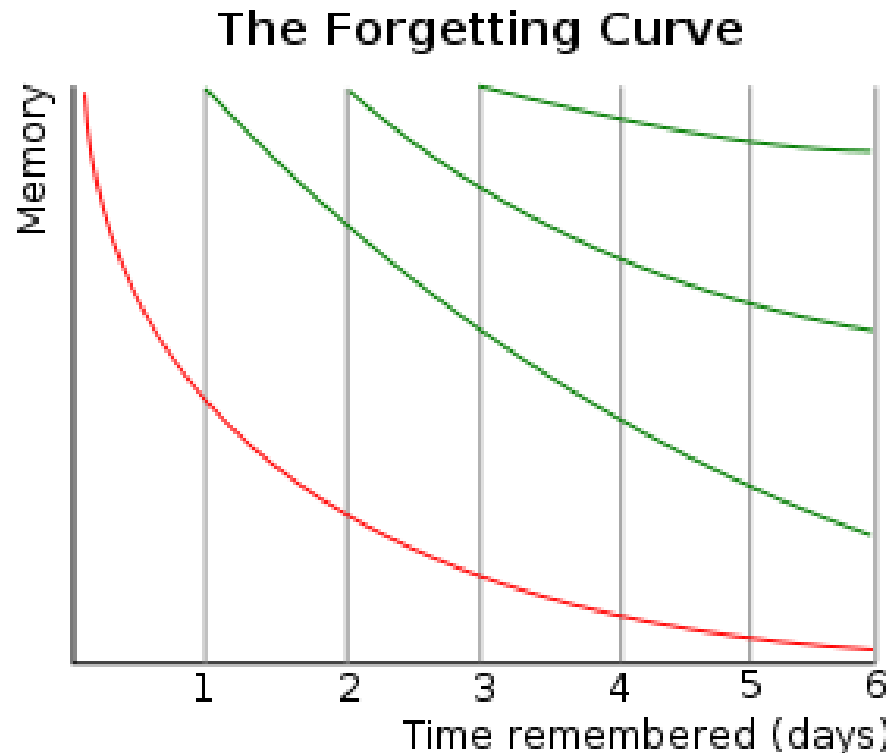
Spaced Repetition Research

- In 1939, H.F. Spitzer conducted the first large scale study on spaced repetition.

- Spitzer asked 3600 elementary school students to read a short paragraph, then tested their memory of it at varying intervals.

- By timing periods of review, he was able to greatly improve student's recollection of the paragraph.

- Spitzer showed that students who were aided by spaced repetition could remember information much longer than students who weren't.
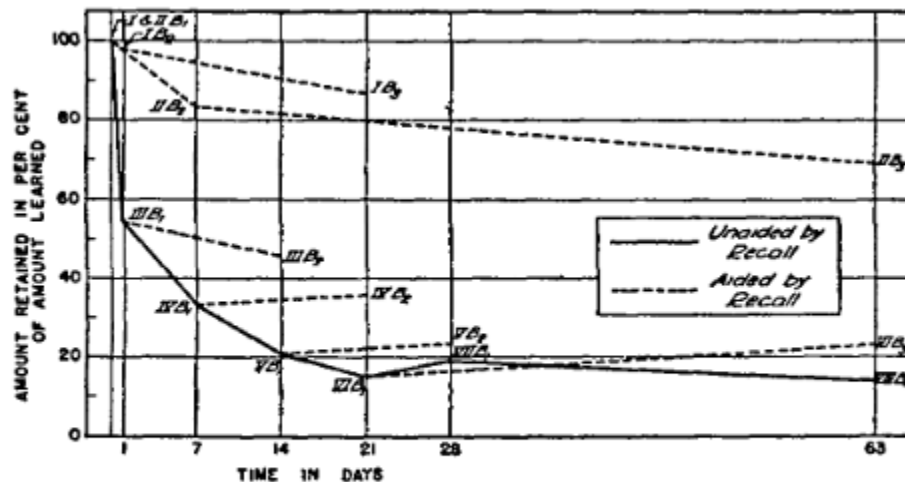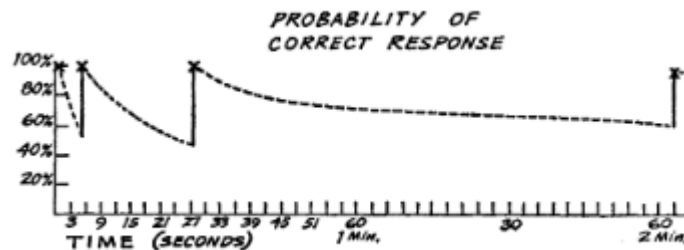
FIG. 2 CURVES OF RETENTION FOR THE ENTIRE POPULATION WHEN THE AMOUNT RETAINED IS EXPRESSED AS A PER CENT OF THE AMOUNT LEARNED
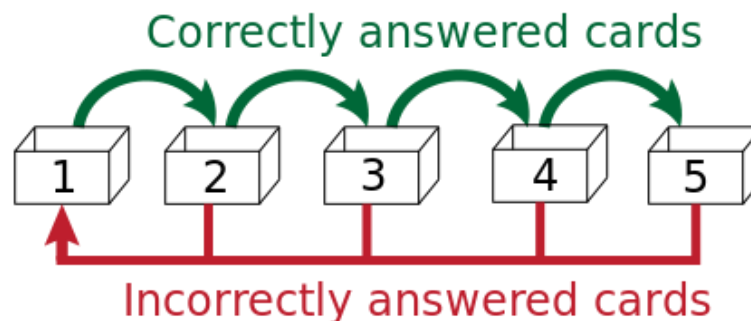
Pimsleur and the Leitner System

- **Graduated Interval Recall** is the name of a review system proposed by Paul Pimsleur to take advantage of spaced repetition while also minimizing review time.

(Pimsleur, 1967)

