Career Connections to Teaching with Technology (CCTT)

Year 6, Final Evaluation Report

By

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EXECUTIVE SUMMARY

The Career Connections to Teaching and Technology has attained its major goals and objectives. The three most prominent and promising developments from this Grant-supported project are:
(1) Active Classroom (AC)
(2) NDL Workshops, and (NDL)
(3) Curriculum Writing Workshops (CW)

Each of these three offerings has matured during the past few years. Each relies on a well thought through and developed technological authoring system and web-site as well as content related to standards, on-line resources, and requires introduction through professional development workshops focussed on its use.

Active Classroom, a fully featured resource akin to "Blackboard", is in use throughout Volusia County, FL for streamlining online organization, management, development of lessons, use of existing resources, tracking attendance, achievement, and communicating between and among teachers, students, and parents. It is being marketed and sold not only to other Local Educational Authorities in the original project, but throughout the country by C2T2 Educational Systems, Inc., a not-for-profit organization started in Year 4 to further the developments of the Grant. It is most developed in Physics, but development in mathematics and chemistry is continuing in Year 6, the no-cost extension year of the Grant. This resource was developed primarily at Mainland High School in Daytona Beach, Florida. Introduction requires a 1-2 day professional development workshop.

The NDL workshops bring the digitized primary resources of the Library of Congress to teachers and students to create new and/or enhance existing curriculum. Use of these resources often requires interdisciplinary development. Again, professional development and introduction to this special web-site and simplified authoring system is accomplished through a 1/2-2 day workshop, with both the technological infrastructure and workshop developed by the hub-site managers in Las Vegas, Nevada.

Curriculum Writing involves a week long training and development process. Participants select units they wish to develop, have access to resources and information about incorporating the Grant Wiggins "backwards design" model, state and national standards, use of existing print and on-line resources, authoring templates to mention but a few features. In these workshops they work with content-specialists as well as facilitators, producing units they implement and which are reviewed and implemented by other hub-site managers and teachers throughout the CCTT consortium. Primarily developed by Dr. Susan Koba of Omaha Public Schools, Nebraska, it fulfills all of the goals and expectations of the project.

In this final report we present data for (1) Active Classroom, (2) NDL Workshops and (3) Curriculum Writing Workshops individually as well as comparisons among all three. This report incorporates findings from the "**Career Connection to Teaching with Technology (CCTT) Year 5 Interim Evaluation Report"** by Karen C. Cohen, Marcus

Lieberman, Jane Coogan, and Toni Rosenberg (2002) which covered (AC) and (NDL) and includes findings from (CW) collected in the final, extended year six of the Grant.

It is clear from the findings for Active Classroom and the NDL Workshops that both give teachers and students valuable technological and content tools. Active Classroom has impacted significantly in helping teachers to organize and present their courses—especially in Physics, the first fully implemented topic. The NDL workshops have opened up resources, linking teachers and students to the Library of Congress, and have motivated development, especially of research skills and use of primary resources via the use of the Internet. The strongest area of impact has been in social studies and has resulted in collaborative work by teachers, developing interdisciplinary projects for their students when possible. The Curriculum Writing Workshops have impacted most strongly on teacher's professional development as well as their ability to work independently and collaboratively in subject matter areas of their own choice and in interdisciplinary subject matter areas.

All three workshop efforts have promoted students working collaboratively rather than individually. Previously documented results of teachers becoming facilitators of the learning process and collaborators with their student appear to maintain.

The biggest barriers to implementation continue to be lack of sufficient time for teachers to learn and incorporate these project developments, usually on their own time, and need for additional resources.

Although all three efforts increased teachers competency, knowledge, and skills, the primary benefit of Active Classroom was to give teachers an organizing and helpful on-line resource for organizing and implementing curriculum materials which they are continuing to use and teach others about. The NDL workshops primarily helped teachers introduce new content and technology to their students. The Curriculum Writing Workshops inpacted most strongly on participants' professional development, their ability to write or rewrite instructional units, and their collaboration with other colleagues in the process; they also spent significantly more time in preparation, involvement, implementation, and furthering the process.

Introduction and Methodology

This final, cumulative external evaluation report includes the instruments, methodology, and data we have collected and have analyzed for three components of the Career Connections to Teaching with Technology (CCTT) project: Active Classroom (AC), the National Digital Libraries Workshop (NDL) Program, and the Curriculum Writing Workshops (CW).

We have singled out these three activities, as they are among the three most promising results of the grant and are most likely to be marketed successfully to sustain and further the goals and objectives of the project. These activities all evolved during the Grant period and implementation is ongoing and, for some, burgeoning.

The report contains Summary Reports of all three efforts and appendices of full quantitative and qualitative results of these workshop efforts as they affected teachers and students throughout the consortium. Significant differences between among these three activities are presented and discussed. The primary instrument is a telephone survey, developed by the external evaluators, revised and refined with hub-site mangers input and focus groups with teachers both in the project and not involved in the project. The survey (Appendix A) covers:

- Activities before, during, and following the training
- Impact of the training on the teacher participants
- Participants' evaluation of aspects of the project
- Impact on teacher's curriculum
- Units developed and/or revised
- Specific types of changes to their teaching resulting from participation
- Implementation and course change specifics
- Sustained Effects and Barriers to Sustained effects
- Impact on Students
- Impact on non-classroom activities
- Impact on Broader Community
- Barriers to implementation
- Time Spent related to the Course
- Demographic Information
- Suggestions and Comments

Lists of teachers who had participated in various project workshops for each of the three activities were provided to the evaluator by the hub-site managers from 5 states. These lists were not complete as there was no central organization of information of teacher participation in the project. We dealt with the lists we were given, opting to call teachers involved primarily in Years 4 and 5 of the project since they had participated in the most evolved or polished workshops and presentations and had access to the most refined technological infrastructure for each. In many instances participant teachers who had collaborated with others not in the lists we were given directed us to other participants, and we called them as well.

Teachers were called at their school with a message left to call the interviewer to set an appointment for an interview. These interviews lasted from 45 minutes to 1.5 hours. The primary drawbacks to this approach are that there are no meaningful comparison groups who did not participate in the project and all of the information is post-only or retrospective. Nonetheless, this post-facto design was considered the most appropriate approach given the objectives of the project, the research hopes and expectations of the US Department of Education, and the funding constraints on the evaluation budget.

We wish to acknowledge and thank the scores of administrators and consultants, the hundreds of teachers and thousands of students involves, the external evaluation associates as well as the U.S. Department of Education TICG Program Director, Officers, reviewers, and consultants for their involvement and help with this major effort. Too numerous to mention individually, we thank them all.

Active Classroom Summary Report

Background

During Grant Years 3-5 several Active Classroom workshops were held for teachers ranging in length from ½ day to several days to introduce teachers to this new software utility developed primarily by a teacher and student from Mainland High School, Volusia County, Florida. In many ways like "Blackboard", Active Classroom allows teachers to organize all of their teaching materials. They can post assignments, tests, class exercises, track attendance and grades, provide parents and students with information about what was going on in each class in general, access to a host of reviewed resources available on the internet, as well as to correspond with the teacher by e-mail. When used with all of its features, it is a marvelous resource. Dramatically positive results of Active Classroom on **student attitudes, attendance, and increased in enrollment in Physics** have been meticulously tracked by Cathy Colwell at Mainland High School, She developed and implemented Active Classroom for her Physics students, and this information has previously been reported and is available on the web. Active Classroom is being sold through C2T2 Educational Systems, Inc., a not-for-profit organization developed to sustain the viable products produced by the Grant. In 2002, the teacher's union voted to adopt Active Classroom county-wide in Volusia County, Florida—the first county to do so.

