Self-directed Scripture memorization compared to guided memorization

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Introduction

Memorization of key passages of the Bible can be of immense value to any believer, but many people do not attempt to or even want to memorize the Bible because they struggle with memorizing text. This research is motivated by a desire to help those people memorize Scripture.

There are many well-documented strategies for memorization, but most people are not aware of more than a few basic strategies. An intelligent coach would be familiar with more memorization strategies than the average person and could suggest that an individual use different strategies based on their past performance with different methods of memorization.

The ultimate goal is to take what is learned from this research and apply it to an artificial intelligence coach that will be included in a project that Dr. Brandle is leading. That project aims to provide engaging and effective activities for memorizing any generic text, but with an emphasis on Bible verses. An AI memorization coach would be able to choose activities based on an individual's most effective memorization strategies to provide an efficient and effective platform to memorize Scripture.

Methods

We are still in the early stages of this research project. At this stage, using an AI coach is not feasible. We are instead running the experiments with a human coach. We hope to use the insights gained from the experiments we are running now to make design decisions regarding the AI. The AI will not be able to use most of the traditional learning techniques on an individual basis since it needs to be useful during its training stage as well, so the current stage of research will serve as initial data for it to use during training.

Tests are set up with control memorizers and experimental memorizers. The control memorizers are told nothing other than how much time to spend working on memorizing the passage. Experimental memorizers are given explicit instructions about how to go about memorizing the passage and are instructed to spend the same total amount of time as the control group. The same control groups and experiment groups are maintained throughout the process so that the coach can learn about each individual in the experimental group and tailor instructions based on the individual's results, in the same way that the AI coach would.

Memorization Philosophy

Below is a guiding philosophy for memorization strategy.

- Memorization skills improve with age (Neimark et al.)
- Memorization skills improve with practice (Yang, Dai)
- Deciding what is important helps memory (Yang, Dai)
- Memory comes automatically with engagement (Snider)
- Repetition is key for long-term memory (Snider)
- Divide the material into small pieces (Piskurich)
- Learning facilitators must have some role (Robertson)
- The exact mechanisms behind memory and forgetting are unknown (Pavlik, Anderson)
- Expanding-interval study helps long-term (Kang et al.)
- Overlearning helps short-term (Rohrer, Pashler)
- There is a tradeoff between short-term performance and long-term retention (Dihoff et al.)

Current Work

We are currently using a two volunteers to test learning strategies and determine how to design the AI that will be integrated into Dr. Brandle's memorization application.

One of my participants (Particpant A) represents a control. Particpant A is told at the beginning of every week what passage he will be memorizing and how long to spend memorizing it that week, and self-reports his progress at the end of the week.

The other participant (Participant B) represents the experiment. Participant B is told how exactly to go about memorizing the passage. For the first few weeks Participant B will be given specific instructions without regard for his past performance and the results recorded. The results from the first weeks will be used to determine how he responds to different styles of memorization. After the initial data gathering stage, the instructions given will be customized to use the style of activity that works best for him.

Future Work

Once the prototype experiment is finished, we plan to run it again with a larger group, adjusting the experimental design as needed.

Acknowledgements

We would like to thank Jon Denning for his guidance through the research process. His help with brainstorming and ensuring that progress in the project continues has been invaluable.

We would like to thank our test participants. Without test participants we would not be able to advance our understanding in the same capacity.

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