

Appendix A: Potential Manifestations of the Leapfrog University

The following documents contain examples that illustrate potential applications of leapfrog thinking at the University of Minnesota.

Examples of Potential “Leapfrogging” Activities

Arthur Harkins and John Moravec

A specific example of undergraduate knowledge production and application:

- Collaborative first-year seminars/laboratories that focus on the discovery and construction of new knowledge, including practice in its applications.

A specific example of leapfrog undergraduate activities based on knowledge production:

- Undergraduate-developed virtual enterprises are created in collaboration with on- and off-campus entities.

A specific example of a graduate curriculum model that produces KN production and leapfrogging:

- Graduate school creates transdisciplinary masters and doctoral programs, uncoupled from departmental “ownership.”
- Students design customized curricula and new “fields” based on their individual professional development needs, culminating in Plan B and thesis projects.
- Students develop portfolios of work and place these on the Internet.

A specific example of pedagogy to support curricula that can produce knowledge production and leapfrogging:

- An increasingly larger proportion of undergraduate and graduate classes become seminars, workshops, and laboratories intended to support knowledge production and leapfrogging.

How all of the above can move the University toward leadership rather than followership:

- Create a state of organizational chaordia* where the system is edgy and goal-generating through leapfrogging.
- University leadership will shift from administering the chaordic system to managing and leading it. Chaordia is defined as the creative ‘event horizon’ between chaos and order.

*Chaordia is defined as the productive relationship between creative chaos and contextual order.

The Subscription-Based Leapfrog University

Contributed by John Tomsyck and Arthur Harkins

Continuous education is now a mandate for innovative knowledge workers. It is inevitable that high-cost degrees with short shelf lives will garner more attention, most of it negative. Ways must be found to continuously update degrees to keep them current and marketable.

In a future of fluid careers there will be a dramatic need for high levels of networking. Individuals and organizations will both need better means for efficiently "finding" each other in the future.

A Leapfrog University can take more advantage of electron-based education by supplementing classroom and Web-based courses with subscription networking services. The Leapfrog University defines its subscribers as University Fellows.

Fellows are provided networks to keep them in touch with peers and faculty. In part, such networks are modeled after highly successful Web social networking sites. As in the cases of faculty and students, Fellows supply knowledge content and upload it to their networks.

Many certificates and several degrees can be earned across the life spans of Leapfrog University graduates if electron-based services are properly integrated with Web courses. For University Fellows, the prospect of becoming distant and detached alumni will become far less likely.

The Leapfrog University's "brand" reflects the goal of supporting innovative knowledge workers. This support, delivered on a subscription basis with supplementary networking, includes work from across fields and disciplines, building an inclusive innovation-focused community. Students, *including undergraduates*, are expected to network with Leapfrog University graduates and to supply their own knowledge content.

Subscription-basing in support of University Fellow networks can also support a reinvigorated approach to the marketing of Web credit and non-credit courses.

To: Dean and Vice Provost Gail Dubrow
From: John Moravec, Ph.D. student, Educational Policy and Administration
104 Burton Hall, moravec@umn.edu, 612/325-5992
Date: March 7, 2006
Re: A proposal for transdisciplinary innovation in graduate education

This memorandum outlines my ideas for a transdisciplinary “Master of Innovation¹” program to be administered by the Graduate School and Provost’s office in response for your call for proposals for innovation in graduate education. The requirements from your request for proposals demand brevity. I therefore consolidated many of my thoughts into bullet points. If you, or any member of your team, would like clarification on any of these items, do not hesitate to contact me at any moment during your selection process or afterward. I am committed to the success of these ideas and look forward to your feedback.

Description of the initiative proposed

“Traditional” students comprise the student bodies of today’s universities. Increasingly, however, universities are finding they will need to market and deliver educational products to life-long learners. As knowledge workers, students will no longer be content to learn and practice in discipline-specific environments. Future students will increasingly demand personalized education that meets their individual human potential development needs. Interdisciplinary and *transdisciplinary* approaches to knowledge transfer and production are critical for the success of individuals and organizations in an economic reality that is increasingly demanding of innovation. As a large “Research I” university, the University of Minnesota must strategically position itself to leverage its knowledge capital toward the development of innovative, new knowledge production.