Methodology

The Teacher Participant Telephone Survey was administered as a telephone survey to more than half of the participants on lists provided by hub-site managers from the five states in the project. We were provided with a list of about 70 names for Active Classroom, teachers who had attended some training and had had time to try to implement what they had learned. Each teacher was called at his/her school and asked to return the call to set and appointment for the lengthy (1 hour-1.5 hour) interview. Teachers were primarily interviewed at home, on their time. 36 interviews were completed. Many of the names provided could not be reached for a variety of reasons: during the past three years some teachers had moved on to other positions, some were on maternity leave, and some had personal tragedies during the time we collected the information.

Active Classroom workshop participants were contacted in April-May, 2001 at their school by telephone and asked to set up an appointment for a telephone interview. All responses were hand recorded by the interviewer, Jane O Coogan. Quantitative findings were keypunched and verified by Tradequotes, Inc. and statistical data analysis of the numerous quantitative findings was performed by Marcus Lieberman. (See Appendix B). Qualitative comments were organized and transcribed by Toni Rosenberg, (See Appendix C). The interim evaluation report is based on the work of these other people. We used the same methodology on the other two major efforts developed by the Project, NDL Workshops and Curriculum Writing.. Comparisons between and among these three

major project outcomes along with cumulative findings comprise this final, Year 6 cumulative evaluation report of the CCTT project.

The findings here are presented in a narrative style. Full detail is found in the appendices for each survey question.

Results for Active Classroom—Quantitative and Qualitative Findings

Activities before, during, and following the training

Most teachers said they were asked to use lecture notes or other handouts in preparation for the workshop or during the workshops along with other activities, usually some work with computers. During the Active Classroom workshops most of the people indicated they identified a unit they wanted to develop or identified other ways they anticipated incorporating project information at their home school. The next two most cited activities were preparing a project or problem to work on during the course and "other" activities, most often related to enhancing their technological skill and learning how to implement Active Classroom off site. The teachers said that their course experience most often included introduction to new teaching methods and new technologies.

By the end of the professional development, to be more effective in their teaching, the teachers most often said they needed more work with reading materials and problem sets. Following the workshops, most teachers indicated they either participated in informal group get-togethers or received technical assistance from the project staff.
After the course, most wrote that they communicated with other participants by e-mail. For those who did communicate with other participants, most indicated that their communications were sporadic.

IMPACT

What the participants learned; what was of value to them

When average scores were computed for numerous possible responses, participants gave the **highest ratings to new or improved technological skills, increased motivation or stimulation for teaching excellence and new information about other resources for use in teaching**. The lowest ratings were given to new or more in-depth knowledge of issues regarding females and minority students and new contacts with colleagues from other institutions. Only three people said they got no benefit from the program.

Participants' Evaluation of Aspects of the Project: How much of a contribution did each of the following make to what you got out of the course?

Average ratings were calculated for a variety of factors could contribute to what teachers felt had helped them gain from the Active Classroom training. **Participants rated most highly the interactions with the instructors, content of the sessions, the experience of**

developing products or materials at the course and discussions on how they would use what they learned in their own classes. The lowest ratings were for preparation prior to the course and follow-up activities.

When teachers were asked "Did you get any benefit out of the program?" 30 responded Yes, 3 responded No, and 2 had no response. Typical comments were:

"Yes. I created a web-site that I used immediately in my classroom. My students enjoyed it and it was easy to facilitate vocabulary for example—I put words on line and didn't have to give them out in class"

"Yes—an enormous amount. [Active Classroom] has allowed me to share lesson plans on-line with students' families, with students who are absent, with students wishing to review materials in preparation for exams. It has allowed me to establish links to educational and scientific web-sites such as the human genome project and other current scientific areas of investigation."

"Yes—the benefit is good if you can get it all on the computer—benchmarks, state standards, homework in reading, math, language, science, social studies and spelling—daily update is very hard to do with so any subject areas. I love the idea: get parents on, get kids on, but it's time consuming."

"Definitely. I've been a teacher for over 15 years and I've been doing Active Classroom for 2 years and it's made me a better teacher, due in part to collaboration with colleagues across the country. It keeps me in tune with new technologies. 'I've seen my students gain interest. They are more motivated. They prefer to work through the computer."

The three negative comments all related to lack of access to technology and inability to use a home Macintosh computer to interface with the system from home.

Impact on Curriculum/Teaching as a result of participation in the project.

Most of the participants indicated they revised one or more existing units. **About half the participants developed or revised four (4) or more units.** Half the participants developed their units in collaboration with others and half did not. More than half the participants described the units they developed as interdisciplinary. Of those who answered the question, one fourth wrote that their units received formal departmental or program approval.

Teacher comments were again positive. **25 (of the pool of 36) made and described specific changes they made in their curriculum or reaching. Eight did not.**

The highest proportion of participants indicated that they had changed their teaching methods **through online organization of course materials, introducing new**

experimental or lab techniques and introducing new content. The change in teaching methods and the new lab techniques were judged of major importance by the most participants. Of those answering, almost 90 percent of the teachers have taught one or more of the units they developed as a result of participating. Of those answering the question, almost forty percent have team-taught the material.

The average number of students who have completed these materials taught by each teacher/participant teacher was 208 and the average percentage of female students was 50.1%. Of those answering the question, almost 90 percent reported the courses or units are still being offered. The multiplier effect of Active Classroom throughout the project, therefore, was and will continue to be enormous.

Typical selected comments were:

"It gave me a new window on how to teach. I became more student-centered instead of teacher-centered. I became more student group work oriented rather than teacher directed. I do the introductory lesson the first day and them I become a facilitator. The downside is that it takes more time and I see that we don't cover as much curriculum. Content takes longer to cover, the students take their time. It's longer but better learned."

"One of my rare split-level classes …was this past year. Having Active Classroom allowed me to conduct two separate levels efficiently in my classroom at the same time. One group looked at Active Classroom on the screen for their assignments while at the same time I can actively engage students in the other level in conversational French. Therefore, four of the four language components were met: speaking and listening and reading and writing. My motivation was primarily to get help on …managing… state required standard skills (FCAT) …and this I achieved much more easily through using Active Classroom. You go on line with your lesson plan and you call up the skills (FCAT) standards to plant the lesson around. We are required to teach those skills and to shop evidence that they have been taught. By doing this on line I can see what's been done, as can my administrator and this cuts out an enormous block of time necessary to hand write and then submit all of the required paperwork."

"You go online with your lesson plan and you call up the FCAT standards to plan the lesson around. We are required to teach those skills and to show evidence that they have been taught. By doing this online I can see what's been done as can my administrator and this cuts out an enormous block of time necessary to hand write and then submit all of the required paperwork."

"Allowed me to utilize the Internet and to use the Internet effectively."

"It made my advanced students more independent. They were responsible for checking the homework calendar and printing out all assignments. For my lower level students, I gave them basic instructions in Internet skills and basic computer skills. I have advanced students and drop-out prevention students."

Impact on Students: Compare the average level of knowledge and skills of students who completed the courses/units you developed or modified as a result of your participation in the course with the knowledge and skills of students who have completed similar courses/units you taught previously.

All of the numerous possible impact items had an average rating of 4.00 or higher on a scale of 1-5 where 1 = Substantially Worse and 5 = Substantially Better. The highest ratings were given to ability to use advanced technology (4.75) and problem solving skills (4.20). The lowest rating (still 4.00) was given to in-depth knowledge of subject area.

Selected typical verbatim comments on impact(s) on students appear below.

