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Mobile Apps for Chemical Engineering Education

Abstract:

Although we have seen a nearly complete shift among chemical engineering students from desktop to laptop computers, it has merely created an incremental change in their education. Without much delay, disruptive change is already arriving as smartphones have become ubiquitous. However, mobile devices can be used for much more than texting, games, photo-taking and online shopping. Students currently in K-12 are growing up with iPads as integral components of their education. The benefits of mobile devices in engineering education still remain largely untapped. There is a great need and opportunity to put chemical engineering course materials in students' pockets. When I started as an Assistant Professor in 2010, I began to seek out chemical engineering-oriented apps, only to be very disappointed in the offerings. With the help of a former student, we decided to take matters into our own hands. Several months later, we released our first app for iOS. This webinar will discuss the ongoing efforts and motivation behind *Chemical Engineering AppSuite*, which is now in use in over 175 countries worldwide and has been launched over 115,000 times in the past year. An overview of the most popular/useful app features will be presented along with my perspectives as to how the development of these tools has shaped my approach to teaching undergraduate courses. A brief walkthrough of the app development and release process on Apple's App Store will also be presented.

Biography:

Jason received a B.S. in Chemical Engineering from Virginia Commonwealth University and a Ph.D. in Chemical Engineering from The University of Colorado at Boulder. He has authored more than 65 peer-reviewed research publications on the topics of CO₂ capture, ionic liquids, polymer membranes, nanostructured materials, and chemical process engineering. Jason is the 2015 winner of the AIChE FRI/John G. Kunesh Award from the Separations Division. In addition to his active research group, Jason has also made broadly reaching educational impacts in the areas of 3-D printing and the development of mobile apps such *Chemical Engineering AppSuite* and *ODEsseus: Numerical Solver for Differential Equations* on iPhones and iPads.



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