

Making Change Happen: A Problem-based Computer Simulation

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Abstract

Globalization and related trends have created an era of rapid change that reaches into the lives of all organizations. The capacity to change has become a necessary core competency for all organizations. Organizational leaders need to be able to produce more successful change by making better use of the human resources at the organization's disposal. Leaders must learn how to make organizations work smarter. This involves becoming more adept at leading change.

This paper presents the design and content of a problem-based learning module designed around a computer-based simulation intended to help organizational leaders learn to lead change. In the simulation, learners are confronted with the problem of implementing new information technology (e.g., a new ERM system) in a company. Students learn through an interactive process of team learning through playing the computer simulation, periodic instructor debriefings, readings, and written reflection exercises. They use the problem-based simulation as a means of constructing and being able to apply relevant theories of change management.

The Simulation: Its Assumptions and Instructional Design

Those who would help others learn to lead social and organizational change face a daunting challenge: how to make potentially useful conceptual knowledge applicable to people in

the workplace. This was the charge our design team assumed in designing the *Making Change Happen!*TM computer simulation, a training tool for leadership development.ⁱ We begin by discussing the assumptions that underlie this computer-based simulation and then proceed to instructional environment.

Underlying Assumptions of the Simulation

Several assumptions underlie the instructional design of the *Making Change Happen!*TM simulation.

1. The goal of training about change in organizations should be *to develop knowledge that leaders can apply in the workplace.*
2. A *problem-based approach* (PBL) to learning new concepts would yield greater results given the goal of developing usable knowledge (Bridges & Hallinger, 1993, 1995; Hallinger & McCary, 1990).
3. A key facet of PBL posits that knowledge and skill transfer will be enhanced if the *content is learned in the context of a realistic problem* (Bridges & Hallinger, 1995).
4. An *interactive simulation* in which learners can develop, apply and see the results of different strategies for making change would be effective at developing capacities for higher order thinking about leading change (Bransford, 1993; Hallinger & McCary, 1990).

5. Since the process of transforming organizations requires managers to lead in a team-based environment, *the learning process should model a team-learning format* (Bridges & Hallinger, 1993, 1995; Senge et al., 1994)
6. Given the scarcity of time for formal staff development outside the workplace, the design of *the simulation should incorporate substantial "cognitive scaffolding"* so users can learn at their own pace inside and outside of formal training (Bransford, 1993).
7. Since learning to apply any sophisticated conceptual framework takes time, it would be advantageous if *the simulation design made it convenient for learners to engage in multiple opportunities for practice.*
8. A simulation that mirrors the complexity of implementing change in the real world should foster open-ended thinking about change and model the assumption that *there is no one best change strategy that will work in all organizations* (Fullan, 1993; Kotter, 1996).
9. The simulation should incorporate a *mix of multidisciplinary resources drawn from theory, empirical research and practice* (Bridges & Hallinger, 1993, 1995).

Next we shall elaborate on how these assumptions are woven into the instructional design of the computer-based simulation.

Instructional Design

The *Making Change Happen!*TM simulation was designed as a training tool for organizational leaders. Learners play in teams of two or three people per computer, even when there are sufficient computers for everyone. Teams will lead most organizational improvement efforts in the future, rather than individuals (Drucker, 1995; Senge, 1990).

Consequently, the instructional design explicitly adopts and models a team-based approach to problem-solving and decision-making. In fact, the development of team-work skills represents an instructional goal of the simulation.

In addition, cooperative learning accelerates the learning of individuals in a problem-based environment (Bridges & Hallinger, 1993; Hallinger & McCary, 1990). Working with a partner in this problem-based exercise stimulates each learner to surface his/her assumptions about change. The process of discussion, resolving conflicts among ideas, and mutual reflection visibly raises the quality of thinking in the learning environment. When playing the simulation as individuals, especially the first time, there is a danger of learners short-cutting the thinking process and assuming a computer-game mentality. Thus we have incorporated a team-learning format as an essential feature in the formal initial use of the simulation.ⁱⁱ

The problem comes first. Consistent with the tenets of problem-based learning (Bridges & Hallinger, 1995), the simulation begins by presenting the learners with a problem rather than with theoretical content. Immediately upon starting the simulation, the teams of learners confront their challenge: how to implement new information technology in the organization.

