II. Executive Summary

Generation www.Y is an integrated model for delivering job-embedded professional development to teachers while providing students with opportunities for engagement and leadership in their schools and communities. The model promotes a learning community approach to education, in which students and teachers work together to create and deliver updated, technology-enriched lesson and unit plans. The Generation www.Y class is delivered as a regular elective or as an extracurricular activity, in grades 4-12, and can be adapted for varying levels of background expertise as well as for specific local hardware and software infrastructures. Much of the work is centered around dyads -- partnerships made up of an individual partner teacher and an individual Generation www.Y student. This allows the project-based learning to be tailored to meet the particular needs and interests of these individuals. These teams are engaged in meaningful, useful work: creating curriculum materials and lesson plans that are used by other students, in the classes taught by the partner teacher. Teachers learn to integrate technology by doing what they would normally do -- update their lesson plans -- with personalized support and assistance for the integration of technology in their curriculum units. Students become involved in creating their own schools, and gain experience doing authentic educational work, as a valued team member.

We also strive to develop extensions of this model that provide students with additional leadership and engagement opportunities in preservice programs, schools, and community service settings. For instance, Generation www.Y students and preservice teachers continue to operate after-school and community-based computer laboratories in Olympia, providing increased computer access and coaching to students, family members, and community members. Generation www.Y graduates now receive memberships in the International Society for Technology in Education, and have participated in many local, regional and national meetings and conferences on educational technology. Our graduates have also provided assistance to district and state level administrators and other government and community organizations.

We are moving forward with no major changes in objectives or in the focus of our activities. We continue to receive very positive feedback from most of our participating schools, and we regularly receive suggestions for improvement from participants and our external evaluator. We have continued to refine and update our materials and activities, based on feedback from participants, and we are working to disseminate our project to new schools across the country. In particular, we have worked to improve our ability to smoothly introduce Generation www.Y to new schools, to provide effective support for these schools through our Website, and to provide resources and materials appropriate for the many elementary level classes that are now being implemented.

This year we have also begun major new initiatives to facilitate dissemination and sustainability, in order to serve the hundreds of schools who have indicated interest in participating. These initiatives have included the formation of a new independent organization, Generation YES, which will hopefully enable the program to reach additional schools in the near term, and will also continue to sustain our efforts after the TICG award is over. In addition, we are working on a major upgrade to our Website and

database. This student-led project will support our online curriculum development consulting service, as well as our online archive of collaborative projects, created by teams of students and partner teachers. We have hired additional staff to support this online system, including a Communications Director and a Curriculum Mapping Specialist. Our curriculum mapping project will be integrated into the new Website and database system, and will assist schools in aligning their Generation www.Y collaborative projects with state and national standards. Several states have directed some portion of their Technology Literacy Challenge Funds toward providing Generation www.Y classes in their high poverty/high needs schools, and we have also hired staff to support these state initiatives. Training workshops have been provided to several hundred teachers, technology coordinators, administrators and students in these states in preparation for their new Generation www.Y classes. During the past year we have also collaborated with The Evergreen Center for Educational Improvement, at The Evergreen State College in Olympia, WA, to develop a Catalyst project that has been funded by the Preparing Tomorrows Teachers to Use Technology Program of the U.S. Department of Education. The Evergreen State College is a national leader in the creation and dissemination of learning community models, and we are pleased to work with them to further develop our Generation www.Y preservice efforts. This project will involve 6 preservice institutions in Washington, Idaho, Nevada, and Kentucky, in conjunction with local K-12 Generation www.Y programs in each local community.

III. Project Status

In this section of the report, projects will include progress in meeting their objectives. Performance is reported using the GPRA indicators that are listed under each objective. Examples of accomplishments for each project objective, as well as examples of project activities, are also included in this section. Information regarding why planned objectives and activities were or were not attained or implemented is also presented. The last paragraph describes the corrective action(s) that will be taken to address any problem(s). *Our program goals are highly interrelated, our objectives serve multiple goals, and each of our activities serves multiple objectives. GPRA Indicators addressed in each objective are 2.1, 2.3, 3.1, and 3.3.*

Goals:

Goal I. Promote a Learning Community Model of School Culture.

Goal Description: Generation www.Y seeks to develop and disseminate a model of technology integration that promotes a new school culture and a new outlook on learning, in which the distinction between student and teacher is less rigid and everyone is a learner. We envision a school environment based on collaboration, communication, and teamwork - an environment that encourages students to communicate broadly with peers and adults, at times assuming leadership roles at school and in the community. Students, faculty, administrators, and community members should function in a variety of roles as learners, teachers, and team members collaborating in the collective educational environment.

Goal II. Promote Embedded, Classroom-Focused Professional Development.

Goal Description: Generation www.Y seeks to develop and disseminate a model of cost-effective, job-embedded professional development for educators in the area of educational technology. We envision a professional development paradigm that changes the culture which surrounds computers in education -- moving away from a model in which teachers must undergo massive re-education to master computer skills before applying them in their work. Instead, we propose that the extensive involvement of students in collaboration with teachers will be an effective way to cultivate the knowledge and skills of individual teachers, as they rebuild their particular curriculum units and lessons to take advantage of modern technologies.

Goal III. Promote Equitable Integration of Educational Technologies.

Goal Description: Generation www.Y seeks to develop and disseminate a model of technology integration that promotes equitable use of technology resources. An explicit goal of Generation www.Y has been to build a set of resources and processes that are effective and accessible for a wide variety of schools, classrooms, teachers and students, requiring only a minimal starting knowledge base and a basic networked technology infrastructure.

Objectives:

Objective I. Prepare Students for Collaborative Technology Integration.

