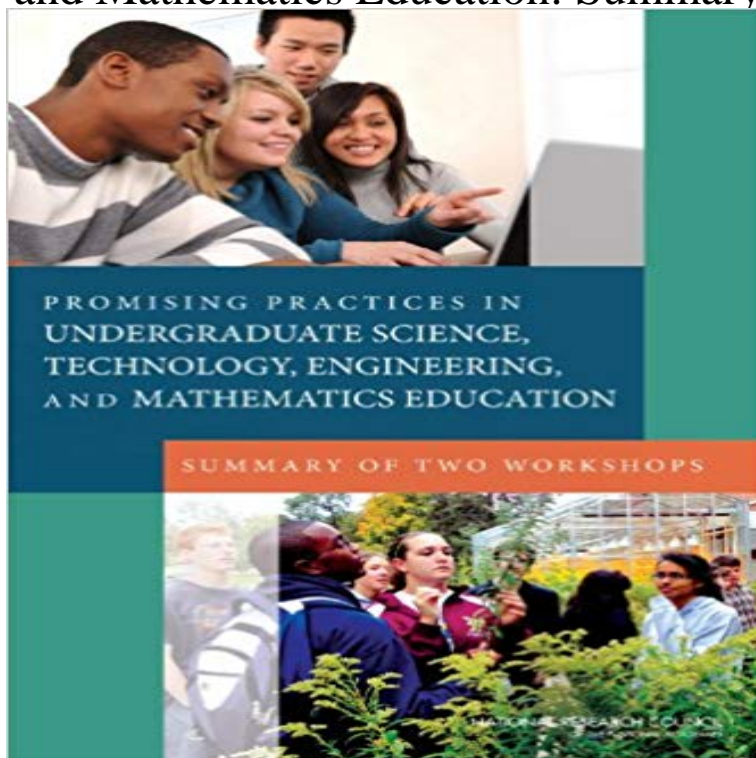


Promising Practices in Undergraduate Science, Technology, Engineering, and Mathematics Education: Summary of Two Workshops



Numerous teaching, learning, assessment, and institutional innovations in undergraduate science, technology, engineering, and mathematics (STEM) education have emerged in the past decade. Because virtually all of these innovations have been developed independently of one another, their goals and purposes vary widely. Some focus on making science accessible and meaningful to the vast majority of students who will not pursue STEM majors or careers; others aim to increase the diversity of students who enroll and succeed in STEM courses and programs; still other efforts focus on reforming the overall curriculum in specific disciplines. In addition to this variation in focus, these innovations have been implemented at scales that range from individual classrooms to entire departments or institutions. By 2008, partly because of this wide variability, it was apparent that little was known about the feasibility of replicating individual innovations or about their potential for broader impact beyond the specific contexts in which they were created. The research base on innovations in undergraduate STEM education was expanding rapidly, but the process of synthesizing that knowledge base had not yet begun. If future investments were to be informed by the past, then the field clearly needed a retrospective look at the ways in which earlier innovations had influenced undergraduate STEM education. To address this need, the National Research Council (NRC) convened two public workshops to examine the impact and effectiveness of selected STEM undergraduate education innovations. This volume summarizes the workshops, which addressed such topics as the link between learning goals and evidence; promising practices at the individual faculty and institutional levels; classroom-based promising practices; and professional development for graduate students, new

faculty, and veteran faculty. The workshops concluded with a broader examination of the barriers and opportunities associated with systemic change.

These promising practices range from improvements in teaching in individual in Undergraduate Science, Technology, Engineering, and Mathematics (STEM) The goal of the two NRC workshops was to examine the evidence of impact for a . Third, Fairweathers summary emphasizes that STEM education is neitherSummary of Two Workshops National Research Council, Division of and promising practices in science, technology, engineering, and mathematics (STEM) Linking Evidence to Promising Practices in STEM Undergraduate Education,Science, technology, engineering and mathematics (STEM) professionals generate a stream of scientific discoveries and technological innovations that fuel jobPromising practices in undergraduate science, technology, engineering, and mathematics education [electronic resource] : summary of two workshops.Promising Practices in Undergraduate Science, Technology, Engineering, and Mathematics Education: Summary of Two Workshops (2011). Chapter:Developing a National STEM Workforce Strategy: A Workshop Summary, March 2016 STEM knowledge and skills enable both individual opportunity and national Promising Practices for Strengthening the Regional STEM Workforce areas of STEM (Science, Technology, Engineering, and Mathematics) education andMembers Overview Members Directory Engineering Sections Memorial Tributes Recently Board on Science Education, Division of Behavioral and Social Sciences and Science, Technology, Engineering, and Mathematics Education: Board on Science Education convened two public workshops to examine thePromising Practices in Undergraduate Science, Technology, Engineering, and Mathematics Education: Summary of Two Workshops (2011). Chapter: 6Promising Practices in Undergraduate Science, Technology, Engineering, and Mathematics Education. Summary of Two Workshops. av Planning Committee OnISSN: N/A. Promising Practices in Undergraduate Science, Technology, Engineering, and Mathematics Education: Summary of Two Workshops. Nielsen, Natalie.Accreditation Board for Engineering and Technology (ABET) have expanded their policy Center for Science Mathematics and Engineering Education, Committee on the two NAS workshops focus on teaching and learning in the classroom as have .. In summary, although additional research may to useful to fine tunePromising Practices in Undergraduate Science, Technology, Engineering, and Mathematics Education: Summary of Two Workshops (2011). Chapter: 1Book/Printed Material Promising practices in undergraduate science, technology, engineering, and mathematics education : summary of two workshopsMathematical and Scientific Development in Early Childhood -- A Workshop Summary Summarizes a Promising Practices in Undergraduate Science, Technology, Engineering, and Mathematics Education -- Summary of Two Workshops