Introduction/Purpose

A. Building Community as goal of CLE

In our collaborations over the years with the Creative Learning Exchange, the Waters Foundation, Portland Public Schools, the Vermont Commons School, the Transforming Schools Consortium, and many other organizations, we have been struck by the realization that progress and growth in our shared endeavors should support and, simultaneously, be supported by the growth of ‘community.’ To keep our terms clear, those shared endeavors have been, at their core, focused on supporting students in becoming what Barry Richmond (2000) described as ‘systems citizens.’ Can we mobilize system dynamics to aid our students in developing the skills, insights, attitudes, and habits of mind that will allow them to collaboratively understand the complex systems that surround them? To collaboratively identify and assess high leverage ways to improve those systems? And to collaboratively work with confidence, passion and compassion, and mutual respect to realize such improved systems? Jay Forrester (1994) anticipated that focus on systems citizenry by describing system dynamics as fostering the “outlook and personality” to confidently create a future. That shared endeavor has provided the drive for many of us to keep plugging away over these years.

Several elements are needed to support the desired growth in quantity and quality of our interactions. All of these elements – training, availability of materials, and feedback – represent aspects of communication, one of the major components of community building. Again for clarity, this idea of community draws on a sense that working together as educators, and as educators with our students, parents, and other local citizens, we do more collectively than we could individually. We can train each other, we can share successful applications, we can provide feedback that improves good applications and turns around weaker ones, we can participate in reinforcing celebrations of our successes and in balancing commiserations for our mis-steps, and we can provide the guidance to get back on course. We would probably not argue that communication is sufficient for such strengthening community building, but it does seem necessary.

Over the years, the forms of communication that have supported this community have certainly evolved, primarily as access to computers has grown to near ubiquity, constraints presented by computer memory have fallen away, and speed of electronic transmission has grown to current broad-band standards. Still, many of the core elements of this information system and our interaction with it have been slow to fundamentally change. We still largely depend on a number of libraries of text and of models that require installation of specific software programs for their use; we still rely heavily on training courses and workshops that gather us all together in a place for a few days; we look to a variety of meetings that bring us physically all together to share our stories; and we continue to struggle to find useful and sustainable ways to maintain conversations between these occasional gatherings. All that traditional stuff is good, and when we gather together good things frequently happen; …
CLE’s new Personal Finance Curriculum — Want to help?

The fundamental failure in the US to support financial literacy has contributed to the recent catastrophe in financial institutions. The Creative Learning Exchange, in conjunction with John Heinbokel and Jeff Potash of the Center for Interdisciplinary Excellence in System Dynamics (CIESD), is working on a project to integrate Economic Education with System Dynamics Education. This approach is essential in fostering the critical thinking skills, as well as the economic knowledge, needed to meet the challenges that students will face. By teaching the economic skills along with transferable system dynamics skills, students’ critical thinking will be enhanced, not only in the economic realm, but also in many other areas of study and work.

The middle school (appropriate for grades 4-8) curriculum, after extensive input from experienced K-12 teachers, is now in the testing phase. If you are interested in helping us make it useful to students and teachers, please e-mail either Lees Stuntz at stuntzln@cle exchange.org or John Heinbokel at jheinbokel@ciesd.org.

The oak leaves are at their peak in New England. While not giving the splashy show of the huge variety of maples, the oaks, with their russet, brown, copper, and bronze variations, herald the muted tones of winter. Here at the CLE, however, things are warm and hopping. The June 2010 conference is shaping up nicely, with exciting connections and learning set to happen. We are thrilled that Jim Hines, Andrew Jones, and Dennis Meadows will be featured speakers. Their enthusiasm is contagious! Make plans now to attend. See page 9 for conference information.

Stay tuned for two new curricular ventures in the CLE roster next year: a beginning economics curriculum for 4-8 graders, in the testing phase now (see the paragraph on this page), as well as an outdoor farm-based curriculum being written in conjunction with the Audubon Society’s Drumlin Farm in Lincoln, Massachusetts.

I hope that your school year has started well. I would love to hear from you about your work developing systems citizens in your school and classroom.

