

FY2007 NCLB - PROJECT NARRATIVE

I-LLINI Partnerships: *Lifelong Learning IN Illinois for 21st Century Teachers*

Overview

Learning is a two-way conversation. Between students and teachers. Between content and pedagogy. Between research and practice. Colleges of education must seek to amplify these conversations in order to transform the schools of today into the schools of tomorrow. The University of Illinois at Urbana-Champaign will be at the center of these conversations through its **I-LLINI Partnerships: *Lifelong Learning IN Illinois for 21st Century Teachers***

(I-LLINI Partnerships). **I-LLINI Partnerships** create sustainable models of practice with and for Illinois teachers that center on lifelong learning with new media and digital technologies. The ultimate goal of **I-LLINI Partnerships** is to increase student performance in mathematics, science, and information literacy through the evolution of the 21st Century classroom. **I-LLINI Partnerships** will...

- ***provide*** innovative, needs-based professional development programs for P-12 teachers and administrators, University content faculty, and University pedagogy faculty that is designed to transform the teaching and learning process through the use of technology-rich learning environments in subject matter classrooms.
- ***create*** enhanced learning environments in high-needs schools through the effective and creative use of new media and digital technologies and characterized by increasing student learning outcomes and developing 21st Century skills such as higher-order thinking, communication, inquiry, and innovation.
- ***strengthen*** partnerships among all stakeholders in teacher preparation to transform teacher education through the use of information and learning technologies.

I-LLINI Partnerships bring together faculty in Education and Liberal Arts and Sciences at the University of Illinois at Urbana-Champaign, teachers and researchers in the Office of Educational Technology and the Office of Math, Science, and Technology Education, and teachers from Danville District 118 Schools and Urbana School District 116. **I-LLINI Partnerships** expand on the successful **TIMeS** model for professional development, initiated through IBHE/NCLB Improving Teacher Quality grant funding in 2004-2006 (<http://times.ed.uiuc.edu>). The powerful collaborations initiated during the TIMeS project and continued through the planning of **I-LLINI Partnerships** are dedicated to the improvement of 21st Century schools through the design and implementation of innovative professional development experiences. These partner districts represent a diverse culture of educators and students, who despite varying degrees

of “high needs”, are all highly motivated to improve the quality of teacher instruction and student performance through collaborations that bridge theory and practice with the meaningful integration of emergent technologies. The essence of **I-LLINI Partnerships** envisions that representatives from these districts in collaboration with University faculty will foster the design, and implementation of needs-based professional development, assessment and data analysis of these contexts, as well as the modeling of effective inquiry-based and technology enhanced learning activities in the areas of mathematics and science.

Evidence for the need for professional development

Despite the growing evidence that well-trained teachers are more essential than ever, it seems that teacher education programs are not preparing their graduates to meet the demands of the 21st century classroom. In his 2006 report, *Educating School Teachers*, Arthur Levine found that today’s schools of education have “not kept pace with changing demographics, technology, global competition, and pressures to raise student achievement.” In recognizing that teacher education programs “cling to an outdated, historically flawed vision of teacher education,” Levine worries that without comprehensive change, these schools of education will become irrelevant. However, Levine does offer an action plan to advance teacher education within the United States, with an overall goal of significant improvements in P-12 student academic performance. His first recommendation – “Transform education schools from ivory towers into professional schools focused on school practice” – this is at the heart of **I-LLINI Partnerships**. Additionally, current trends in research indicate that the expectations of students with regard to learning are heavily influenced by their use of technology. Eight years ago, Tapscott (1998) suggested that the computer and digital resources students and teachers utilized in the classroom far surpassed what each group utilized in their homes. This is clearly not the case today. Prensky (2006) suggests that students today are “digital natives” and as a result are making unique demands of teachers and of the types of learning encountered in formal school environments. These teachers - described by Prensky as “digital immigrants” - are struggling to teach students that “speak an entirely new language.” This language is one in which technology is the core of communication and collaboration as the blending of technological resources within informal and formal educational settings are affording new opportunities for lifelong learning. It is this language that will be learned as part of the professional development experienced through **I-LLINI Partnerships**. Although students are coming to expect that technology be a part of their education, the rigors of pre-service teacher training programs tend to put technology integration on the sidelines. Hence, most pre-service and novice teachers feel ill-prepared to integration technology (Ansell and Park, 2003). As a result of the gap between digital natives and digital immigrants, as well as the lack of preparedness of pre-service and in-service teachers to use technology in their classrooms,

