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The *World Class Initiative* ... a grant proposal

An interactive solution ... that unites **wireless technology** and **Web-based learning tools** to empower and connect **teachers, parents and kids** across **diverse communities** with meaningful **learning opportunities**

A presentation to:
Wireless Cities ... Communities of Interests Conference
Minneapolis, MN
April 17, 2007

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The World Class Initiative

The Opportunity

Technology is supporting exciting learning strategies that are revolutionizing the experience of "*classroom learning"* in and out of the classroom. All over the United States, technology-literate students, families and educators are embracing technology tools (e.g., multimedia authoring, Web tools, digital cameras).

Digital Watershed's World Class Initiative is committed to the positive transformation of the traditional classroom learning experience. Today, technology-literate learners have the potential to learn anywhere... anytime. We believe that knowing ***how*** to use technological tools is just the first step. It is even more important to learn ***how to effectively express and share ideas and thoughts*** using technological tools. Moreover, it is essential that teachers, students and families have the opportunity to collaboratively learn with other people throughout the Twin Cities, state, country and world.

The Mission

Discovery-based learning that engages the mind! Our youth need to participate in projects that involve a panorama of experiences that promote both learning and community service. They need to master skills that allow them to excel at individual and collaborative writing, project planning, publishing, scientific investigation and critical thinking -- in and out of the classroom.

The ***World Class Initiative*** will allow student/teacher/community collaborations to flourish. Assisted with wireless tools that facilitate the exploration of content in meaningful ways, students located almost anywhere can pursue invaluable learning skills as they: analyze data, organize discussions, prepare presentations, compare and contrast results and publish reports of their findings. Mastering all of these learning skills will determine today's students capability to successfully compete in today and tomorrow's workforce.

Digital Watershed is dedicated to creating opportunities for students to actively participate in real-world learning supported by wireless data collection tools that enable them to conduct surveys, take temperature readings, participate in mobile blogs, collect and interpret data, engage in citizen journalism and master all those buttons on digital cameras!

The VISION

The ***World Class Initiative*** will provide educational opportunities and experiences that facilitate the development of strategic learning objectives that broaden and expand critical thinking skills of learners - of all ages. Imagine... student using laptops, cellphones, even mobile game players with browsers to interact with learning content customized by their teachers to effectively nurture and facilitate collaborative, exploratory, interactive learning everywhere... in classrooms, in libraries, at community meetings and events... even at the kitchen table!

Proposed Project

Wireless Web Content Templates

The World Class Initiative is a grant proposal originated by non-profit organization Digital Watershed. The initiative will provide easy-to-use, wireless educational tools that allow students, teachers and parents to discover ideas, solve challenges, cultivate learning and understanding and participate in educational experiences. These experiences will promote and enhance the critical thinking skills that our youth will need to actively and successfully participate in a rapidly evolving global community.

The **World Class Initiative**:
-- Will design, develop and produce customized Wireless Web Content Templates that foster connections to the community.
-- Will broaden and expand meaningful learning experiences by working with local libraries, museums and arts/culture venues.
-- Foster the growth and development of critical thinking skills by contextualizing learning.

Digital Watershed and its *Creative and Development Team* propose to develop interactive *Wireless Web Content Templates* that will:

-- Connect young people with their community and the world-at-large in new and engaging ways.

-- Allow teachers to quickly and effortlessly develop engaging and meaningful curriculum projects and spend less time mastering ever-changing technology.

-- Allow teachers, parents and students to develop and participate in learning experiences that will advance the learning process and the on-going development of critical thinking skills.

-- Empower lifelong learners of all ages to utilize online and interactive experiences that present content in meaningful, engaging ways while addressing multiple learning styles.

Our Focus upon Global Warming will be the first topic of exploration employing the *Wireless Web Content Templates*. Young learners are intensely interested in having a positive influence on the future of the environment. That begins with understanding. Environmental issues are complex, interrelated and global. Understanding the scientific, economic and social issues of environmental change and global warming is a significant challenge, but only education on the issues will lead to change.

Communities connected through wireless technology allow young learners to bring their projects out into the local community. The ability to collect environmental data, collaborate with other project learners and connect with mentors and teachers is facilitated through networked wireless technology. This collaborative learning provides immediate feedback and allows students to see the impacts of their local studies. And it will be local actions, in aggregate, that produce meaningful global changes.

Connecting to Diverse Communities is best achieved through the technology of community wireless networks. Minneapolis is currently overseeing installation of a citywide wireless network and St. Paul is engaged in discussions about creating their own network. One of the key goals for such networks is to bridge the economic and cultural “Digital Divide” of the inner city.