- **The Leitner System** is a way of organizing flashcards based on how well you remember them. Box 1 will be studied every day, box 2 every other day, and so on.
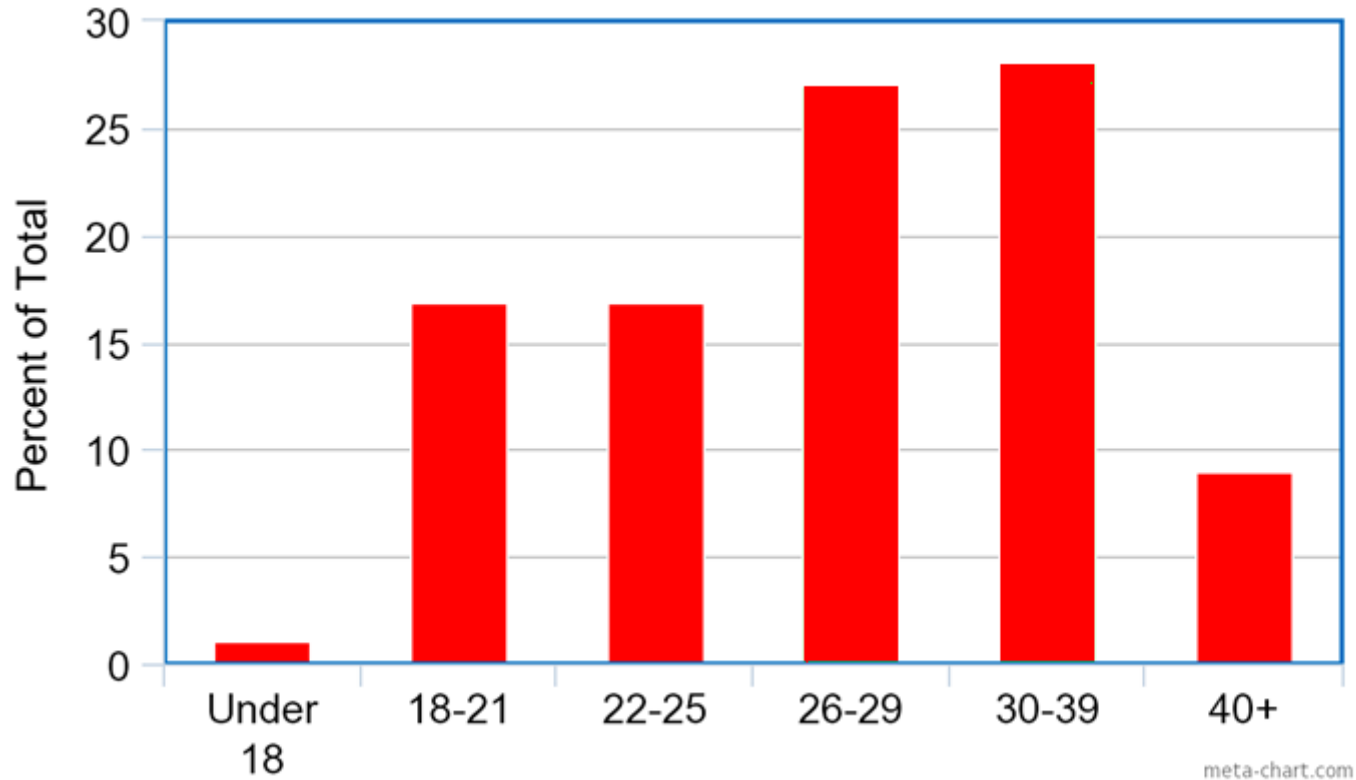
- **Anki** is a combination of these two systems.
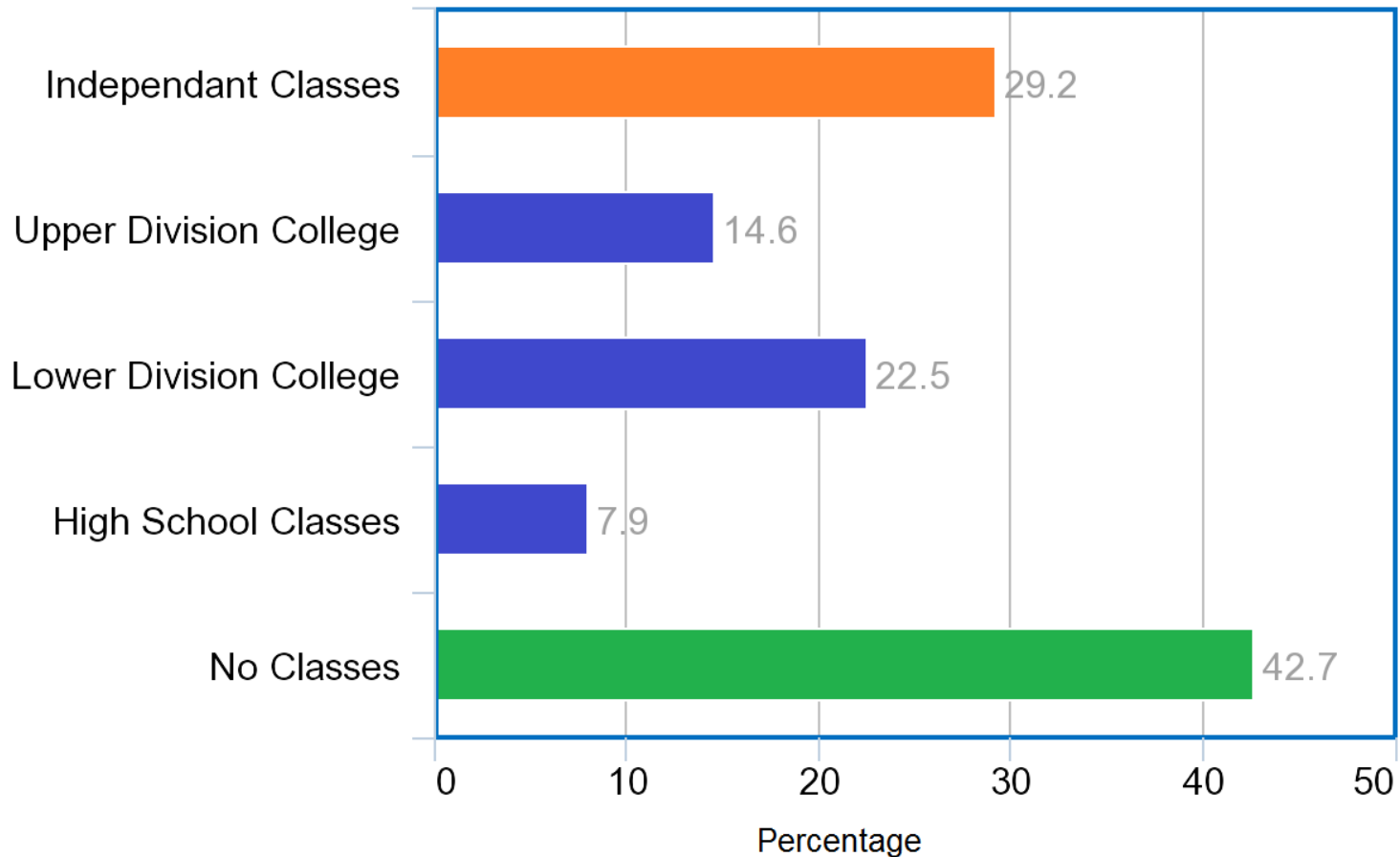
Research Method

- Study Participants
  - 89 Anki users, collected from the Koohii.com forums and Japanese Level Up website
    - 69 Males
    - 17 Females
  - 64.1% Older than 25
  - 57% Had taken Japanese classes
- Research Instrument
  - Online Survey