After reading the problem on the computer screen, the learners begin to access other factual information concerning their situation. This information is presented via handouts and the computer screen.

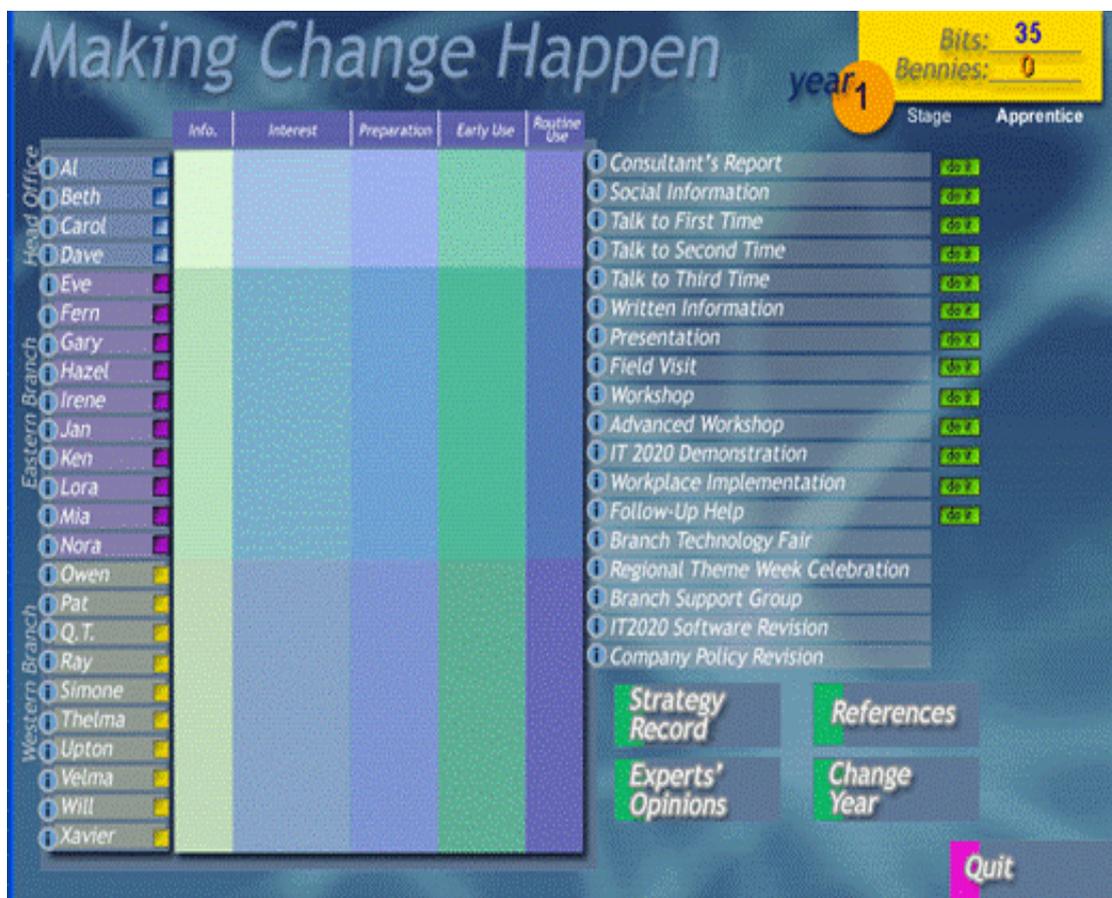
?? The game board on the computer screen (see Figure One), displays the organization and community members on the left-hand side. Listed across the top of the board are five stages of the change process: Information, Interest, Preparation, Early Use, and Routine Use. The game pieces representing the 24 people begin "off the game board" because they have yet to begin the process of change. *The goal of the*

change team is to move these staff and, Board Directors from a state of knowing nothing the use of this new information technology to a stage of mastery and routine use in their work.

