

Episodic and sustained use of systems in k-12 classrooms - The approach fits the goal.

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Use of System Dynamics concepts in the K-12 curriculum in the United States has been varied. Some groups have focused on systems thinking with little or no use of models. Others have concentrated on use and development of models and modeling skills in the classroom. Within this latter group, usage can be broadly characterized as episodic or sustained. While advocates of both approaches have, as their stated basic intent, the development of systems thinking in their students, the two approaches to the use of models result in profoundly different approaches to teacher training and classroom utilization of models.

At the simplest level, episodic use of system dynamic models uses these models as a tool for presenting content. In this situation, content development takes priority, with development of systems concepts a desirable, but secondary purpose. This approach is often the first used by teachers as they begin to consider the use of system dynamics in the classroom. The "tool", or more specifically, the modeling software, is the "focus" of the systems work. Development of a systems perspective is assumed to be developed, but not usually directly approached. This technique is attractive because the use of individual models requires less commitment of time and resources, less in depth master of systems concepts on the part of the teacher.

Sustained use, on the other hand, places systems concepts as equal in importance to the content area's concepts. Models are not merely used, but developed, extended, and critiqued. While the investment of time and resources is substantially greater, the exposure to and mastery of systems concepts is almost inevitably deeper. The models used are less important than the ideas developed in the models. This approach elevates the role of systems in the course. In essence, it turns system dynamics concepts into one of the fundamental ideas used to develop the curricular area. This can only occur when the value of system dynamics is clear to both faculty and administration. As a result, while outcomes are more impressive, implementation is more problematical.