professional development for both pre-service and in-service teachers is needed to facilitate this transformation in P-12 learning environments. **I-LLINI Partnerships** intend to seamlessly integrate technology into instructional practices for preservice educators through a collaborative initiative that connects these teacher education candidates with inservice teachers. Additionally, there is a need for professional development that is based on the principles of high quality professional development described in the Goals 2000: Educate America Act, Title III, “Both pre- and in-service professional development require partnerships among schools, higher education institutions, and other appropriate entities to promote inclusive learning communities of everyone who impacts students and their learning” (Goals 2000). **I-LLINI Partnerships** are built upon these tenets of high quality professional development. As evidenced by the collaboration among the key partners, the goals and objectives of this plan were designed to meet the needs of schools struggling to meet the demands and expectations of students who will define our 21st Century workforce. Wallis et. al (2006) identify those characteristics that will define our future workforce: individuals who can think across disciplines and whose quest for learning allows them to construct their own knowledge path as they think creatively and rapidly process information while using new approaches to solve problems. Hence, schools need to shift their focus to ensure that students not only gain core knowledge, but also possess portable skills that will allow them to command the workforce. This shift can occur as teachers participate in professional development experiences designed through **I-LLINI Partnerships**.

Evidence for the need for professional development in partner schools

In Danville District 118 Schools, the need for the kind of professional development provided by **I-LLINI Partnerships** is demonstrated not only by research, but by school and district-level technology and school improvement plans. For purposes of this grant activity, two schools were selected within Danville District 118: Edison Elementary School and South View Middle School. Past collaboration with Danville schools through the TIMeS Project (<http://times.ed.uiuc.edu>), in which enriching and applicable professional development experiences were designed for their teachers, allowed for communications that recognized the need for continued and more focused professional development. The outgrowth of those communications was **I-LLINI Partnerships**. Both schools have acknowledged past and future collaboration as key to the success of improving their students’ performance in mathematics and science. The school improvement plan at Edison Elementary School directly referenced the **TIMeS Project** as a key professional development project during the 2006-2007 school year and Edison planners have included continued involvement of the intermediate teachers with the University of Illinois in 2007-2008, as well as their participation (at district expense) in ThinkLink Predictive Assessment Series, a resource first brought to their attention through

University sponsored activities. For example, Activity #1 in the 5th grade action plan is to “academically challenge the math students by creatively scheduling extra time in the computer lab...to benefit from the ThinkLink program.” Additionally, the technology portion of the school improvement plan references the use of Kidspiraton and Inspiration, concept mapping tools introduced to them through the TIMeS grant, for mathematics and reading instruction. Their interest in **I-LLINI Partnerships** is to continue introducing their teachers to resources otherwise unknown to them, but that fit in well with school improvement initiatives. Similarly, the South View Middle School school improvement plan targets professional development in technology “...to assist teachers as they continue to learn to integrate technology into instruction...and to interpret student outcomes.” Local funding supports teacher participation in summer professional development programs in technology. Title I funding supports participation in ThinkLink for data on student outcomes. South View Middle School has bi-weekly content-area meetings to discuss implementation of school improvement activities. These meetings will serve as a vehicle for communication with the **I-LLINI Partnerships** collaboration. Local funding supports teacher participation in these collaborative content-area meetings. Danville School District has Title II-D and Title V funds allocated for technology and professional development across the district. Likewise included in the technology plan for the Urbana School District 116 has an identified need/gap that states the there is a "need to expand professional development activities that will increase teachers' implementation of 'best teaching practices', including the use of technology in classrooms. The specific strategy for 2007-2008 is to "...continue training activities that will create learning opportunities that utilize research-based solutions and best practices to promote achievement of the Illinois Learning Standards with a focus this year on Science and Social Studies." As with the Danville schools, the Urbana district has provided its own funds to continue with ThinkLink Assessment software as introduced to them through their TIMeS participation. The Urbana Schools District 116 has now partnered in the **I-LLINI Partnerships** in hopes of meeting the goals outlined in their school improvement and technology plans.