Demographics: Age

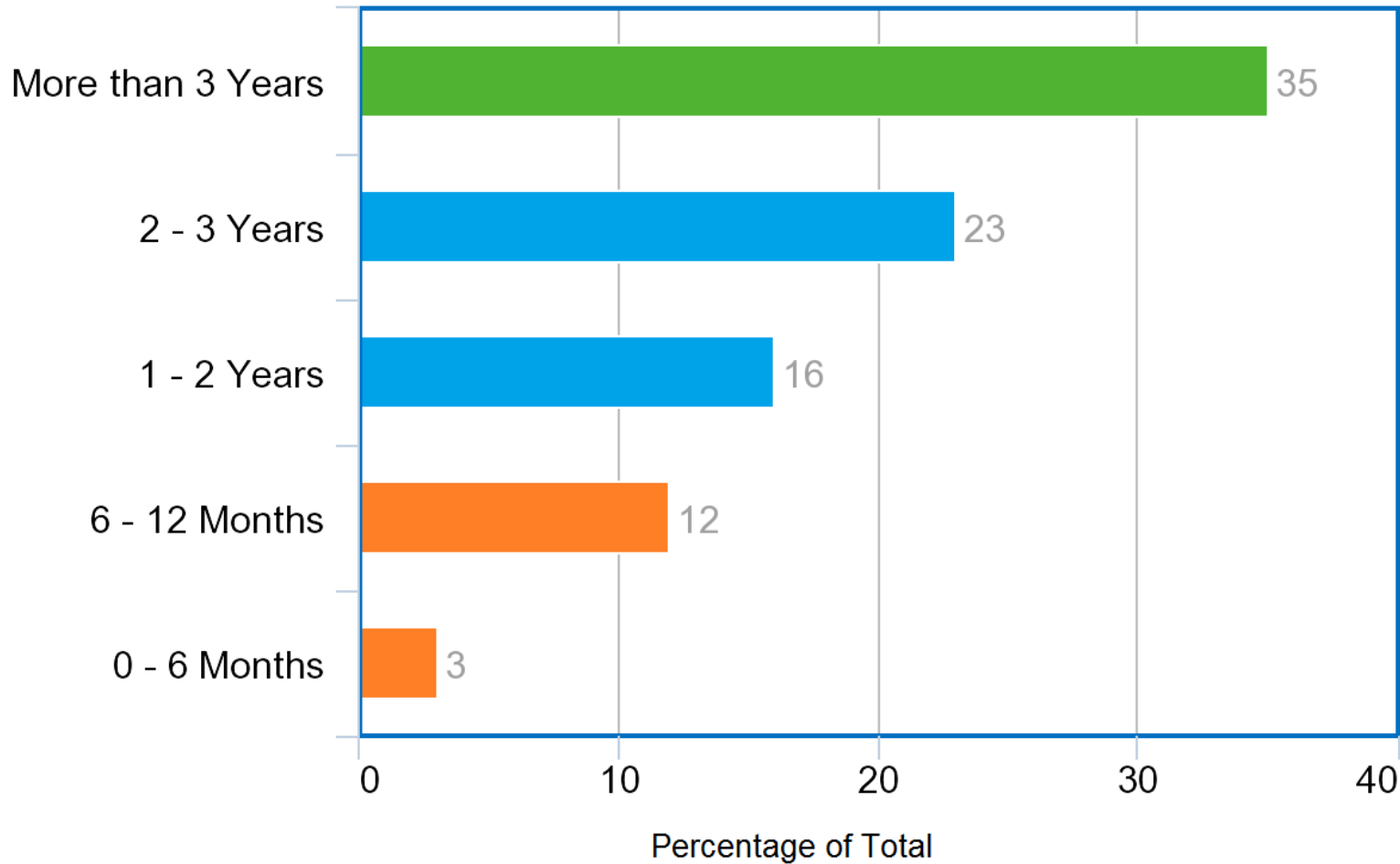About 55% of the participants were aged 26 – 39.
Only 34% were 18-25.

Demographics: Class Experience

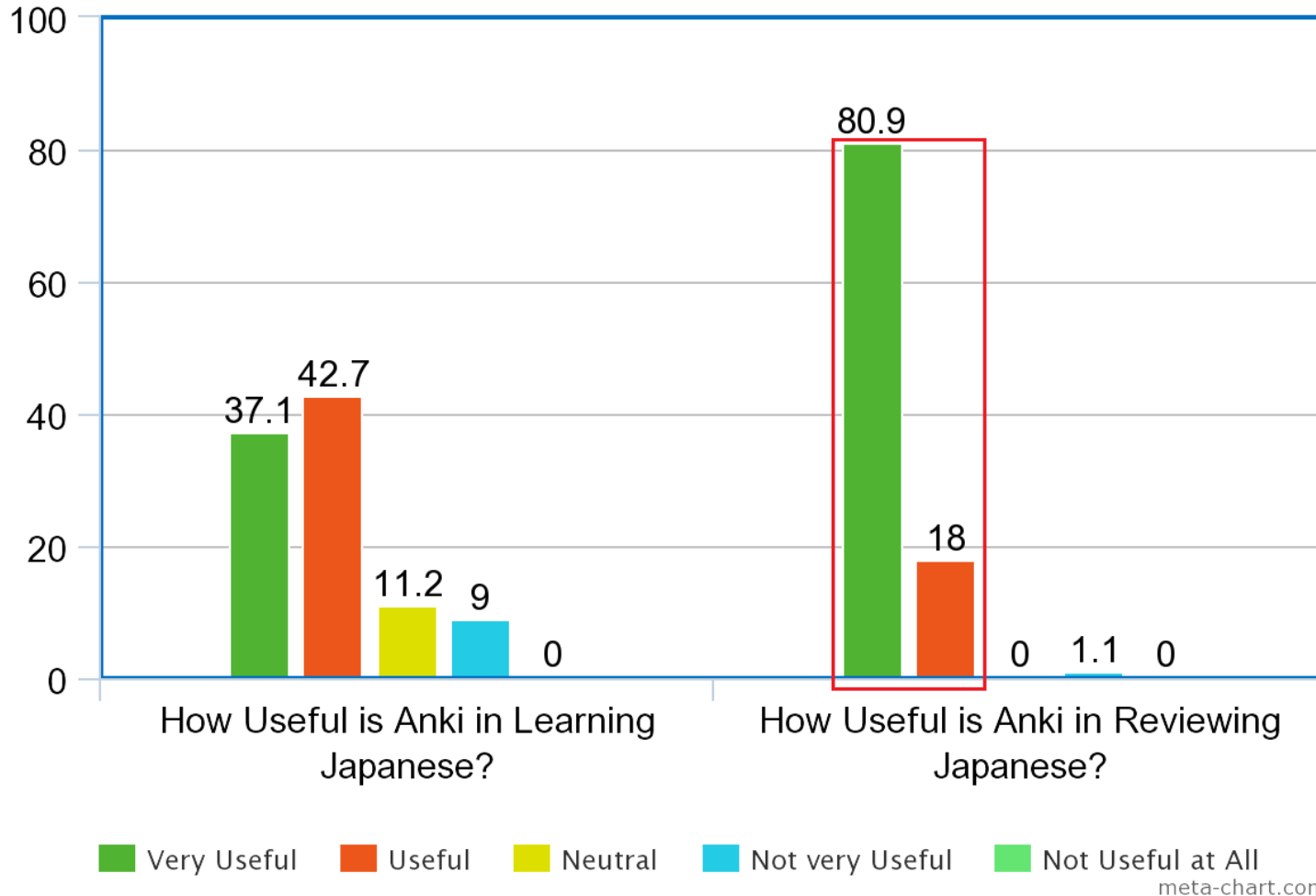57% of the Anki users had taken formal Japanese classes.