Deliverables

The ***World Class Initiative*** will provide content templates will be composed of interchangeable, interactive content elements that allow people to explore, examine and assess content in purposeful and thought-provoking ways. ***Digital Watershed*** plans to deliver up to 20 *Wireless Web Content Templates* complete with fully developed *Content* and learning strategies.

Educational arenas for the World Class Initiative

The following six educational arenas are pivotal factors providing the foundation for assuring today's students success in tomorrow's workplace. (*Kay and Honey, 2005)*

Digital Watershed and the ***World Class Initiative*** are committed to developing educational template tools that provide a "blueprint" and foundation for building the following skills:

Communicating Effectively

Students must have a range of proficient skills to express themselves not only through paper and pencil but also utilizing audio, video, animation, design software as well as a host of electronic environments (e-mail, Web sites, message boards, blogs, streaming media, etc.)

Analyzing and Interpreting Data

Students must have the ability to analyze, crunch, compare-and-contrast and critically assess the glut of data now available in Web-based and other electronic formats.

Understanding the Benefits and Limitations of Computational Modeling

Students must possess an understanding of the power, limitations and underlying assumptions of various data representation systems, such as computational models and simulations... which are increasingly driving a wide-range of academic disciplines.

Managing and Prioritizing Tasks

Students must be able to manage the multi-tasking, selection and prioritizing required by today's world and marketplace and to effectively do so across technology applications that allow them to actively participate and move fluidly among teams, assignments and diverse communities and cultures.

Engaging in Problem Solving

Students must have an understanding of how to apply *what they know* and *what they need to know*... within new and unfamiliar situations. Learners need to develop the ability to identify, understand, conceptualize and interpret multiple perspectives.

Ensuring Security and Safety

Students must know, embrace and utilize a wide range of learning strategies to acknowledge, identify and negotiate 21st century risks.

Scenarios

Scenario 1: Enhance and promote collaborative learning!

Envision young student teams...
They are studying agronomy and the sequestering of carbon dioxide in the deep roots of native prairie grasses. They have planted a garden plot with varieties of native grass plants donated by "Seed Savers". Sarah, a student actively involved in this garden project, is deciding how to determine the fertility of the dirt in her plot of land. Taking samples of dirt from her plot, she analyzes them for pH and other nutrients and records her findings in her Web-enabled PDA using a ***World Class Initiative*** *plotting* template. As her work continues she better understands the scale of pH through use of a ***World Class Initiative*** *glossary of terms* template and a ***World Class Initiative*** *show me* template graphically depicting scientific principles associated with pH.

Though she never has to leave the garden, the data and plots are immediately accessible on the school server by her other team members located in the garden, back at school, and at home.

Her project teammate, Jerome estimates the volume of native prairie grass root growth in their whole plot using a ***World Class Initiative*** *area calculation* template customized by their teacher, Mr. Tyler. They use a wireless camera to document and upload an on-going series of plant photos capturing the student's garden throughout the growing season and use a ***World Class Initiative*** *slide show* template to organize it into a presentation on the biological life-cycle of the native prairie grass they are growing.

Sarah and Jerome use a ***World Class Initiative*** *private classroom instant message* template to chat online with the other team members collecting organic fertilizer at the school's grounds facility and check tomorrow's work schedules wirelessly on a laptop using a ***World Class Initiative*** *shared team calendar* template.

Mr. Tyler is grading papers from the local coffee shop but reviews the uploaded video and images of the team's plot sent only minutes ago using a ***World Class Initiative*** *teacher's master* template making accessible all resource and team content. He observes that the soil in their plot looks too dry and wirelessly messages the students to use watering cans as well as natural, organic fertilizer to improve the "growing potential" of their plot. They chart the use of water and fertilizer in their ***World Class Initiative*** *journal/log* template, which Mr. Tyler monitors from home that evening.

Curriculum goals achieved by this educational project:

-- Facilitate and promote authentic, collaborative learning.
-- Deepen understanding by making abstract and complex biological and environmental concepts graphically clear and easy to understand.
-- Strengthen the overall learning experience by creating cycles of revisions within the learning project. The *Wireless Web Content Templates* promote the reflection and discussion that facilitates deeper understanding and learning.
-- Provide students with the opportunity to actively contribute to their community as they develop empowering real world knowledge.

Scenario 2: Connect student learning with community service!

Greenhouse gases are absorbed into bodies of water, changing their acidity and ability to support life. A class designs a freshwater mollusk shoreline survey for residents of three city lakes in the Twin Cities using a ***World Class Initiative*** *survey* template. Student teams use Web cameras to document their observations and add photos of shells they find at Lake Nokomis. They share their images online with the other teams who are surveying at Lake Calhoun and Cedar Lake.