***Objective Description*:** The Generation www.Y class curriculum is intended to prepare students to partner with teachers and to assist those teachers with the integration of technology in specific units or lessons. In order to accomplish this, students must become familiar with the range of technologies available in the school, some options for using these in lessons, and information about how to serve as a team member and work productively with partner teachers.

***Objective Progress*:** The Generation www.Y class format and Curriculum Guide have been through four development cycles and we are now receiving our seventh wave of feedback from participants using the program. The present version of the Generation www.Y curriculum has been published by the International Society for Technology in Education (ISTE). In addition to the Generation www.Y Curriculum Guide, a Student Workbook, Video, and CD have been created and are being disseminated by ISTE.

The specific technology that is available to students and teachers varies in participating schools, but all Generation www.Y students receive extensive training and practice in using the tools available in their building. Typically this includes email and other communications tools such as listservs, discussion forums, etc., research and communication tools for the Web, multimedia authoring and presentation tools, webpage design tools, and image processing tools. All students who complete the class also receive 4 units of training on collaboration with partner teachers, project planning, and technical writing. Students, working with their partner teachers, integrate all these components in an authentic curriculum project which is designed to be used in real instruction in their school. Online feedback is provided for students regarding their project planning and documentation. This feedback is given to each participating

student through the Generation www.Y Website, by a team of curriculum specialists.

The Generation www.Y class has two components: (1) students learn both technical and pedagogical skills based on twelve units of study, and (2) students partner with one of their teachers and develop at least one curriculum project in the teacher's class, typically rebuilding a unit or lesson plan to make use of available technology. Detailed instructional materials for each unit and lesson are provided for those teachers who wish to use them, but teachers are encouraged to adapt the details to the specific needs and interests of their students and teachers, as well as the details of their technical infrastructure.

Objective II. Establish a Partnership Model for Students and Teachers.

Objective Description: The core Generation www.Y partnership model is intended to provide individualized assistance to teachers as they develop their own ability to make effective use of modern telecommunications technology in their classrooms. At the same time, the model is intended to give student partners an authentic, meaningful, engaging role in co-creating their own educational environments.

Objective Progress: The partnership model for Generation www.Y students and their partner teacher has evolved along with the Curriculum Guide, and is a central feature of the program. This is also the most flexible portion of the model, in that the needs, interests and abilities of both the partner teacher and the student shape their relationship and the curriculum project they create. These partnerships and the collaborative projects are also shaped by the available technology infrastructure and the existing curriculum, instruction and leadership in the school. This flexibility allows teachers, students, and schools with a wide variety of skills and resources to customize the program for their own needs. In addition, dyads can be arranged to meet particular needs, e.g., a student with special needs or interests can be paired with a teacher who is well prepared in that area, or vice versa. A clear majority of students and teachers report positive experiences collaborating and learning with each other in the course of creating these curriculum projects, and most report an intention to continue working in similar collaborative ventures in the future.

In new schools adopting the program, we have seen a period of initial uncertainty about the role of the partner teacher and the intended form of these partnerships and projects. To address this issue, we have produced a brochure and other materials for partner teachers, and have included these materials as part of the package that Generation www.Y coordinating teachers use to introduce the program to a school. Still, it may take two or more semesters before the nature and potential of these partnerships are fully understood by a large portion of teachers in a school.

Most partner teachers report spending a few hours working with their Generation www.Y partner student. The majority are pleased with the curriculum projects that are created, and most report using these projects in their classrooms. Most teachers also report plans to continue using these projects, develop them further, or work on additional projects with new or continuing Generation www.Y students.

Hundreds of collaborative projects produced by these partnerships are now archived on the Generation www.Y Website. In the past, these archives have described the project itself, mostly from the perspective of the Generation www.Y student, but have not described the entire lesson or unit plan

in which the partner teachers use the project. We are currently expanding our documentation to capture more of this contextual information about how the projects fit into the partner teachers' classes.

This partnership model has also been introduced to preservice teachers at several institutions of higher education. Generation www.Y graduates have hosted preservice students in their schools and have taught lessons for preservice teachers in their courses. This portion of the project is currently being further expanded and developed through an associated PT3 grant awarded to The Evergreen State College in Olympia, WA.

Objective III. Develop a Model that is Adaptable

Objective Description: The Generation www.Y model is intended to provide a general framework with many potential implementations, so that it can be used at different grade levels, in a wide variety of settings, with varying levels of initial knowledge, skill, and hardware and software infrastructure.

Objective Progress: As noted in the description of the other objectives, the Generation www.Y model has been specifically designed to allow customization for particular schools, as well as for individual students and teachers. In addition, the program can and has been implemented in a wide range of grade levels, from 4th to 12th grade. Over the entire course of the project, the largest number of Generation www.Y classes have been at the middle school level (7th and 8th grade), but in the past year more high school course have been implemented and a large number of elementary schools have begun using the model. Responding to feedback from elementary school teachers, we are currently revising our curriculum materials to include more examples and resources appropriate to elementary level classes.

A number of particularly talented and articulate Generation www.Y graduates have received national attention by speaking at conferences, writing in national publications, appearing on television, etc. Others have produced sophisticated information technology projects, such as geographic information systems or complex database driven Web sites such as the Generation www.Y site. The program exists partly to promote empowerment and leadership opportunities for students. However, these high profile individuals have led some observers to conclude that Generation www.Y is only for gifted students, and this is not the case. In fact, the model is carefully designed to allow participation regardless of the background of students or teachers, and the program can be implemented in schools with only very basic computing and network resources.

Generation www.Y has been implemented in several high needs inner city areas and in many high needs rural schools across the country, as well as in the U.S. Virgin Islands. The model is being used in several schools serving primarily Native American students. Several states have used Technology Literacy Challenge Fund projects to specifically target Generation www.Y for high poverty, high needs schools. Many of these schools began participating in the program this year, or will begin next year, so we are still in the process of getting feedback on how well the model works in these settings and how we may improve this aspect of our work.