Demographics: Amount of Time Spent Studying Japanese
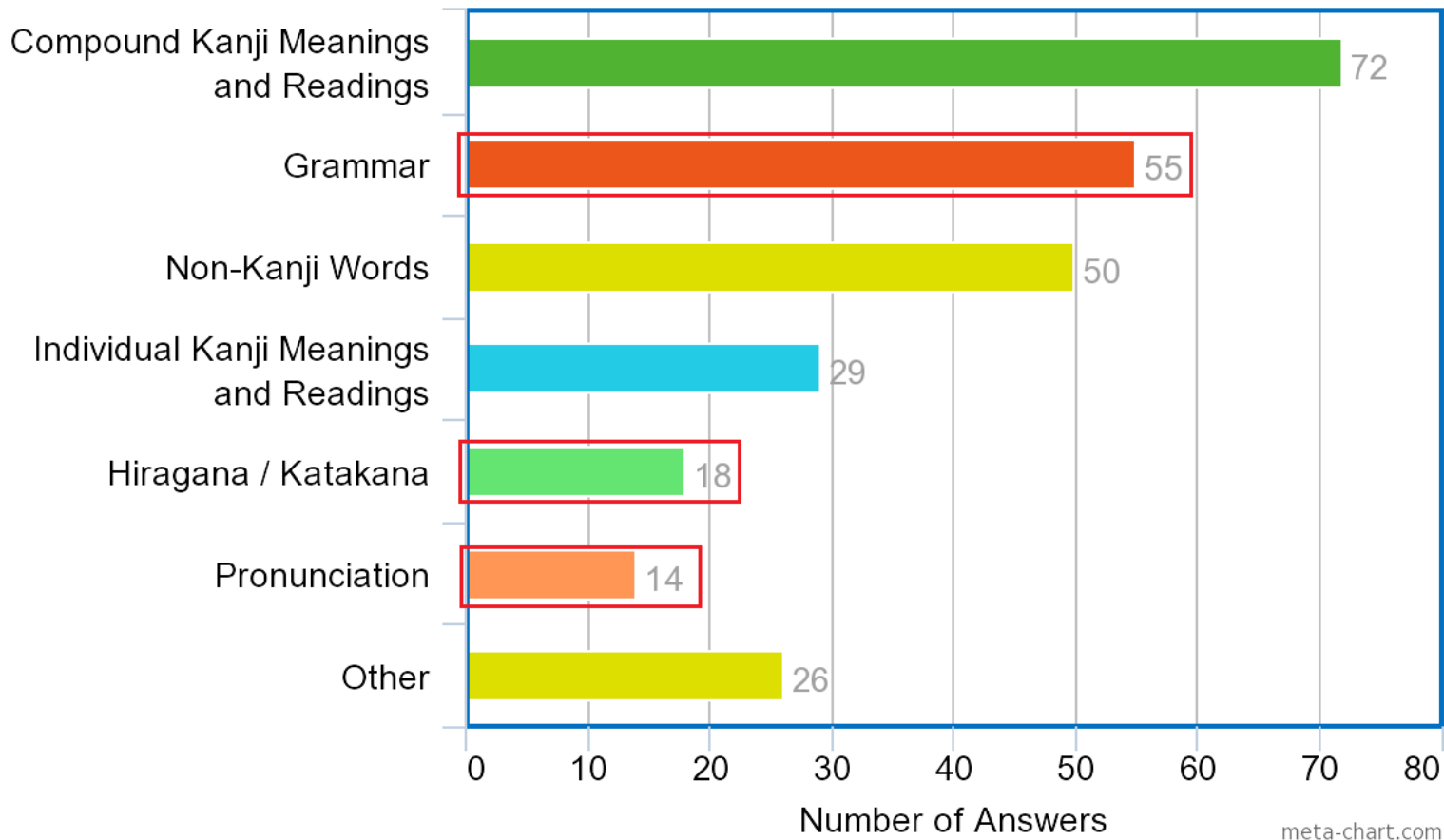

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35% of users had spent more than three years studying Japanese.

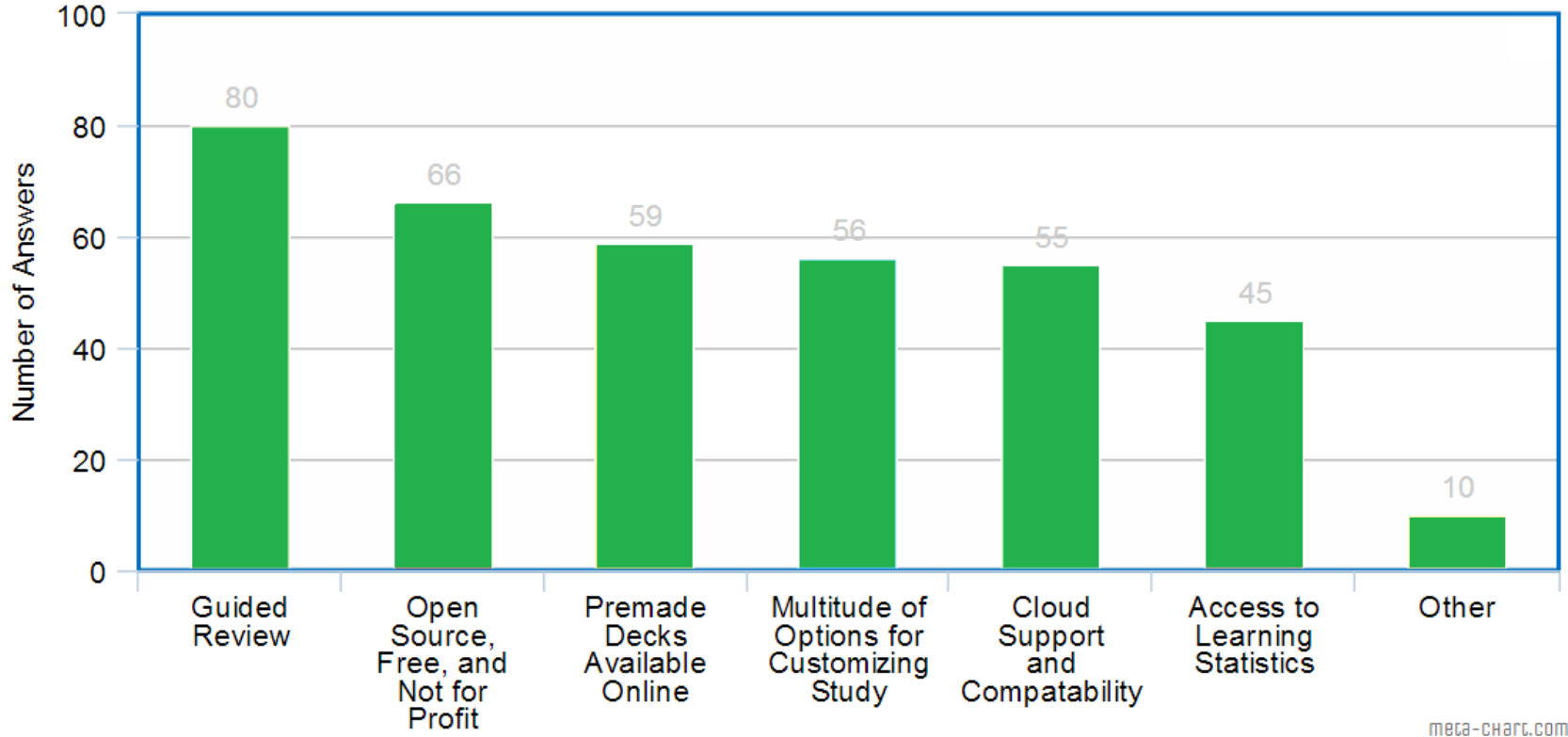# Is Anki better at reviewing or learning?