I propose that the Graduate School, in coordination with the Office of the Senior Vice President for Academic Affairs and Provost, create a *Coordinating Office for Transdisciplinary Programs*. The office, reporting to both the Graduate School and Provost, will administer a transdisciplinary, master’s level program that will enable students to maximize their individual, innovative knowledge production potential.

Because successful completion of the proposed program is dependent on the individual student’s personal leadership, admittance to the program will be competitive and dependent on the prospective student’s demonstrated history of leadership as well as intellectual achievements. Prospective students accepted into the program are required to select two co-advisors from two different academic departments for their designed field of study. If the advisors concur that an existing program could meet the student’s needs, the student would be required to instead apply for or transfer to the existing program. If no developed field of knowledge presently exists, the student, in consultation of the

¹ This is a suggested title, and may need to be changed in the future to avoid confusion with the existing Innovation Studies program.

faculty advisors and Graduate School will develop a customized academic program, combining core coursework from the relevant contributing fields in addition to elective coursework of the student's choosing.

At the end of the program, the student will submit (and defend) either a professionally-relevant portfolio of work completed (Plan B) or a Plan A thesis. Following the successful defense, the Graduate School will award the student a "Master of Innovation" in the field of their creation (e.g., "Master of Innovation in Educational Business Design").

Audience that will benefit from this proposal

The audience that will benefit from this proposal involves all stakeholders and actors that are involved in innovative production in the emerging knowledge economy. These individuals and organizations include (and are not limited to):

- Present and future knowledge workers and innovators
- Traditional and non-traditional students
- University faculty and staff
- Businesses
- Governments (local, state and national)
- Non-governmental organizations

Expected impact

The intended outcome of the proposed program specifically meets the Graduate School's goals to a) innovate in the design of graduate education to produce excellent student experiences and outcomes; and, b) develop institutional policies and practices that facilitate interdisciplinary teaching, research, and training in graduate education. By focusing on individual knowledge production, the program also complements the Graduate School's diversity initiatives. Additional outcomes include:

- Demonstrate that the Graduate School and the University of Minnesota are leaders in innovation-based education.
- Produce professionals that are leaders in the innovative fields they create.
- Create new value networks and knowledge networks within and beyond the University.
- Contribute to the continued socioeconomic growth of the State of Minnesota through innovative research and education.

Steps needed to implement the new initiative

Please see "proposed project timeline," below.

Evaluation criteria

Products generated from the implementation of this proposal are intangibles and are therefore difficult to quantitatively evaluate. As part of the program's operation, a supervisory committee will need to be formed to determine criteria for evaluation, evaluate the program and provide recommendations for improvement. Long term evaluation criteria should include:

- Change of University and Graduate School ranking in international surveys.

- Amount and quality of innovative knowledge and innovative application of knowledge produced within University.
- Impact on socioeconomic development in Minnesota, nation and world.

Implementation partners

Implementation partners in the formation of a coordinating office would span University-wide leadership and will include the active collaboration of:

- Graduate School
- College deans
- Office of the Senior Vice President for Academic Affairs & Provost

Estimated cost of implementation

The most significant initial development costs would be from several FTE adds to Graduate School staff: Director of Transdisciplinary Programs, marketing coordinator/specialist, and support staff. Additional funds will need to be budgeted to cover overhead operating expenses and an initial marketing budget. Program costs may be recovered through student enrollment fees. Through new industry-university collaborations, operating costs could be further reduced, and transform the program into a profit center.

Proposed project timeline

An ambitious timeline for this project is proposed:

- *Now - Fall 2006*: develop finalized implementation plan, hire staff for Coordinating Office
- *Fall 2006*: Open Coordinating Office for Transdisciplinary Programs reporting to the SVP for Academic Affairs and Dean of the Graduate School
- *2006-2007 school year*: begin program development for colleges and faculty, begin nationwide publicity and marketing efforts
- *2007-2008 school year*: pilot program with up to fifteen students to develop best practices in the program, identify problems that may emerge, and provide effective corrections
- *2008-2009 school year*: program operates at full capacity

Prognosis

The creation of a truly transdisciplinary graduate program will propel the Graduate School of the University of Minnesota into a leader of knowledge production and innovation in the global economy. The focus on each individual student's interests and potential will produce more positive student experiences and provide a framework to support active, responsive knowledge production and distribution from underrepresented groups. This model will help the University become one of the top three research universities in the world in the next decade and beyond.