?? Each of the 24 staff members has a unique personality that is conveyed through a brief description on a handout. For example, the description for the Central Region's Director reads, "Al is a respected manager who is concerned with maintaining his Region's

productivity. Passed over for the Managing Director's position, he has been heard to say: "The new boss may not understand how things are done around here." Or Irene, a credit clerk: "She says: 'When there's a job to be done, the old ways still work best.' She doesn't trust technology or see a need to change the credit system. She will resist anything that results in more work, even in the short-term."

Figure 1: The Gameboard



- ?? *The team has a budget which it may spend on activities intended to foster change.* The budget is represented in units called bits and is replenished each year. There are 16 activities from which the learners can choose (see Figure One). These are typical activities a change team might undertake: talking with people, giving out written information, holding a workshop, trying the IT out in the workplace, policy implementation. By spending the budget on some combination of these activities, the learners will begin to see change occur.
- ?? *Each time that learners implement an activity in the simulation, they receive feedback describing what happened.* For example, if the team chooses to “Talk to” several people, their budget will be reduced by the cost of that activity. The people they talk with may (or may not) respond positively. For each activity, the teams will receive feedback on what happened and why and people may move across the game board squares (or not).
- ?? The instruction is designed so that learners develop the desired conceptual frameworks out of their experience in the simulation. A central feature of the simulation is the interdependence of the activities that comprise the team’s strategy. That is, the success of certain activities in the simulation depends upon the completion of other activities. Therefore, the simulation is designed with hidden decision rules. These require the learner to develop a strategic sequence of activities that creates a context that supports change in the organization.

This facet of the simulation derives in part from the “Concerns Based Adoption Model” (Hall & Hord, 1987). This model assumes that

people will change when their needs or concerns are being met. So, for example, the successful implementation of IT in the Workplace depends upon people having reached a sufficient level of knowledge, interest, and skills in the new strategies. Thus, in the prior example the people designated to begin to implement the IT strategies must have reached the *Early Use Stage* on the game board. If not, they would receive the following feedback: “The people involved are not ready to implement new strategies. Do some more preparation with them so they have a better idea "how to do it." Or choose a group that is better prepared and then try again. No one moves.”

- ?? *The simulation also provides feedback on learning outcomes.* Certain activities – generally those that involve interaction with customers – also generate *productivity benefits*. These are conveyed via the feedback and accumulate through the three years in which the simulation is played. So if Implementation of New IT Strategies was successful, the feedback would note: “Your assessment of needs helps you make use of current research on effective practices. Staff begin using new strategies that -- to the surprise of some -- increase customer interest and enhance productivity. Gain 50 Bennies for everyone in Early Use Stage and beyond. Double the # of Bennies for everyone in the Routine Use stage. Every participant moves 1 space.” Bennies are the learner benefits.

- ?? *At the end of the three years the team can see the results of its change strategy.* Success is based on two criteria: a) moving people through the stages of change (i.e., how many of the 24 people in the system reached the Early and Routine Use Stages?) and b) improving productivity (i.e., how many learner benefits did their team achieve?).

As noted above, the simulation is played in three one-year cycles. The instructor conducts a structured debriefing after each year. The debriefing is designed so learners from various teams can share what they derived from their different experiences (i.e., implementation of different strategies.ⁱⁱⁱ

Accessing a Knowledge Base for Leading Change

Societies throughout the world are straining to accommodate new values, norms and standards of practice emanating from the global culture (Naisbitt, 1997). Most organizations are in a state of information and work overload, struggling to keep up with the pace of change in the environment (Handy, 1994; Kotter, 1996; Ohmae, 1995). At the same time, resistance to change has never been greater (Evans, 1996; Hargreaves & Fullan, 1998; Maurer, 1996).

This begins to explain *why* resistance is greatest when change is rapid. Too much change too quickly causes confusion and the breakdown of individuals, organizations and societies. In the face of rapid change, people seek to hold even more strongly to what is known (Evans, 1996; Maurer, 1996).