Take care,
Lees Stuntz
(stuntzln@cle exchange.org)
Using New Technologies to Help Build Community

continued from page 1

B. Limits to the recent paradigm

… However, there are limits to how effective this communication strategy has been (and perhaps how effective it CAN be) in building and supporting community. Within our own experiences we certainly learned in the early 1990’s that providing teachers with an intense one-week training in modeling produced gratifying progress in that week, many stimulating discussions, good course evaluations, and improvement in our own modeling skill. We realized, however, that very few of our students could carry, much less extend, those useable skills for very long without some form of continued engagement and interaction. The need for such ongoing connection was one of the major incentives for our development of an illustrative set of models (Demo Dozen) and a self-paced tutorial that has evolved into Modeling Systems Self-Taught (MSST).

Similarly, for those able to attend, a three-day Conference pays dividends; but many of those insights and excitements fade quickly, as the event recedes into the past. And while teachers and students can benefit by acquiring and using a model or curricular unit from one of the libraries, how often are the problems encountered, modifications made to the unit, or successes achieved shared with others?

We cannot expect all of these communications issues that stand in the way of better community to be solved by technology, but we have been impressed in recent years with some of the options that have developed to, at least incrementally, enhance the ways we can productively work with each other. Although we are hardly ‘techno-gurus’ and fully cognizant of everything going on in that arena, we want to share some of the technologies we have experienced and played with, focusing on three particular tasks: providing on-line access to simulations without software constraints; providing self-paced and self-scheduled instructional modules; and utilizing conferencing software to facilitate discussion and sharing of materials among widely dispersed participants. We will then speculate a bit. Our goal here is to initiate a conversation and invite others to join us in that exploration of how to 1) better use these available options and 2) solicit descriptions of other technologies of which we are not yet aware.

II. New Technologies

A. On-Line Access to Models: NetSim® and other options

For many of us who believe that a powerful application of systems thinking comes from engagement with computer simulation models, a fundamental limiting factor continues to be access to software necessary to run those simulations. Two problems exist here: the cost of acquiring and updating sufficient modeling software (STELLA®, the most common software used by K-12 educators, is available as discounted, but not free, licenses from iseey systems), and installation and maintenance of the software on school computers or computer networks.

A number of efforts over the years have explored alternative strategies to give students access to on-line system dynamics simulations divorced from any particular modeling software. One noteworthy example was The Shodor Foundation (http://www.shodor.org/). In the late 1990s they developed and made available a “Stella2Java” program that converted STELLA models to Java applets that could run independently. Many of these models are still available at their site. Another was the Maryland Virtual High School of Science and Mathematics (http://mvhs1.mvhs.edu/index.php) which converted many STELLA models into “WebSims,” including an impressive multifaceted “Riverweb” simulation of a dynamic watershed that uses an integrated web-based graphical interface (http://www.mvhs.mbhs.edu/riverweb/). More recently, the Cloud Institute for Sustainability Education provides a simple fishing simulation on its home page for exploration on-line (http://www.sustainabilityed.org/), and the Schlumberger Excellence in Educational Development, Inc. (SEED) has developed a number of applications of the familiar bathtub illustration (http://http://www.seed.slb.com/subcontent.aspx?id=4014&terms=bathtub).

The goal of developing a common and effective template for mounting system dynamics models on the web has most recently been addressed by iseey systems inc., makers of STELLA. This software, NetSim®, translates an original STELLA or ithink model to a form that can be published to the web (most easily by utilizing the hosting facilities of the collaborating Forio Business Systems, where it is accessible to and runnable by anyone who has the proper url. For those familiar with STELLA, the graphical interface is very similar and easy to use and most of the features of the existing STELLA software (including Storytelling) are available in the NetSim conversions.

Technology continued on page 4
But a picture is worth a thousand words. Figure 1 is the NetSim version of the control panel for the Lilypad model from our “Demo Dozen” collection [http://forio.com/service/netsims/heinbokel/lilypad9-18jun09/index.html], juxtaposed with that from the original STELLA model. As you can see, they are quite similar in appearance.

But they (NetSim and the underlying STELLA model) are not equivalent. NetSim is exclusively a device for presentation and exploration. It does not provide access to the modeling level, except perhaps through STELLA’s Storytelling feature; even then the equations are not accessible. That renders it liable to being seen as a “black box,” something that raises the hackles of modelers who legitimately want to know “what’s under the hood.” Without that access, NetSim does not permit any modifications or alterations to the model. It is not a modeling tool, but rather a tool that presents finished STELLA models and supports the exploration of their outputs as certain conditions are manipulated. Transparency is key, for the benefit of users and modelers alike. To maximize the value of these simulations, we would encourage NetSim creators to the larger community to seriously consider also providing the underlying STELLA model for those using New Technologies to Help Build Community continued from page 3
who would profit from that deeper access, use STELLA's Storytelling capacity to build the logic of the simulations construction, or, at the very least, provide a screen-capture of the underlying model as a graphic to illustrate the stock and flow structure of the model.

