Systemic Change in Education: A Road Map

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Introduction
As we enter the new century, the need to improve the nation's schools is becoming more urgent. For years, theorists and researchers have been discussing various tactics for improvement. Often, in reality, schools use a piecemeal approach to "fix" their complex problems. Only recently have we started to realize that piecemeal approaches are not sufficient. In order to help the schools, we must consider the entire system in which they exist (Reigeluth & Garfinkle, 1994). This means considering not only the school, but also every aspect of the community it affects. By using this kind of systemic approach, the school and the community can both benefit. However, the road to this kind of change is long and ill-defined. This article offers a road map for systemic change, using both text and illustrations (see Figures 1–6).

Overall View of the Change Process
Figure 1 provides a bird's-eye-view of the entire change process. It shows the sequence of events from beginning to end. The first event is the preparation of the facilitator and the initial contact of the facilitator with the system (Jenlink, Reigeluth, Carr, & Nelson, 1995; Salisbury, 1996). This step, as shown in the diagram, is the facilitator's entry into the system of interest.

The system being changed is represented by a box containing the ideas, desires, etc., of the stakeholders of the system. These ideas are being acted upon by the thoughts and ideas of other systems that affect the system. The design team takes all the information being offered by the stakeholders and converts it into an ideal vision (Banathy, 1991). This vision is then clarified, implemented, evaluated, and, finally, accepted by the school or district (Banathy, 1991; Havelock, 1995; Jenlink et al., 1995; Reigeluth, 1995). Only after this event can the facilitator complete the gradual process of disengaging from the system to allow it to flourish on its own.

While this diagram represents the major events involved in a change process, it does not show the details involved in systemic change. Figures 2 to 6 represent enlargements of the various sections of Figure 1.

Preparing for Facilitating Change
Figure 2 allows us to view some of the thoughts and actions that are involved when a facilitator chooses to enter a system. Before becoming involved in a change effort, the facilitator needs to prepare or locate potentially useful materials for helping to teach the concepts that are important to the success of the change effort (Jenlink et al., 1995; Reigeluth, 1995; Ryan, 1996). For instance, the facilitator should locate materials about systems thinking, consensus building, and team building.

At this point, the facilitator also needs to make a conscious effort to assess any ulterior motives in accepting a position as a change facilitator (Jenlink et al., 1995). For instance, the prospective facilitator should consider any relationships with people in the system or any desires to see a certain kind of system implemented. The facilitator will need to be a neutral outsider in order to provide impartial guidance when the process gets rough. If the facilitator has other motives and agendas, the change effort could be compromised.

Once the facilitator makes initial contact with a school or district, s/he has, in a way, become a part of the system which is to be changed. It is important that the existing system be respected by the facilitator. The facilitator needs to gain some understanding of the current system (Reigeluth, Norris, & Ryan, 1991). By doing this, the facilitator will be able to assess the readiness of the district, work toward building trust by showing interest, and be able to start understanding some of the values of the system. The facilitator will need to divulge some of his/her personal values to help assure that there is a good match between the system's values and the facilitator's values (Ryan, 1996). This divulgence will help build trust. The other primary trust-building effort should be a confirmation on the part of the facilitator that, like the school itself, the facilitator wants what is best for the students.

Once the facilitator has determined that the school or district is ready for change, a formal agreement should be signed (Jenlink et al., 1995). This will make the change effort a contracted effort. This means that the facilitator is protected financially and that the district will take the effort seriously.

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Building a Core Team

The first job of the facilitator is to start working with a Core Team and building a relationship with the larger stakeholder groups (Jenlink et al., 1995; Reigeluth, 1995). As shown in Figure 3, the Core Team should be made up of five to seven people representing various stakeholder groups. It is very important that both the core team and other stakeholders continue to support the change effort. Therefore, a primary duty throughout the change process involves the facilitator working to build and maintain morale and interest in the effort (Jenlink et al., 1995; Reigeluth et al., 1991). The facilitator also needs to focus on helping all of the stakeholders, not just the Core Team, understand the importance of thinking systematically.

Specifically, in the early stages of the change effort, the facilitator will be responsible for preparing the Core Team to lead the design effort. This means helping them learn how to build consensus, work in teams, and think systematically (Jenlink et al., 1995). The facilitator will also have to work closely with the core team to understand any other change efforts in the district or school and what the implications of those efforts are on the acceptance of the current change effort (Jenlink et al., 1995).

