Summer workshop opportunity

The National Science Foundation and Texas Instruments will be sponsoring a week-long summer workshop in Austin, Texas during the second week in July. Funding is available to help defray the cost of attending.

For more information, contact us at:

ltps-workshop@ccl.tufts.edu

NSF REC - 9814682

TEXAS INSTRUMENTS

Participatory Simulations
http://www.ccl.tufts.edu/ps/index.html
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The
Participatory Simulations
Project

What is a participatory simulation?

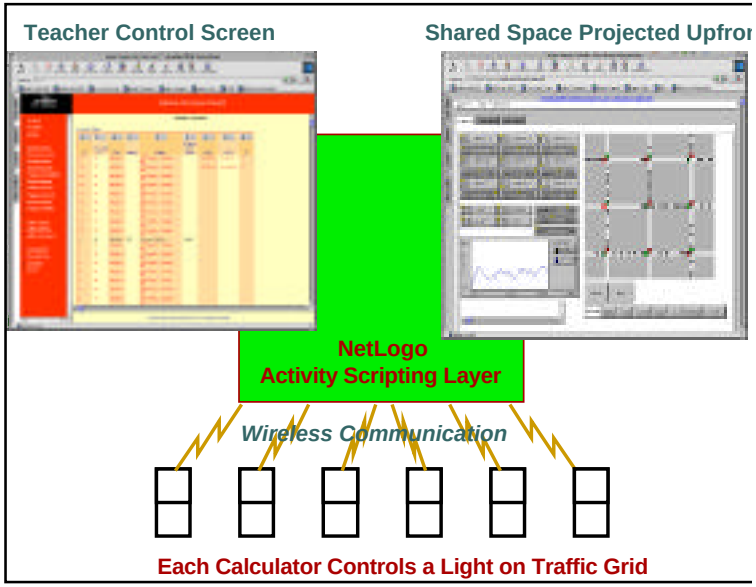
Students engaged in participatory simulations act out the roles of individual elements in a system. Through their actions the behavior of the system as a whole emerges. This emergent behavior of the system and its relation to individual students' actions and strategies then becomes the object of class discussion and analysis.

Middle school students discussing the GridLock Traffic Simulation

Students simulating gas molecules use motion detectors to collect data. This data is later drawn up by the network and the students compare the histograms of their motion with histograms of actual gas molecule motion.

What are some examples of participatory simulations for classrooms?

Participatory activities can cover a wide range of topics. Students can be points in a function, stoplights in a traffic grid, predators or prey in a population simulation, or gas molecules in a simulated gas.



Upfront computer controlling HubNet and using NetLogo as scripting language.

What are some of the advantages of participatory simulations?

Participatory simulations match the structure of real classrooms: They allow every student to be active and, generally, work better with more students. Students identify with their roles and become very invested in the activity. Classes — as a whole or in smaller groupings — become more than the sum of their parts.

What classroom technology design supports this fully participatory classroom interaction?

HubNet is the name we have given to a new architecture designed to give students the experience of participating as elements in a simulation of a complex dynamic system. HubNet hardware includes an up-front computer (the "hub") capable of addressing the network of nodes (calculators) and a display capability (e.g., a ViewScreen ™ or computer projection system) enabling an entire class to view the simulation. HubNet enables many users at the "Nodes" to control the behavior of individual objects or agents and to view the aggregated results on the hub. HubNet is designed with the assumption that the nodes have significant reside functionality (at least that of a programmable graphi calculator). The network layer implements flexib communication protocols that include the ability t upload and download data sets, upload and downloa programs (e.g., applets), monitor key-presses at th hand-held level, support real-time interaction as in ne work computer games, and form collaborative grou of various sizes (e.g., peer to peer, small groups, an whole class modes).

What is NetLogo?

This product is both a parallel modeling environme (a full Java port of StarLogoT) and a participatory simu lation authoring environment. The ability to autho highly interactive simulations is a significant extensio of parallelism in support of systems learning in clas rooms (and other group learning situations). All of th functionality is supported by a network-savvy clien server architecture. Activities and models can ru within a browser, enabling participatory simulations t be run locally or distributed over the Internet.