

Global Education Greenhouse: Constructing and Organizing Online Global Knowledge

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EXECUTIVE SUMMARY

Knowledge iTrust (KIT), a non-profit organization, through the cooperation of educational institutions, NGOs, and the private sector launched the Peace Diaries following September 11, 2001 to establish a forum where educators, students and their families of diverse cultural backgrounds and discourse groups could gather and submit multi-modal literary works (e.g. text, artwork, audio recordings, etc.) that address issues of personal, local and global significance. While this project was a successful demonstration model of what is possible in the way of global learning in collaboration with many stakeholders and actors, there is enormous potential to extend and transform this initiative into a more synthesized and sustainable online global education portal. This learning will be incorporated into Global Education Greenhouse, a corporation in formation, that will create a new class of products and services for students in primary and secondary schools/grades k-12 that address a void in the current educational system.

INTRODUCTION

Education, and the knowledge it generates, is seen as a means to effective participation in societies and economies that are affected by globalization (UNESCO).¹ The United Nations Decade of Education for Sustainable Development (2005-2015) was declared by a Resolution of the General Assembly, in December 2002, with a goal to re-

focus on education and learning as central to the common pursuit and achievement of the Millennium Development Goals. The United Nations General Assembly has stated that education for all is essential for achieving the goals of eradicating poverty, reducing child mortality, curbing population growth, achieving gender equality, and ensuring sustainable development, peace and democracy.² Education is viewed as key to participation in the global economy as well as critical to local prosperity.

What marks this debate as unique to the 21st century is its deep relationship to information technology. Inherently combining education and information technology is viewed as endemic in preparing the global youth to face the challenges of the knowledge economy (Monahan, 2005). The Internet promises a novel and cost effective means of transmitting knowledge, allowing for the rhetoric of global learning to become a genuine possibility. The hope is that education leverages on the current phenomena of transnational connectivity and cross-cultural sociality, leading to the birthing of new knowledge. In fact, much of this effort is structured to move away from the chronic center-periphery flow of information of prior decades, focusing on a more global diffusion model.

In 2004 alone, governments of the world invested 1.97 trillion U.S. dollars or 4.4% of global GDP in PPP (purchasing power parities) on education (UNESCO). Further, the Information Technology in Education Study³ revealed that developed countries had succeeded in establishing connectivity across its schools in the 70-90 percent range in 1999 with full connectivity by 2001. Amongst developing countries,

¹ In UNESCO (2000). *The Dakar Framework for Action*: Paris, France: UNESCO

² United Nations General Assembly Resolution A/C.3/52/L.II/Rev.1 / 29 October 1997

³ SRI (2003). *Second Information Technology in Education Study: Module 2 (SITES M2)*

there has been a strong financial and political commitment to bridge the digital divide in education with a goal to achieve 100% e-literacy (Norris, 2001).

Yet, despite the trillions of dollars spent on education and technological connectivity for global education, a 2005 article in ScienceDirect reports a rapid decline in worldwide innovation. Recent studies by bi-partisan panels have concluded that we cannot achieve change by “patching the system,” but only “by changing the system itself.” (National Center on Education and Economy. 2008). In other words, access to technologies and people alone does not shape global education. Much effort is needed to pioneer an international model of knowledge formation and sharing that does full justice to transnational social and technological participation amongst youth, teachers, administrators, curriculum experts, policy makers and other actors in pursuit of a new global education.

NEED FOR A NEW APPROACH

We live in an ever-changing society where worldwide issues affect our local communities (e.g. global climate change, energy and food production and consumption, monetary system upheavals, crime, war, poverty, etc.). The need for global understanding is not a luxury but a profound necessity; “we predict that global awareness will become the first new basic skill of the twenty-first century, as computer literacy has so rapidly become a basic skill in the final decades of the twentieth century” (Tye, 1992, p.7). The crisis in contemporary education persists as it struggles to transform its institutional, curricula and technical realms (Lewis, 2000).