Appendix B: Brainstorming Notes

The following brainstorming notes are an example of leapfrog thinking being done by an academic unit that is investigating the creation of a novel advanced professional degree program.

Title Alternatives

- Leadership in Knowledge-Oriented Organizations
- Strategic Educational Leadership
- Strategic Information and Knowledge Leadership
- Strategic Global Education & Knowledge/Innovation Leadership
- Human capital development

Assumptions

- Cross-Disciplinary using resources of U of M local and international communities.
- Cross-Program U.S. and International Business Systems Design and Management.
- Serve knowledge-based economies (or those trying to become).
- Create knowledge and innovation workers.
- Designed to serve knowledge-based economies and create knowledge-innovation workforces.
- Learning collaborative format (LCF)
- Create and manage complexity
- Create a knowledge and innovation workforce.
- Create knowledge and innovation leaders
- Synchronous/asynchronous format.
- Discuss, discover, create trends and normative futures in global education, organization.

Scope: Global Markets

- Academic Sector
- Military Sector
- Private Sector
- Private Sector (HRD)
- Government Sector
- NGO's
- P-K-12
- Tourism
- Retired/Boomers
- Mass Communication Media

Issues/Factors/Considerations

- ICT
- Knowledge systems
- Innovation
- Creativity
- Knowledge management leadership
- Knowledge production management
- Knowledge distribution management
- Cultural design
- Strategic global leadership
- Reflective/creative thinking
- Policy formation and analysis
- Strategic research and development
- Systems assessment and evaluation
- Global systems dynamic (communication and travel)
- Competitors and collaboration in global context
- Strategic systems thinking
- U.S. and international business systems designs and management
- International law
- Risk management
- Anticipatory systems
- Entrepreneurship

Appendix C: Selected Comments Received

Electronic comments received from participants and other persons are included in this index. Unless if given explicit permission to share personal information, names are hidden.

In response to version 1.0 from a state legislator:

Mon 2/20/2006 10:17

John and Arthur,

I have read your press release and proposal. I congratulate you on moving forward with a concept that is fresh and aggressive. I would caution however, that if you try to move within the current structure and system, you are fated for failure.

Consider creating small, flexible and responsive substructures within a few critical departments that have complete autonomy from the department proper. As long as "innovation" is answerable to the existing system, innovation will always be stymied and the system will revert towards the status quo.

Just a thought. . . Good luck.

In response to version 1.0 from an academician outside of the University community:

Mon 2/20/2006 12:09

hi art

I am not certain what you and moravec mean about leap frogging and who you are aiming this at faculty or administration. and what do you think this will lead to?

keep me posted.

there are some changes blowing in the wind and some leapfrogging at a number of levels internationally. what it will take for the univ to leap frog the leap frogs or to survive in the rapids of change will prove interesting.

i think the State has already made some very creative leaps to give the U that edge what more might imagination find

In response to version 1.0 from a University staff member:

Thu 2/23/2006 10:45

John,

[...]

In reading your proposal, I think there are a few pieces missing:

- 1) In your discussion of "stimulating the involvement" (bullet 2), I think you are missing a significant and largely untapped segment of the university population-

staff who are also students. It is tempting to seek outside input & experts when attempting bold changes, but what would happen if the University made a more concentrated effort to learn from the people who work closely at the University level AND learn within it? I would add this group to "the involvement of first-rate retirees, volunteers, alumni, & creatives"... I guess I'm thinking of this as the Harvard vs. Japanese rugby team [...] talked about today...

- 2) I think the press release helps the outside critics understand the context of UMN in a grander context, but there is other data missing. I have yet to see anything describe and define what a "top 3 research" public institution is. Synergy and being more interdisciplinary are critical pieces, but those words are just ways of making groups be more resourceful with less resources.
- 3) Since you want the media to buy in to this, I would look at angles that appeal to the individualistic nature of the general public. What does "leap-frogging" mean to joe-taxpayer? [...]
- 4) There are programs already at the University that are considered to be # 1 in their respective fields (i.e. Child Development, WHRE Tech Ed, Law school is #19) What can the broader University learn from these schools/programs/depts. and apply it to the University as a whole?

In response to version 1.0 from a University staff member:

Sun 2/26/2006 20:40

A couple more thoughts...

1) How can companies like 3M, Honeywell, General Mills & Gillette contribute to "leap-frogging"? What is unique about the ties these international (GLOBAL!) companies have to UMN?

