Studies of human tutoring suggest that the participants’ use of natural language might be crucial to the effectiveness of human tutoring. In order to study the impact of natural language on learning, we compared 2 kinds of human tutoring (spoken and computer-mediated) with 2 kinds of natural-language-based computer tutoring (Why2-Atlas and Why2-AutoTutor) and 2 kinds text studying. Students solved qualitative physics problems by writing paragraph-long explanations and (in some conditions) discussing them with a tutor. Results from 5 experiments suggest that natural language tutoring is more effective than studying a text without a tutor unless (a) the students are motivated to self-explain the text thoroughly, (b) they have the prior knowledge to successfully self-explain the text, and (c) the content of the text matches the content of the assessments. If all three conditions are met, as they were in some of our experiments, then studying a text elicits the same learning gains as tutoring, even human tutoring. These results are consistent with current theories of cognitive skill acquisition, and with the benefits of tutoring in practical settings where students often lack appropriate engagement, prior knowledge and texts.