Objective IV. Develop Opportunities for Student Leadership

Objective Description: Generation www.Y is intended to foster creative and substantive student involvement in the school and community. In order for this to happen, opportunities for such involvement must exist and students must be prepared to participate. In addition, linkages between schools and other community organizations must be cultivated and strengthened.

Objective Progress: The Generation www.Y curriculum and projects provide a venue in which students take on real responsibilities in their schools. Their projects result in knowledge products which are used by teachers and other students, and which are often used and refined for successive years after the initial student created them. These projects give students an experience of working with adults on authentic, consequential projects, acting as co-creators of the curriculum and instruction at their school. Beyond this, the Generation www.Y vision includes a number of other opportunities for students to become more engaged, empowered and involved in their schools and communities. In the Olympia School District, several of these extensions to the Generation www.Y model have been developed. These include:

- ◇ A higher education extension in which Generation www.Y students work with preservice candidates to help these new teachers learn technology and teaching skills.

- ◇ A community computer lab extension in which Generation www.Y students and preservice candidates operate after-school or community based computer labs for students and community members. The location, scheduling and services of these labs have been arranged to provide increased access to students and family members who may not have computers or network access at home.

- ◇ Community service opportunities, in which Generation www.Y students have provided assistance to community organizations, or participated in local, regional, or national organizations.

A number of other local or regional structures have arisen in various parts of the country to provide such extensions and leadership opportunities. For instance, the Kansas Student Leadership Conference is an annual summer showcase of collaborative projects built by Generation www.Y students and their partner teachers.

One potential problem that has arisen in some locations is that students who have graduated from Generation www.Y may become frustrated when they face a lack of opportunity to continue working at high levels of responsibility and creativity as they move to successive grade levels. To alleviate this problem and further our efforts, we have increased the number of districts in which the model is implemented at multiple grade levels. In addition, our new sister organization, Generation YES, is developing an advanced course for Generation www.Y graduates and a set of related courses to open up further opportunities for student leadership in education and educational technology.

Activities:

Activity I. (PD) Training Workshops

Activity Description: Training workshops were held for each of the more than 200 schools that began delivering Generation www.Y during the past school year, including 13 schools in Hawaii, 14 schools in Ohio, 50 in Kansas, 41 in New York, 63 in Washington, and 22 schools sponsored by the Milken Family Foundation, as well as several schools in Idaho, Nevada, and other states.

Number of school staff participants: 280
Professional development contact hours: 1680
Professional development number of days: 11

Activity II. (PD) Embedded Professional Development

Activity Description: As described throughout this report, the essence of our model is an integrated approach to professional development, curriculum integration, and student engagement and leadership. Faculty receive personalized professional development as they update their unit and lesson plans, with the assistance and teamwork of a Generation www.Y student. These activities are supported in an ongoing manner by the Generation www.Y coordinating teacher, and in many cases by participation in our online curriculum development feedback program.

Number of school staff participants: 6000
Professional development contact hours: 36000
Professional development number of days: 180

Activity III. (PD) Preservice Learning Community Development

Activity Description: Generation www.Y staff helped The Evergreen State College in Olympia, WA design a successful PTTT Catalyst grant that will further develop Generation www.Y's model of moving schools toward a learning community approach by utilizing students to help train preservice teachers. This grant expands the preservice portion of the Generation www.Y model to 6 colleges of education in Kentucky, Nevada, Idaho and Washington.

Generation www.Y students have worked with college of education faculty at both TESC and St. Martins College to provide educational technology experiences for 28 graduate level classes. Preservice teachers studying how to infuse technology into the curriculum do so in real schools and taught by real K-12 Gen www.Y Students and Teachers.

Number of school staff participants: 160
Professional development contact hours: 1200
Professional development number of days: 35

Activity IV. Website and Database Development

Activity Description: The Generation www.Y Website was developed and is maintained by students who have taken the Generation www.Y course. In addition to providing information and resources related to Generation www.Y, this site archives all of the technology-infused lesson plans that Generation www.Y students and their partner teachers have created, and is the portal through which students receive online feedback on their projects from curriculum experts. Many improvements were

made on the site during the past year, and Olympia School District students have been working on a thorough overhaul of the site to upgrade the underlying database. When complete, this new server will do a much better job of tracking project and survey data from participating students, as well as assisting participants in linking their projects to state and national standards. This year, the site received Curriculum Administrator Magazine's Diamond Award for the most outstanding curriculum-based Website in the United States.

Activity V. High Needs Schools Assistance

Activity Description: During the past year, special efforts have been made in high poverty/high needs schools. (1) Gen www.Y received a Unity Grant from Washington state to work with the 30 most needy elementary schools in the state, (2) Gen www.Y has been sponsored by TLCF grants aimed at high need schools in Alabama, Hawaii, Kansas, New York and Washington, (3) Gen www.Y has begun in six NYC schools and three District of Columbia schools, and (4) Gen www.Y staff is in discussions with officials in Chicago, Seattle, Oakland, Philadelphia, Los Angeles, and Gary, Indiana to begin Gen www.Y in the near future. Generation www.Y is now being delivered to more than 100 schools with high percentages of minority students.

Activity VI. Elementary School Development

Activity Description: During the past year 77 elementary schools began delivering the model. The elementary schools deliver the course over the entire school year rather than a single semester, and currently always schedule the course before or after school. Secondary schools normally offer the course on a semester basis (twice per year) and often teach Gen www.Y as a regularly scheduled class. Based on feedback from these elementary schools, we are now adding additional resources to our curriculum guide and Website to make the model more adaptable for elementary level students and teachers.

