

ZMATH 2016f.01430

Kissane, Barry

Integrating technologies into mathematics: comparing the cases of square roots and integrals.

Aust. Sr. Math. J. 30, No. 1, 4-17 (2016).

Summary: Two decades ago, in an award-winning paper, Dan Kennedy likened learning mathematics to climbing a tree, for which there was only one way to climb: up a large and solid trunk. In the limited time that is available, many students give up the climb, impede others, fall off the trunk, or fail to climb the tree sufficiently well. In the case of integration, the solid trunk seems to be heavily laden with algebraic manipulation. Kennedy suggested that technology might provide help in the form of ladders to climb the tree in other ways. Just as the use of technology allowed us to bypass the numerical requirements to calculate square roots (and other aspects of basic mathematics), it now seems time to look carefully at the use of computer algebra to reconsider how much of the algebraic trunk is really needed to help students climb the tree, look around and start to explore the branches of the tree that look interesting to them. (ERIC)

Classification: U70 I50 F50

Keywords: technology integration; mathematical concepts; calculators; handheld devices; square roots; integrals