"Today, my students can walk into class with no knowledge about a particular molecule or metabolic pathway and leave 45 minutes later with a beginning sophistication that would have been rare among college students before now. My students can walk into the classroom with no understanding of a photoreveriible phytochrome, interact with the computer for example with photo and visualize molecules such as photoreversible phytochrome. Whereas the in the past it would not have been subject matter in a high school setting—too boring and too abstract. Now they enjoy looking at molecules…[it is] awesome, basically."

"I would say a higher level of motivation and keeping a student on task longer during the class period. For instance, if they are working out of a text book their attention span is 15 minutes. It's much longer attention span when they click back and forth between resources and labs and worksheets and doing so with others in teams of 2 or 3.

"The students had a clearer understanding of the key concepts or goals being taught. They also developed more independent learning skills."

Impact On Non-Classroom Activities

The highest proportion of teachers reported sharing with other colleagues in their schools formally and informally. Most of the teachers reported attending professional meetings, seminars or workshops and participating in further professional development activities. Those who made presentations to local campuses or delivered papers at professional meetings rated their impact the greatest. Those who attended professional meetings and those who participated in further professional development activities rated their impact the least**. Impacts ranged from application for and receiving grants for further development related to the project, to increased comfort and knowledge with technology, and becoming part of a peer-community for further communication, collaboration, and development. These findings are all based on the availability and mastery of technology provided by the Grant**. (See Appendix C.)

Impact on Broader (Professional) Community

Almost all the participants have shared information or skills they learned with colleagues either in their institution or in any other institution and they most often did that sharing through informal discussions with one or more colleagues.
Most of the participants reported that colleagues with whom they shared knowledge gained from the Active Classroom training. They reported that their own experience was expanded even further by their colleagues attending or joining the project.

Barriers To Implementation

Over two-thirds of the responding participants report encountering barriers to implementing what they learned from their involvement in this course. **These barriers primarily involved time and financial resources to implement in a project that is "winding down.'**
Just over two-thirds report that they did intend to develop new materials or units or modify existing materials or units despite these barriers.

Time Spent Related to the Course

The average number of hours spent during Active Classroom training was 16.
The average number of hours spent in additional development was 31.
The average number of hours implementing Active Classroom was 25..
The total average number of hours related to Active Classroom alone was 58.

Demographic Information

The average number of years that the participants had been at their school was seven years.
Just over three-quarters of the participants taught at the high school level.
Only about 1/7 of the participant were male.
The average age of participants was forty-three.
Only two participants described themselves as Hispanic or Latino.
All but one of the participants described themselves as Caucasian.
All of the participants who responded to the question indicated they were U.S. citizens.
All but one of the participants wrote that they had no impairment or disability.

National Digital Library Summary Report

Background and Methodology

The National Digital Library (NDL) workshops were developed and presented by George and Carolyn Breaz. They were the Las Vegas, Nevada hubsite managers. They organized and presented in person and through on-line training, sessions for the other hubsite managers and for large numbers of participants in the project not only in Nevada, but throughout the five states in the project. They focussed both on training teachers, but also on training potential trainers of teachers, especially in their state, Nevada. Thus a large number of librarians, media specialists, and teachers were introduced in one or two day workshops. During the last two years of the project they presented these workshops at project meetings, at national regional meetings, and at national conferences. Finding that small group presentations worked best, since having internet access to the NDL resources were critical to workshops, they provided us with a list, again, of about 70 people who participated in these workshops.
Many could not be located at all since their schools had no telephones, but through using the same telephone survey instrument and process for contacting participants as for the Active Classroom project, we reached and completed interviews with 36 participants. The results are summarized in narrative fashion below, both quantitative and qualitative. Full quantitative findings appear in appendix D and full verbatim comments appear in Appendix E.

FINDINGS

During the NDL workshops or "courses" participants reported on their primary activities.

During the workshop, all of the people indicated they identified a unit they wanted to develop or identified other ways they anticipated incorporating project information at their home school. All the respondents reported they did "other" activities. All but two indicated they prepared a project or problem to work on during the course.

The teachers said that their course experience most often included incorporating and synthesizing interdisciplinary content and teaching methods. A high proportion of teachers also checked the other areas.

In preparation for the course, were you asked to use any…

Most teachers said they were asked to use lecture notes or other handouts.

By the end of the professional development, to be more effective in your teaching, did you feel you needed more work with…

The most often cited areas that needed more work were reading materials and lecture notes.

Now, in terms of follow-up activities:

In terms of follow-up activities, **most teachers indicated they reviewed or site-tested materials or products developed as part of the workshop or participated in one or more informal group get-togethers.**

After the course…

After the course, most wrote that they communicated with other participants by e-mail. For those who did communicate with other participants, most indicated that their communications were sporadic.

IMPACT

What the participants learned; what was of value to them.

When average scores were computed for these responses, participants gave the **highest ratings to new information about other resources for use in teaching and increased content knowledge**. The lowest ratings were given to new or more in-depth knowledge of issues regarding females and minority students and new contacts with colleagues from other institutions. **ALL (100%) of the respondents indicated that they did get benefit from the program.**

For example, a few selected comments:

"Yes, I got a lot. Because there is such a vast amount of resources that would not be available to us otherwise except through this site. It's available to us—the records that would not be available, the music, the art, original written documents are all accessible through this site. ***It's really overwhelming—I use it every day in my classroom [emphasis supplied].*** *You couldn't get all this information out of history books."*

"It gave me an excellent perspective on primary sources. It motivated me to share the information with colleagues, It greatly extended my knowledge of the technical aspects of the audio and video capabilities of computers in the classroom."

"..I was introduced to new technology. Of especial value the…content of sessions, perspective on teaching and learning, increased motivation for teaching excellence, and new information on resources."

"I'm a media specialist. I help teachers to use the internet/print and non-print materials. I find that a lot of teachers do not use primary resources with their students in their research papers. I've shown quite a few teachers the Library of Congress site to encourage them and their students to seek primary resources in research projects."

"Yes. In fact I used the lesson plans we helped to create at workshop in my lesson plans this year. Through use I did quite a bit of modification. It was a huge teaching [challenge]…we set it up as a group of two students [working together] so I had 12 projects going on times 4 [i.e. in four classes], so I'm changing it to groups of 4 next year. Second thing, I underestimated how well the students could get around on the web and locate the kinds of information required to complete the project. I was amazed. They found sites for me that I kept and subsequently incorporated. I had no idea how much is out there.

Participants' Evaluation of Aspects of the Project--How much of a contribution did each of the following make to what you got out of the course?

Average ratings were calculated for a variety of factors that could contribute to teachers benefiting from the NDL workshops. **Participants rated most highly, interactions with the instructors, content of the sessions, the experience of developing products or materials at the course and discussions on how they would use what they learned in their own classes.** The lowest ratings for contribution were preparation prior to the course and follow-up activities.

Impact on Your Curriculum

Most of the participants indicated they developed or revised one or more existing units. Just under half the participants developed or revised two or more units. Over half the participants developed their units in collaboration with others. 90% of the teachers responding to this item described the units they developed as interdisciplinary. Of those who answered the question, less than one-fifth wrote that their units received formal departmental or program approval.

"*What I did was that I now have my children, every day, work out of the LOC [Library of Congress]in areas of their interest to learn research techniques. The time allotment is one hour for 8 or 9 year olds. I first taught them what was available in each of the different sites…and they are required to choose one topic of interest in each of the different sites and report on it.*

"We (my colleague and I) are showing teachers how to get their students to use better skills in researching. When we went to the LOC we showed teachers how to do a more in depth research to find it faster and easier."

"Basically, most of the teachers did not have experience using the Library of Congress at all. So we basically look....[there] to enhance the lessons that were already there. For example, in a history class they produce a WWII scrapbook and the Library of Congress becomes a resource. Please note that more examples can be given if necessary"

"Basically we developed a whole new unit. It changed the way we teach Nevada History and Nevada symbols. For example quilt making. We're integrating more technology use with teaching of social studies. We: art teacher, librarian, music teacher, and me, the computer person."

