To improve instructional design, it is important to identify the features and elements of texts that are most effective at aiding students’ learning, and under what conditions. The use of visual aids in textbooks is pervasive, and prior research has identified a number of associated advantages and corresponding best practices. Specifically, graphic organizers refer to a class of visual aids designed to help learners visualize how different concepts are connected. That is, they organize ideas presented in texts into a visual, relational structure. These have been demonstrated to promote learning relative to plain texts as well as other adjuncts such as outlines. One clear possibility is that the visuospatial nature of the graphic organizer allows for this advantage in learning. However, while verbal adjuncts summarize information in the text, they have not been designed to verbally present the same relational information conveyed in the graphic organizer. The present study attempted to replicate prior work on graphic organizers while extending its known advantage to verbal adjuncts that present comparable organizing information. An advantage here would help address an alternative, information-based interpretation for the previously-observed advantages of graphic organizers.
Previous studies have found that learning benefits from animated graphics are higher when students have higher visuospatial skills. However, it is possible this result depends on the absence of learner self-pacing. In the present study, it was hypothesized that an advantage of static graphic organizers would also be moderated by visuospatial skill. If observed, this would extend the known advantage of higher visuospatial skills in learning from graphics to self-paced, static materials, as in textbooks.

Participants were recruited from two universities for this online study. Each completed pretests of knowledge on two psychological topics and were then assigned to experimental groups. Each read a roughly 1100-word passage about each topic, in counterbalanced order. However, depending on assignment condition, one text had two supporting graphic organizers, and the other had two information-equivalent verbal organizers. Participants then completed a test of visuospatial skill followed by knowledge posttests for each topic. Linear mixed models were computed to test for effects of the adjunct condition and its interaction with visuospatial skill while controlling for other factors such as prior knowledge, academic level, and reading time. Although visuospatial skill, prior knowledge, academic level, and reading time were statistically significant predictors of performance among participants, graphic condition and its interaction with visuospatial skill were not. Results are discussed in terms of potential implications for theory and future directions for research on text-based instructional design.