This suggests that resistance to change – the traditional bane of organizational leaders – is not wholly negative. Rather, resistance helps maintain equilibrium within social systems (Evans, 1996). This represents a paradigm shift in change management. Instead of viewing resistance as an obstacle to overcome, change leaders must view it as a source of information (Evans, 1996; Fullan, 1993; Hallinger, 1998b; Senge, 1990).

We can conclude resistance is a natural by-product of the change process. It is something leaders must learn to work with; not something to sweep under the rug, to bludgeon into submission, or even to “overcome” through argument. Leaders must learn to look for and use resistance. This perspective sets the stage for the change obstacles and strategies built into the simulation.

Assumptions about Organizational Change

Several assumptions underlie the design of the simulation’s content. These reflect our understanding of the leadership and change literatures. These include:

- ?? Change is a process, not an event.
- ?? Change takes place in individuals before it takes place in organizations.
- ?? Change involves gradual growth in both skills and feelings.
- ?? Individual members of a social system react differently to the same change.

These assumptions underlie the theoretical framework from which the simulation derives its decision rules. Next we discuss the change principles that underlie an “effective strategy.

The change principles we want student to learn emerge from the experience of the learners during the simulation and are highlighted explicitly in the debriefing sessions. We emphasize that there is no single “best strategy.” Rather the goal of the simulation is for the learners to understand and be able to principles such as these to their own change efforts in the workplace. Key strategic principles that are learned through the simulation include the following:

- ?? Resistance to change is natural; understand and address the causes of resistance rather than trying to fight it.
- ?? Think big, but start small in implementing organizational changes.
- ?? Change is an evolutionary process. Learn and adapt as you go.
- ?? Pressure and support are necessary to foster change.
- ?? Use change teams to lead change efforts.

At the conclusion of the simulation, the learners are invariably stunned at the extent of difference in results across the teams. Despite starting with the same budget, the same people, and the same information, the results vary widely. Differences are readily apparent in both the pattern of player progress across the game

board as well as in the accumulation of Bennies. These are readily linked to differences in the change strategies implemented by the various teams.

The instructor uses these patterns of results as the basis for the final debriefing. Indeed the explicit assumptions and principles delineated above emerge only gradually. This final debriefing is designed to help the teams synthesize their learning into an understanding of an effective change strategy.

Conclusion

The purpose of this paper was to describe the design of the *Making Change Happen™* simulation. This is one of several problem-based computer simulations we have developed to help leaders learn to apply knowledge about organizational change.^{iv} In this case, the simulation focuses on the implementation of a specific innovation: information technology. However, the goals of the simulation pertain to leading change more broadly. Thus, in closing we would like to reiterate the observation of Hargreaves and Fullan (1998) that when it comes to organizational change, you have to “beat the path by walking it.”

There is no ready answer to the “how” question. Singular recipes... oversimplify what it will take to bring about change in your own situation. Even when you know what research and published advice tell you, no one can prescribe exactly how to apply [it] to your particular [organization] and all the unique problems, opportunities and peculiarities it contains. (Hargreaves & Fullan, 1998, p. 106)

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York: Doubleday.

ii The team of developers was led by Carol Bershad and Susan Mundry. They worked under the overall direction of David Crandall to develop the original gameboard version of the Making Change Happen! simulation (The NETWORK Inc, 1990, 1999). This simulation was later revised and redesigned for computer-based instruction by Philip Hallinger. The authors wish to acknowledge the primary intellectual contribution of Carol Bershad and Susan Mundry to the development of the original simulation.

ii While we encourage a team-learning process the first time the simulation is used, there is no reason why learners cannot or should not proceed to use it on their own following the initial training. The ability to use the simulation outside of a workshop setting is one of the flexible features of the computer-based simulation.

iii For further information on the actual operation of the simulation see Bershad, Mundry & Hallinger, (1999), available by contacting The NETWORK Inc. (change@netwrk.org).

iv The other simulations focus on learning organizations (Systems Learning/Systems Changing and school effectiveness (In the Center of Things -- ITCOT). Information on these simulations is available from The NETWORK Inc.