In addition to our “Lilypad” model, we have developed models for our classes, e.g., a small model designed to illustrate S-shaped growth for our graduate public health students at the University of Louisville: http://forio.com/broadcast/netsim/netsims/jheinbokel/s-shaped-growth_jh-28sep08/index.html; and a simplified take-off on FISHBANKS, LTD that we published to support a class we 'guest-taught' at the University of Vermont: http://forio.com/service/netsims/jheinbokel/fishing-simple10mar09-small_format/index.htm. In addition, we are currently assessing a set of nine NetSim models as part of a five-Unit Module on Personal Finance designed for 4th – 8th grade students. After post-assessment revisions, we expect that material to be generally available early in 2010. A link to one of those Personal Finance NetSim models is:


And we have not been alone in utilizing this technology. The isee web-site offers examples of such models: http://www.iseesystems.com/softwares/NetSimWizard.aspx. Also the Waters Foundation, among others, is exploring and developing models for distribution using this technology, e.g.: http://forio.com/broadcast/netsim/netsims/alavigne/infection/index.htm; and we would welcome learning about other applications of this technology designed to broaden access to these simulations. CLE's K-12 Discussion List would be a great place for NetSim developers to display their work and solicit feedback. We encourage those who have not yet seen any of these simulations to explore them and share them with others. And while the software to create and publish a NetSim is not free, we believe that the expanded access to these models opens greatly enhanced opportunities to share and collectively “grow” our efforts.

B. Creating and Archiving Instructional Modules: e.g. Adobe Presenter® – for Flash animated and narrated PowerPoints

In addition to broadening the distribution and use of computer models, recent technological advances offer opportunities for enhancing communication among SD-using (and wannabe SD-using) K-12 educators. One powerful illustration of that shift is the availability of instructional modules based on relatively traditional PowerPoint presentations which have been

Technology continued on page 6
Using New Technologies to Help Build Community

continued from page 5

augmented and translated to Flash applications that can be stored on-line and served to users on demand. We have utilized one of those utilities heavily in our distance public health teaching to minimize the class time needed for direct instruction; that gives us more time for supporting student activities and discussions. Students can access and work through or review the Presentations when and as often as they need.

The specific product we have utilized is Adobe’s Presenter. A limitation of that product is that it is restricted to Windows’ platforms and it most definitely is NOT free. As a stand-alone product it definitely hit our financial ‘pain point,’ but, although not well publicized, it is an included component of ‘Adobe Acrobat 9 Pro Extended.’ That whole package, through Adobe’s Education Store, is less than half the list price of Presenter alone. There are, however, likely to be other options as well; a cursory Google of ‘powerpoint flash converter’ yielded multiple links to other commercial (and some free) products that are likely to extend the utility of such an application to Macintosh computers and price conscious individuals and schools. We cannot vouch for any of them, but would appreciate hearing of anyone else’s experiences with them.

In addition to converting a typical PowerPoint slide deck to a Flash application that can be stored on and served conveniently from web sites, the Adobe Presenter we have used offers a number of benefits: 1) narration can be conveniently added to the slides during the conversion process; 2) video clips in a number of formats can similarly be added and incorporated into the Flash document; 3) quizzes in a variety of formats can be designed and included; and 4) slide notes (which we tend to use as the script for the narration) can be computer searched so that a user could, for instance, identify slides 2, 5, and 13 as making specific reference to ‘material delay.’

We provide here a pair of illustrations from our instructional work in public health. The first is a short module (#2 of 5) we built to explain the basics of systems thinking for a course in their Masters in Public Health (MPH) program. Module 2 [http://ciesd.na5.acrobat.com/mod2/] focuses on Behavior Over Time Graphs; it follows a general introduction to systems thinking in public health and precedes modules on Stock & Flow Mapping and Feedback Loops.

Figure 3: Screen capture of Slide 8 (of 22) from Module 2 of the Introduction to Systems Thinking in Public Health set of instructional Adobe Acrobat Presentations

6 Creative Learning Exchange • Fall 2009
A second Presentation was built as a case study to help explore the use of systems tools in dealing with the recent outbreak of H1N1 influenza [http://ciesd.na5.acrobat.com/h1n-[case-study]). The final slide of that Presentation contains a link to a NetSim model of a public health approach to limiting the severity of such a flu outbreak.