In 1992, the Earth Summit at Rio brought together 172 countries, 108 heads of state, 2,400 representatives of non-governmental organizations and 17,000 people

attending the parallel NGO forum to discuss the impact of economic development on the planet. The adoption of Agenda 21 placed emphasis on education for environmental concerns. Today, the vision has broadened to encompass socio-cultural and socio-political aspects of development, including “issues of equity, poverty, democracy, and quality of life” (UNESCO, 2005). The world has also witnessed an explosion in the development of new technological innovations in Information and Communication Technologies (ICT), which, as noted by UN Secretary-General Kofi Annan in his opening address to the third meeting of the UN Information and Communication Technologies Task Force (2002), is a “powerful instrument for speeding up the realization” of the Millennium Development Goals. Therefore, we are behooved to create innovative education curriculum, tools and technologies that will teach people how to interconnect across cultures and socio-economic strata to harness our vast, collective knowledge, collaborate, plan and agree upon possible solutions for the sustainable, ethical economies.

This effort has been gaining serious traction in the last decade (Mason, 1998). Transformation is happening at an institutional level where some academic programs are moving beyond its domestic horizons through online distance learning. Curricula are getting reengineered for certain topics, incorporating multiple perspectives and novel teaching styles to suit this new cyber-environment. The focus here is more on developing critical and creative thinking and problem-solving skills than information accumulation and regurgitation. That said, global education continues to be deeply fragmented, asynchronized and mostly compartmentalized, viewed as supplemental to main public

education (Gaudelli, 2003). The viewing of knowledge through the lens of the nation-state continues to dominate current educational practice.

PROPOSAL FOR GLOBAL EDUCATION GREENHOUSE

A networked content and software development community of schools, educators and technologists is required to create curricular materials, tools and elearning products designed to prepare all students with new skills and talents for our 21st Century, global society. Global Education Greenhouse as an idea and institutional entity will have an innovative and unique market niche in the global education marketplace. Currently, there is a large and growing demand in the primary and secondary education consumer markets for books, curricular materials, tools and elearning products that are designed to prepare youth to comprehend the full scale of global social, economic, political, and scientific issues (e.g. worldwide monetary fluctuations, climate change, pandemic disease) and to interact, collaborate and problem-solve both locally and globally to develop ethical solutions that benefit the greatest numbers of people.

Product

In the first 3-5 years of operation, Global Education Greenhouse will serve as a global education provider that invites a worldwide community of academics/researchers/educators/software developers to research, incubate and develop a global education framework, products (e.g. curriculum, toolkits, software) and services (teacher professional development) that will be utilized by partner schools, ministries of education and other educational institutions, as well as parents in homes, around the globe to educate children ages 5-17.

Features

- Global Greenhouse Community Web Site with expert development panels
- Publishing and Development Forums
- Collaborative Development Tools
- Content Indexing, Search, Networking and Distribution System
- Ecommerce

Objectives

- Create a new class of products and services for students in primary and secondary schools/grades k-12 that address a void in the current educational system.
- Connect stakeholders from the international and national public and private sector to collaborate in forums and advise on the development of products and services that address global and local political, economic and development needs.
- Harness the intellectual capital of diverse groups of people and break down artificial and real boundaries that have impeded the kind of understanding and collaboration that is needed to move forward onto a more sustainable and systemic development path.

PILOT

Peace Diaries was launched in response to the events of September 11, 2001. Knowledge iTrust, the non-profit organization, worked with the New York City Department of Education (NYCDOE) to develop Web-based educational tools for teachers that can be integrated into classroom instruction. Through the co-operation of educational institutions, NGOs, and the private sector, our non-profit organization, Knowledge iTrust (KIT), developed this model for the integration of ICT and classroom education for development, for consideration and further research. In January 2002, we

launched the *Peace Diaries*⁴ to establish a forum where educators, students and their families of diverse cultural backgrounds and discourse groups could gather and submit multi-modal literary works (e.g. text, artwork, audio recordings, etc.) that address issues of personal, local and global significance.