I-LLINI Partnerships Project Description

I-LLINI Partnerships are dedicated to the improvement of 21st Century schools through the design and implementation of innovative professional development experiences, and take care to provide for continuous collaboration among each member of the partnership. It is anticipated that **I-LLINI Partnerships** is a three -year effort in which various practices will be institutionalized and sustained by the fourth year. For purposes of this proposal, Year One is detailed with the understanding that Year 2 and 3 will continue with expansion to other districts and leveraging the success of Year One to create partnerships with other initiatives currently taking shape on the UIUC campus and

within the UIUC College of Education such as the establishment of a Center for Education in Small Urbana Communities and a Global Campus. Ultimately, we envision **I-LLINI Partnerships** spanning across Illinois as the preeminent model for professional development that transforms teaching and learning through the use of and innovation with emergent technologies. **I-LLINI Partnerships** are built upon three cycles that contain two phases (Phase One and Phase Two): collaborative planning cycle, implementation cycle, and a transformation cycle. During these cycles, feedback loops will be created:

- between P-12 partner teachers and University professional development providers/technology experts to ensure that professional development activities are properly aligned with teachers' needs and school and district improvement plans
- between P-12 partner teachers and Education Faculty to inform University content and methods instructors about the overall practice of teaching and learning in today's classroom
- between LAS Faculty and Education Faculty on new research and practice in the areas of mathematics and science as well as pedagogy and instruction
- between University professional development providers and University faculty on areas of integration of content, pedagogy, and technology

Collaborative Planning Phase One

The initial phase of the **I-LLINI Partnerships** will involve significant time spent in continued collaborative planning between P-12 partner teachers, University content and pedagogy faculty, and the Office of Educational Technology as initiated by the drafting of this proposal. The goal of this phase is to establish the critical partnership foundations between each member and to begin development of appropriate, needs-based professional development plans for mathematics and/or science curricula in each of the P-12 partner classrooms. The professional development activities will be aligned with both the school and district school improvement and technology plans in upper elementary and middle school classrooms in both Danville District 118 Schools and Urbana School District 116. In addition to the professional development plans for classroom teachers, the curricular teams will focus on the design and implementation of inquiry-based lessons taught in each partner classroom based on the areas of need identified by ISAT testing and the ThinkLink Predictive Assessment Series, implemented by each of the partner districts. Finally, planning will be done to provide for unique early field and student teaching experiences for pre-service teacher candidates in the areas of mathematics and science. This collaborative planning phase allows all project partners to interact and inform through face-to-face and virtual interactions on the development of needs-based professional development plans that will subsequently lead to improved student performance in targeted areas. This collaboration allows each partner to contribute in the appropriate areas of theory and practice prior to implementation of the professional development plans. The collaborative planning phase also contains additional foundational work including critical research and

development involving online delivery of professional development, and University course redesign, as well as the design of the overall project evaluation.

Implementation Phase One

Implementation Phase One of **I-LLINI Partnerships** is where the professional development plans established during *Collaborative Planning Phase One* are put into practice. The P-12 partner teachers work to complete professional development activities in their personal plan, as well as to teach the inquiry-based, technology-enhanced lessons, and finally to assess and analyze student learning using the ThinkLink Predictive Assessment Series and other methods. The Office of Educational Technology will provide ongoing curricular and technological support for each partner teacher – both virtually as well as in the classroom, and University faculty and graduate assistants will make site visits to each partner classroom. Another key component of *Implementation Phase One* is the professional development work done with University faculty in which technology becomes an integral part of the teaching and learning process, and the significant redesign of critical courses for pre-service teacher candidates. Implementation phases are the heart of **I-LLINI Partnerships**, highlighting the essential synergy necessary for informed feedback for each partner. P-12 partner teachers grow in their classroom practice as a result of careful curricular and professional development planning with University partners; University partners grow in their classroom practice as a result of careful implementation and observation with P-12 partner teachers. These essential feedback loops serve to move each of the targeted groups forward, enhancing the collaborative nature of their relationships. One final key to this phase is a strong plan for formative evaluation, allowing each of the targeted groups to adjust professional development implementation and classroom practice as the phase progresses based on the feedback loops.