Activity VII. Sustainability

Activity Description: As Generation www.Y enters its final year in October of 2000, much time during the present year has been spent building a sustainability strategy. The Olympia School District cannot provide services to all the schools currently asking to deliver the model. The solution that we have adopted is to establish an external organization named Generation YES which would support Generation www.Y schools not on the original TICG grant. With permission from the U.S. Department of Education, Project Director Dr. Dennis Harper's contract with the Olympia School District was reduced 40% (2 days per week) so he could establish this external organization. Sustainability within the Olympia School District will be supported as well; the district licenses to the International Society for Technology in Education (ISTE) the rights to Generation www.Y materials developed with district funds. ISTE pays the Olympia School District royalties which will help the district sustain the project after the grant ends. It is likely that Generation YES will also be involved in sustaining the project within the Olympia School District.

Activity VIII. Curriculum Mapping

Activity Description: In March of 2000, a full-time Curriculum Mapping Coordinator was hired who will emphasize the alignment of all Generation www.Y projects to state standards. Next year, when students and teachers type in the objectives of their project on the Generation www.Y Website, a program will make a best guess at what state academic standards this project will address. The student then chooses the proper standards and they are entered in the proposal. This will be available for every state as well as national and ISTE standards. This new staff member will also investigate how students can keep track of which standards they are addressing as they pass through their school experience.

Activity IX. Public Relations

Activity Description: The project has received much positive publicity. Newsweek, Leading and Learning with Technology, and the San Francisco Chronicle did feature articles on Generation www.Y. In addition, Websites that have featured Gen www.Y interviews include the Future Channel (http://www.thefutureschannel.com/piper_conversation.htm). The Olympia School District hosted more than 100 visitors from throughout the world who came to see Generation www.Y first-hand.

Activity X. Dissemination

Activity Description: Dissemination efforts have been extensive, and as usual we use many of these events as opportunities for student leadership presentations. Generation www.Y submitted an application to the U.S. Department of Education's Expert Panel on Educational Technology. More than 100 Generation www.Y students and teachers have presented the Generation www.Y model at conferences and meetings throughout the nation. These include:

- ◇ National Education Computing Conference in Atlantic City - June 1999
- ◇ Western Cluster TICG Meeting in Salt Lake City - November 1999
- ◇ Milken Distinguished Educator Conference in Los Angeles - June 1999
- ◇ Telecommunications in Education Conference in Los Angeles - January 2000
- ◇ Challenge Grant Directors' Meeting in Baltimore, MD - April 2000
- ◇ Kansas Gen www.Y workshop in Abilene - April 2000
- ◇ Northwest Council for Computers in Education in Portland - April 2000
- ◇ District of Columbia Generation www.Y Teacher Workshop - June 1999
- ◇ Hudson Valley, New York Generation www.Y Teacher Workshop NY - August 1999
- ◇ TIE Conference in Sioux Falls, South Dakota - April 2000
- ◇ National School Board Association Conference in Dallas - November 1999
- ◇ The Community of Learners Conference in Hawaii - March 2000
- ◇ Internet Librarians Conference in San Diego - November 1999
- ◇ Washington State School Directors Conference in Seattle - November 1999
- ◇ Model Schools Conference in Washington DC - June 1999
- ◇ Tomorrow's Classroom Conference in Seattle - August 1999

Corrective Action(s):

As noted in the Evaluation sections, we have had a high level of success in schools who do implement our model, though sometimes 2 or 3 cycles of the class are required before the model takes root and is adequately understood by the majority of teachers in a school. Many teachers overestimate the time it will take to partner with a student, and underestimate the benefits, until they have seen the partnerships in action. We have expanded our training and resource materials for coordinating teachers, in order to assist them with orienting teachers in their school to the model. Schools who have failed to sustain the class or implement it properly have generally suffered from a high turnover of administrators and teachers, resulting in a lack of sustained leadership and interest. In some cases, schools have attempted to begin delivering the Generation www.Y class before their basic computing infrastructure was installed and operating reliably, which is a recipe for disaster.

We have made greater efforts to orient administrators and lead teachers to the model before they commit to introducing Generation www.Y in their schools. Because we have placed great emphasis on adapting our model to conditions at each school, there is a great deal of variability in the collaborative projects and partnerships that are crafted by participating dyads of students and teachers. This variability is a strength, but also a problem, as some schools or partner teachers implement Generation www.Y in relatively rote, non-engaging ways. In many cases, we don't consider this a problem because these implementations improve over time, and we believe this gradual improvement from the status quo is healthy and well supported by our model. However, we are strengthening our materials and resources aimed at communicating the nature of high-quality technology-enriched lesson and unit plans.

By far the biggest problem Generation www.Y now faces is how to expand the project to meet the demand of thousands of schools throughout the U.S. who want to implement Generation www.Y. Expanding too rapidly would dilute the program and lessen the model's integrity. The new ISTE materials were created to help with this expansion, but the training and support necessary for expansion will require additional resources and staff. The formation of Generation YES to deliver Generation www.Y services to expansion schools is being undertaken. This organization will also be the main vehicle to sustain the model after the five-year period of the present grant.

IV. Project Focus

Subject Matter Covered By Project:	All subjects
If Applicable, Describe Cross Disciplinary and/or Other Here:	During the past year, more than 1,000 teachers and students worked together to create technology-infused lesson plans. Most subject areas were addressed multiple times. The Generation www.Y website allows anyone to search by subject area. Many projects have resulted in cross-disciplinary projects. For example, one student/teacher team created a course revolving around the Graphical Information System (GIS) that combined science, mathematics, history, geography, literature, and art.

