

My talk/discussion was 100% based on a quotable presenter at the first meeting of The American Institute of Instruction (see below.) There were two speakers on mathematics. I only used the first quote, but both presenters were fantastic...

"The mind which has acquired the habit of thinking and reasoning, can easily apply the same powers to other branches of knowledge. Whatever study the pupil may now undertake, is entered upon more systematically. He is now accustomed to investigate for himself. He has not the same dependence on authority; nor does he lay so much stress on the conceptions of others, until they are made his own by a fair appeal to his understanding."

F. J. Grund
The American Institute of Instruction
Boston, 1830

"By the old system the learner was presented with a rule, which told him how to perform certain operations on figures, and when they were done he would have the proper result. But no reason was given for a single step... And when he had got through and obtained the result, he understood neither what it was nor the use of it. Neither did he know that it was the proper result, but was obliged to rely wholly on the book, or more frequently on the teacher. As he began in the dark, so he continued; and the results of his calculations seemed to be obtained by some magical operation rather than by the inductions of reason."

Warren Colburn
The American Institute of Instruction
Boston, 1830