According to Warschauer (2003) “the Web is an ideal writing medium for students’ to explore and develop their evolving relationship to their community, culture and world” (p. 164). This contributes to “a sense of agency, as learners take public action through their writing” (Kramsch, Ness & Lam, 2000; Warschauer, 2000a cited in Warschauer, 2003, p. 164). The choice to integrate ICT with classroom practices was driven by the fact that this was a unique opportunity to connect diverse communities of learners together on global issues, post-September 11, when the awareness of and desire to participate in this kind of discourse was heightened by events and the media. *Peace Diaries* was driven by need and a sense of purpose:

High student engagement in writing for the Web depends on students’ understanding the purpose of the activity, viewing the purpose as socially and/or culturally relevant, finding the electronic medium advantageous for fulfilling the purpose, and being encouraged and enabled to use medium-appropriate rhetorical features to fulfill the purpose. (Warschauer, 2003, pp. 164)

We customized open source technology provided by OpenVES [2] to develop an online, password-protected learning environment with web-based writing, editing and annotation tools, semantic-map search engine, resource library and curriculum and learning units. This was developed in consultancy with The Peace Education Center of Teachers College Columbia University. We reached out to schools’ administrators and educators with the help of ePals Classroom Exchange [3] and recruited teachers in

⁴ www.peacediaries.org

Argentina, Armenia, Azerbaijan, Canada, Chile, Ghana, Great Britain, Haiti, Peru, Sierra Leone, South Africa, Taiwan, Ukraine and the United States. Teachers were provided with a 28-page curriculum manual and illustrated technical user's guide and training was conducted onsite or through Internet technologies (email and Web). Throughout the program, teacher questions were answered usually within a day via help desk and email. Every teacher and student was assigned their own password-protected workspace to compose and edit essays, upload artwork and collect data. The community also collaborated and communicated via email or electronic bulletin board.

Development and Funding

The first iteration of *Peace Diaries* was built and launched on a shoestring with an initial \$10,000 grant from the W.T. Grant Foundation and the pro bono contributions of the non-profit's founder's and board's supporters. The grant paid for a PHP/SQL programmer to build out the beta Web site's registration, password protection, journaling, editing and display functionality. A co-founder of Knowledge iTrust was also a Web designer and developer. She designed the user interfaces for the Web site and all the html pages, pro bono. Another team member of Knowledge iTrust wrote grants, developed partnerships with NGOs and other international education organizations and schools, and recruited professionally developed teachers in New York City to use the Web site, pro bono. Teachers in other countries and States in the United States were provided with virtual professional development and help desk through email. The beta Web site was hosted on a ViaVerio virtual server.

Following the beta launch and successful pilot of the *Peace Diaries*, the W.K. Kellogg Foundation awarded Knowledge iTrust a larger grant (\$125,000) to continue to

build out the program. The New York State Department of Education also funded a portion of the *Peace Diaries* through a Learning Technology Grant to a NYCDOE regional education office. In addition, OpenVES provided Knowledge iTrust with a free license to utilize a multi-million dollar elearning/epublishing Web software that was initially developed for the Massachusetts Department of Education and then spun-off into a non-profit organization for proliferation amongst state's departments of education. It was the intention of OpenVES to showcase the Web software's capabilities through the *Peace Diaries* program, which was a live demonstration of how teachers and students could collaborate across far-flung boundaries in real-time.

Partners

The organizations that contributed to the success of *Peace Diaries* represented both the public and private sector, including: the New York City Department of Education, the New York State Education Department, the W.T. Grant Foundation, W.K. Kellogg Foundation, OpenVES, ePALs classroom exchange and Project Harmony. The W.T. Grant Foundation, the W.K. Kellogg Foundation and the New York State Education Department provided the funding. OpenVes, a non-profit organization, provided free access to a multi-million dollar elearning and publishing environment.