Collaborative Planning Phase Two

This formative evaluation is a critical first step in *Collaborative Planning Phase Two* of the **I-LLINI Partnerships**. Each of the members of the partnerships again comes together in a collaborative planning role to revisit the initial professional development plans and to make adjustment based upon the feedback from the initial implementation phase. This additional planning is critical for keeping all partnership members in a cycle of continuous improvement, ultimately moving each forward to completion of partnership goals. *Collaborative Planning Phase Two* also allows University pre-service teachers to begin their place in the partnership, working with P-12 partner teachers in the design of an inquiry-based, technology-enhanced classroom experience to be delivered during *Implementation Phase Two*.

Implementation Phase Two

The **I-LLINI Partnerships** progress in *Implementation Phase Two* with continued work by P-12 teachers to complete professional development activities in their personal plan, to co-teach (with University pre-service teacher candidates) the inquiry-based, technology-enhanced lessons, and to assess and analyze student learning using the ThinkLink Predictive Assessment Series and other methods. All other characteristics of the initial implementation phase proceed as well, including site visits by University partners and University course redesign. Finally, this phase involves some initial planning for the summer leadership training held in the *Transformation Phase*.

Transformation Phase

The *Transformation Phase* in **I-LLINI Partnerships** allows all partners to begin to reflect on the work done during all previous phases and to complete the initial transformation of their professional practice. This transformation of practice allows the potential to affect change in three essential areas: participants' individual professional practice, their classrooms and students, and their schools and colleagues. The highlight of the *Transformation Phase* is the capstone leadership training involving P-12 partner teachers, University content and pedagogy faculty, and the Office of Educational Technology. This valuable experience provides partner teachers with another avenue to develop critical 21st Century skills, while allowing for additional growth and training as mentor teachers for future cycles of the **I-LLINI Partnerships**; provides University content and pedagogy faculty the opportunity to redesign their instruction to align with more authentic classroom contexts, and for OET researchers to provide support for emergent technologies in authentic contexts.

The result of the continuation of the phases of **I-LLINI Partnerships** is sustained professional development experiences for teachers – ultimately affecting whole P-12 school culture within the partner schools, and strengthening the relationships with University partners. In the end the phases of the **I-LLINI Partnerships** are generative, leading to lifelong, systemic change for P-12 schools and teachers, University content and pedagogy faculty and future teachers, and ultimately for the students of the 21st Century classroom.

I-LLINI Partnerships Goals and Objectives

The goals and objectives of **I-LLINI Partnerships** are as follows:

Goal #1: *Provide innovative, needs-based professional development programs for P-12 teachers and administrators, university content faculty, and university pedagogy faculty that are designed to transform the teaching and learning process through the use of technology-rich learning environments in subject matter classrooms.*

- Objective 1.1: Deliver needs-based professional development activities that integrate technology in mathematics and science curriculum through the creation of collaborative design teams centered on the synergy between research and practice.

- Objective 1.2: Establish professional development practices to further lifelong learning by current and future P-12 teachers and University faculty.
- Objective 1.3: Research the delivery of professional development activities via the Internet to P-12 teachers.

Goal #2: *Create enhanced learning environments in high-needs schools through the effective and creative use of new media and digital technologies and characterized by increasing student learning outcomes and developing 21st century skills such as higher-order thinking, communication, inquiry, and innovation.*

- Objective 2.1: Develop research-founded, inquiry-based classroom experiences in the areas of mathematics, science, and information literacy.
- Objective 2.2: Provide multiple avenues of support for P-12 partner classrooms.
- Objective 2.3: Explore emergent technological resources and effective use in curricular redesign at P-12 and University settings.

Goal #3: *Strengthen partnerships among all stakeholders in teacher preparation to transform teacher education through the use of information and learning technologies.*

- Objective 3.1: Create or redesign key content and pedagogy courses for pre-service teachers that focus on inquiry learning and 21st century skills and provide a strong link between research and practice.
- Objective 3.2: Establish a method of providing for inquiry-based, technology-enhanced student teaching experiences in local partner schools.
- Objective 3.3: Create a library of inquiry-based, technology-enhanced classroom experiences for use in University methods courses.