National, State or Local Initiatives Addressed:	Every Generation www.Y project is aligned to state and local educational standards. The Gen www.Y Website provides summaries of hundreds of projects that teachers and students have created together. Each of these projects lists all standards that they address. Next year the Website will also provide national standards (e.g., NCTM, ISTE NETS for Students, etc.) for teachers and students to align their projects to.
Technology Type:	Both Software and Hardware
Technology Name:	EVERY piece of hardware and software can potentially be part of a Generation www.Y project.
Technology Description:	The Generation www.Y website (http://genwhy.wednet.edu) provides detailed summaries of hundreds of projects that teachers and students have completed. Each project summary contains a list of all hardware and software used during the project.
Technology Innovation of the Project:	In traditional staff development, teachers are trained to do some technology skills in hopes that will result in improved student learning. The Generation www.Y model trains students in these technology skills in hopes that will result in improved teachers' infusion of technology into their curriculum. Another innovative aspect of Generation www.Y is that teachers don't necessarily need to know technology skills in order to successfully utilize the power of technology to improve student learning. The students can provide the technological expertise and work with teachers to reform education.
Is Distance Learning a Focus of the Project?:	Yes
Distance Learning Technologies Used:	Public TV broadcast,Videos,Video conference,Computer for class activities, Internet or World Wide Web On-line services, E-mail, CD-ROM, Telephone, Fax
Other Distance Learning Technologies:	

V. Budget Information

Funds Requested:

Funds Received:

Actual Budget Expenditures for the Reporting Period: $864,758.00

Status of Current Budget: This is the amount that Generation www.Y has expended or encumbered during the current fiscal year.

Rate of Expenditure: At expectations

Explanation for Non-expenditure:

Amount of Carryover (if any) Anticipated This Period: $0.00

Reasons for Carryover (if applicable):

Funds Spent on Evaluation: $130,000.00

% of Total Budget Spent on Evaluation: 14.0

Funds Spent on Technology Infrastructure: $6,868.00

Funds Spent on Professional Development: $762,137.00

Leveraging of Funds from Other Sources: TLCF

Other Federal Funds:

Other State Initiatives:

Information is accurate as entered: Dr. Dennis Harper

VI. Supplemental Information and Changes

In this section of the report, projects will describe any changes they wish to make in the performance objectives and activities. Provide any other appropriate information about the status of the project including any key personnel and/or partnership changes and unanticipated outcomes or benefits from the project.

Describe significant program changes: The only major program change that has been approved by our D.O.E. Program Officer is to support the thousands of schools throughout the country who wish to deliver Generation www.Y through the formation of an external organization. The vast number of schools was well beyond what the original grant was intended to support and beyond the capabilities of the Olympia School District to house. The new organization will act as the major sustainability structure for the program once the fifth year tasks have been completed.

At this point Generation www.y does not foresee any changes to its original goals and objectives. Year five activities will focus on the summative evaluation and the refinement and production of materials that will sustain Generation www.Y. What we learn from the evaluation and the production of a set of strong research-based materials to support a powerful model of staff development will make Generation www.Y a solid alternative professional development model that will improve student learning throughout the nation.

VII. Evaluation

Executive Summary of Evaluation Findings

Generation www.Y is a model for training and empowering students to use computing and information literacy skills to help teachers rebuild curriculum units in their schools. The model is aimed at giving students an authentic, multidisciplinary, project-based experience of doing real and valuable work, in collaborative partnerships with adults and other students. In this process, teachers receive individualized support for integrating technology in their particular classrooms, and work with students as co-learners and co-creators of curriculum improvements. One goal is to make it possible for teachers to increase their use of technology while keeping their focus on teaching; i.e. building and delivering lesson plans and curriculum units that help students achieve the learning goals outlined in district or state academic standards. Another goal is to involve students as co-creators and co-owners of the curriculum, who bring needed skills and resources to the table. The heart of the program is not technology per se, but technology as a facilitator of structural change and curriculum innovation, moving schools toward a learning community approach in which students and teachers are all participants in a learning community.

The Generation www.Y Curriculum Guide provides a general model which can be implemented,

with appropriate adaptations, in upper elementary grades through high school. The course, and the especially the projects and partnerships between students and partner teachers, can be adapted to the particular interests and needs of individual teachers and students, as well as the specific hardware and software available in each building. The model has been replicated in well over two hundred schools, in grades 4 through 12, although implementations in grades 7 and 8 have been the most frequent. The training model, curriculum materials, and online resources provided to these schools have been well received, and have generally enabled Generation www.Y coordinating teachers to successfully conduct Generation www.Y classes. Currently, hundreds of students and partner teachers participate in the program each term, working as teams to build new or improved lesson plans tailored to the specific needs of classes taught by the partner teachers.

The course is designed to make better use of existing technology infrastructure, not to install or upgrade infrastructure. Before taking part in Generation www.Y, participants generally have access to networked computers (including at least minimal access to Internet and email facilities) and have some prior experience with basic computer operation and word processing. Most participants to date have had limited prior experience with more advanced software, and limited prior experience with integrating computers and telecommunications in the classroom.

The goal of creating and disseminating a cost-effective, flexible curriculum model that can be adapted to a wide variety of grades, technology infrastructures, and settings appears to have been largely realized, although further development is ongoing. The course as a whole and the collaborative projects in particular are adapted to make use of a variety of available hardware and software, are tailored to a wide range of student and teacher skill levels, and are applied to curriculum-building needs in most content disciplines. Students and teachers report very positive outcomes associated with their participation in the program. These findings include the following:

1. Students accumulate substantial experience and skill-building in the areas of computing, network use, communication, collaboration, and project management.