The Director of Instructional Technology for the NYCDOE bought into the program and promoted via a Technology and Education conference entitled, "Tech to Go" at Fordham University. Teachers who attended the conference signed up for the initial pilot program. ePals Classroom Exchange, a for-profit global elearning community promoted the *Peace Diaries* to teachers in its network and helped Knowledge iTrust to recruit teachers from countries that included Argentina, Chile, France, Ghana,

Israel and South Africa. Project Harmony, a non-governmental organization funded in part by the USAID, brought the countries of Azerbaijan and Armenia to the Peace Diaries. A *Peace Diaries* teacher in South Africa eventually evolved into a project manager for Knowledge iTrust and recruited teachers from Taiwan, Sierra Leone and Canada. Other teachers from Great Britain, Haiti, Peru, Ukraine and the United States (e.g. California, Colorado, Massachusetts, and Pennsylvania) learned of the program through the UN and other peace and education organizations and joined.

Online curriculum

The challenge in developing and implementing a true global education framework range from securing agreements on what should be taught, and how (McKeown, 2002; Hernandez & Mayur, 1999), to those of access and digital divide (UNESCO, 2005; UN, 1998). Following, September 11, many NYCDOE teachers have been seeking resources that can support them in helping their students to understand the causes of September 11 and to express their feelings through journaling and other forms of creative expression. Peace Diaries as a pilot for Global Education Greenhouse serves as an online global initiative to help students to engage in inquiry about the salient issues of humanity and to question how human needs can be fulfilled through non-violent means. A password protected web-based environment was developed to enable teachers to access lessons and students to access online journaling tools to write about themselves and topics of “a local-global nature.”

The first Peace Diaries activity asked students in classrooms in seven countries to introduce themselves to each other through illustrated totem drawings/representations of themselves and written essays explaining the artifacts that were embedded in the totems

and their significance. This exercise gave students the opportunity to compare and contrast what was similar and different about each other. Another activity asked students to write about a favorite recipe and a story, memory, folktale, holiday, etc. associated with it. Students were also asked to identify the source of the ingredients (e.g. whether they were grown locally or shipped; were they purchased in a farmers' market or a grocery store etc.). These seemingly simple exercises subtly introduced teachers and students to more complex issues of culture, sustainable development, food security, etc. This built upon each other in a two-year scope and sequence that gradually immersed students in critical thinking about global climate change, pandemic illness, quality of life and human rights, through local and international responses and implications. All the students completed essays have been archived on servers and is now shown on the Web site. The students' collective works have been published in three volumes of printed books.

By the end of this two year pilot study, the *Peace Diaries* community grew where teachers and students from classrooms in fourteen countries participated in the programs. This translated into creating curriculum that helped students to find their own explanations for larger global issues from the point of view of their every day lives. This approach is supported by the theory of Occam's Razor, which posits that "one should choose simpler explanations in preference to more complex ones" (Baum, 2004). Henceforth, *Peace Diaries* took very complex ideas about global issues and broke them down into their most simplistic meanings for each person at their level of knowledge and the scale of their own community (e.g., family, classroom, village and / or city). The challenge of sustainable development, for instance, then becomes less daunting, more

feasible and empowers the individual to collaborate and contribute their talents and knowledge for the greater whole.

Three thematic topics comprised the learning units of *Peace Diaries*. The topics are “Recipes for Life,” “Healing Planet,” and “Quality of Life.” Each of the topics has two Activity Layers that take students into deeper inquiry and learning. Layer 1: Cultural and Social; and Layer 2: Science and Economy. Teachers decide how many layers they would like to complete. A primary goal of *Peace Diaries* was to develop students’ capacity to realize their potential for change through their relative point of view.

Sample Learning Unit

The learning unit introduces issues that are familiar to all people (e.g., access to food) in new contexts (e.g., Edith’s chicken rearing story) and provides students with a background to identify and illustrate similar situations from their own, everyday points of view. For example, a Canadian, First Nations’ student, who contributed to *Peace Diaries*, describes his family’s practice of dip netting for and drying salmon each summer and how each part of the salmon is consumed. A Taiwanese student relates her story of the family harvest and the special meaning of the rice pudding that sustained them in hard times. Another student from Sierra Leone writes about cassava leaves or “sakai tomboi,” which among the Mendes people means nourishment. He says, “The leaves are not only used to make a favorite sauce, but are credited with saving lives during the war when there was “no other food to be found.” Many students in the United States described farm life and memories of grandparents who wasted nothing.