2) The admissions office loves to play up that fact that the University of Minnesota is the largest URBAN campus in the United States. Diversity is also part of the sales pitch. I guess I'm thinking of the bridge connecting the west/east bank...I've always thought that is a cool symbol of the diversity & presence of the university in the city. What if that "bridge" didn't exist-how would knowledge & ideas be shared? Even the passive advertising tells a story & communicates identity. How could the geographic location of the campus contribute to Bruininks vision? Leap-frogging? Becoming a top 3 research institution?

In response to version 2.0, posted on the Education Futures blog (www.educationfutures.com):

Wed 3/8/2006 06:22

Please consider the performing arts for a possible model of individualized faculty/student relationships. My two studio teachers were the guiding force behind my secondary and

undergraduate degrees. This seven-year relationship to extraordinary expertise formed me much more so than the content and provided a seamless transition to undergrad work even though that period spanned the years 1975-1982 and two states. A self-generated learning contract each semester was just part of the normal scope of life and included suggestions for designing extra-curricular activity (i.e., “You won’t understand this music until you’ve heard Mr.X play it live, and fallen in love with someone”). My present doctoral work has a more codified (albeit less adventurous) learning plan. It is called the dissertation proposal.

It seems greatness lies in managing the fundamental tension between fully individualized knowledge generation and the continuous development of the human condition (i.e., all of us getting along). For me, my artistic training was fundamental to both.

In response to version 2.0 from a doctoral candidate:

Thu 3/9/2006 09:29

Interesting concept. I'm glad that you are requesting ideas for application to university improvement; I think the document would be improved most by reaching toward the concrete ground of examples throughout.

As a doctoral student who has often felt unduly constrained by requirements within my department and program, I decided to concurrently enroll in the Masters in Liberal Studies (MLS) program in order to secure some support for a more interdisciplinary approach to my own learning. Additionally, when frustrated by the lack of attention by my Ph.D. program's faculty to what I consider to be a central issue to the future of our discipline in society, I gathered peer involvement in a faculty-less doctoral seminar on the topic, inviting outside resources from outside the department and outside the university.

I wonder what kind of progress in thinking we might make if some parallel to what I have done were institutionalized and supported directly. What if doctoral students were as a matter of course invited to identify important questions not being addressed by their own faculty, either in terms of research or teaching, and to come up with some plan for learning in those areas? This might shift our understanding of what it means to earn a Ph.D. from one of emphasizing learning and producing knowledge to a greater emphasis on considering and generating important questions, on meta-analysis of the very disciplinary map upon which we are asked to base our own routes and borders.

A separate suggestion follows from the concept of open sourcing, and is one which was raised as a topic of discussion during the graduate assistant unionization campaign. This idea is simple: make available to all eligible graduate assistants a comprehensive list of

assistantships to be filled in the following term, including those within and without the department (perhaps limiting the breadth to single colleges) and provide this list by a date which ensures that students have a chance to present their interest and qualifications for any position. As it currently operates in my department, the only positions which we hear about are A) those which our advisors and our faculty feel are right for us individually (or perhaps right for others, more cynically); and B) those which apparently no one immediately wants and which therefore need to be posted more publicly to recruit a taker. Collaboration is not present in this system so much as hierarchical (and controlling) thinking. I wonder if everyone's interests would not be better met by inviting all stakeholders to participate in the overall puzzle.

Those are my specific thoughts. While I realize that your document has a broader scope, I wonder if having a wealth of more concrete examples of application of principles would not strengthen your document.

In response to version 2.0 from a doctoral student:

Sun 4/9/2006 14:52

I am a graduate student in IT and have recently read your Leapfrog 3.0 proposal. I believe that your Leapfrog strategy is a correct one to ensure the success of the University. It is necessary to apply a collaborative networking strategy that is often thought of as "common sense" in the scientific research community to all disciplines. Applying this strategy during the undergraduate years (when students are still quite impressionable) could break down cultural barriers that hinder knowledge creation.

I would like to propose another aspect to consider in your model. I believe in one of your later versions you should address corporate involvement in the knowledge network you propose. Encouraging executives to participate in the knowledge network would further enhance the fluidity of degrees and allow students to tailor their knowledge creation to a specific field of interest. These Leapfrog students would already understand the workings of the companies they will join and be able to offer sound advice and do good work from day one. The initial training time/cost for these students would be minimized. This savings would allow corporations to offer preferential hiring to Leapfrog students, which would likely result in preferential treatment of the University in the form of research grants to continue expanding and updating the knowledge creation network.