Most agreed it was useful for both, but clearly Anki's specialty is review.
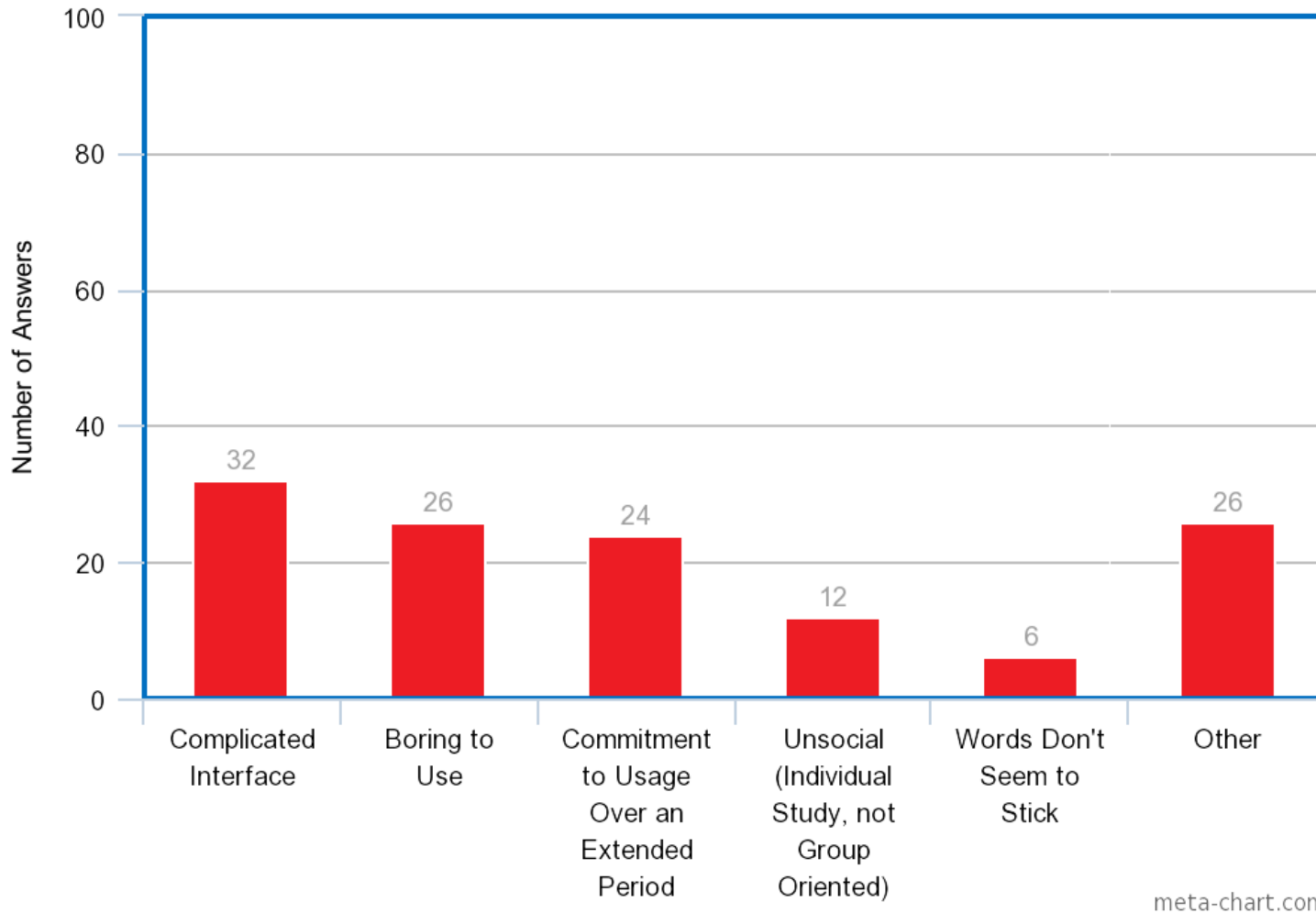
What do you use Anki to study?

Nearly all participants use Anki to study compound kanji words. A large number also use it for grammar.

What do People **Like** About Anki?

80% of users liked Anki's guided review. Most of its other features were liked by at least half of the respondents.

What do People **Dislike** About Anki?

The largest complaint about Anki is its difficult interface. Many also agreed that Anki was dull to use.

Anki and Anxiety

- In this next series of slides, I will compare answers from the original *Foreign Language Reading Anxiety Survey* (FLARAS)(Saito, Horwitz, & Garza, 1999) to the answers of Anki users who were asked the same questions.

- FLARAS studied three languages, French, Russian, and Japanese. French represents a cognate language, Russian a semi-cognate language, and Japanese a non-cognate language. Only the Japanese group will be examined.

- I have selected 3 questions about reading anxiety, two about general language classroom anxiety, and a final one about test anxiety.

- From the next slide, the green indicates FLARAS results and the orange indicates my own results.

Summary of Anki User's Opinions

- Participants considered Anki more useful for reviewing than learning.
- Most use Anki to study compound kanji words and grammar. Hiragana and katakana were not often studied, indicating more advanced users. A small number also use it to study pronunciation.
- The majority of participants have studied Japanese for over 3 years.
- Participants consider guided review to be Anki's best feature.
- The biggest complaint was Anki's complex interface, however, a large number of comments favored Anki's complexity.

Research Question

- To what extent does knowing when and what to review reduce anxiety and assist in learning kanji?

# I feel intimidated when I see a whole page of Japanese in front of me
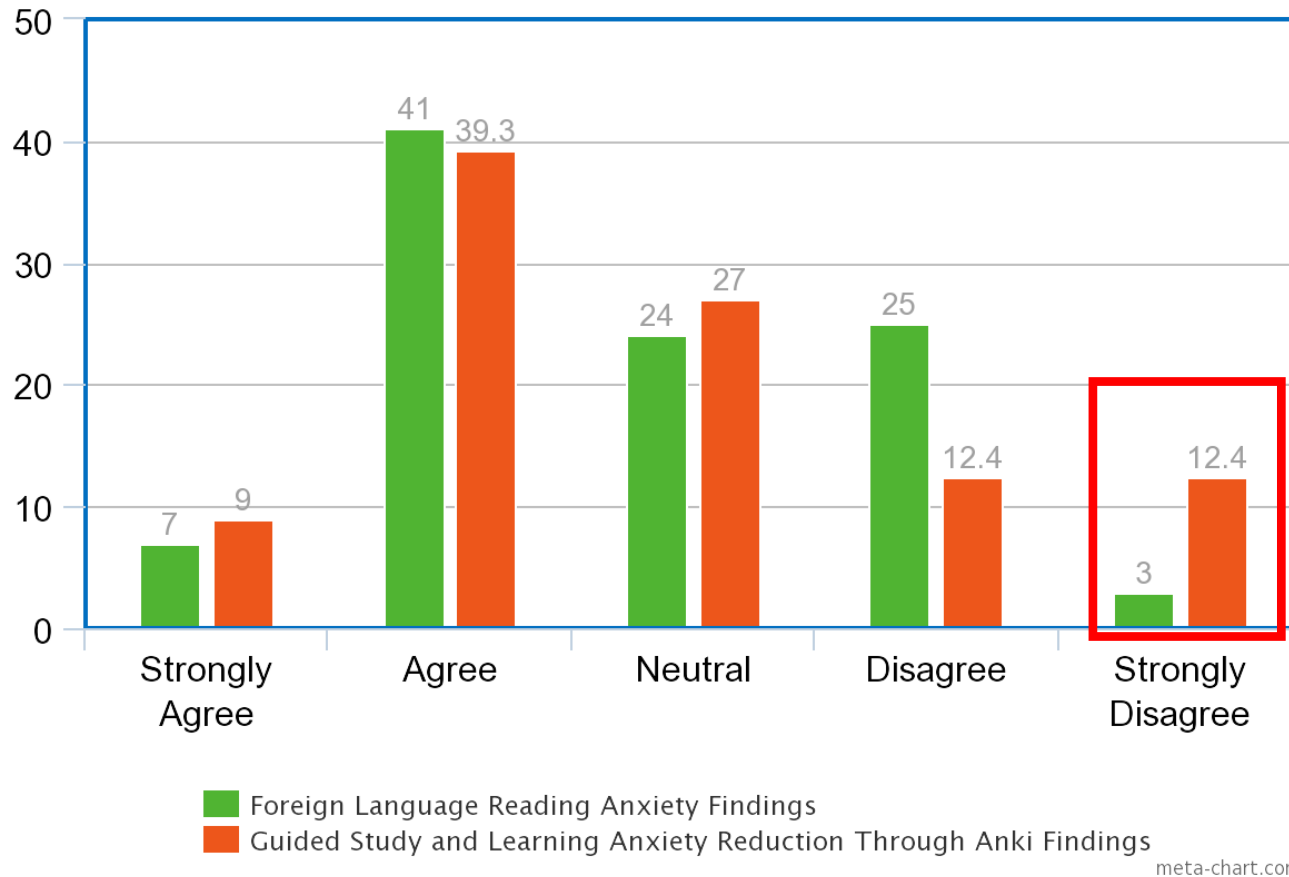
About half of the participants of both studies are intimidated by large amounts of reading, however, about 12 percent of Anki users are very confident in reading.