I-LLINI Partnerships Anticipated Outcomes

I-LLINI Partnerships seek to facilitate measurable change within and among the following groups: P-12 students in partner schools, P-12 teachers in partner schools, University pre-service teacher candidates, and University content and pedagogy faculty. An organized table of project goals, objectives, activities, and results is found in Attachment 4. Key anticipated outcomes for Year One include:

- 12 needs-based professional development plans developed and implemented by P-12 partner teachers
- 90% of P-12 partner teachers indicate increased comfort level with technology and content and demonstrate increased understanding of technology and information literacy
- A minimum of 4 workshops held throughout the project year focused on curriculum development
- All partners establish a support network involving technology experts, curriculum developers, and partner classrooms
- OET and P-12 partner schools establish standardized professional development training delivered online
- 24 classroom experiences designed and implemented in P-12 partner classrooms
- Student achievement in P-12 partner classrooms will improve in mathematics, science, and information literacy
- OET develops clearinghouse website for support for P-12 partner classrooms

- OET, University faculty, and P-12 partner teachers develop a sustainable model of practice in emergent technology integration at both the P-12 and University settings
- 2 courses in each target area (science, teaching of science, mathematics, teaching of mathematics, and learning technologies) created or redesigned
- All P-12 partner teachers will have a pre-service teacher candidate for early field experiences and student teaching experiences
- All placed pre-service teacher candidates will teach an inquiry-based, technology enhanced lesson
- 90% of participating pre-service teacher candidates indicate increased comfort level with technology and content and demonstrate increased understanding of technology and information literacy
- Findings from project will be disseminated at a local, state, and national level through conferences and presentations

I-LLINI Partnerships Proposed Activity Timeline

The timeline of activities for **I-LLINI Partnerships** involves work done in both planning and implementation phases that inform one another for continuous re-conceptualization and evaluation of project goals. This model establishes a continuous cycle involving experience, reflection, and learning that is the foundation for our promotion of lifelong learning necessary to establish an effective 21st Century classroom. An organized table of project goals, objectives, activities, anticipated results, and implementation dates is found in Attachment 4. Key activities and anticipated dates include:

Collaborative Planning Phase One: August 2007 – October 2007

- Kickoff meeting
- Collaborative planning between P-12 partner teachers, University faculty, and OET to establish needs-based professional development plans for each teacher
- Initial online professional development modules released
- Mentor teacher project development

Implementation Phase One: October 2007 – December 2007

- Two workshops focused on inquiry-learning and curriculum development held
- Inquiry-based, technology-enhanced classroom experience delivered by P-12 partner teacher
- Site visits by University faculty and professional development coordinators
- University course redesign

Collaborative Planning Phase Two: January 2008 – February 2008

- Collaborative planning between P-12 partner teachers, University faculty, and OET to establish needs-based professional development plans for each teacher
- Collaborative planning involving pre-service teacher candidates and P-12 partner teachers

Implementation Phase Two: March 2008 – May 2008

- Two workshops focused on inquiry-learning and curriculum development held
- Inquiry-based, technology-enhanced classroom experience delivered by P-12 partner teacher and pre-service teacher candidate
- Site visits by University faculty and professional development coordinators

- Continued University course redesign

Transformation Phase: June 2008 – July 2008

- Three day leadership training for P-12 partner teachers, University faculty, and OET
- Selection of participating teachers and mentor teachers for Year Two
- Professional development module revision

Collaborative Planning Phase One, Year Two: August 2008 – October 2008

- Kickoff meeting
- Collaborative planning between P-12 partner teachers, University faculty, and OET to establish needs-based professional development plans for each teacher
- Initial online professional development modules released
- Mentor teacher project development
- University redesigned courses taught

Partnership Roles and Responsibilities

I-LLINI Partnerships bring together faculty in Education and Liberal Arts and Sciences at the University of Illinois at Urbana-Champaign, teachers and researchers in the Office of Educational Technology, and teachers from Danville District 118 Schools and Urbana School District 116. Each of these partners brings unique and critical strengths to the partnership, is prepared to accept the shared risk, responsibility, and reward of their role, and has already taken significant steps to establish directions related to their role in **I-LLINI Partnerships**.

