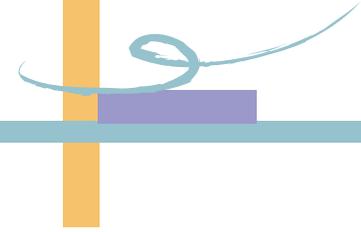




Department of Curriculum and Pedagogy



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Teachers' Playground: Enhancing Teacher Professional Development through the Use of Technology

Abstract: The second half of the 20th century has been marked by three major breakthroughs in science education. Firstly, the governments realized that science education has a significant impact on a competitiveness of a country on the global market, resulting in a substantial investment into science education (Sputnik era). Secondly, extensive research into student conceptual difficulties resulted in a creation of easy-to-administer instruments for measuring science learning. This development allowed thousands of science teachers all over the world to measure objectively student learning and share their results with each other. Moreover, it also dispelled the myth that rote memorization leads to conceptual learning. Thirdly, the last three decades of the 20th century brought an exponential growth of novel computer-based educational tools ranging from computer simulations, online interactive problem-solving systems, micro-computer-based labs, tablet technologies, electronic response systems, vast online resources, etc. The research on the effectiveness of these technologies shows that in the hands of knowledgeable teachers, these tools have a potential of helping students to develop critical thinking skills crucial for modern society. Consequently, the beginning of the 21st century has been marked by an intensive exploration of the effective uses of these technologies and the ways of incorporating them into the training of science teachers. The goal of such teacher professional development activities is to motivate and equip the teachers into exploring the pedagogical uses of the current technologies as well as of the technologies to come. Nowadays, successful science teachers are the ones who possess not only the content and pedagogical knowledge of their subject but also understand how they can use available educational technologies to promote student learning. The exploration of the development of the elementary, high school, as well as university teachers' technological-pedagogical content knowledge is the focus of my research and will be the theme of the current presentation.

Monday, October 19th, 12:30 – 1:30, SCARFE Room 310

(light lunch provided)