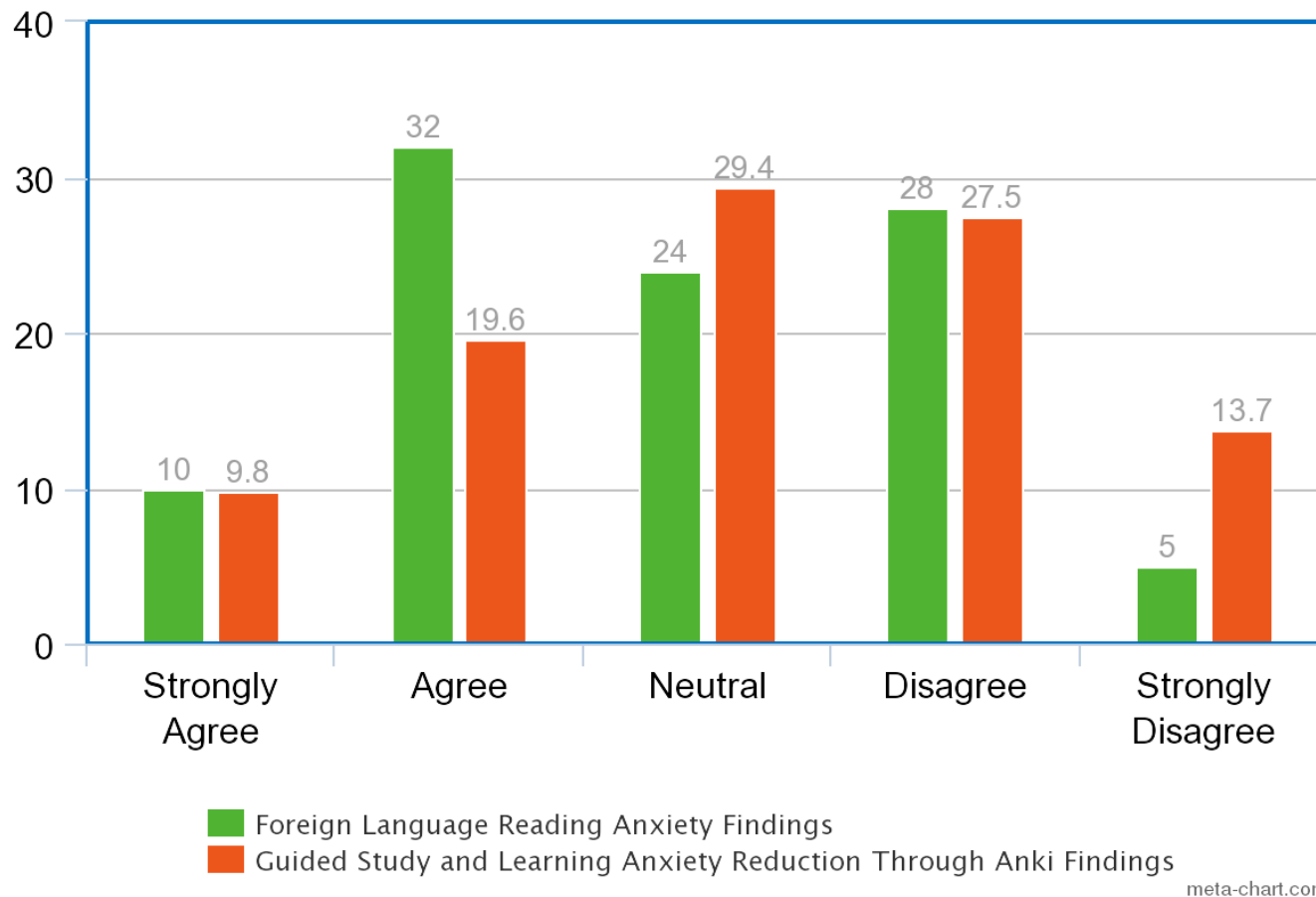# I get upset whenever I encounter unknown grammar when reading
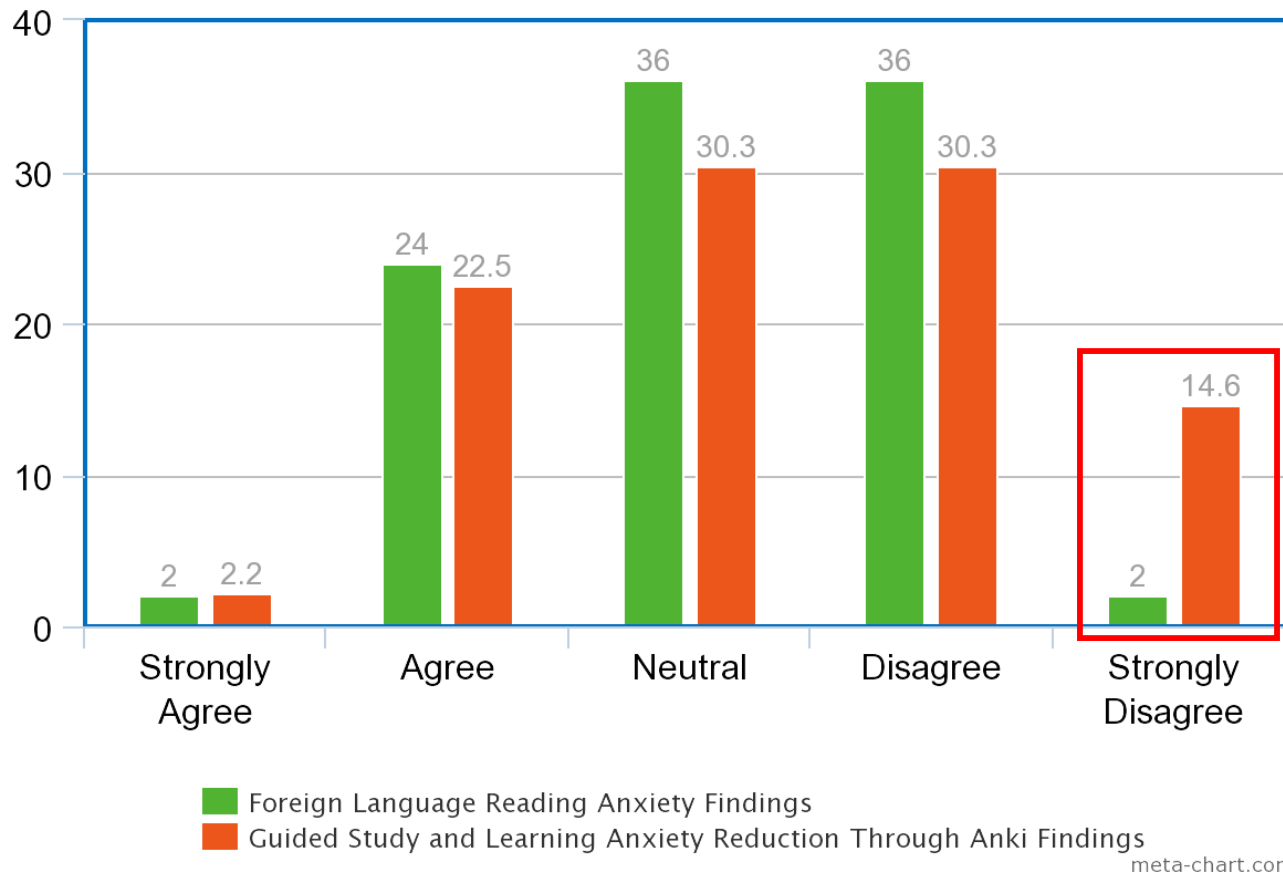
Compared with FLARAS, there seems to be a greater number of students in the Anki group who are very comfortable with grammar.

