Interactivate Your Math Students

Project Interactivate is mathematics courseware developed by the Shodor Education Foundation in collaboration with classroom teachers, content experts, curriculum designers, and education technologists. *Interactivate* has been described by the National Council of Teachers of Mathematics (NCTM) as setting "a new standard for on-line support for math teachers" (see reference, below). The project contains more than 80 classroom-tested interactive activities and tools. Suggested lesson plans and discussions based on various concepts contained in the activities help support standards-based approaches to mathematics education. Supplemental materials for the activities and lesson plans exist in the form of help files, worksheets, open-ended explorations, a dictionary, and links from those pages to related NCTM, NCEE, and DoDEA, standards. *Interactivate* runs on any computing platform with any browser that supports Java and can be freely accessed on Shodor's website, http://www.shodor.org/interactivate.

The poster session will center on *Project Interactivate.* After the session, participants will be able to navigate through the site and be inspired to use *Project Interactivate* in their own classrooms. Participants will also learn about the Shodor Education Foundation as a non-profit organization dedicated to integrating computational science and modeling and visualization tools at all levels of education. Bethany Hudnutt, a former high school math teacher and currently the *Project Interactivate* manager, will present.

The presentation will suggest multiple ways of utilizing the courseware in the mathematics curriculum at all grade levels, including teacher education programs. Also, the usefulness of modeling and visualization to enhancing student understanding of math and science concepts will be discussed.

Shodor's philosophy on the role of technology in the classroom will be an integral part of the presentation. Technology should be used when the computing power of a computer will either make a task less time consuming or make a task which was impossible to complete using other means possible. For example, demonstrating the difference between empirical probability and theoretical probability using dice can be time consuming and uninteresting to students. Asking a student to roll a die one hundred times and keep track of results is a dull and time consuming task where no learning can take place until the experiment is complete. Even then, one hundred times may not be enough rolls for the empirical probability to approximate the theoretical. A computer can be programmed to simulate rolling a die thousands of times and keep track of the results in seconds. *Interactivate* activities are designed with this type of technology use in mind.

Interactivate has received wide-spread recognition and numerous awards including:
- Eisenhower National Clearinghouse Digital Dozen award (twice):
   http://www.enc.org/resources/records/full/0,1240,012956,00.shtm
   http://www.enc.org/resources/records/full/0,1240,018591,00.shtm
- National Council on Teachers of Mathematics' Illuminations:
   http://illuminations.nctm.org/webresources/pinteractive.html
- Forbes Magazine's Best of the Web:

http://www.forbes.com/bow/b2c/category.jhtml?id=142

Interactivate originated with the Presidential Technology Initiative in partnership with the US Department of Defense Education Activity (DoDEA) with the goal of producing high-quality interactive activities to support a variety of middle-school math texts. Since its inception, *Interactivate* resources have been linked to NSF funded middle school mathematics curricula and several other standards based texts through these texts tables of contents. *Interactivate* is in DoDEA schools around the world and in many schools and homes in the US, with more than 50,000 documented users per month.