

What You Can Do

What Technology Specialists Can Do

Brian Beabout

Technology Specialists are *high leverage* educators who often work systemically with a broad cross-section of the school population. For example, when the technology coordinator of an urban public school was disappointed with the public speaking ability of her students, she was able to work with teachers and the administration to add public speaking to a pre-existing ninth-grade unit. The students created PowerPoint slides and delivered presentations on colleges they were interested in. This public speaking mini-unit became a fixture of the 9th grade curriculum, and teachers were able to build off it for the rest of 9th grade and beyond.

As this example shows, technology specialists are in an excellent position to apply the principles of systemic change in their work. Residing outside a specific grade-level or content area, they can observe the functioning of the school somewhat *holistically*. Additionally, they often have some budgetary input and a close connection to the administration. Financial resources and approval of the administration can prove invaluable when attempting to implement and sustain changes in any organization (Ely, 1976).

Technology specialists are also great change agents because people “expect” new things from them — new software, new computers, new web resources — so why not new types of lessons and new types of assessments? Who knows how the innovation of a public speaking curriculum for 9th graders would have turned out if it had come from a district mandate, but there most likely would have been some resistance to what was perceived as forced, top-down change. When the idea comes out of the collaboration of two teachers, the innovation might be received differently by teachers. Utilizing the budgeting responsibilities that are often a part of their job, technology specialists can ensure that technology items purchased by the school are those that can help the school meet its vision and those that will be utilized by students.

By combining their holistic view of the school with day-to-day access to nearly *all* of a school community, technology specialists can apply systems principles to create positive change in the learning of students.

What Instructional Designers Can Do

Shawn Foley

“Never let schooling interfere with your education.”
- Mark Twain

People naturally learn. Whether their learning is the outcome of instructional design or something more natural

can depend on the approach of the instructional designer (ID). IDs should:

- Capitalize on the natural, lived experience of the learner.
- Use the natural system, interconnections and interdependencies to guide the design of learning.
- Foster an active, collaborative, holistic culture of learning within whatever environment surrounds the learner.
- Provide a relevant learning experience that improves life for the learner.

Learning should lead us to “do” something. Every day we face real life challenges. These challenges can produce learning in every context imaginable. Through learning, we reflect on life and the culture that surrounds us. As we strive to understand the world and our role within it, our perspectives will naturally grow and guide our learning. Learners should be encouraged to apply new knowledge to improve their lives and the lives of others. This will further an understanding of the topic through active participation, the application of knowledge and the realization that we can “change” the world around us.

To design effectively, the designer needs to find what the learner will “do” with acquired knowledge. This action or practice becomes the focus of the learning. The designer should use systems thinking and systems design to capitalize on the natural, and should encourage learners to do the same. Learners bring new perspectives to the learning process and become instrumental in the learning community. They should be autonomous and accountable and encouraged to collaborate and network with peers. They celebrate diversity and begin to think holistically when solving complex problems. Open dialogue exposes learners and their communities to interpersonal and intrapersonal reflections. This reflection guides discovery. Dialogue should facilitate shared understandings.

As we explore the ID’s place in the information age, we need an open mind that accepts a more strategic and systemic role. We should think less about “developing the learning environment” and focus instead on fostering an active, collaborative, trans-disciplinary and multi-dimensional culture of learning within the existing setting.

What Teacher Trainers Can Do

Marjorie Rickard

There are several ways that teacher educators can apply systems thinking to our work and contribute to systemic change. The key to systemic change in education is understanding the difference between learning from technology and learning with technology. Although many teachers have begun to utilize technology in the classroom, it is still a teacher-centered environment. Students today are technology savvy and are used to a multi-tasked, eclectic environment. To reach today’s students, teachers

must understand the importance of developing a customized, learner-centered, attainment-based paradigm of education.

How will teachers acquire skills for implementing learner-centered methods in their classroom? The International Society for Technology in Education (ISTE) National Educational Technology Standards (NETS) provide the necessary resources for school improvement through technology use. ISTE proposes that students develop positive attitudes towards technology uses that support lifelong learning and develop the telecommunication skills necessary to collaborate with others.