The potential to develop a library of small instructional modules (say 15 – 30 minutes each in duration) excites us. System dynamics experts providing mini-workshops that could be accessed on demand; educators tying the tools of systems thinking to broader pedagogic or organizational concerns; and a teacher in Bozeman providing context and illustration of a model-based SD application for other teachers around the world, are all illustrations of how the technology could strengthen our endeavors and facilitate our mutual support of each other by sharing what we each know, understand, and apply best.

C. Web Conferencing: e.g. Adobe Acrobat Connect Pro®

Web Conferencing is a communications technology that is probably even more exciting and useful than the support of direct instruction described above. The ability to come together and work collectively and collaboratively on a particular project with colleagues from around the country or around the world has the potential to make the conference-like learning that we experience every other year possible frequently, almost impulsive-ly, and at any time that is convenient. An exciting illustrative experiment, conducted during the 2006-2007 school year, utilized “real time” collaboration between teachers and students at the Vermont Commons School and their counterparts at Nanjing Education Technology Center. Separated by more than 7,000 miles and 12 time zones, the experiment in global communication and collaborative model-building (including projects for Improving Water Quality of a Campus Pond in Nanjing and exploring The Effect of Climate Change, Keystone Species, and Economics on Vermont’s Maple Sugar Production) involved Vermont students arriving at school at 7 am and their Chinese counterparts staying until 8 pm. Using the relatively new – and free – Skype capacities to link the groups in both audio and video modes, the experiment powerfully reinforced the learning possibilities for using technology to build communities unimaginined only a short time ago. For more information on this, see [http://www.iseesystems.com/resources/CaseStudies/vcs.pdf]

In our own experience, we have come to rely upon another commercial product, Adobe Acrobat Connect Pro, as a fully featured and powerful tool for pursuing meaningful collaborative “real time” interactions. Foremost here has been our use of this software over the past four years to “teach” a series of systems thinking and dynamic modeling courses to MPH and Ph.D. students at the University of Louisville’s School of Public Health and Information Sciences. The particular power of this software, up and above maintaining an audio and video connection, rests with the ease with which participants’ computer screens can be shared with others. Beyond simply presenting materials (documents, PowerPoints, etc), this software permits the session “administrator” to permit a participant to “take control” of another’s computer. In our efforts to foster mod-

Technology continued on page 8
III. Challenges, opportunities, limitations for using these technologies for community-building

Ideally this brief presentation fosters an appreciation that there are a number of new technologies that offer considerable promise in helping us to pursue our shared educational endeavors and in helping us to build a stronger and more supportive “community” among current ST/DM practitioners. No single one of these technologies offers “the answer” to all of our needs. Each has virtues, or benefits; and each carries with it costs. In some cases those costs are financial; all impose costs of time to develop and utilize; and, especially evident with the NetSim applications, there are costs or trade-offs in terms of breadth of the engaged audience and depth of the modeling insights. There, the ability to reach out to systems-beginners and educators not yet ready for challenges of model construction to illustrate the power and benefits of exploring system dynamics models is balanced by the limited depth of that insight if the underlying model, and its inherent structure and assumptions, remains hidden.

And there will be organizational or administrative costs to facilitate the effective use of these technologies. Along those latter lines, we advocate that the CLE begin exploring ways and means to support the development and application of these technologies; to foster further conversations among its audience of educators including an explicit programmatic thread at next June's Conference; and to devise ways to review and facilitate the availability of these new electronic forms of information and creativity, as part of its current mandate to help archive and distribute educational materials.

What should be obvious, though, is that the process of maximizing benefits (and, perhaps, reducing costs) ultimately must be grounded in our willingness as a community to explore, to invest, to experiment, and to share. There are elements here that feel like a reinforcing feedback loop. As we recognize the benefit from these technologies, we should increase our willingness to invest the dollars or hours, which strengthens each of us individually and collectively as a community. If those are tangible benefits, then we are more willing to take next steps, and … the trick will be to get ourselves started moving around that loop and to assure that those first cycles pay positive benefits. One of our mentors, Jim Waters, long ago taught us the importance of thinking in terms of “successive approximations,” that is, doing the...
Join some of the finest practitioners of system dynamics in a learning bonanza designed to foster systemic change and community-building in K-12 education. Featured speakers include Jim Hines, Andrew Jones, and Dennis Meadows. This year’s conference will be designed to maximize your learning, provide practical take-away knowledge, and bolster opportunities to meet and network with others. It will center around:

- Workshops with hands-on learning
- Informative plenary presentations
- Discussion roundtables
- Ample opportunities for less formal networking and schmoozing

The sessions will range from Introductory to “Master Class,” and will focus on curricula, classroom management, and organizational themes to meet participants’ needs, addressing specific grade levels, systems tools, and disciplines.