The ideas in these essays illustrate the least common denominators of what it means to be human from socio-cultural, economic, and environmental perspectives which

are, according to UNESCO (2005), the three pillars of sustainable development that are described by international discourse and key to sustainable learning. Also important, the ideas in the essays demonstrate how the community is making linkages to these three pillars and ultimately to each other, through their culture. UNESCO (2005) notes that cultural “practices, identity, and values” help build common commitments.

Teachers and students who participated gathered research, wrote essays, produced artwork, shared best practices and gathered scientific information that was collected and stored in a database for access by the international community. Over a period of two years, KIT worked with students, teachers and administrators in sixteen countries that have contributed to the publication of Peace Diaries in the form of the World Wide Web, three books and broadcasts on radio.

ACTIVITY 1: “Recipes for Life”

Layer Two: Science and Economy

Concepts: Agriculture, Local Food Supplies (Indigenous vs. Planted) and Import / Export

OBJECTIVES

Students will learn about....

- Where the ingredients in foods come from
- Whether or not they can grow the ingredients in their community, school or family garden
- The relationship between food, natural resources, commerce, politics, history

LAYER TWO — Framing Discussion, PREPARATORY

In an effort to feed more people, farmers have experimented with ways to increase agricultural yields. Some large-scale farming techniques have proven harmful (i.e. use of DDT pesticide) to the environment, humans, and animals. Today groups of scientists, and agricultural and ecological organizations and educators are working together to develop sustainable agriculture methods – farming practices that will produce food for human or animal consumption without causing harm to the environment or animals or humans. One area of interest to these groups is local food gardening. Community gardens are springing up in urban lots, schoolyards and people’s home yards around the world. These

gardens produce not only nutritious foods, but in some cases, a small income for the growers.

Questions

- 1) Where do the ingredients in your recipe come from?
- 2) Are they grown locally or are they imported? What are the ingredients' histories?
- 3) Why do we import and export food?
- 4) What is the significance of local gardening versus importing and exporting?
- 5) What challenges do countries dependent on food exports face?
- 6) Do people all over the world have access to enough food? Do children in our own country have enough to eat?
- 7) What are some of the factors that contribute to food insecurity? (These can include poverty, lack of access to land, environmental degradation, war, lack of access to education.)
- 8) Why are women important to food security (access to enough food)?
- 9) Before your city/town/community was developed, was it originally farmland? What crops were grown there? If not, what was the land used for (e.g., grazing by animals, early industry)?

Listen: UN Radio: "Women are the pillars of food security throughout most of the world. According to the UN Food and Agriculture Organization (FAO), they produce between 60 and 80 percent of all food in developing countries"

<http://www.un.org/womenwatch/news/unradio/progs/2001Jul09.html>.

Listen: Peace Diaries Radio. Show 10 "Women and Gender Equality." Full transcripts of the show and the radio shows themselves, in wav format, are available on the Peace Diaries Web site http://www.peacediaries.org/2_community/2_1_radio_sh10.html. An excerpt of Show 10 is below.

01:03 – 01:25 (Narr Intro)

According to a Ghanaian proverb, if you educate a man you educate an individual, but if you educate a woman you educate a nation. The center of family- and most community-life across the developing world, women still remain the most marginalized.

06:15 – 06:44 (Narr)

The Food Gardens Foundation in South Africa was founded 2-and-a-half decades ago by two women who wanted to train the unemployed and rural poor how to raise fresh vegetables on the smallest plot of land possible. Food Gardens volunteer, Betty Hanratty, says although the gardens help many women, they still face huge obstacles. Hanratty worked in Driftsands, a community outside Cape Town, and remembers how a young mother and resident, Edith, struggled to survive...

06:45 – 07:37 (Hanratty)

Her husband had abandoned her for another woman when her youngest child was born, and she struggled and then she managed to get one of the children through college. Then he reappeared in their old age, so she took him back in. In the meantime we had

introduced the women to rearing chickens, so that they could have eggs to eat, eggs to sell and manure for their gardens. Edith's family in the Transkei had some problem and she had to go, so she left her husband, Wellington, in charge. When she came back there were only 11 hens. So she went to Wellington and said, "Where's my other hen?" And he said, "I ate it." Well, Edith was devastated, because that was part of her income gone.