A final part of the core team training is to work toward a deeper understanding of what a learning environment can be. The diagram in the Core Team circle in Figure 3 shows how a person learns from many different systems (Banathy, 1991, p. 110). School is only a small portion of the learning experience. This is an important concept for the Core Team to understand.

Design Team at Work

Although there is a considerable amount of work between training the Core Team and arriving at the ideal vision, the primary steps to get to the vision are relatively simple. First, the Core Team expands into the Design Team, a group of eight to twelve people representing stakeholders in the system (Jenlink et al., 1995). A systemic change effort may involve more than one of these teams and may include a decisioning...
team comprised of up to 25 people. Figure 4 addresses one Design Team’s efforts.

The Core Team is the primary entity responsible for the Design Team developing an understanding of systems thinking, consensus building, and working in teams. The facilitator will act as a guide and be available to answer questions (Jenlink et al., 1995).

Once the Design Team is prepared to move ahead, the facilitator should spend some time differentiating planning and design. Because the process that the Design Team will be going through is a design process, the participants must understand the importance of working toward an ideal system rather than trying to rework the system they are already a part of (Banathy, 1991).

Once the design process starts, all of the items being fed into the system and fed into the Design Team will be talked over, analyzed, and considered. After careful consideration, the Design Team will identify the core values and core ideas of the school or district. It is from these values that the ideal vision is developed (Banathy, 1991; Jenlink et al., 1995; Reigeluth, 1995).

The Transformation of the Ideal Vision into the Design of the New System

As seen in Figure 5, this section is, by far, the most complicated and involved of the entire process. The ideal vision, a fuzzy image of a system the Design Team would like to create, has to be looked at from many different perspectives in order to be brought into focus (Banathy, 1991). The participants must scrutinize all the aspects of it to be sure that they have a true system. If these steps are left out, the system will have holes in it and will not function properly.

The Big Picture

The big idea of the process is Vision->Image->Design (Banathy, 1991, p. 27). The Vision is the Design Team’s concept of the ideal system. By letting this emerge first, the participants will remain more motivated through the rest of the process because they will start to see what they are creating. This initial vision also starts to represent something specific rather than an abstract idea of the “system.” The Image starts
The Stakeholders
- maintain & build their support
- sustain motivation
- work to evolve mindset
- provide resources
- guide them in reflection
- create/maintain 2-way communication

The System

The Core Team
(5-7 people representing stakeholders)
- build trust
- consensus building workshops
- systemic thinking workshops
- understand other change efforts in system
- work to expand concept of learning environment

Ad-Hoc Learning Resources System
Primary Social System
Formal Ed. & Training System
Community Education System
Communications System (media)
Work System

Figure 3. Roles of the core team.

to bring the Vision into focus. Finally, the Design Team arrives at the Design. It is the model from which the real system will be built.

The Detailed Picture
The more detailed picture of how the fuzzy image (Vision) is converted into a model involves several steps:

1. Develop ideal vision: This is based on the core ideas and values. It requires that several analyses be performed in conjunction with its creation. These include learner, societal, community, and resource analysis.

2. Transform vision into model: Use Banathy’s three lenses (Banathy, 1992): the Bird’s-Eye-View Lens, looking at the system within its environment; the Still Image Lens, looking at the structures and functions of a system at a given time; and the Motion Picture Lens, looking at the system through time. These lenses are very important because they force the image of the system to start becoming focused. Because of the way the lenses work, they also require that the designers continue to think systemically.

Banathy’s framework for thinking about the image (Banathy, 1991, p. 49) forces more details to be made clear. There are three stages to this process, representing three-dimensional thinking. First, the designers look at and select one boundary to focus on. The four specific boundaries focus on either those things internal to the system, the environmental interactions that affect the system, the community in which the system exists including societal systems and other organizations, or the society which affects and is affected by the system.

Next, consider the specific boundary being examined with each of the following as its scope: governance, centered around top decision-makers; administration, focused on the curriculum planners and resource directors; instruction, teacher centered; and learning, learner centered.

Then, narrow down these selections with a third element: the relationships between the school system and the community (information exchange, the school provides information for the community; cooperation,
the school interacts with the community occasionally and in mutually beneficial ways; coordination and linkage, the community and school share ownership in education; and integration, the school and community would become integrated, allowing various agencies to provide services currently offered by schools.

To simplify this explanation, the "Framework" helps the designers consider how each level of the new system interacts with outside systems. For the best total image of the system, the process will be repeated for each of the four boundaries. Once the Design Team has considered the various ways their system could be, they choose the one combination that best suits the needs and wants of the stakeholders.