The Conference Center is located on Babson College’s campus in Wellesley, Massachusetts, 20 minutes from Boston and Logan International airport. The campus is lovely, with rolling hills and landscaped grounds. The seclusion and serenity of the setting will ensure the focus of our conference is on learning, engaging, and sharing. The facility offers state-of-the-art meeting facilities, comfortable, pleasing accommodations, and highly acclaimed food and dining.

The registration fee includes the conference, 6 meals—lunch and dinner on Saturday, breakfast, lunch, and dinner on Sunday, breakfast on Monday—and a continuous break buffet.

There are three ways to register for the conference:

1. Register on-line at www.clexchange.org with credit card payment.
2. Fax your completed registration form with a purchase order to 978-635-3737.
3. Mail the completed form with payment or purchase order to us at the CLE.

For lodging at Babson, please go to the Babson website to make your reservations. https://reservations.ihotelier.com/crs/g_reservation.cfm?groupID=403084&hotelID=15437 A direct link to the lodging website is available at www.clexchange.org.

Rooms at the Babson Conference Center cost $116.41/single occupancy or $120.33/double occupancy, per night, during the conference dates of June 26 and 27. Rooms at the Conference Center before or after those dates cost $141.29/single or double occupancy, per night. All room rates are subject to 9.7% Massachusetts room tax. Reserve early to be assured of room availability. On-line reservations will not be accepted after June 12, 2010.

Wellesley Carriage (+1-800-836-0006, wellesleycarriage.com) provides limousine service from Logan Airport in Boston to the Babson Conference Center. The cost, including gratuities, is $99.50 for 3 people. A van, accommodating 1-9 people, costs $180.00 all inclusive. It is suggested to make transportation arrangements in advance of arrival. Mention account # 04468 to receive a 10% discount. A taxi instead, accommodating up to four passengers from Logan Airport to Babson, is approximately $68.00, plus gratuity. Veterans Taxi: +1-800-442-7554, veteranstaxi.com

Please mark your calendars now, and recruit colleagues across grades, disciplines, and organizational roles to make an effective team. Keep an eye on the CLE website and subsequent issues of this newsletter for further details. Email Andi Miller at milleras@clexchange.org for more information.

Check out this YouTube TEDex clip to get a flavor of Andrew Jones’ work and enthusiasm: http://www.youtube.com/watch?v=CTS9RY1z_i8
Yannick Ngana, an eleventh grade student at the Earl Haig Secondary School in Toronto, Canada, established a system dynamics club at the school. Yannick has enlisted the support of the Curriculum Leader of the Mathematics Department, Dr. Jane Lee, to be Haig Dynamics's staff advisor. We congratulate Yannick on his initiative and look forward to hearing how this student-run organization brings system dynamics to Earl Haig School.

Yannick would enjoy hearing from anyone who is creating similar initiatives in other secondary schools. He can be reached at Earl Haig Secondary School, 100 Princess Avenue, North York, Ontario M2N 3R7, Canada. systemdynamics@earlhaig.ca

**Haig Dynamics**

How could math, science, literature and the social sciences, which are traditionally separated knowledge areas, be interrelated? The answer is Systems Thinking and Dynamic Modelling, through HAIG DYNAMICS. System dynamics deals with how things change through time, which covers most of human concerns. System dynamics uses computer simulation to reveal how the structure and policies in a system act to create its behaviour.

How can System Dynamics make a students’ academic life easier? Haig Dynamics’ goal is to teach Earl Haig students the enrichment System Dynamics can bring to a student. It will give students a more effective way of interpreting the world around them, giving them a well-founded confidence for managing their lives and the situations they encounter.