I don't mind reading to myself, but I feel very uncomfortable when I have to read aloud
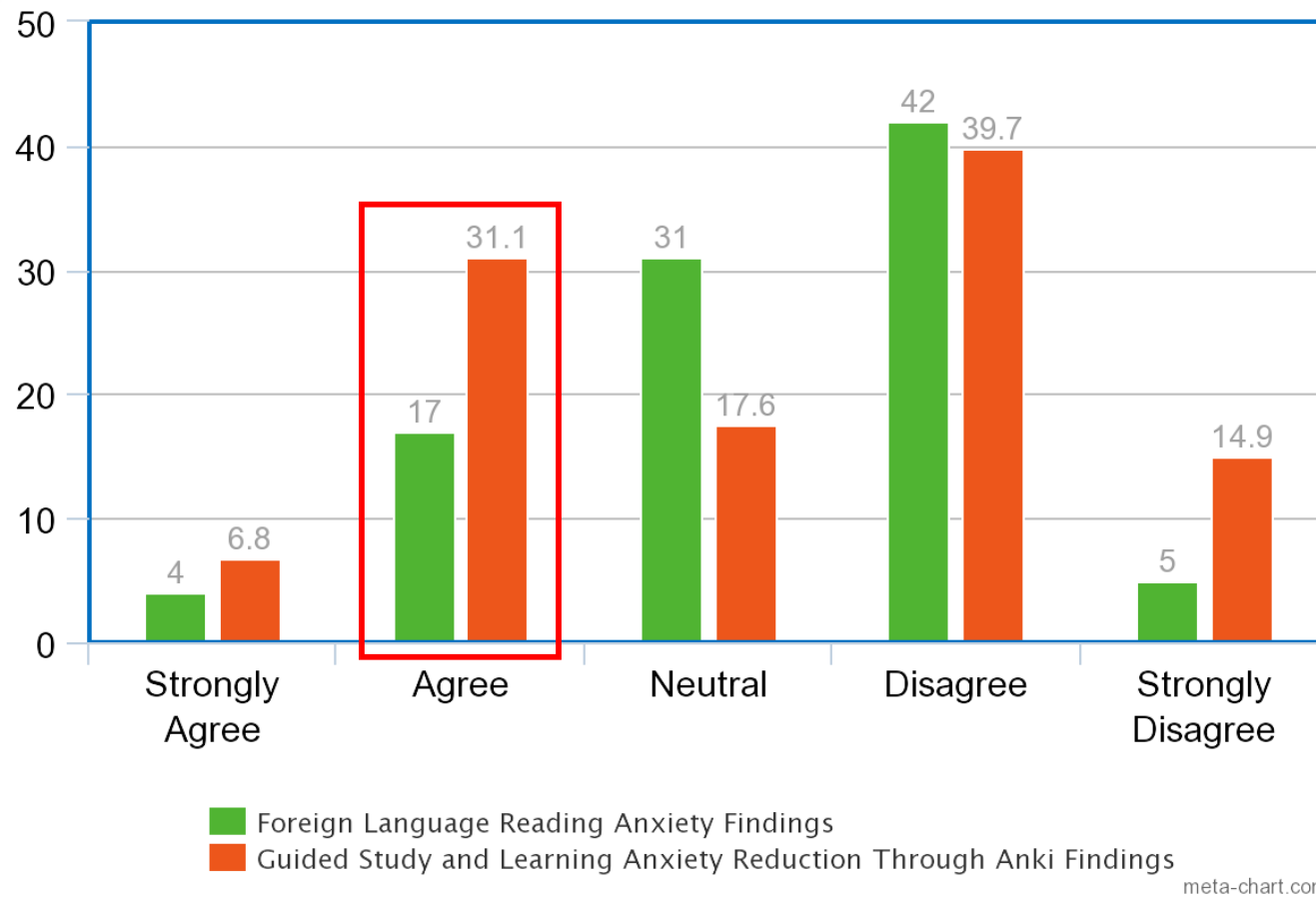
Compared with FLARAS, Anki users seem more uncomfortable with reading.

I keep thinking the other students are better at Japanese than I am

Foreign Language Reading Anxiety Findings
Guided Study and Learning Anxiety Reduction Through Anki Findings

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Anki users appear to be more confident in their Japanese ability than non-Anki users.