- *Office of Educational Technology (Pianfetti, Williams, Burdick):* The Office of Educational Technology (OET) will provide the overall management and care of the **I-LLINI Partnerships**. Additionally, OET will provide information and education technology expertise, will coordinate evaluation activities with an external evaluator, and will serve as professional development provider for all partners. OET activities will be continually informed by both University content and pedagogy faculty in the Department of Curriculum and Instruction and from the College of Liberal Arts and Sciences, as well as P-12 partner teachers, in the design and implementation of professional development activities. Pianfetti (TIMeS/IBHE) and Williams (TALENT/PT3) have both served as Project Investigators on federal and state funded initiatives involving the improvement of pre-service and in-service teacher quality, and both teach undergraduate and graduate courses on learning technologies. Burdick served as professional development coordinator on the TIMeS/IBHE project and will serve in a similar role in the **I-LLINI Partnerships**. The **TIMeS** project has partnered with up to three schools in each of 10 school districts in central and east-central Illinois over the past three years and provided needs-based professional development to teachers. The professional development targeted teachers' use of emerging digital technologies and included the use of technology in science, mathematics and literacy instruction in grades K-8. In addition, ThinkLink Predictive Assessment Series was provided as an assessment tool for participant schools in order to facilitate data-driven

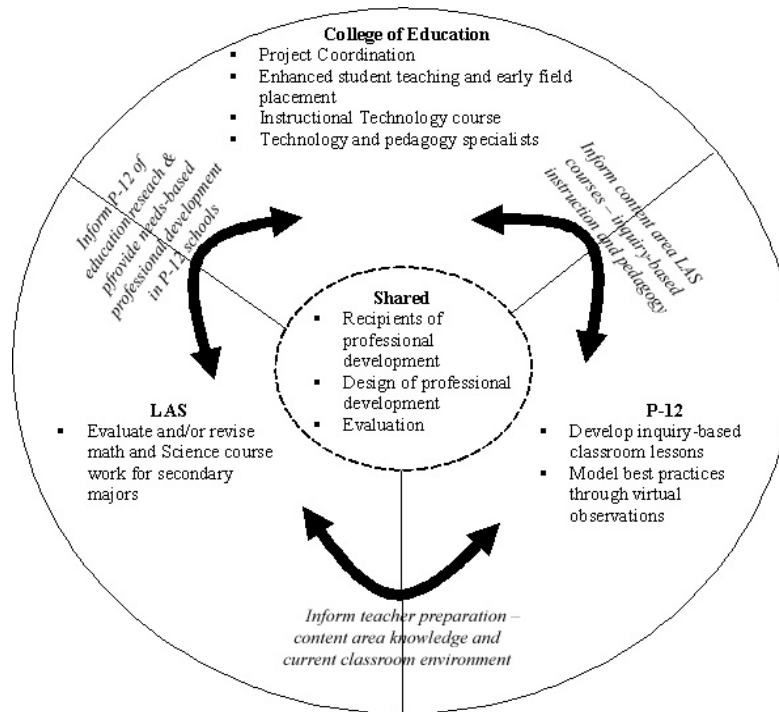
instruction. Each of the **I-LLINI** partner P-12 school districts has contracted with ThinkLink to continue the assessment series beyond the period of the **TIMEs** project. The model for professional development established during the three years of **TIMEs** will serve as the basis for the P-12 / University portion of the **I-LLINI Partnerships**; these existing partnerships have served to move the **I-LLINI Partnerships** forward on the continuum of collaboration.