All of the teams ask lakeside residents to submit shoreline mussel shell counts and the students post all of the findings on their school's server during their live Earth-Day audio podcast from Lake Harriet using a ***World Class Initiative*** *podcast* template.

That evening, their school band performs a music concert celebrating ecology at the community band shell for the entire community. All of the teams have asked audience members to bring their vacation lake shore photos to the concert. The students use their wireless laptop to sort and organize the images into a ***World Class Initiative*** *slide show* template. The students wirelessly send the interactive slide show to the band shell's stage manager, who will project images onto a background screen behind the performers.

Curriculum goals achieved by this educational project:

-- Develop organizational skills to manage, interpret and present scientific data in clear, informative reports.
-- Practice important observational skills that facilitate scientific study.
-- Improve communication skills needed to convey complex information.
-- Develop and support a community of active learners that collaboratively share knowledge with others.

Scenario 3: Expand students' vision of their world!

Sixth grade teacher, Ms. Torres, visits the Science Museum of Minnesota two days before she will take her class on a field trip. They will visit the museum's ***A Day in Pompei*** exhibit as part of their study of ash and other ejecta from volcanos impacting weather patterns. She has loaded the ***World Class Initiative*** *field trip* template onto her laptop. She has also added a ***World Class Initiative*** *slide show* template that allows her students to easily post images taken with the class digital camera and add them to their individual ***World Class Initiative*** *e-journal* templates. Her students will use these tools to record and analyze their observations about the exhibit in their personal school blogs from team laptops and handheld devices.

The day after the Science Museum field trip... using a ***World Class Initiative*** template... Ms. Torres works with her students to develop and publish an online *"did you know?" fact sheet* template for public distribution that will be shared with future Science Museum Visitors.

Curriculum goals achieved by this educational project:

-- Inspire student to explore invaluable educational resources, like the Science Museum of Minnesota... that exist in their community.
-- Experience planning and organizing *how* to effectively present the analysis of complex information as a public presentation/report that is easy to understand.
-- Develop hands-on learning activities that promote scientific observation and investigation and results in a community learning tool.

Technology in the Schools

Technology inside America's Public Schools

A recent survey conducted by *Pew Internet & American Life Project, (Hitlin & Rainie, 2005)* found that roughly 21 million youth between the ages of 12 through 17 -- approximately 87% of the entire age bracket -- use the Internet. Of those 21 million online teens, 78% (approximately 16 million students) report that they use the Internet at school in 2005. This translates into 68% of all American teenagers -- up from 47% in 2000.

National research strongly indicates that our country's young people are also embracing new, powerful communications tools that technological advances have developed. Research estimates that 75% of online teens use instant messaging. Today, approximately 16 million American youth use instant messaging to talk about homework, classroom assignments and tests. Many surveys also report that 85 - 88% of surveyed teens believe that the Internet helps them do better in school.

It is not enough for students to have access to wireless technology and the ability to use these technologies. Educators and students need educational tools and models that will help them actively participate in new forms of social interaction and new types of learning activities.

Educators, parents and communities need to consider and evaluate ***what*** kind of technologies are being used in the classroom and ***why*** they are being used. Technology must be better integrated into curriculum strategies to effectively support and promote the development of critical thinking skills and creativity and competent research skills.

Innovative technological applications need to be developed to allow educators to prepare, develop and support integrated inquiry-based learning. These applications must effectively engage students in learning activities that include: exploring, thinking, reading, writing, researching, problem-solving, inventing and experiencing the world.

All content materials developed for the ***World Class Initiative*** will be based upon the premise that the overall effectiveness of engaged student learning and the development of critical thinking skills depend on:

-- **HOW** the technology is integrated into learning experiences, curriculum goals and instructional objectives.

-- **HOW** teachers develop curriculum strategies. We need to improve each educator's ability to easily modify and customize coursework instruction to effectively meet individual student's and student group's needs.

-- **HOW** instructors and parents effectively encourage, support and assess student learning, productivity and academic performance.

In addition, the ***World Class Initiative*** is committed to developing the on-going and evolving professional development necessary to assist and to support teachers and parents who are learning how to use and implement new technology in meaningful ways. Teachers and parents need to be knowledgeable about and also have access to ongoing training that provides instruction about how to effectively use different wireless software technologies. Again, the educational goals don't just involve ***how*** to use technology, they must involve activities that foster and promote opportunities for students to develop invaluable critical thinking skills.

World Class Initiative Goals

The ***World Class Initiative*** strives to empower students to engage in collaborative learning that promotes and empowers understanding and the valuable resources of different cultures and communities. We seek to support and positively embrace the cultural diversity of communities. The *Creative and Development Team* will produce tools that support strong families, provide healthy development for children and youth, and motivate parents to become more easily involved in understanding their child's learning goals and academic progress.