Thank you for your time, I look forward to reading the next version of your work.

Appendix D: Workforce Transitions and Human Capital Development

These heuristic scenarios of workforces and their supporting technologies are intended to convey a remarkably profound shift away from learning and performance as ends in themselves in favor of continuous innovation as a process of working, living and learning. A major casualty of such change is the loss of stability in the job market and parallel growth in the opportunity or work market.

WORKFORCE TRANSITIONS AND HUMAN CAPITAL DEVELOPMENT

Prepared by Arthur Harkins and George Kubik

Five learning approaches

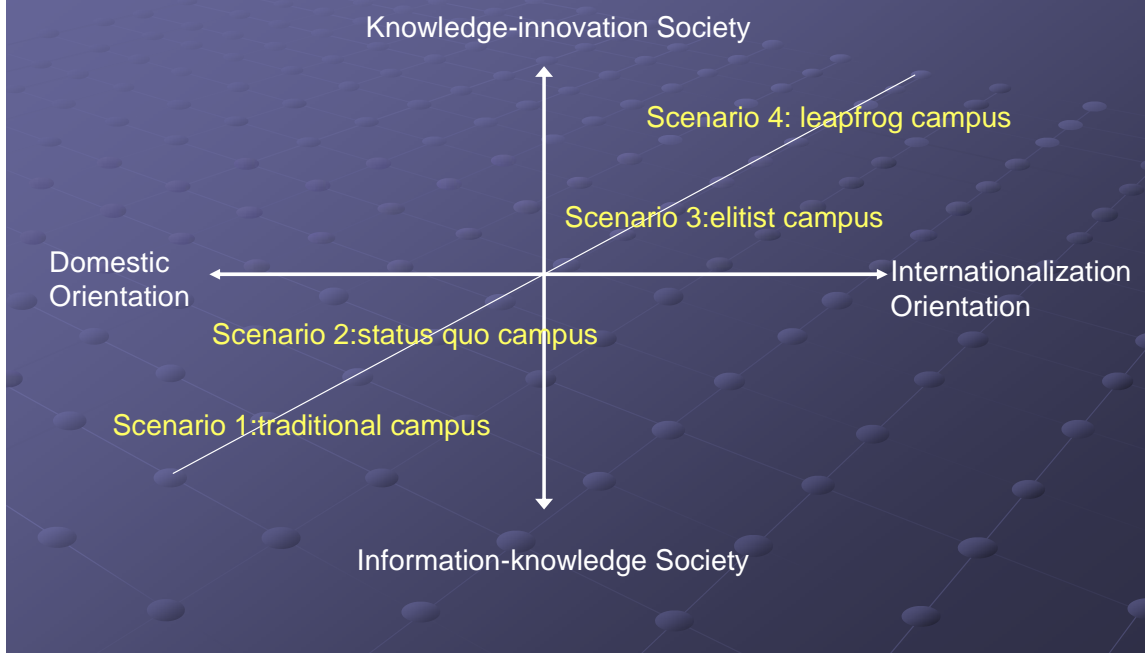
| Learning system attributes | Earlier industrial training | Generalized mass education | Information/knowledge transition | Cybernetic supports: Person-focused electronic performance support systems | Performance/innovation-based learning for Continuous Innovation Society |
|-----------------------------------|---|--|---|---|--|
| Primacy (learning is performance) | Performance (learning is secondary) | Learning (performance is secondary) | Performance (performance is focus) | Performance (learning is unnecessary) | Creativity, innovation & learning are synchronous |
| Purpose | Prepare individuals for specific task performance | Prepare individuals for general task performance | Provide explicit information to enhance performance | Guide performance | Advise, consult, guide, facilitate, perform-for, innovate-with |
| Approach | OJT preparation | Class preparation | Inform | Coach (perform-with-for) | Partner, innovate-with |
| Occurrence | Episodic instruction | On-going tutoring | On-demand information | On-demand performances | On-demand innovations |
| Focus | Group cohort | Age cohort | Group (organization) members | Employees | Integrated systems within contexts |