Now I'd like to ask you to be more specific about the types of changes you made in units or teaching as a result of participation in the project.

The highest proportion of participants indicated that they had introduced new content, followed by introducing new experimental techniques or lab techniques. The change in content to focus on key issues or "big ideas" and introducing new equipment, materials or computer software that they learned were judged the most important to the changes in the courses they made.

Of those answering, over 80 percent of the teachers have taught one or more of the units they developed as a result of participating. Of those answering the question, sixty percent have taught more than one course or unit developed as a result of participation. Of those who answered the question, over forty percent team-taught the material.

The average number of students who have completed these materials per teacher was 88 and the average percentage of female students was 55.1%. Of those answering the question, two-thirds reported the courses or units are still being offered.

Impact on Students

Compare the average level of knowledge and skills of students who completed the courses/units you developed or modified as a result of your participation in the course with the knowledge and skills of students who have completed similar courses/units you taught previously.

On a scale where 1 = 'a great deal worse' and 5 = a great deal better, all but one of the items had an average rating of 4.00 or higher (somewhat better). The highest ratings were given to ability to apply new knowledge (4.40), ability to collaborate with others (4.24) and critical thinking skills (4.20). The lowest rating (3.91) was given to communication skills.

"In one of the collections shows during training—possibly Life in the West—some of the participants recognized people in the photographs ass lifelong residents of Nevada that they knew. Wow—here is a remote rural Nevada family being featured in this rare extensive world wide collection—the Library of Congress. It's one of the major feature collections, right on the front page—you don't have to stumble across the information. We are very remote and rural---one room school houses in the school district. So this was really BIG."

"They know the difference between primary and secondary sources. They can't get to primary sources, so this is a primary resource of itself as well as the only resource of information these students have access to as primary. They are restricted to this campus."

"My students received knowledge of the subject area that had never been introduced to them before. The project allowed them to ID their multiple intelligence and enhance that multiple intelligence through cooperative learning."

Impact On Non-Classroom Activities

Most of the teachers reported attending professional meetings, seminars or workshops and participating in further professional development activities. **Those who began new communication or continued existing communication with experts in one or more disciplines rated their impact the greatest.** Those who attended professional meetings rated their impact the least.

"You get a different angle on ideas for implementation. For instance, when I took Power Point training to become a trainer to provide in-service training on PP this summer, it enabled me to develop a hyperlink to 'American Memories'. I can demonstrate at the power point in service workshops the scope of sources of the NDL site that my teachers can use in their classes; a double outcome of my summer in service training workshops."

Impact On Broader (Professional) Community

Almost all the participants have shared information or skills they learned with colleagues either in their institution or in any other institution and they most often did that sharing through informal discussions with one or more colleagues. Most of the participants reported their colleagues attending or joining the project.

Barriers To Implementation

Less than half of the responding participants report encountering barriers to implementing what they learned from their involvement in this training.
Just over half report that they did intend to develop new materials or units or modify existing materials or units. Very few of the participants spent time in preparation before the course.

Most of the barriers encountered related to time—enough to implement-- restrictions on the curriculum, and especially lack of technology in the classroom. Teachers also used their own money to pay for ink for printing and had fund-raisers to help cover such costs.

Time Spent Related to the Course

The average number of hours spent during the course was 27.
The average number of hours spent in additional development was 16.
The average number of hours implementing the course/unit was 25.
Just over forty percent of the respondents reported hours beyond the above areas.
The estimated total average number of hours spent that were related to the course was 48.

Demographic Information

The average number of years that teachers had been at their school was nine years
Nine-tenths of the participants taught at the high school level.
Slightly more than a fifth of the participants were male.
The average age of participants was forty-seven.
Only two participants described themselves as Hispanic or Latino.
All but three of the participants described themselves as Caucasian.
All the participants who responded to the question said they were U.S. citizens.
None of the participants reported having an impairment or disability.

Suggestions or Comments

The participants had high praise for the instructors. They want, perhaps, about 30 hours of training, and they felt that it should be presented to more and more teachers. The most important negative is probably lack of time to implement and lack of technological resources in many places. Appendix E presents the full set of participant comments.

Curriculum Writing Report

Background and Methodology

During the course, did you…

During the course, almost all the participants reported that they identified a unit they wanted to develop or prepared a project or problem to work on during the project. The teachers said that their project experience most often included teaching methods and new technologies.

In preparation for the project, were you asked to use any…

Most teachers said they were asked to use reading materials and lecture notes or other handouts.

By the end of the professional development, to be more effective in your teaching, did you feel you needed more work with…

The most often cited areas that needed more work were problem sets, project descriptions or lab exercises followed by other activities.

Now, in terms of follow-up activities:

In terms of follow-up activities, most teachers indicated they either participated in online follow-up or received technical assistance from the project staff.

After the course…

After the course, most wrote that they communicated with other participants by e-mail. For those who did communicate with other participants, most indicated that their communications were sporadic.

IMPACT

What the participants learned; what was of value to them…

When average scores were computed, participants gave the highest ratings to new or more in-depth perspectives on teaching and learning. The next highest ratings were for new information about other resources for use in teaching and increased motivation or stimulation for teaching excellence. The lowest rating was given to new or more in-depth knowledge of issues regarding females and minority students.

Only four people said that they got no benefit from the program.

Participants' Evaluation of Aspects of the Project

How much of a contribution did each of the following make to what you got out of the project?

Participants rated most highly informal interactions with other participants, followed by the experience of developing products or materials at the end of the project. The lowest ratings for contribution were preparation prior to the course and follow-up activities.

Impact on Your Curriculum

During, or as a result of your participation…

Most of the participants indicated they developed one or more new units. Seven wrote they developed one or more proposals requesting permission or funding to revise or develop materials or units. Just under half the participants developed or revised three or more units.

Almost ninety percent of the participants developed their units in collaboration with others. Seventy percent of the participants described the units they developed or revised as interdisciplinary, and at least some eof their units received formal departmental or program approval, although in many instances this was not necessary.

Now I'd like to ask you to be more specific about the types of changes you made in units or teaching as a result of participation in the project.

The highest proportion of participants indicated that they changed the content to focus on key issues or "big ideas", followed by introducing new experimental or lab techniques. The new focus on big ideas and the change in teaching methods were rated highest in importance by the participants.

Almost ninety percent of the teachers have taught one or more of the units they developed as a result of participating. Of those answering the question, about a third have team-taught the material.

-The total number of students who have completed these materials was 6,149 or an average of 228 per teacher.

-The average percentage of female students was 52.5%.

- Over three-quarters reported the courses or units are still being offered.

Impact on Students

Compare the average level of knowledge and skills of students who completed the courses/units you developed or modified as a result of your participation in the project with the knowledge and skills of students who have completed similar courses/units you taught previously.

All the items had an average rating of 4.00 or higher (somewhat better). The highest ratings were given to ability to apply new knowledge (4.43) and in-depth knowledge of subject area (4.42). The lowest rating (4.23) was given to understanding the scientific method--still quite high.

Impact On Non-Classroom Activities

Most of the teachers reported doing all of the non-classroom activities mentioned in the survey, with the single exception that only quarter reported presenting papers at professional meetings. Those who participated in further professional development activities rated the impact the greatest (Average = 3.13 out of a possible 4). Those who attended professional meetings rated their impact the least (Average = 2.75 out of a possible 4).

Impact on Broader (Professional) Community

Almost all the participants have shared information or skills they learned with colleagues either in their institution or in any other institution and they most often did that sharing with colleagues either at their institution or in other institutions.