2. Students and partner teachers have together completed and implemented well over a thousand curriculum projects in almost all content disciplines. These projects are often reused and refined over successive years by the partner teachers as they continue to update their curriculum and lesson plans.

3. Students and teachers demonstrate positive attitudes about the curriculum projects, and about the collaborative, cross-age teamwork that they experienced while working together. Partner teachers report virtually no negative experiences; they report positive effects on their comfort level with computers, personal and teaching-related use of computers, attitudes toward educational computing, and interest in learning more about educational technology.

4. Both students and teachers report interest and behavioral intentions to continue developing collaborative projects that utilize computing and telecommunications resources for curriculum improvement and for other community service efforts.

In addition to these findings for the core of the program, a number of extensions appear

promising. In Olympia, Generation www.Y students work with pre-service teachers to staff after-school or community-based computer labs, providing assistance to other students, family members, and community citizens who wish to learn more about computing. Generation www.Y graduates have facilitated preservice teacher education classes on educational technology, and have hosted preservice teachers on field experiences in K-12 schools. These partnerships with pre-service teacher education institutions have resulted in further exploration of ways that Generation www.Y schools can collaborate with colleges and universities, providing enriched experiences for students and faculty of both K-12 schools and higher education institutions. The Evergreen State College in Olympia, Washington, has received a grant to develop this aspect of the model, in partnership with the Generation www.Y project.

Finally, in addition to working with preservice teacher education, graduates of the program have participated in a number of other opportunities for student leadership and community service, many of which embody structural changes in educational institutions. For example, Generation www.Y graduates have served as representatives to national and regional educational organizations, served on expert panels for educational technology policy, managed school websites and networks, provided information services to local and regional government agencies, presented curriculum projects at many local, state, regional and national conferences, and participated in new showcases for curriculum innovation such as the Kansas Student Leadership Conference.

Evaluation: Description of Key Findings

1. **"Students Gain Experience with Educational Technology"**: During the course of their Generation www.Y participation, students receive many hours of experience using the educational technology resources that are available at their schools. Many students learn new skills for the first time as part of the course. Students explore and practice various ways that these tools can be used for educational purposes.

2. **"Students Collaborate with Teachers to Build Technology-Enriched Curriculum Units or Lesson Plans."**: In addition to the technology skill units, students work through several units of instruction in collaboration and communication skills, project planning, and technical writing. Each student works with a partner teacher to produce a curriculum project that the teacher will use with students in his or her classes. In schools that participate in the online feedback program, students receive additional online feedback from curriculum experts during the project planning process.

A high percentage of students complete projects that are considered valuable by themselves and their partner teachers, and which are used repeatedly by the partner teachers. The majority of students report satisfaction with the collaborative process, and a desire to continue working with teachers in a similar fashion, or to work on other school and community service projects.

3. **"Students with Diverse Backgrounds Successfully Participate."**: Successful participation in the Generation www.Y class is not strongly linked to gender, ethnicity, grade level, or prior background experience with telecommunications technology. The class has been successfully adapted for a wide variety of communities, schools, and individual students and teachers.

4. **"Teachers Integrate Technology."**: Teachers report almost no adverse reactions to this

intervention aimed at increasing their familiarity with telecommunications technology and their integration of these technologies in their classrooms. Most report positive experiences with the program, increased use of technology in their classes, and steady or improved attitudes toward technology integration. The majority report that they do use the technology-enriched lesson plans that resulted from their partnership with a Generation www.Y student, and most also report that they will continue to use and build on these curriculum projects in the future. Most participating teachers also report that Generation www.Y is a good method for providing support and assistance to teachers as they integrate technology into their classes; most would like to continue participating in the future.

5. **"Teachers with Diverse Backgrounds Successfully Participate."**: Teachers with a wide range of prior technology experience participate in the project and report similar levels of satisfaction and success. In addition, teachers with a variety of teaching styles find that the collaborative project format is helpful in integrating technology resources into their classrooms. This may be considered both a positive and a negative finding, since some teachers are able to add technology projects into a class format that does not currently use best practices. However, it is hoped that positive exposure to student-centered, engaging curriculum and instruction that is centered around authentic, interdisciplinary projects will stimulate all teachers to try these approaches in their own units and lessons.

6. **"Training and Materials Support Dissemination of the Model."**: Four revisions of the Curriculum Guide and many iterations of the training workshop have been supported by many waves of survey data, interviews, and observations. Currently, the great majority of Generation www.Y teachers report that the training, materials, and support they receive are adequate and make it possible for them to successfully implement the class, including the partnership model.

Successful introduction of Generation www.Y to a school does require administrative support and leadership, a reliable basic technical infrastructure, and communication by administrators and the Generation www.Y coordinating teacher that successfully encourages other teachers to participate. Generally, teachers are satisfied with the training, materials, and support they receive for actually conducting the class, but in some instances more help with issues of leadership and communication is needed in order to promote the model throughout a school.

7. **"Student Engagement and Leadership is Supported."**: In all schools where Generation www.Y is implemented, students take on key roles in working with teachers to rebuild the curriculum and instruction in particular units of specific courses. Students take on serious responsibility for presenting or facilitating particular lesson activities for fellow students, tasks which require organizational skills, public speaking and presentation skills, higher order thinking, project planning, etc. Evidence from students, teachers, administrators, and observers converge on the finding that most students are very engaged by this process, and put a great deal of effort into doing a responsible, "professional" job. Many students spend a significant number of hours of their free time perfecting these projects, and given this, it is striking that most students report that they would like to continue working on similar projects. In addition, many students have used their Generation www.Y experience as a springboard to other kinds of school or community involvement. Unfortunately, the opportunities for such continued authentic participation in their schools and communities are often limited outside of their Generation www.Y

activities.

