Virtual Manipulative to teach mathematics are a current topic of discussion and research in PK12 and higher education. The presenters look at virtual manipulatives available on the Internet and suitable for PK12 teachers and pre-service teacher education students to use to teach and reinforce mathematical knowledge. The presenters are university professors and in-service PK12 teachers. Virtual manipulative sites are described in detail and the recommended activities for each site are linked to national standards. A comprehensive handout will be available as well. Research demonstrates that both concrete and virtual manipulatives are effective learning tools in the teaching of mathematics. However, concrete manipulatives are often not available for entire classes. Virtual manipulatives offer an alternative to concrete manipulatives that many classroom teachers and pre-service teacher educators need to learn more about in order in use virtual manipulatives effectively with their students.

Problem: while many PK12 teachers would like to use virtual manipulatives with their students, they lack the time to research and experiment with them. The presenters have researched virtual manipulatives, chosen several based on learning objectives and how well each helps learners meet the objectives, and linked high quality virtual manipulatives to national content standards, such as NCTM. In addition, the presenters have used the selected virtual manipulatives with pre-service and in-service teachers and offer guidance in how to effectively use the games with learners. The presenters will describe the results of research conducted on the use of virtual manipulatives in elementary classrooms in the winter of 2008. This work is important because current PK12 students have grown up with computers, and research is showing they are comfortable with and receptive to learning from simulations and interactive activities. PK12 teachers and pre-service teachers need practice working with virtual manipulatives as an educational tool, as many of them are unfamiliar with them and their use as learning tools. The presenters will demonstrate to teacher and teacher educators how virtual manipulatives have been successfully used in real classrooms by real teachers to teach content to students, as well as give teachers and teacher educators a comprehensive list and website with links to a variety of high quality virtual manipulatives available for free on the Internet. Selected manipulatives will be demonstrated and their use discussed with conference attendees. As a result of this round table, conference attendees will be become informed about the availability and use of virtual manipulatives, be prepared to begin using them with their students, and be able to link specific ones to learning objectives and standards.

Example of a site demonstrated in round table:
This well organized website has been the object of much research demonstrating successful use of virtual manipulative in PK12 education. The presenters will show some of the manipulatives available at this site and others and discuss successful use in helping students learn mathematics.