- Danville School District 118 and Urbana School District 116 (P-12 Partner Teachers):* Six teachers from the Danville School District 118 and six teachers from the Urbana School District 116 will provide practical classroom expertise and will serve as the focus of professional development plans and creation of classroom experiences. The work done in these P-12 partner classrooms will inform University content and pedagogy faculty in the overall practice of education in today's schools. These partner teachers will also serve as mentors and collaborators for University pre-service teacher candidates. Three teachers from Edison Elementary School in Danville will be from a **TIMEs** partner school and will focus on the development of inquiry-based classroom lessons with less need for instruction on the use of emerging technologies. South View Middle School in Danville, however, will begin at the early stages of the professional development continuum, not having participated in **TIMEs** professional development activities. Urbana School District 116 is also a continuing district, having had teachers participate in **TIMEs** professional development activities. As in Danville, two school will be a continuing school, while one additional schools will partner for the first time. District and school-level administrators in both districts have participated in planning meetings to define their role in the **I-LLINI Partnerships**.
- College of Education Faculty (Hug, Smith, Bentz):* Faculty from the College of Education will provide pedagogical expertise during establishment of professional development plans and creation of classroom experiences. Education Faculty will also undertake the redesign of several undergraduate courses to involve additional inquiry-based and technology enhanced experiences for undergraduate and graduate students., Education Faculty will be informed by LAS Partners on new research and practice in the areas of mathematics and science and by P-12 partners in the overall practice of education in today's schools. Hug received funding through the Illinois State Board of Education for a Math-Science Partnership (MSP) in another high-needs central Illinois school district whose focus will be on improving mathematics and science instruction in elementary classrooms with an emphasis on emergent technologies to enhance instruction, and improve content-area knowledge of the elementary school teachers. The resources and feedback from teachers from Hug's project will complement the feedback from the **I-LLINI Partnerships** to inform College of Education and LAS faculty about the characteristic and dynamics found

in high-needs classrooms. Hug (Science Education), Smith (Mathematics Education), and Bentz (Special Education) are all involved in the design and instruction of several methods courses required of pre-service teacher candidates.

- *College of Liberal Arts and Sciences Faculty (Tomkin, Charlevoix, Braunfeld, Smith):* Faculty from the College of Liberal Arts and Sciences will provide content expertise during establishment of professional development plans and creation of classroom experiences. LAS Faculty will also undertake the redesign of several undergraduate courses to involve additional inquiry-based and technology enhanced experiences for undergraduate and graduate students. Finally, LAS Faculty will be informed by Education and P-12 partners in the overall practice of education through seminars and workshops. Tomkin, Associate Director for Academic Affairs for the School of Earth, Science, and the Environment, is charged with the establishment of a new Earth Systems School in the College of Liberal Arts and Sciences (merging geology, geography and atmospheric sciences), and is in the process of redesigning coursework required of education majors. Charlevoix, Braunfeld, and Smith are each involved in the design and instruction of several science and mathematics courses that pre-service teachers are required to take before entrance into the College of Education.

Members of **I-LLINI Partnerships** are well positioned for meeting the goals and objectives based on the indicators of a successful collaboration. Each of the collaborating groups has a prior relationship with one or more of the other members of the **I-LLINI Partnerships** and is poised to advance their current relationships to impact teacher education and student learning in the P-12 classroom. Partners indicate a willingness to redefine traditional roles to explore the potential rewards of a true collaboration. Project activities (e.g. ThinkLink Predictive Assessment Series) that were previously funded by other grants are being sustained by local resources demonstrating the sharing of risk and responsibility. Administrators in Danville District 118, at both the district and school levels, have been enthusiastic about this collaboration and its potential impact on the teachers and students in Danville schools. As detailed in the project description section and the activities worksheet in Attachment 4, each partner contributes in a vital way to this project. In communications with the partners, all agreed on key roles that they would play; the diagram below summarizes those roles.



Significant care will be given to grow and support each of these feedback loops. Naturally, all partners will play a substantial role in the evaluation process with the Office of Educational Technology taking the lead role in the coordination of activities and interactions with the external evaluator.

Research Foundations

The impetus for **I-LLINI Partnerships** stems from the belief that educators now must prepare students for a 21st Century workforce which includes making sure that students are well prepared not only in core academic subjects such as mathematics and science, but also in having knowledge about the world, in thinking outside the box, in becoming smart about new sources of information, and in developing new people skills (Wallis, Steptos, & Mirand, 2006). Additionally, four areas of research frame this project: (1) inquiry-based learning, (2) professional development, (3) mathematics and science literacy, and (4) information/digital literacies.

- Inquiry-based learning*: “Inquiry-based instruction is the creation of a classroom where students are engaged in essentially open-ended, student-centered, hands-on activities.” (Alan Colburn, 2000) Key characteristics of inquiry-based learning include: 1) student centered learning; 2) active learning; 3) critical thinking, and 4) an emphasis on authentic, real world tasks. **I-LLINI Partnerships** are designed to adequately address these characteristics. Through these collaborations, students will ask meaningful questions that are inspired by genuine curiosity about real-world experiences; investigate their knowledge by gathering information, crafting experiments,

observing, and interviewing, create new knowledge from what they learn and express their knowledge in creative ways, and discuss and reflect on what they know and conclusions they've made

(<http://www.inquiry.uiuc.edu/inquiry/process.php3>). In essence,

I-LLINI Partnerships will inspire educators to develop a classroom environment characterized by students actively involved in their own knowledge construction.