Evaluation Tools and Names of Instruments Used in the Evaluation

1. *Electronic survey*: "Student Pre-Survey"
2. *Electronic survey*: "Student Follow-up Survey"
3. *Electronic survey*: "Partner Teacher Follow-up Survey"
4. *Electronic survey*: "Teacher Follow-up Questionnaire"
5. *Electronic survey*: "Teacher Supplemental Questions"
6. *Electronic survey*: "Teacher Midterm Survey"
7. *Paper survey*: "Curriculum Workshop Evaluation: Educators"
8. *Paper survey*: "Curriculum Workshop Evaluation: Students"
9. *Paper survey*: "Community Lab Registration"
10. *Electronic survey*: "Lab User Session Survey"
11. *Electronic survey*: "Lab Attendant Session Survey"
12. *Paper survey*: "Teacher Survey"
13. *Document review*: "Project Proposal Form"
14. *Document review*: "Project Final Report Form"
15. *Face-to-face interview*: "Partner Teacher Interview"
16. *Face-to-face interview*: "Teacher Interview"
17. *Face-to-face interview*: "Student Interview"
18. *Face-to-face interview*: "Principal Interviews"
19. *Case study*: "Case Study"

Replication of Evaluation Components

The essence of this project has been to create and disseminate a model that can be widely replicated, i.e. that is flexible enough to adapt to many settings. As noted above, the core model has been implemented in well over 200 schools, in grades 4 through 12, in rural, urban and suburban areas, and in schools with a wide range of technology resources and approaches to curriculum and instruction.

Title, Type and Description of Product Disseminated

Dissemination Title:	**Generation www.Y Curriculum Guide**
Dissemination Type:	Curriculum
Dissemination Description:	A 533 page guide for teachers who teach the Generation www.Y course that trains students to partner with teachers to incorporate technology into the curriculum. The Guide is broken down into 12 units of study. Each unit contains one or more activities for students. Each Unit lists student

objectives, time estimate, required equipment and materials, ways to evaluate objectives, Student Information Pages, and a comprehensive list of procedures the Generation www.Y teacher can use to deliver the lesson. These procedures are a word-for-word primer for the entire course of study. The guide also contains Frequently Asked Questions, an Anatomy of a Successful Gen www.Y Class, and alignment of all Gen www.Y skills to the ISTE NETS standards.

To obtain product: The Generation www.Y Curriculum Guide is published by the International Society for Technology in Education (ISTE) and can be ordered from them.
Cost:$110.

Dissemination Title: **Generation www.Y Student Workbook**

Dissemination Type: Curriculum

Dissemination Description: The 173 page Student Workbook provides students with (1) all course objectives, (2) vocabulary review, (3) templates, (4) progress checklists, and (5) a series of action pages. The Student Workbook is aligned to the Generation www.Y Curriculum Guide. The action pages provide students with dozens of activities geared at helping their teachers infuse technology into lessons.

To obtain product: The Generation www.Y Student Workbook is published by the International Society for Technology in Education (ISTE) and can be ordered from them.
Cost:$20.

Dissemination Title: **Generation www.Y CD**

Dissemination Type: Curriculum

Dissemination Description: The Generation www.Y CD is linked closely to the Generation www.Y Curriculum Guide and Student Workbook. The CD contains over 100 Information Pages to help students. These pages can be shared over a school network or installed on individual hard disks. Templates to all proposals and checklists are also found on the CD. The CD also contains a PowerPoint show on each Unit of Study that teachers can use when presenting the curriculum. Lastly, the CD provides some public domain software programs that may be of use when students are learning the technology skills to help their teachers.

To obtain product: The Generation www.Y CD is published by the International Society for

	Technology in Education (ISTE) and can be ordered from them. *Cost:$20*.
Dissemination Title:	**Generation www.Y Video**
Dissemination Type:	Curriculum
Dissemination Description:	This one-hour long video is divided into three parts. Part one is a summary the Generation www.Y model. Part two discusses each of the 12 Units of Study. Part three describes and shows the Gen www.Y project process. This third section takes a viewer through the entire process of a student working with a teacher to infuse technology into the curriculum. The video is aligned to the Generation www.Y Curriculum Guide and Student Workbook.
To obtain product:	The Generation www.Y Video is published by the International Society for Technology in Education (ISTE) and can be ordered from them. *Cost:$30*.
Dissemination Title:	**Generation www.Y Website**
Dissemination Type:	Instructional materials
Dissemination Description:	The Generation www.Y Website is a comprehensive online environment for the Gen www.Y community. This Website received Curriculum Administrator's Diamond Award for the best Curriculum-based Website in the United States. This site was created and is maintained by Generation www.Y students. The site (http://genwhy.wednet.edu) contains (1) description of the model with FAQs, (2) a Gen www.Y curriculum summary, (3) a complete detailed list of every completed Generation www.Y project, (4) a location where students can enter their project proposals and receive feedback from Generation www.Y subject experts, (5) a place where student/teacher teams can submit their final report and evaluation, (6) a list of all schools participating in Generation www.Y, (7) a list of all Generation www.Y partners, (8) a Generation www.Y Virtual Workspace where students and teachers can participate and begin forums and chat sessions, (9) hundreds of links to websites related to the Generation www.Y Units of Study, and (10) complete Annual Reports and Evaluation Reports from the Northwest Regional Education Laboratory.
To obtain product:	Going to the Website... http://genwhy.wednet.edu

