Using Technology to Reach Out to the Individual Student Creating Success in Mathematics for All

Presenter: Gary Hagerty
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Abstract: In 1991, Geoffrey Moore wrote the text, “Crossing the Chasm”. The text describes the process of bringing a new technology to the market. The chasm represents the rift between innovators using the new technology and the technology becoming a mainstream technology. Some technologies make it across the chasm (VCR’s until replaced with DVD’s) while others do not (Betamax).

In 2000, new technologies of online homework for mathematics found their ways into the hands of innovators. Initially, there were both success and failures in using technologies. Over time, a sufficient and growing number of innovators were obtaining remarkable results of 70-80% (20-30% higher than traditional textbook courses) passing rate in entry level math courses. Such results helped push online homework systems over the chasm around 2008. Today there is exponential growth in the usage as these systems enter the mainstream.

This presentation will examine the cultural changes that are necessary to create a successful transition from textbook based assignments to online assignments. Educational theories, which support the move to a more successful process using online technologies, will be presented. Myths, which developed over time in a textbook era and were required, will be debunked. The presentation will conclude with a vision that online homework systems present the opportunity for building a mathematical environment which is richer for all students. (And even possibly removing the term “math anxiety” from the spoken language!)