To the best of your knowledge…

Most of the participants reported their colleagues modifying the content of a unit or program of study.

Barriers To Implementation

A third of the responding participants reported encountering barriers to implementing what they learned from their involvement in the project.
Over eighty percent of the participants reported that they did intend to develop new materials or units or modify existing materials or units.

Time Related to the Course

A few participants spent large amounts of time to prepare. The average was 9.85 hours.

-The average number of hours spent during the project was 37.9.
-The average number of hours spent in development after the course was 51.2.
-The average number of hours implementing the project was 176.8.
- The average number of hours spent after the project on other related activities was 23.0.

The average total number of hours spent related to the project was 301.5.

Demographic Information

The average number of years that the participants had been at their school was 7.16. Almost two-thirds of the participants were at the high school level. Approximately one in nine participants was male. The average age of participants was forty-five. Two of the participants described themselves as Hispanic or Latino. About a sixth of the participants described themselves as minorities. All the participants indicated they were U.S. citizens. Only one of the participants indicated an impairment: hearing.

Selected comments were:

"I really enjoyed. I felt it was a very valuable program."

"I miss not having CCTT workshop being given. It was a quality program and should be continued at the very least as refresher courses. Were it to be marketed it probably would be self-sustaining…."

"If I had been involved with my level it would make a difference. I personally didn't get as much out of the content; it was just content over my head. But the backward design and teaching to the standards was helpful."

Full comments and criticisms appear in the Appendix.

.

Significant Differences Among Three Groups

There were many statistically significant differences among the three AC, NDL, and CW Groups full statistical findings and summaries of those findings appear in this section of the report.

During the course, did you…

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
read any background o other reading materials or lab materials?	Yes	Count	12	22	31	65
		% within GROUP	34.3%	61.1%	81.6%	59.6%
	No	Count	23	14	7	44
		% within GROUP	65.7%	38.9%	18.4%	40.4%
Total		Count	35	36	38	109
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 16.98, p<.001

A much lower percent of Active Classroom participants read any background materials or lab manuals during the course.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
prepare a project or problem to work on during the project?	Yes	Count	27	34	37	98
		% within GROUP	79.4%	94.4%	97.4%	90.7%
	No	Count	7	2	1	10
		% within GROUP	20.6%	5.6%	2.6%	9.3%
Total		Count	34	36	38	108
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 7.77, p=.021

A much lower percent of Active Classroom participants prepared a project or problem to work on during the course.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
do any other types of activities?	Yes	Count	23	35	30	88
		% within GROUP	69.7%	100.0%	85.7%	85.4%
	No	Count	10	0	5	15
		% within GROUP	30.3%	.0%	14.3%	14.6%
Total		Count	33	35	35	103
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 12.54, p=.002

A much lower percent of Active Classroom participants did other types of activities.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
did that include incorporating and synthesizing interdisciplinary content?	Yes	Count	15	34	29	78
		% within GROUP	53.6%	94.4%	87.9%	80.4%
	No	Count	13	2	4	19
		% within GROUP	46.4%	5.6%	12.1%	19.6%
Total		Count	28	36	33	97
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 18.48, p<.001

A much lower percent of Active Classroom participants included incorporating and synthesizing interdisciplinary content.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
teaching methods?	Yes	Count	18	32	32	82
		% within GROUP	64.3%	88.9%	97.0%	84.5%
	No	Count	10	4	1	15
		% within GROUP	35.7%	11.1%	3.0%	15.5%
Total		Count	28	36	33	97
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 13.21, p=.001

A much lower percent of Active Classroom participants included incorporating and synthesizing teaching methods.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
lab technologies?	Yes	Count	14	30	30	74
		% within GROUP	50.0%	85.7%	90.9%	77.1%
	No	Count	14	5	3	22
		% within GROUP	50.0%	14.3%	9.1%	22.9%
Total		Count	28	35	33	96
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 16.67, p<.001

A much lower percent of Active Classroom participants included incorporating and synthesizing lab technologies.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
new technologies?	Yes	Count	17	29	32	78
		% within GROUP	60.7%	80.6%	97.0%	80.4%
	No	Count	11	7	1	19
		% within GROUP	39.3%	19.4%	3.0%	19.6%
Total		Count	28	36	33	97
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 12.64, p==.002

A much lower percent of Active Classroom participants included incorporating and synthesizing new technologies.

In preparation for the course, were you asked to use any…

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
reading materials	Yes	Count	4	4	26	34
		% within GROUP	12.1%	11.1%	68.4%	31.8%
	No	Count	29	32	12	73
		% within GROUP	87.9%	88.9%	31.6%	68.2%
Total		Count	33	36	38	107
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 36.51, p<.001

A much higher percentage of the Curriculum Writing Group participants were asked to use reading materials in preparation for the course.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
lecture notes or other handouts	Yes	Count	11	8	19	38
		% within GROUP	32.4%	22.9%	50.0%	35.5%
	No	Count	23	27	19	69
		% within GROUP	67.6%	77.1%	50.0%	64.5%
Total		Count	34	35	38	107
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 6.08, p=.048

A much higher percentage of the Curriculum Writing Group participants were asked to use lecture notes or other handouts in preparation for the course.

crosstab

			GROUP			Total
			Active Classroom	National Digital Library	Curriculum Writing Group	
problem sets, project descriptions or lab exercises	Yes	Count	9	5	18	32
		% within GROUP	26.5%	14.3%	47.4%	29.9%
	No	Count	25	30	20	75
		% within GROUP	73.5%	85.7%	52.6%	70.1%
Total		Count	34	35	38	107
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 9.79, p=.007

A much higher percentage of the Curriculum Writing Group participants were asked to use problem sets, project descriptions or lab exercises in preparation for the course.

crosstab

			GROUP			Total
			Active Classroom	National Digital Library	Curriculum Writing Group	
other activities	Yes	Count	4	2	14	20
		% within GROUP	13.3%	5.9%	37.8%	19.8%
	No	Count	26	32	23	81
		% within GROUP	86.7%	94.1%	62.2%	80.2%
Total		Count	30	34	37	101
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 12.52, p=.002

A much higher percentage of the Curriculum Writing Group participants were asked to use other activities in preparation for the course.

By the end of the professional development, to be more effective in your teaching, did you feel you needed more work with…

crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
problem sets, project descriptions or lab exercises	Completed	Count	22	17	12	51
		% within GROUP	66.7%	48.6%	32.4%	48.6%
	Needed more work	Count	11	18	25	54
		% within GROUP	33.3%	51.4%	67.6%	51.4%
Total		Count	33	35	37	105
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 8.18, p=.017

A much higher percentage of the Curriculum Writing Group participants felt they need more work with problem sets, project descriptions or lab exercises

Now, in terms of follow-up activities…

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
Did you participate in any online follow-up?	Yes	Count	11	10	29	50
		% within GROUP	33.3%	28.6%	78.4%	47.6%
	No	Count	22	25	8	55
		% within GROUP	66.7%	71.4%	21.6%	52.4%
Total		Count	33	35	37	105
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 21.83, p<.001

A much higher percentage of the Curriculum Writing Group members participated in any on-line follow-up.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
Did you communicate with the staff and/or other participants by telephone?	Yes	Count	10	5	19	34
		% within GROUP	30.3%	13.9%	51.4%	32.1%
	No	Count	23	31	18	72
		% within GROUP	69.7%	86.1%	48.6%	67.9%
Total		Count	33	36	37	106
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 11.82, p=.003

A much higher percentage of the Curriculum Writing Group members communicated with the staff and/or other participants by telephone.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
Did you communicate with the staff and/or other participants by e-mail?	Yes	Count	25	18	29	72
		% within GROUP	75.8%	50.0%	78.4%	67.9%
	No	Count	8	18	8	34
		% within GROUP	24.2%	50.0%	21.6%	32.1%
Total		Count	33	36	37	106
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 8.09, p=.017

A much lower percentage of National Digital Library participants communicated with the staff and/or other participants by e-mail.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
Did you collaborate online with any other participants or colleagues?	Yes	Count	9	6	23	38
		% within GROUP	27.3%	16.7%	62.2%	35.8%
	No	Count	24	30	14	68
		% within GROUP	72.7%	83.3%	37.8%	64.2%
Total		Count	33	36	37	106
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 17.96, p<.001

A much higher percentage of Curriculum Writing Group participants collaborated on-line with any other participants or colleagues.

