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Information Technology-Impact on Calculus Problem Solving Skills/Historical Perspective:

Changes in mathematics instructions over the past three decades have been necessitated by increasing student numbers at post-secondary institutions. Advances in technology have benefited mathematics instruction, particularly in the area of calculus due to its analytic, graphic and numeric approaches to solving real life problems.

Until the 1970s, Calculus was taught with traditional text books. In the 1980s, non-linear processes in Reform Calculus involved the use of graphing calculators and computer spreadsheets. Websites designed to promote the sharing of information and ideas became popular in the 1990s. In the 21st century, increasingly sophisticated technological tools such as teleconferencing and chat rooms are enhancing calculus problem solving skills with one-to-many and many-to-many web-based collaborative instructional strategies for student-centered learning.

The pitfalls of advances in technology also need to be recognized. For example, students today may be lacking basic skills that would allow them to perform calculations without the benefit of calculator.

This presentation will review some major developments in technology since the 1970s and share information on how technology advancement has influenced calculus problem solving skills—both positively and negatively.