Developing an understanding of both school and district structures will help teachers overcome impediments to implementing effective learner-centered methods. The education of America's youth must be a collaborative initiative by community, parents and the educational system. Educators need to work in cooperation with the community in developing a learner-centered environment where diversity, creativity and knowledge will thrive.

Can teachers successfully prepare all students to meet the challenges and demands of the 21st century? This is an essential question which educators, employers, the public and parents want answered. Implementing an effective change process that involves a school's stakeholders in bringing about school-wide structural change will lessen hindrances to learner-centered instruction.

The global society of tomorrow is quite different from that of yesterday. It will require students to think critically, work collaboratively, learn independently and be contributing members of the community. When teachers understand the importance of the evolution of mindsets that leads to successful implementation of learner-centered instruction, then changes will occur in the structures of schools.

We teacher educators need to better prepare teachers to develop a customized, learner-centered, attainment-based paradigm of education for all students and thereby contribute to systemic change.

What Teachers Can Do

Janise Venia Wriddle

A teacher can do two things to use systems thinking in a classroom. A teacher can always be mindful of the big picture, and can gradually apply the concept. Because systems thinking in education is the application of systems theory, systems methodology and systems philosophy in education, it allows one to examine the variety of components associated with the teaching and learning environment.

Systems thinking in education encompasses "...the *embeddedness* of educational systems ..." (Banathy, 1996, p. 83), which can include relationships, purposes, dynamics of interactions and properties of teaching and learning. Engaging in systems thinking enables a teacher to think about the design of each instructional experience in the

context of the entire process a student experiences, as well as the individual interests, backgrounds and special needs of the student.

Systems thinking in the classroom is about keeping the big picture in mind, with the goal of functioning as an efficient and effective teacher. For example, the teacher should examine the efficiency and effectiveness of the classroom routines from the beginning of the day to the end of the day. Which routines are useful? Are there any routines that can be discarded?

Other ways to use systems thinking in the classroom can include being cognizant of the implementation fidelity of lessons, instructional programs or teaching strategies (Mills & Ragan, 2000). Are you really executing the math lesson, computer program or reading series in a way that fits your teaching environment and learner's needs?

Another way to apply systems thinking in the classroom involves curriculum planning. When planning the use of supplemental materials, systems thinking can be applied to establish curriculum congruency (Miller, DeJean & Miller, 2000). Are the materials congruent with mandated curriculum, mandated tests and learner needs?

Finally, start small and then expand. Pick a classroom issue of concern. Examine the concern in relation to the big picture. Readjust the necessary components, implement the concept, maintain it and expand the systems thinking to a new area.

What Parents Can Do

Laurie MacDonald

As parents, teachers and a nation, we want every child educated to his or her fullest potential. But schools and teachers can't do it alone. They need the help of their students' first teachers — their parents and other caregivers. National Education Association (NEA) president Bob Chase suggests that teachers would like to see parents and other caregivers more involved in their children's education.

Parents can do things at home that will help their children succeed in the classroom. The most effective educational tool is time. Effective parents can really listen to and talk with their children. They can read them a bedtime story, even after they are old enough to read for themselves. They can play brain games with their kids. A parent's love, support, caring, attention and discipline can make a world of difference in a child's education (Garcia, 2001).

Outside the home, parents can be a part of systemic change by being involved in the change process. As Bill Lamperes, principal of an extremely successful alternative high school in Fort Collins, Colorado, writes "One of the indicators of a school's success is the presence of a vibrant, active parent group" (Lamperes, 2005, p. 188). School staff and parents need to communicate and be partners in the process of building the home-school-community connection that is critical to a school's success.

This should not be a haphazard relationship. To be the most effective, efforts need to be made to create an organizational structure for parent involvement. Otherwise, parents can feel at a loss as to how they can help, and teachers can sometimes feel burdened by parent volunteers whose skills may not match the classroom's needs (Louv, 1999). Where there is effective communication of school needs and an opportunity to match these with community talents, there is mutual benefit. Open communication among parents, teachers and administrators encourages collaboration based on mutual understanding and respect for the assets and talents of each group. With these types of alliances, students will have the opportunity to spend time with, and learn from, positive community role models.