Impact – To What Extent Did the Course Give You…

1=Little or None, 2=Some, 3=A Lot

Mean Ratings

Mean

	GROUP			
	Active Classroom	National Digital Library	Curriculum Writing Group	Total
increased content knowledge	2.09	2.64	2.00	2.24
new or more in-depth perspectives on teaching and learning	2.06	2.53	2.45	2.36
new or improved technological skills	2.45	2.06	1.97	2.15
new information about other resources for use in teaching	2.24	2.67	2.34	2.42
new contacts with colleagues from other institutions	1.61	1.75	2.26	1.89

For increased content knowledge, the National Digital Library participants felt the impact given by the course was significantly higher than the other two groups (F=8.48, p<.001).

For new or more in-depth perspectives on teaching and learning, Active Classroom participants felt the impact given by the course was significantly lower than the other two groups (F=4.79, p=.010).

For new or improved technological skills, the Active Classroom participants felt the impact given by the course was significantly higher than the other two groups (F=4.47, p=014).

For new information about other resources for use in teaching, the National Digital Library participants felt the impact given by the course was significantly higher than the other two groups (F=4.43, p=.014).

For new contacts with colleagues from other institutions, the Curriculum Writing Group participants felt the impact given by the course was significantly higher than the other two groups (F=8.66, p<.001).

Participants' Evaluation of Aspects of the Project

How much of a contribution did each of the following make to whatever you got out of the course?

1=Little or No, 2=Moderate, 3=Great

Mean Ratings

Mean

	GROUP			
	Active Classroom	National Digital Library	Curriculum Writing Group	Total
preparation prior to the project	1.12	1.03	1.56	1.24
study materials used during the project	1.81	2.44	2.31	2.20

For preparation prior to the project, the Curriculum Writing Group felt the contribution to whatever they got from the course was significantly higher than did the other two groups (F=13.53, p<.001).

For study materials used during the project, the Active Classroom group felt the contribution to whatever they got from the course was significantly lower than did the other two groups (F=8.56, p<.001).

Impact on your curriculum:

During or as a result of your participation,

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
did you develop or redesign a major or a program of studies?	Yes	Count	17	19	31	67
		% within GROUP	53.1%	52.8%	86.1%	64.4%
	No	Count	15	17	5	37
		% within GROUP	46.9%	47.2%	13.9%	35.6%
Total		Count	32	36	36	104
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 11.30, p=.004

A much higher percentage of Curriculum Writing Group participants developed or redesigned a major or program of studies.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
did you develop one or more new units?	Yes	Count	19	24	33	76
		% within GROUP	59.4%	66.7%	91.7%	73.1%
	No	Count	13	12	3	28
		% within GROUP	40.6%	33.3%	8.3%	26.9%
Total		Count	32	36	36	104
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 10.13, p=.006

A much higher percentage of Curriculum Writing Group participants developed one or more new units.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
Did you develop or revise these units in collaboration with one or more colleagues?	Yes	Count	12	19	30	61
		% within GROUP	50.0%	59.4%	88.2%	67.8%
	No	Count	12	13	4	29
		% within GROUP	50.0%	40.6%	11.8%	32.2%
Total		Count	24	32	34	90
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 11.02, p=.004

A much higher percentage of Curriculum Writing Group participants developed or revised these units in collaboration with one or more colleagues.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
Did you change teaching methods in any other way?	Yes	Count	19	14	18	51
		% within GROUP	73.1%	41.2%	52.9%	54.3%
	No	Count	7	20	16	43
		% within GROUP	26.9%	58.8%	47.1%	45.7%
Total		Count	26	34	34	94
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 6.08, p=.048

A much lower percentage of National Digital Library participants changed their teaching methods in other ways.

Impact on Students

Compare the average level of knowledge and skills of students who completed the courses or units you developed or modified as a result of participation in the course with the knowledge and skills of students you taught previously.

1=Substantially Worse, 2=Somewhat Worse, 3=No Difference, 4=Somewhat Better, 5=Substantially Better

Mean Ratings

Mean

	GROUP			
	Active Classroom	National Digital Library	Curriculum Writing Group	Total
Ability to use advanced technology	4.7500	4.1000	4.3333	4.3906

In the area of ability to use advanced technology, the Active Classroom group felt the contribution to whatever they got from the course was significantly higher than did the other two groups (F=4.94, p=.010).

Impact on Non-Classroom Activities

1=None, 2=A Little, 3=Moderate, 4=Great

Mean Ratings

Mean

	GROUP			
	Active Classroom	National Digital Library	Curriculum Writing Group	Total
Amount of impact of further professional development	2.4231	2.5600	3.1290	2.7317
Amount of impact of attending professional meetings	2.3793	1.8333	2.7500	2.3474
Amount of impact of making presentations to local groups	3.4545	2.3571	2.8947	2.8636

There was a statistically significant difference between the groups on the amount of impact participating in further professional development activities or workshops designed to change the content of courses or units or to improve instruction (F=3.27,p=.043), and the Curriculum Writing Group gave the highest mean rating, no group was statistically significantly different from any other.

There was a statistically significant difference between the groups on the amount of impact attending professional meetings, seminars or workshops (F=5.89, p=.004). The National Digital Library participants rated this impact significantly lower than did the other two groups.

There was a statistically significant difference between the groups on the amount of impact making one or more presentations to local campuses or community organizations (F=4.05, p=.025). The National Digital Library group rated this activity having significantly lower impact than did the Active Classroom group.

Impact on the broader (professional) community

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
Have you shared any information or skills you learned through observation of your clas or laboratory by one or more colleagues?	Yes	Count	13	9	23	45
		% within GROUP	46.4%	25.7%	65.7%	45.9%
	No	Count	15	26	12	53
		% within GROUP	53.6%	74.3%	34.3%	54.1%
Total		Count	28	35	35	98
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 11.28, p=.004

A much higher percentage of Curriculum Writing Group participants shared any information or skills they learned through observation of their class or laboratory by one or more colleagues.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
Have you shared any information or skills you learned through participation in any department or school committees on curricula change and or reform?	Yes	Count	18	9	25	52
		% within GROUP	62.1%	27.3%	71.4%	53.6%
	No	Count	11	24	10	45
		% within GROUP	37.9%	72.7%	28.6%	46.4%
Total		Count	29	33	35	97
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 14.51, p=.001

A much lower percentage of National Digital Library participants shared any information or skills they learned through participation in any department or school committees on curricula change and/or reform.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
As a result of what you shared, have any of you colleagues attended or joined the project?	Yes	Count	19	12	15	46
		% within GROUP	65.5%	34.3%	42.9%	46.5%
	No	Count	10	23	20	53
		% within GROUP	34.5%	65.7%	57.1%	53.5%
Total		Count	29	35	35	99
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 6.50, p=.039

A much higher percentage of Active Classroom participants reported their colleagues attending or joining the project as a result of what they have shared.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
As a result of what you shared, have any of your colleagues made any other changes?	Yes	Count	5	2	16	23
		% within GROUP	17.2%	5.9%	45.7%	23.5%
	No	Count	24	32	19	75
		% within GROUP	82.8%	94.1%	54.3%	76.5%
Total		Count	29	34	35	98
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 16.12, p<.001

A much higher percentage of Curriculum Writing Group participants reported their colleagues making other changes as a result of what they have shared.