Class moves so quick, I worry I'll get left behind
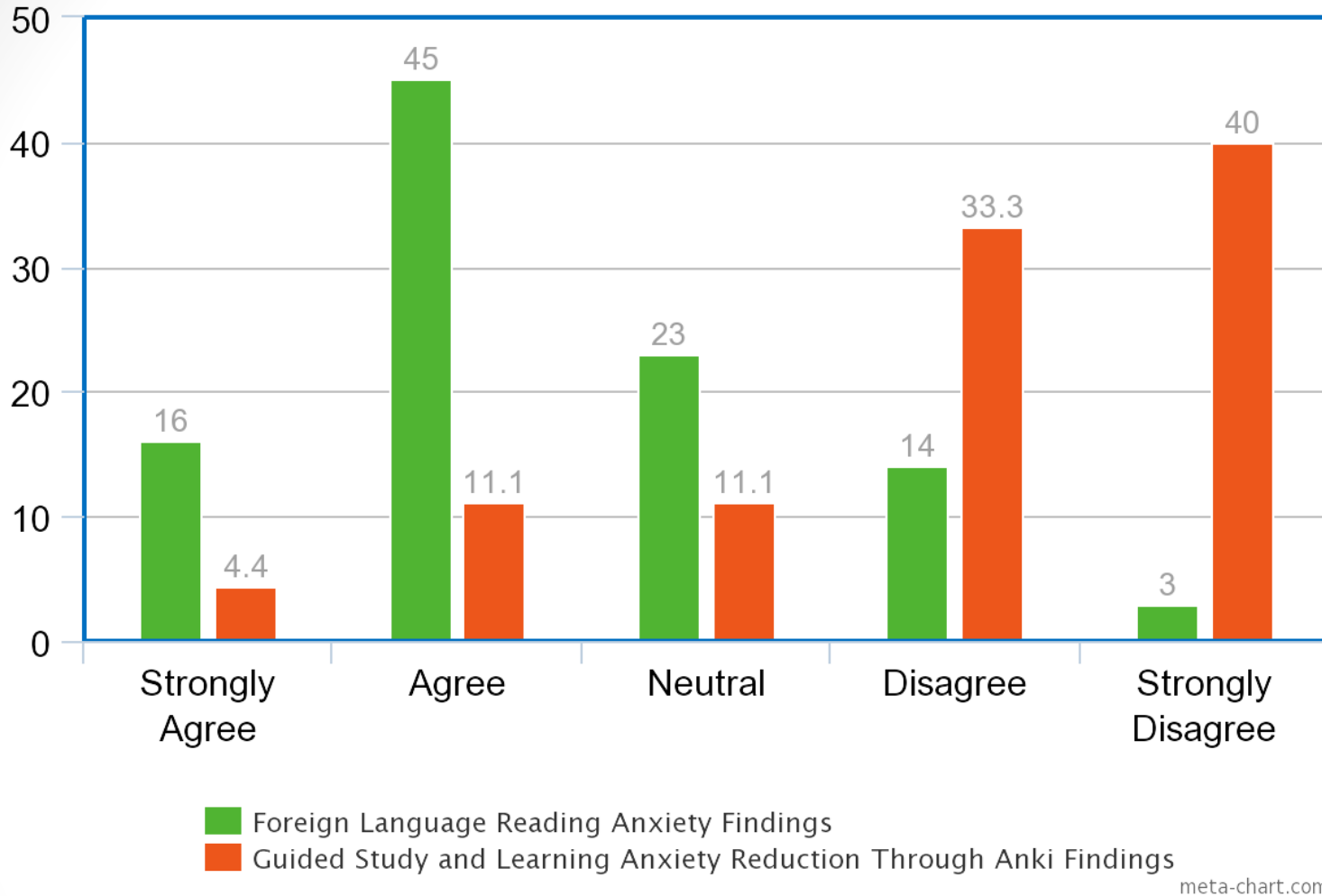
Anki users appear far more comfortable with the pace of their classes than non-users.

I am usually at ease during tests

The number of comfortable students is the same in both groups, however the number of uncomfortable students is much lower in the Anki group.
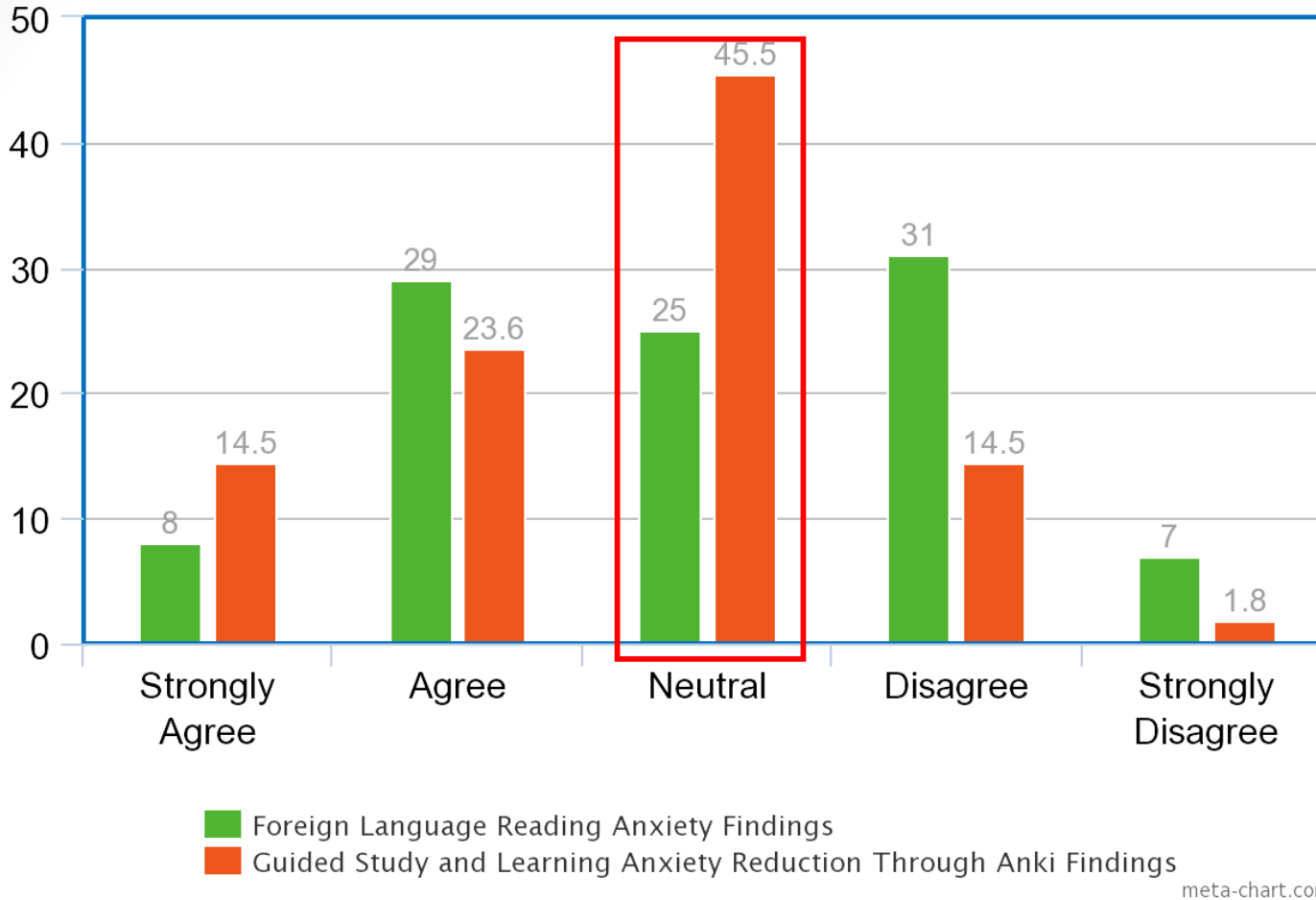
Conclusions

- Anki does seem to measurably decrease student anxiety.
- The effects are most pronounced during tests and in a student's ability to keep up with class.
- In general, Anki users were more polarized in opinion. I assume this is due to the much greater diversity of skill levels in the Anki group, compared with the FLARAS group.
- There is a larger number of very confident students in the Anki group.

Limitations of the Study / Future Studies

- Limitation of the study
  - Only focused on two small groups of Anki users on the internet. The responses may not be representative of average Anki users.
- Future studies
  - to go over the data further, and look for possible correlations to determine the optimal strategy with which to approach Anki.
  - to examine the ways individuals use Anki, and attempt to learn which strategies are useful and which are not.
  - to examine the diversity of skill levels within the group, to see how this relates to anxiety levels.
  - to create a longitudinal study to compare learning between Anki users and students using other methods.

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Graphing/Charting and General Data Visualization App. (n.d.). Retrieved April 28, 2015, from https://www.meta-chart.com/

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