| | | | | | |
|---------------------------------|---|---|---|---|---|
| Basis | Informal training program | Academic curriculum | Electronic information base | Software-based explicit knowledge | Individualized creativity within chaotic, emergent context |
| Learning sequence | Learning occurs prior to performance | Learning occurs prior to performance | Need-driven | Event-driven | Continuous (concurrent and post-performance) |
| Delivery platform | Human & machine-based | Human-based | Machine-based (electronic information base) | Agent-based for individuals-in-context | Agent- & human-based upgrades of distributed competence software |
| Learning initiative determinant | Trainer determines how individuals will learn | Teacher determines how individuals will learn | Need-driven | Event-driven | Learner-tool-task-context co-determine nature of innovation base learning |
| Context | Context dependent (partial) | Context independent | Context independent | Context dependent | Context creative |
| Person dependency | Muscle-command worker enticed to repetitive labor | Brain-information worker enticed to repetitive work | Mind-knowledge worker asked to adapt continually & to innovate occasionally | Software-backed knowledge worker choosing to adapt continuously & innovate frequently | Students are strategic, innovative, & knowledgeable, generating new information, automating DC software, & continuously innovating in new contexts, software, & PBL |
| Delivery location | OJT/classroom | Classroom | Computer node | Software network nodes | Anywhere, anytime, anyplace (user, task, context-determined) |
| Delivery time | Unscheduled/scheduled | Scheduled | On-demand (anytime) | On-demand (anytime) | Continuous (anytime) |
| Performance | 1. Individual cognitive | 1. Individual | 1. Ability to use information | 1. Ability to use | 1. Motivation of user |

| | | | | | |
|------------------------|--|--|---|--|--|
| determinants | aptitude/motor skills 2. Quality/quantity of training | cognitive aptitude 2. Quality/quantity of education | base 2. Quality of information base | performance support systems 2. Quality of performance support systems | 2. Quality of DC, PBL & PBI systems 3. Quality of interaction with context |
| Workforce implications | High relevance, but usually lags behind needs | "Just-in-case" relevance; sometimes only chance of applicability | High situational relevance but very inefficient to store or access due to information mgmt. limitations | High situational relevance; essential for supporting PBL | Uploaded situational competence/innovations to points of need "just-in-time" or "just-ahead-of-time" |

Appendix E: Misc. Materials Submitted by Participants

Four Scenarios



From **Yuki Watabe**, Ph.D. student, Educational Policy and Administration, University of Minnesota, e-mail: wata0028@umn.edu

Appendix F: A Pocket Overview of Emerging Technologies Relevant to Leapfrog University

The following text originally appeared in Version 3.0 of the *Building a "Leapfrog" University* document.

To support knowledge based learning for an innovation society, a handful of technologies is listed below. The Leapfrog University must design and build institutional flexibility to rapidly adopt/incorporate/evolve these technologies into transformative practices rather than using them to support old practices.

- Tiny terabyte disk drives; pocketable optical and quantum computers operating at room temperatures; circuitry woven into clothing or sprayed onto skin; early implants; large percentage of flat surfaces receive painted-on interactive displays; heads-up delivery of high-resolution images to the retina; automatic language and dialect translations; obsolescence of the keyboard; 'nano-marketing' to individual consumers worldwide; projections of the eclipse of homo sapiens by a wide range of intelligent technological and genomic varieties of humanity.
- Jobs whirl into and out of existence quickly, sometimes overnight.
- More and more, human work creates jobs that are carried out by automata. Traditional separations of living, learning and working have vanished, as the same technologies are used in all three domains. Learning is experiential, through simulations and direct, real-world involvement. Performance and innovation are paramount.
- Humans are expected to move forward, creating low-cost, highly efficient automated processes in their wake. Innovative knowledge workers make up perhaps 90% of the work force. Intelligent machines, capable of competing with innovative Knowledge Workers, are on the 20-year horizon. The individual resume replaces the transcript.

Appendix G: Horizon Forum Presentation

The following slides were used at the inaugural meeting of the Horizon Forum, a discussion on the future of education in Minnesota, sponsored by the College of Education and Human Development, University of Minnesota.