Barriers to Implementation

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
Did you encounter any barriers to implementing what you learned from your involvement with this project?	Yes	Count	22	16	13	51
		% within GROUP	71.0%	44.4%	36.1%	49.5%
	No	Count	9	20	23	52
		% within GROUP	29.0%	55.6%	63.9%	50.5%
Total		Count	31	36	36	103
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 8.66, p=.013

A much higher percentage of Active Classroom participants encountered barriers to implementing what they learned from their involvement in the project.

Crosstab

			GROUP			
			Active Classroom	National Digital Library	Curriculum Writing Group	Total
When you took the program, did you INTEND to develop any new materials-units or modify any existing materials or units?	Yes	Count	21	20	31	72
		% within GROUP	70.0%	57.1%	83.8%	70.6%
	No	Count	9	15	6	30
		% within GROUP	30.0%	42.9%	16.2%	29.4%
Total		Count	30	35	37	102
		% within GROUP	100.0%	100.0%	100.0%	100.0%

Chi-square = 6.16, p=.046

A much higher percentage of Curriculum Writing Group participants intended to develop new materials or units or to modify any existing materials or units when they joined the program.

Time Spent Related To the Course

Mean Numbers of Hours

Mean

	GROUP			
	Active Classroom	National Digital Library	Curriculum Writing Group	Total
Number of hours in preparation before the project	.3214	.5588	9.8514	3.9646
Number of hours during the project	15.7097	26.5833	37.9189	27.3750
Number of hours after the project developing	30.5556	15.6286	51.1892	32.9899
Approxmate total number of hours	57.6250	47.9412	301.5405	149.1579

There was a statistically significant difference between the groups on the average number of hours spent in preparation before the course (F=4.21, p=.018). The Curriculum Writing Group spent significantly more hours preparing for the course than did the other two groups.

There was a statistically significant difference between the groups on the average number of hours spent during the course (F=7.06, p=.001). The Curriculum Writing Group spent significantly more hours during the course than did the Active Classroom group.

There was a statistically significant difference between the groups on the average number of hours spent after the project developing (F=3.15, p=.047). However, none of the groups' average hours were significantly different from any other.

There was a statistically significant difference between the groups on the average total hours spent (F=6.86, p=002). The Curriculum Writing Group spent significantly more total hours than did the other two groups.

APPENDIX A: TEACHER PARTICIPANT TELEPHONE SURVEY

Introduction and Disclaimer (Project, Course, and Person Identification; Dates of Involvement)

Karen C. Cohen and Associates
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Weston, MA 02493
U.S.A.

TEACHER PARTICIPANT TELEPHONE SURVEY

DURING THE COURSE DID YOU:

Y

Read any background or other reading materials or lab manuals?

Complete any surveys to assess your skill level, interests, teaching responsibilities, or objectives?

Identify a unit you wanted to develop or other ways you anticipated incorporating project information at your home school?

Prepare a project/problem to work on during the course?

Do any other types of activities? If “yes,”

Did that include incorporating and synthesizing interdisciplinary content?

Teaching methods?

Lab technologies?

New technologies?

In preparation for the course, were you asked to use any:

Y

Reading materials

Lecture notes or other handouts

Problem sets, project descriptions, or lab exercises

Other activities_____

By the end of the professional development, to be more effective in your teaching, did you feel you needed more work with:

	Completed	Needed More Wor
Reading materials	1	2
Lecture notes or other handouts	1	2
Problem sets, project descriptions, or lab exercises	1	2
Other activities_____	1	2

NOW IN TERMS OF FOLLOW-UP ACTIVITIES:

	YES	NO
Did you participate in one or more formal follow-up sessions at scheduled times?	1	2
Did you participate in one or more informal group get-togethers?	1	2
Did you participate in any online follow-up?	1	2
Did you review or site-test any materials or products developed as part of the workshop?	1	2
Did you receive any technical assistance from the project staff?	1	2

After the course . . .

	YES	NO
Did you communicate with the staff and/or other participants by telephone?	1	2
Did you communicate with the staff and/or other participants by e-mail?	1	2
Did you collaborate online with other participants or colleagues?	1	2

[IF R ANSWERED "YES," ASK]

Was this communication/collaboration ongoing or sporadic? [CIRCLE ONE ANSWER.]

1 Ongoing
2 Sporadic
9 Don't recall

IMPACT

WHAT PARTICIPANT LEARNED/COURSE VALUE TO YOU:

To what extent did the course give you . . .

	Little or None
Increased content knowledge	1
New or more in-depth perspectives on teaching and learning	1
New or improved skills in teaching	1
New or improved experimental or lab techniques	1

New or improved technological skills	1
New or more in-depth knowledge of issues regarding females and minority students	1
New information about other resources for use in teaching	1
New contacts with colleagues from other institutions	1
Increased motivation or stimulation for teaching excellence	1

Did you get any benefit out of the program?

1 Yes. Please describe:

2 No. Why not?

PARTICIPANT'S EVALUATION OF ASPECTS OF THE PROJECT:

I'm going to read a list of possible course features, and I'd like you to tell me how much of a contribution each of the following made to what you got out of the course.

	Little or No	Moderate
Preparation prior to the course	1	2
Content of the sessions	1	2
Study materials used during the course	1	2
The experience of developing products or materials at the course	1	2
Other hands-on learning activities, such as laboratories or computer work	1	2
Materials from the course that you used in your school	1	2
Presentations or practice lessons that you gave	1	2
Interactions with the instructors (both structured and unstructured)	1	2
Discussions of how participants would use what was learned in their own courses	1	2
Informal interactions with other participants	1	2
Follow-up activities (formal or informal)	1	2

IMPACT ON YOUR CURRICULUM:

During or as a result of your participation,

	YES	NO
a. Did you develop or redesign a major or a program of studies?	1	2
b. Did you develop one or more new units?	1	2
c. Did you revise one or more existing units?	1	2
d. Did you develop one or more proposals requesting permission or funding to revise or develop materials/units?	1	2

All in all, how many units did you develop and/or revise? _____

Did you develop or revise [this unit/these units] in collaboration with one or more colleagues? [CIRCLE ONE ANSWER.]

1 Yes.

2 No.

How many of the units that you [developed/revised] were interdisciplinary? _____

Were the unit or units that you [developed/revised] interdisciplinary?

1 Yes.

2 No.

Did [this unit/these units] receive formal departmental and/or program approval? [CIRCLE ONE ANSWER.]

1 Yes.

2 Some did and some did not.

3 No/ N/A

Now I'd like to ask you to be more specific about the types of changes you made in units or teaching as a result of your participation in the project.

		How important was the change to the cours		
		Of Little or No Importance	Of Moderate Importance	Of M Impor
Did you introduce new content that you learned?	1 Yes 2 No	1	2	3
Did you change the content to focus on key issues or "big ideas"?	1 Yes 2 No	1	2	3
Did you introduce new experimental techniques or lab techniques?	1 Yes 2 No	1	2	3
Did you introduce new equipment, materials or computer software that you learned?	1 Yes 2 No	1	2	3
Did you change teaching methods in any other way?	1 Yes 2 No	1	2	3

Please describe in your own words the changes you made to your classes as a result of your participation in the project.
[INTV: THIS INCLUDES DESCRIPTION OF NEW CLASSES.]