3. Build the model: this process involves four main steps—explore, formulate, create, and design (Banathy, 1991, p.174).

Explore: develop a statement of purpose. This is the first point in the design process that allows the participants to consider the existing system. However, even at this stage, the Design Team may choose not to look at the existing system. If they do, the examination will, again, need to be systemic. Therefore, it is recommended that Banathy's three lenses and "Framework" be used.

Formulate: create exact specifications for the new system. The team must identify specifically who the clients of the system are, who owns the system, who is responsible for parts of the system, and the responsibilities of the system to each of the four scopes of inquiry from the "Framework" (internal, environment, community, society).

Create: build the functions model (Banathy, 1992) and a model of the enabling system. These two models together provide the first tangible information about what the new system is really going to be.

Design: change the models into design plans—or blueprints—of the new system (Reigeluth et al., 1991). The Design involves a clearly laid out plan for exactly how each part of the system will work and how the parts will interact with each other.

To help the participants get a feel for the system they have just created, it would be a good exercise, at this point, to have them describe the now-clear design.
Moving On
As the design is finalized, the team must shift its focus to planning for its implementation. This involves the development of three plans (Jenlink et al., 1995).

Implementation Plan: provides an outline for how the new system will take effect. It will also outline information about formative evaluation and revisions, as well as options for any schools not participating in this change.

Evaluation Plan: provides a guide by which to determine success. This plan will outline what is considered success/failure in the new school/district. This includes both summative and formative evaluations as well as other assessment tools.

Evolution Plan: provides a plan for the constant evolution of the system. This will prevent the system from stagnating and prevent the need for another total reconstruction effort. The Design Team should consider such things as the evolution of society when creating a plan for evolving the system.

Implementation, Evaluation, and Closure
Once the new model is ready to be implemented, the procedure follows the plans that have been laid out in the design process. A certain number of formative evaluations should take place at set periods throughout the first few years of the new system's activity (Ryan, 1996; Jenlink et al., 1995). The evaluations should always include evaluating the system and making corrections. See Figure 6.

At the implementation phase, it becomes vitally important to have buy-in, or preferably ownership, from the stakeholders. Throughout the process, the facilitator should work with the stakeholders to be sure they are being involved. But, no matter how much effort goes into the work, there will always be a few people who do not like the new system. These people need to have options open to them, such as allowing their children to attend other schools. There is no need to force acceptance by everyone.

Finally, after at least five years, the new system will be established enough to undergo a summative evaluation. This evaluation will also be developed...
during the design phase (Reigeluth et al., 1991). This evaluation will provide information that should be used to decide if the new school/district system is working. If it is not, certain parts of the design process will have to be revisited in order to try to create a better design (Jenlink et al., 1995).

The facilitator will need to separate himself/herself from the system. Because the facilitator has worked very closely with all the stakeholders and the Design Team, s/he may be regarded as a part of the community. There is a lot of "psychology" involved in being a facilitator! Throughout the design process, the facilitator needs to be sure that the stakeholders feel empowered—they must feel that the system is their own. If they feel like the new system really belongs to the facilitator, the system will die once the facilitator leaves. Part of the job of the facilitator is to empower the stakeholders—this is done by giving them information and skills that will allow them to continue the journey on their own. The facilitator needs to recognize that if the disengagement is handled inappropriately, s/he will be regarded the same way as a superintendent who stopped at the school just long enough to get a better job. The stakeholders could feel "used" and may let the new system die. Therefore, although the literature does not allude to the disengagement of the facilitator, it should be considered a vital and important part of the process.

**Conclusion**

This model of the system design process is undoubtedly incomplete. The process is very complex and varies from one situation to the next. However, this provides general guidelines about what order various events should fall in. It also offers some tips about being a facilitator and helps to combine the recommendations of several references into a series of steps that enhance the success of a systemic change effort.

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A comprehensive examination of all facets of using the World Wide Web for instruction and the design and development of learning environments is now available in a new book, Web-Based Instruction, edited by Badru H. Khan. Published in February, 1997, the book is already in its second printing and has become one of ETP’s “best sellers.”

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The volume, priced at $59.95 softcover or $89.95 hardcover, is available from Educational Technology Publications, 700 Palisade Avenue, Englewood Cliffs, NJ 07632. It is available as well on the Internet from amazon.com, the electronic bookstore.

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An alternative view of Banathy's design cycles.  

by C.M. Reigeluth