<table>
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<tr>
<th>Activities</th>
<th>Timeline</th>
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| Establish Haig Dynamics as an official club | September 8th to 23rd | -staff advisor identified  
-club approved by SAC  
-meeting room/dates identified |
| Advertise Club | September 24th to October 5th | -kick off Haig Dynamics advertisement  
-announcements being played on Haig Radio  
-posters up in hallways |
| Introduction Meetings | October 5th to 30th | -“General Meeting”  
-System Dynamics introduced (history, main aspects, etc.)  
-club’s tone set  
-members emails, names, phone numbers acquired  
-meetings once every two weeks confirmed  
-important concepts taught, i.e., using STELLA  
-examples of applications taught, i.e., simulation models  
-established its usefulness in our daily lives |
| Meetings (Meetings will rotate from Interactive Meetings to Workshops) | November 1st to December 10th | -System Dynamics’s application in:  
Mathematics  
Chemistry  
Physics  
-use System Dynamics tools to apply the knowledge |
| Meetings... continued (Meetings will rotate from Interactive Meetings to Workshops) | January to June | -System Dynamics’s application in:  
Biology  
History  
Literature  
Economics  
Psychology  
-use System Dynamics tools to apply the knowledge |
STELLA®

Education and research are most exciting when they move out of the lecture hall and library and provide opportunity to create, experience, and see. STELLA offers a practical way to dynamically visualize and communicate how complex systems and ideas really work. STELLA models allow you to communicate how a system works—what goes in, how the system is impacted, what are the outcomes. STELLA models can help students discover relationships between variables in an equation.

Use STELLA to:
- Simulate a system over time
- Jump the gap between theory and the real world
- Enable students to creatively change systems
- Teach students to look for relationships—see the “Big Picture”
- Clearly communicate system inputs and outputs and demonstrate outcomes

System Dynamics in Mathematics

The typical mathematics curriculum is packed with material to cover. Because of so much ground to cover, students can have barely enough time to develop a deep appreciation for the underlying concepts. And, of course, the inherently abstract nature of mathematical representations can easily compound student difficulties. Translating word problems into the appropriate equation form, for example, often entails a conceptual leap that challenges even the better students.

The STELLA software is a tool that can dramatically increase learning within the mathematics curriculum. The STELLA software’s diagrammatic interface makes it easy to visualize mathematical relationships. As you or your students add detail to the relationships represented in a STELLA diagram, the concepts involved will be stated more rigorously and precisely than is possible using words or stick figure diagrams. Then, the STELLA software’s simulation capabilities allow you to see the mathematical solution unfold.

The STELLA software thus provides you with an intermediate stepping-stone between the words that describe a mathematical concept or problem, and the formal representation of the concept. By using the STELLA software, you can cover more material, in a shorter period of time, achieving a deeper level of student understanding.

System Dynamics in Algebra

Word problems typically give students a lot of trouble. They have difficulty understanding what is important in the problem and in translating the words into mathematical equations. STELLA can help students solve these problems by allowing them to work closer to the problem. Using STELLA modeling and simulation software, students can create a visual representation of word problems to better understand the translation into mathematical equations.

System Dynamics in Calculus

A key unit in any pre-calculus or calculus course covers the topic of related rates. The difficulty in this unit is the conceptual abyss that many students perceive between the stick figure depiction of a story problem, and the mathematical expressions needed to solve it. Since the thinking skills acquired in the unit on related rates are essential to subsequent progress in the math curriculum, it is essential that students learn to navigate this abyss.
Using New Technologies to Help Build Community

continued from page 8

best we can, and then critically assessing our effort(s) to figure out how to do better and move further in the next iteration. That’s a critical piece of building a reinforcing developmental loop here.

Central to that process of small steps, assessment, and modification are ongoing conversations – to identify the successes, to recognize the alternatives, and to head off the problems before they convert that feedback loop from a virtuous- to a vicious-spiral. Our hope is that the ideas presented here facilitate that conversation on the CLE listserv, and in the upcoming CLE conference, where we once again can both inspire and be inspired for building community.

Interested In Investing?

If you would like to invest in our effort here at The Creative Learning Exchange, your contribution would be appreciated. You may donate any amount you wish; perhaps $50.00 is a reasonable amount for a year. All contributions are tax-deductible.

Enclosed is _________________ to The Creative Learning Exchange to help invest in the future of K-12 systems education.

Name_____________________________________________________

Address___________________________________________________

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THANK YOU!
The Creative Learning Exchange, 27 Central Street, Acton, MA 01720

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- In paper format via US mail ($15.00 outside the USA)

Since we vastly prefer electronic distribution to paper because it is so much less expensive, please e-mail us at any time when you would like to have an electronic subscription.

milleras@clexchange.org