What Corporate Trainers and Performance Technologists Can Do

Stephen Smith and Rob Campbell

Our challenge in corporate training and human performance technology is how to apply systems thinking to improve individual, team, corporate and societal performance (Kaufman, 1989, 1995, 1996a, 1996b). In Thomas Gilbert's (1996) coinage, our challenge is to increase "Worthy Performance" — to ensure that the change in performance proves more valuable than the effort required to build that performance. Our advice is:

- 1) Challenge convention / think systemically,
- 2) Become principle-based, as opposed to rule-based, and
- 3) Blur the distinction between researcher and practitioner.

Systemic change requires that we understand overall performance architecture. Performance architecture underpins individual, team, organizational and societal performance and learning. If conventional, piecemeal thinking and structures create design, development or delivery limitations, as systemic professionals, our duty and privilege is to challenge and change this thinking and structures. Take the challenge to identify at least five systemic change principles that you have learned in this special issue, and apply them to improve yourself, your team, your organization, even your industry and the society you work in.

A key driver to systemic change is to become principle-based, rather than rule-based. A principle-based approach allows our performance to be driven by a set of agreed-upon core principles, rather than a set of rules that blind one's systemic perspective. A common set of principles allows an organization to remain flexible and react, or better pro-act, to improve their existing business performance, industry and environment. If your policy manual or approved processes dictate arcane and irrelevant procedures, it is beyond time to build a principle-centered organization. Building systemic perspective into your guiding principles improves their effectiveness.

At times there appears to be cognitive dissonance between academic and corporate professionals in education

and training. Viewing performance and learning through a systemic lens builds commonality and shared purpose, and can lead to greater collaboration to improve individuals, teams, organizations and ultimately societal performance.

Now, what are you waiting for? Your world abounds in systemic change opportunities for you to experience, understand and advance. Your systemic thinking will identify performance improvement opportunities that previously were invisible to you.

What Professors of IDT Can Do

Johannes Strobel

Ideas of systemic change can guide professors of IDT in a variety of ways and layers of their work:

- taking into account that the impact of *how* professors do research and teaching is as important as the impact of *what* is being researched and taught, by emphasizing the development of successful sustainable communities.
- integrating systemic change in teaching through participatory design and reflective lenses that address the intertwined complexity of educational endeavors.

Through an increased emphasis on research and design in naturalistic contexts, be it professional communities, formal educational systems or loosely operating informal settings, researchers become more visible and their actions become as inextricably connected to the context as the phenomena that are being studied. Research and design interventions are no longer isolated endeavors — if they ever were — but are forces in the crafting of sustainable communities of diverse stakeholders. For the work of researchers/designers, it becomes important to build trust and sustainable partnerships, and to reflect on one's own processes.

The number of non-traditional students is increasing, and through the emphasis on life-long learning and continuous education, the landscape of universities, programs and individual courses is changing. For many students, work, family life and educational pursuits are inextricably connected. Although challenging to teach within this context, the multifaceted experience of students can considerably enrich and change the shared endeavor.

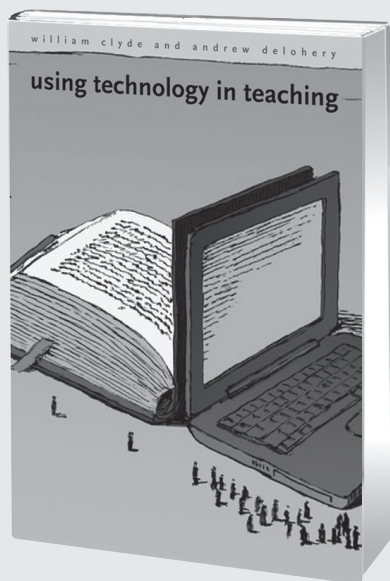
Systemic change action can be employed on three different layers: (1) participatory design of instruction can actively build on the experience of course participants and turn control over to students; (2) providing reflective lenses that are based on systems thinking can emphasize students' own endeavors as complex systems that require systemic solutions; (3) a professor can explicitly emphasize one's own role in the context of students and curricular demands.

In conclusion, a systemic view of one's role as a professor adds to the effectiveness of research and teaching and provides new opportunities to contribute to sustainable solutions in education.

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What Technology Specialists Can Do

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What Instructional Designers Can Do

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What Parents Can Do

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What Corporate Trainers and Performance Technologists Can Do

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What Professors of IDT Can Do

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