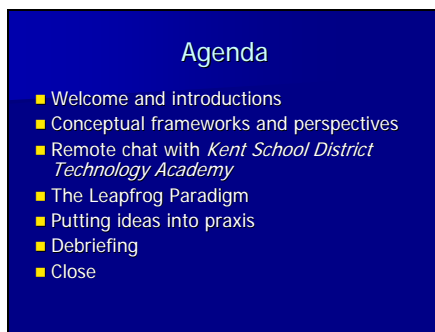
Slide 1



Slide 2



Slide 3



Slide 4

Leapfrogging

- Leapfrogging means jumping over obstacles to achieve goals.
- LF is a leadership marker.
- LF saves time.
- LF builds institutional prestige.
- LF works best if institutions collaborate.
- Can LF stimulate a second MN Miracle?

Slide 5

Discussion of Leapfrogging

Slide 6

Modes of Knowledge Production

- Mode I:

Science knowledge. Usually driven by creative individuals in highly specialized contexts.
- Mode II:

Applied knowledge. Based on, or associated with, scientific foundations; often driven by creative teams.

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Modes of Knowledge Production

- Mode III:
Personal knowledge, built from experience intentionally expanded; personally utilized.
- Mode IV:
Contextual knowledge, constructed for understanding, designing, and working within social, cultural, natural, and built environments.

Slide 8

It Appears That...

- Many American universities are very good at knowledge Modes I and II.
- Some American tertiary organizations are good at Mode III, especially schools of art and drama.
- A few American colleges are good at Mode IV, especially schools of architecture and design.

Slide 9

Overall...

- There is much to be done to enhance individualized learning through Model III knowledge production.
- There is also much to be done to promote upgrades and redesigns in learning contexts of many kinds, including organizations operating in the pre-k through 17 range.

Slide 10

The Uses of Technology in the Knowledge Modes

- Have been quite conservative.
- Continued conservatism may develop deficient human capital in comparison with other nations.
- Should computers and handhelds support all four knowledge Modes?
- Are we ready to leapfrog conventional testing, moving directly to knowledge creation and innovation?
- Does this offer the best leadership hope for American pre-K through 17?

Slide 11

Moving Forward Requires...

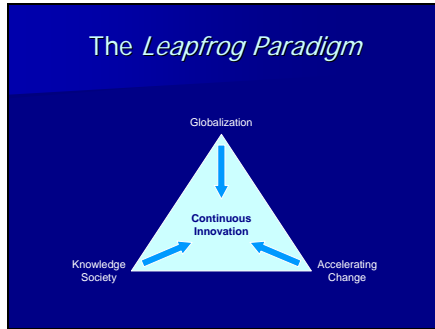
- Paying equal attention to all knowledge Modes.
- Leapfrogging ahead in technology applications.
- Establishing a Minnesota Leapfrog Consortium.
- Starting demonstration projects ASAP.

Slide 12

What if Minnesota...

- Developed a *Leapfrog Paradigm* of learning, knowledge production, and knowledge application based on all four of the knowledge Modes?
- Utilized advanced technology to the maximum for this purpose, much as industry and business are attempting to do?
- Created a second Minnesota Miracle?

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Slide 14

Discussion: Knowledge Modes and the Leapfrog Paradigm

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A relevant chat with Danielle Pfeiffer, Mill Creek Middle School, Kent, WA

Background:

Danielle is Assistant Principal at Mill Creek Middle School, Kent, Washington. She is associated with a technology program that, among other things, allows kids to look up exam questions on computers and handhelds.

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The *Leapfrog Paradigm*:
A Second Minnesota Miracle?

- What if no one failed in Minnesota schools and colleges?
- What if there were no more 'dropouts'?
- What if failure prevention were linked to fundamental changes in pedagogy and the mission of education?
- What if Minnesota young people became the global standard for leading edge human capital?

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Needed:
Minnesota Leapfrog Demonstration Projects

- What if CEHD developed Modes I-IV learning in conjunction with local school systems?
- What if a "U" campus collaborated with CEHD and their local schools?
- What if Minnesota became the first state to create effective leapfrog collaborations outside education, including public health, law enforcement, business and industry?

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What Have We Been Discussing?

Summary and comments by George Kubik, doctoral candidate in Educational Policy and Administration. Thesis topic in progress: *futures of the American workforce*.

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Personal Debriefing

- Please list several of the most important things you have heard today.
- Please project their importance for the future of Minnesota leadership in education and human capital development.
- Please indicate whether you would be interested in helping to construct a Minnesota Leapfrog Consortium.

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Closing remarks

Concluding comments by Dr. Carole Gupton

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Web site

<http://www.EducationFutures.com/horizon>