- Professional development:* Ansell and Park (2003) found that “only 42% of novice teachers feel well or very well prepared to use computers for instruction in the first year of teaching.” The US Department of Education published similar findings that showed that only 20% of teachers report feeling well prepared to integrate educational technology into classroom instruction. Compounding this gap between teachers and students is the fear that in underrepresented areas, limited access to emergent technological resources will continue to keep classrooms from meeting the needs of today's learners. The framework of **I-LLINI Partnerships** is built around the concept that good professional development will offer a sustainable model of practice for schools in addition to bridging a relationship between theory and practice. These are also salient features of a professional development school in which all the stakeholders have a voice and can act as agents of change within a school culture. **I-LLINI Partnerships** support a strong connection with the pre-service teacher candidates and the experiences they receive both within the university classroom and the P-12 classroom. Increased involvement from university faculty will help facilitate this as well as an emphasis on inquiry based learning. We have worked diligently to align our goals and objectives to match the research on collaboration.
- Core subjects:* Research indicates a need for authentic and inquiry-based learning in mathematics and science and an increase in the use of diverse technologies integrated into these curricula. In the past, subjects such as mathematics have been taught largely through rote methods. These procedures have led to a “Teaching Gap”(Stigler & Hiebert, 1999) that has left American students lagging behind on international comparisons. In mathematics and science, new curricula have been developed to teach high quality mathematics and science to ALL students (U.S. Department of Education Mathematics and Science Expert Panel, 2001; U.S. Department of Education's Mathematics and Science Expert Panel, 1999), but teachers are often unprepared to use such curricula. Teachers continue to use rote methods pedagogy while the research indicates that a conceptual approach will improve student problem solving without diminishing their basic skills (Boaler, 1998; Riordan & Noyce, 2001; Schoenfeld, 2002). Several key reports have pointed to technology as a key component in improving teaching. In particular, the President's Taskforce on Teacher Education found that “teachers are inadequately prepared to

understand and apply technology to teaching (ACE Presidents' Task Force on Teacher Education, 1999 p. 9)". And the report by the Glenn Commission advocated summer training, inquiry groups, and access to online resources with real-time data (National Commission on Mathematics and Science Teaching for the 21st Century, 2000 pp. 26-28).

- *Information/digital literacies:* Digital technologies extend and enhance the ways in which students interact and learn, placing an emphasis on new kinds of literacies involving information technology and new media. Zhao, et al (2002), identify the teacher, the project, and the school as three key overlapping categories that play pivotal roles in successful technology implementation. Further, Cordes and Miller (2004) suggest that "A new approach to technology literacy, calibrated for the 21st century, requires us to help children develop the habits of mind, heart and action that can, over time, mature into adult capacities for moral reflection, ethical restraint, and compassionate service" (p.7). Moreover, as stated in "The Report to the President on the use of technology to strengthen K-12 education in the United States" submitted by the President's Committee of Advisors on Science and Technology (1997, March), "The content of professional development is..critical. Rather than focusing narrowly on technical uses of computers...an approach that emphasizes the link between computers and how teachers might use them is generally the most beneficial" (pp. 7-9 and 48-49). Additionally, in a report written for the Department of Education, Means & Olson (1999) emphasizes authentic uses of technology in education. She believes effective technology use has these characteristics:

- The technology supports student performance of an authentic task.
- The technology use is integrated into activities that are a core part of the classroom curriculum.
- Technology is treated as a tool to help accomplish a complex task rather than a subject of study for its own sake.

I-LLINI Partnerships look to help all educators understand that within core academic subjects such as mathematics and science, new literacies are emerging as a result of the proliferation of information and technology. These new literacies are redefining what it means to "know" and how we come to "know". The **I-LLINI Partnerships** will help redefine teaching and learning for 21st Century teachers and learners.