END LEARNING UNIT

Technical Challenge

In the first *Peace Diaries* beta Web site, the PHP coding was not thoroughly debugged and tested. This resulted in Web site errors and crashes that often frustrated teachers and students. For example, a student might write an entire essay in her password protected journaling space and click on a save button only to receive an error message and lose all her work. In New York City, a Symantec filtering software often blocked access to the *Peace Diaries* Web site from teachers' classrooms. In addition, many schools in the United States and other participating countries had slow or unreliable Internet access. Some country teachers (e.g. Ghana and Sierra Leone) who had no computers or Internet access at all in their schools, literally took students' hand written essays to Internet cafes, typed the essays and submitted them via email to Knowledge iTrust. These essays were then uploaded to the Web site. While the students could not view their work online unless they went to an Internet café, they did receive printed books of their collective work.

In the preceding *Peace Diaries* version II, OpenVes provided additional functionality (e.g. bulletin boards, search, maps), but also was not without its challenges. Because the technology was licensed to Knowledge iTrust, our programmers and producers did not have access to code or the back room administrative tools and thereby could not easily make modifications to the Web site as needed. In addition, while a great

deal of funding went into the development of the site, there was still debugging to be done and crashes from time to time. In 2002 through 2004, integrating technology in classroom instruction was still a fairly new idea for many teachers and it was critical that the Web site was intuitive, easy to navigate, accessible and as error free as possible. Anything less would result in participation fallout.

Institutional Challenge: For profit versus non-profit

While non-profit status often affords organizations the ability to apply for grants that are not available to for-profit entities, non-profits are often subject to the whims of donors and hard-pressed to develop sustainability models (beyond the next grant) for their programs. Case in point, when the W.K. Kellogg Foundation re-aligned its grant giving focus in 2004, there was no longer an interest in funding “a peace initiative.” It was therefore necessary for our non-profit to reconsider our development focus and priorities. Another drawback of the non-profit world is that often the “assets” that are developed with grant money are public domain property, making it difficult to generate the “income” that is the foundation of sustainability.

Outcomes from the pilot project

Peace Diaries combined ICT, education and best practices of UN agencies and local communities to address six of the eight Millennium Development Goals: poverty and hunger, primary education, gender equality, HIV/AIDS and other diseases, environmental sustainability and global partnerships. These projects promoted awareness and action through lesson plans that supported literacy, global studies, science, and the UN tenants of peace, etc., that build students academic skills within the context of practical exercises that are applicable to their daily lives.

CONCLUSION

Drawing from the *Peace Diaries* pilot project, Global Education Greenhouse can benefit tremendously from its institutional, curricula and technical issues. The *Peace Diaries* illustrated that a global knowledge exchange amongst classrooms around the world is possible and welcome by educators. The next step in the evolution of a true global education network is to take a page out of the open source community. Global Education Greenhouse was conceptualized with these goals in mind:

- 1) Connect stakeholders from the international and national public and private sector to collaborate in forums and advise on the development of products and services that address global and local political, economic and development needs.
- 2) Harness the intellectual capital of diverse groups of people and break down artificial and real boundaries that have impeded the kind of understanding and collaboration that is needed to move forward onto a more sustainable and systemic development path.
- 3) Reward all participants in the development community.

As noted by UNESCO (2005), ICTs are not universally available, as they are limited by cost, infrastructure, energy supplies and telephone connections. To address this challenge, KIT collaborated with technologists, educators, UN agencies, NGOs, other non-profit organizations and educational institutions to envision the future of local to global collaborative learning. We have articulated a blueprint for an open, connected, locally customizable learning environment that would be available to schools and communities around the world. It is a modular system that is broken down into components that include an e-learning platform for students, family or professional or community development; hardware; power sources (e.g., solar power) and digital connectivity (e.g., satellite). Since we believe it is important to work with local resources such as regional leaders, groups and organizations, we did not propose to introduce ideas

that would not integrate immediately or out of context to the existing society, culture or economy. Thus, the modules are designed to work independently to enable community leaders to choose appropriate tools for their level of knowledge and the scale of their respective community. This returns us to the premise of *Peace Diaries*, which is to approach development from the individual's point of view that will create more feasible and empowered outcomes and contribute to a larger whole.