The ***World Class Initiative*** will create opportunities for students to acquire invaluable knowledge and experience that focuses on collaborative learning processes through digital technology. It will pose learning challenges/tasks that are meaningful and multi-disciplinary. Our team is committed to facilitating learning experiences that inspire our young students to identify what they need to know, how to effectively apply knowledge in their daily lives, how to ably express themselves and how to value the learning experience as explorers, team players and producers.

The ***World Class Initiative*** project encourages students to express themselves and provides learning experiences that speak to a divergent range of learning styles. Instructional models will be developed that are engaging, positive, collaborative and knowledge-building. Students will learn to manage and prioritize tasks, select wisely between multi-tasking activities and participate in collaborative team activities that promote and enrich their cooperation with others. It is one thing to tell young people "to collaborate". It is more important to teach young people "how to effectively collaborate".

The ***World Class Initiative*** templates will be designed to be easy-to-use and complement current education standards and goals identified by the Technology Plans of the St. Paul and Minneapolis Public Schools. Students will be challenged to analyze and interpret data, compare and contrast ideas and theories, and critically assess their currently media-rich environment. The ability to manipulate data, to develop and create graphic representations, computer simulations, etc. will facilitate their understanding of the power and limits of computers.

The *World Class Initiative* will allow teachers to create, coordinate and monitor student progress and class assignments. Assessments of student progress will be performance-based and easy-to-monitor. Teachers will enhance their roles as facilitators, guides and co-investigators while sharing information and resources with other teachers and parents. Parents will be integral to the process and will be provided with timely updates on student progress and activities.

The *World Class Initiative* will motivate parents, families and communities to actively participate in our youth's education. The project will produce collaborative learning activities that are designed to empower parents to play a more pivotal role in helping their child engage and thrive -- as they learn.

Authors

Greg Daigle

Greg is the Executive Director of ***Digital Watershed***. *Digital Watershed* is a 501(c)(3) non-profit dedicated to building strong communities through leveraging wireless technologies. In 2005 *Digital Watershed* hosted the first "*Wireless Cities...Community Context"* conference at the University of Minnesota. It was co-hosted with the university's Digital Technology Center. The next conference will be in Spring 2007. This conference will focus on wireless e-learning strategies in wireless cities.

He is also a digital media consultant with twenty-one years experience managing software and product development. His experience in e-learning assessments includes leading a 2005 analysis of e-training for the national offices of US Bank. In 2004 he was a key member of a similar assessment team for Delta Airlines World Headquarters, Atlanta. He has participated as a pivotal team member of over 60 completed interactive projects.

Greg managed creative and production staffs at the headquarters of an Ad Age and Adweek Top-100 interactive advertising agency, His staff of fourteen included an Executive Producer, Senior Producers, Design Director, Development Director, Programming Director, Instructional Designer, Copy Editor and other staff. The team developed 8 Web sites, 3 Intranets and 4 CD-ROMs for clients such as 3M, SciMed and Agilent.

His experience in e-learning and interactive software for kids is extensive. In 1989 he co-founded and was the CTO of the new media firm, ICONOS, inc. ICONOS was a pioneering firm in adventure science software and e-learning including "*What's the Secret?* " the adventure science CD-ROM series based on the Emmy-award winning, national PBS science series, *Newton's Apple*.

Leslie Kratz

Leslie is ***Digital Watershed's*** content development and marketing partner. Leslie's 20-year career in the interactive communications field includes leadership positions at three Interactive Communications Solutions firms: ICONOS, Juntunen Media Group and SixtyFootSpider, an interactive agency that was part of the InterPublicGroup (IPG). She has lead creative teams that have developed strategic corporate branding and marketing pieces, interactive Websites, interactive training, educational software products and marketing materials.

As a Producer and Senior Producer she was an key member of the production staff that created, developed and produced two national, Emmy-Award winning national, PBS series: *Alive From Off Cente*r and *Newton's Apple*. Two of the national specials she produced for *Newton's Apple* included documentaries on the excavation, restoration and assembly of a Diplodocus Dinosaur and Will Steger's Arctic Explorations. In addition, she has worked as an integral member of creative design teams that have developed interactive media exhibit modules for five national museum exhibits.

She also produced the national documentary *"Thinking Out Loud"* which documented cutting edge education initiatives that promote the development of critical thinking skills in elementary schools across the country. She was also a member of the creative team that developed award-winning Teacher's Guides and hands-on teaching workshops for teachers throughout the United States. During the 12 years she worked on *Newton's Apple* she was part of the core creative producing team that won over 150 awards.

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