Dissemination Title:	**Generation www.Y Teachers' Workshop**
Dissemination Type:	Professional development presentation
Dissemination Description:	A workshop has been developed and evaluated that provides new Generation www.Y teachers with the necessary skills to deliver a successful Generation www.Y class. This 6-hour workshop covers the use of the Generation www.Y curriculum and website along with examples of successful Generation www.Y programs. During the past year this workshop was given in Washington DC, Washington state, New York City, Albany, Alabama, Ohio, Kansas, Hawaii, and the U.S. Virgin Islands. The workshop is sometimes given as part of an educational technology conference.
To obtain product:	Schools, districts or states can contact the Generation www.Y office to arrange for this workshop. The cost of the workshop depends on location of the workshop and number attending the workshop.
Dissemination Title:	**Generation www.Y Introductory Workshop**
Dissemination Type:	Professional development presentation
Dissemination Description:	This one to two hour workshop presents the Generation www.Y model to interested educational entities. Sometimes presented at national and state educational conferences, this workshop often involves Gen www.Y students describing the model.
To obtain product:	Requests for this workshop can be made to the Generation www.Y team in Olympia.
Dissemination Title:	Northwest Regional Education Lab Evaluation Report
Dissemination Type:	**Evaluation report**
Dissemination Description:	The Northwest Regional Laboratory published an Annual Generation www.Y Evaluation Report. This bound report provides a variety of statistical tables and graphs along with written description of results of the extensive Generation www.Y formative evaluation plan.
To obtain product:	Through contacting the Olympia School District Generation www.Y program. Cost is for printing and shipping. The report is available free on the Generation www.Y Website. *Cost:$10.*

Lessons Learned

Lesson Title:	**Students Respond to Authentic Engagement.**
Lesson Category:	Curriculum content
Lesson Description:	We have observed hundreds of students putting in extra hours of hard work perfecting their projects -- not because of artificial rewards or punishments, but because the students were truly interested and engaged. These students were asked to contribute their energies, skills and talents toward the production of a real-life, authentic, useful piece of work. In most cases, these projects became part of the curriculum and instruction used in their schools, so they were helping create the educational environment they and fellow students experience daily. In other cases, students have collaborated with administrators, counselors, or district officials to build other real aspects of the educational system in their communities.
Lesson Title:	**Teachers Respond to Embedded Professional Development**
Lesson Category:	Professional development
Lesson Description:	Teachers are understandably reluctant to take on additional time commitments or responsibilities, including technology training. Many teachers have had frustrating experiences in their past attempts to learn new technology skills. Like most educational endeavors, success is more likely using an approach that delivers individualized attention, in the context of a personal relationship and real work that must be done. Teachers have responded very positively to this approach in our project. Participating teachers are able to start with the skills and knowledge they already have and take the next step, committing only a few hours per semester, enjoying personalized teamwork with a student partner, and generating a useful updated lesson or unit for the classes they teach. Most participating teachers, even those initially resistant, report that the process was pleasant, the product is useful, and they would like to continue with this model of professional development in the future.
Lesson Title:	**Leadership is Crucial**
Lesson Category:	Curriculum integration
Lesson Description:	The Generation www.Y model is relatively easy to replicate because it can

be modified and adapted to local conditions in a number of ways. Most of the failed implementations we have encountered have resulted from two causes. Some schools, particularly in the first two years of the project, attempted to adopt the program before any reasonable technical infrastructure was in place -- generally these were attempts to install infrastructure and implement Generation www.Y at the same time. Most other failures have come from a lack of leadership -- either a lack of vision for how and why technology integration and student leadership and engagement are important, or a high turnover of administration and lead teaching staff that resulted in great instability and diffusion of responsibility. We have come to consider leadership -- technology planning and a vision of curriculum integration and student engagement --to be a key prerequisite to the successful adoption of our model.

Lesson Title: **Network Fear Blocks Progress**

Lesson Category: Infrastructure development

Lesson Description: One clear impediment to technology integration and education in some schools is inordinate security concerns on the part of network managers and administrators. Some schools currently block student access to important network resources such as storage space for personal files, email, Web access, etc. In some cases, these security measures are designed to prevent abuse of students by outsiders, while in other cases, they are designed to prevent abuse of the network by students. Either way, these security concerns can be greatly overblown, to the detriment of student learning. Some vendors of security products intentionally hype these fears to sell their wares to schools.

These issues have long been the subject of discussion in universities, where it is generally well understood that the very nature of education requires high access to network resources, sometimes at the expense of the strictest security measures. This is a new issue for K-12 schools, and some schools are currently erring on the side of caution, at the expense of education. We believe that in most cases, students are most at risk of abusing the system or being abused if they don't feel that they are truly partners in the system. We have had tremendous success with student-built and student-run networks and systems, and we believe this approach prepares students to act responsibly and professionally.

Lesson Title: **Technology is a Moderator Variable**

Lesson Category: Evaluating the project

Lesson Description: We have come to realize that for the most part, technology integration is not an intervention, it is an enabling factor or catalyst that supports some other intervention -- and a proper evaluation must take into account the entire picture. In our case, the intervention is that we promote student engagement in the design and delivery of curriculum and instruction and in other authentic, important, real aspects of running schools and communities. This intervention can fit well with many other school improvement initiatives, or stand alone. Technology is a particularly powerful enabling factor for this intervention, because adults now need to integrate technology into their work, and kids are good at it and enjoy it.

The most successful schools we have worked with are already involved in existing schoolwide improvement efforts which by their nature are energized by the increased integration of technology. For instance, schools in which teachers are already working together toward interdisciplinary, project-based, constructivist curriculum and instruction will see these efforts enhanced by the introduction and use of modern telecommunications technology. However, if no coherent school improvement efforts are under way, there is nothing for technology to support. In the latter case, Generation www.Y can supply both an improvement initiative (authentic partnerships between students and teachers, a learning community approach to curriculum and instruction) and a catalyst (technology integration), but only if there is substantial interest and/or leadership to support both of these components.