The World Bank Development and Communication Division states that, among other purposes, development communication empowers grassroots organizations' participation in matters of public discourse. Information Communication Technology is a vehicle to connect the local to global for the greatest participation. As delineated in the UNESCO (2005) Draft International Implementation Scheme for the United Nations Decade of Education for Sustainable Development, sustainable development begins locally and then "radiates out to an ever-increasing number of stakeholders." A guiding principle of our work to date can be expressed by the words of Margaret Mead who said, "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed it is the only thing that ever has." We submit that for the achievement of sustainable development, government policy-makers, educational institutions, NGOs, and private sector corporations should look to the local citizens, acknowledge their ways of doing things, learn from them, and support them with technology and tools that make it possible for them to share their perspectives and ideas with others transnationally and cross-culturally.

As previously stated, the effectiveness of *Peace Diaries* was contingent on the careful integration of ICT with classroom curriculum to fulfill a discourse need driven by

time, events, and media. Educators and students felt that their words had purpose; to unite the world in peace as expressed by this student “For me peace is simple. If each one took the time and had patience to know foreign people, the world would be better” (Peace Diaries, 2002). This project was deeply dependant on the sharing of a common goal amongst all participants.

The way forward

While we view this project as a successful demonstration model of what is possible in the way of global learning in collaboration with many stakeholders and actors, we believe that there is enormous potential to extend and transform this initiative into a more synthesized and sustainable online global education portal. This learning will be incorporated into Global Education Greenhouse, a corporation in formation. Global Education Greenhouse (GEG) will create a new class of products and services for students in primary and secondary schools/grades k-12 that address a void in the current educational system. It will connect stakeholders from the international and national public and private sector to advise on the development of products and services that address global and local political, economic and development needs. GEG will harness the intellectual capital of diverse groups of people and break down artificial and real boundaries that have impeded the kind of understanding and collaboration that is needed to move forward onto a more sustainable and systemic development path. Its partners will create critical thinking tools and building blocks through a k-12 global education curriculum spiral that deliver educational experiences that help learners to develop intellectual independence; to be able to use knowledge to continue to evolve as productive citizens and contributors to the nation and the world. GEG will ensure that

teachers are trained to harness the power of emerging technologies and encourage students and their parents to participate and have a voice in the education process.

Finally, the mission of GEG is to prepare all students for the demands of the future world.

For example, working with more and a diverse range of educators and community leaders to gather and develop a critical mass of culturally relevant sub-text would serve as a highly effective launching pad of global education. Providing more starting points for students by activating their prior knowledge/schema, potentially produces richer output and data or indicators on how sustainable development works.

Also, at a technical level, the open source movement encourages collaborative development efforts amongst a variety of stakeholders and at the same time embraces new revenue generation models for the good of all participants. Fast forwarding to 2009, wiki, blog and open source elearning platform technology makes it possible to launch programs like *Peace Diaries* without a great deal of backend development. In addition, Web applications such as MediaWiki, WordPress and Moodle are relatively flexible, powerful, scalable and debugged. In addition, the next generation of Smartphones offer new ways to network, communicate and share knowledge amongst a larger global audience that was not possible in the early days of *Peace Diaries*.

Endnotes

[1] As heard on the Peace Diaries radio programme, broadcast by Worldspace Satellite Network for the World Summit for Sustainable Development (WSSD), Johannesburg, South Africa, 2002.

[2] OpenVES (www.openves.org) is a non-profit organization dedicated to the research, development and global dissemination of an open architecture, standards based eLearning platform for pk12 education.

[3] Epals (www.epals.com) global network connects 101,506 classrooms in 191 countries through email and collaborative technology for education.

[4] We refer to relative point of view as the students' subjective perspectives, which are their primary realities (Moshman, 1999).

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