Have you taught one or more of the courses or units you [developed/revised] as a result of your participation? [CIRCLE ONE ANSWER.]

1 Yes. CONTINUE WITH QUESTIONS IN THIS SECTION.

2 No. SKIP TO NEXT SECTION.

How many? _____

Have your team taught [this material]?

1 Yes.

2 No.

a. In all, approximately how many students have completed this material? _____

b. Approximately what percentage of these students is female? _____%

[IF R NEEDS PROMPTING, SAY “Please give us your best estimate.”]

SUSTAINED EFFECTS:

If you have taught this course/these units more than once since participating, how did what you did as a result of your participation change over time? [INTV PROMPT: FOR EXAMPLE, DID YOU INCREASE OR DECREASE WHAT YOU DID? DID IT BECOME MORE KEY?]

BARRIERS TO SUSTAINED EFFECTS:

[Is the course or unit/Are these courses or units] still being offered?

1 Yes.

2 No. Why not?

IMPACT ON STUDENTS:

I'm going to read a list of various types of knowledge and skills. For each item, I'd like you to compare the average level of knowledge and skills of students who completed the courses/units you developed or modified as a result of your participation in the course with the knowledge and skills of students who completed similar courses/units you taught previously. If there is no valid basis for comparison, please indicate that.

	Substantially Worse	Somewhat Worse	No Difference	Somewhat Better	Subst Be
In-depth knowledge of subject area	1	2	3	4	
Problem-solving skills	1	2	3	4	
Communication skills	1	2	3	4	
Ability to apply new knowledge	1	2	3	4	
Critical thinking skills	1	2	3	4	
Ability to collaborate with others	1	2	3	4	
Ability to use advanced technology	1	2	3	4	
Understanding of the scientific method	1	2	3	4	

Please describe, in your own words, the impact on your students of the changes you made as a result of your participation in the project.

IMPACT ON NON-CLASSROOM ACTIVITIES:

FOR EACH ITEM, CIRCLE ONE ANSWER IN EACH COLUMN.]

		None	A Little	Mod
a. Have you participated in any further professional development activities or workshops designed to change the content of courses/units or to improve instruction?	1 Yes 2 No	1	2	
b. Have you begun any new communication or continued existing communication with experts in one or more disciplines?	1 Yes 2 No	1	2	
c. Have you established any new research or teaching collaborations with colleagues?	1 Yes 2 No	1	2	
d. Have you attended any professional meetings, seminars, or workshops?	1 Yes 2 No	1	2	
e. Have you delivered one or more papers at a professional meeting?	1 Yes 2 No	1	2	
f. Have you made one or more presentations to local campuses or community organizations?	1 Yes 2 No	1	2	

Please tell me in your own words what you feel the major impacts were.

IMPACT ON BROADER COMMUNITY:

	YES	NO
Have you shared any information or skills you learned with colleagues either in your institution or in other institutions?	1	2
Through informal discussions with one or more colleagues?	1	2
Through presentations to one or more colleagues?	1	2
Through observation of your class or laboratory by one or more colleagues?	1	2
Through participation in any departmental or school committees on curricular change and/or reform?	1	2
Through any other activities? (Please specify.)	1	2

To the best of your knowledge, as a result of what you shared . . .

	YES	NO
Have any of your colleagues modified the content of a unit/program of study?	1	2
Have any of your colleagues developed a new unit/program of study?	1	2
Have any of your colleagues attended or joined the project?	1	2
Have any of your colleagues made any other changes? (Please specify.)	1	2

BARRIERS TO IMPLEMENTATION

Did you encounter any barriers to implementing what you learned from your involvement with this course?

2 No.

1 Yes. Please tell me about these barriers.

When you took the program, did you **intend** to develop any new material/units or modify any existing material/units? [CIRCLE ONE ANSWER.]

1 Yes.

2 No. Please explain:

TIME SPENT RELATED TO THE COURSE

Number of hours in preparation before the course _____

Number of hours during the course_____

Number of hours after the course developing _____

Number of hours after the course implementing _____

Number of hours after the course — Other (What?) _____

Approximate total number of hours _____

DEMOGRAPHIC INFORMATION

At the time you participated in the project, how many years had you been at the school where you were teaching at tha
time? _____ years

Which of the following best describes the school where you were employed when you took the course?

1 Elementary school

2 Middle school

3 High school

4 Community college

5 Four-year college

6 University

7 Other (Please specify.) _____

INTV: IS R MALE OR FEMALE?

1 Male

2 Female

What is your date of birth? Month_____Day_____Year_____

Are you Hispanic or Latino or NOT Hispanic or Latino? [CIRCLE ONE ANSWER.]

1 Hispanic or Latino

2 Not Hispanic or Latino

I'm going to read a list of race categories. Please choose one or more categories that best indicate your race.
[INT: READ LIST. CIRCLE ALL THAT APPLY.]

(9 REFUSED)

1 American Indian or Alaska Native

2 Asian

3 Black or African American

4 Native Hawaiian

5 Other Pacific Islander

6 Caucasian

What was your citizenship when you participated in the project? Were you a U.S. citizen or national, a permanent resident, or
another type of non-U.S. citizen (that is, a temporary resident)? [CIRCLE ONE ANSWER.]

1 U.S. citizen or national

2 Permanent resident

3 Other non-U.S. citizen (that is, temporary resident)

Do you have a hearing impairment, a visual impairment, a mobility/orthopedic impairment, and/or some other type of disability?
[CIRCLE ALL THAT APPLY.]

1 Hearing impairment

2 Visual impairment

3 Mobility/Orthopedic impairment

4 Other (Please specify.) _____

5 No impairment or disability

INTV: Those are all of my questions. Thank you very much for your help in completing this interview. Would you care to add any other comments about your experience(s) with the project or the impact on your teaching or your students' learning?

SUGGESTIONS AND COMMENTS:

APPENDIX B: Active Classroom Quantitative Findings

read any background or other reading materials or lab materials?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	34.3	34.3	34.3
	No	23	65.7	65.7	100.0
	Total	35	100.0	100.0	

complete any surveys to assist your skill level, interests, teaching responsibilities or objectives?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	31.4	32.4	32.4
	No	23	65.7	67.6	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

identify a unit you wanted to develop or other ways you anticipated incorporating project information at your home school?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	32	91.4	91.4	91.4
	No	3	8.6	8.6	100.0
	Total	35	100.0	100.0	

prepare a project or problem to work on during the course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	27	77.1	77.1	77.1
	No	7	20.0	20.0	97.1
	3	1	2.9	2.9	100.0
	Total	35	100.0	100.0	

do any other types of activities?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	23	65.7	69.7	69.7
	No	10	28.6	30.3	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

did that include incorporating and synthesizing interdisciplinary content?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	15	42.9	53.6	53.6
	No	13	37.1	46.4	100.0
	Total	28	80.0	100.0	
Missing	System	7	20.0		
Total		35	100.0		

teaching methods?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	51.4	64.3	64.3
	No	10	28.6	35.7	100.0
	Total	28	80.0	100.0	
Missing	System	7	20.0		
Total		35	100.0		

lab technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	40.0	50.0	50.0
	No	14	40.0	50.0	100.0
	Total	28	80.0	100.0	
Missing	System	7	20.0		
Total		35	100.0		

new technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	48.6	60.7	60.7
	No	11	31.4	39.3	100.0
	Total	28	80.0	100.0	
Missing	System	7	20.0		
Total		35	100.0		

reading materials

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	11.4	12.1	12.1
	No	29	82.9	87.9	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

lecture notes or other handouts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	31.4	32.4	32.4
	No	23	65.7	67.6	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

problem sets, problem descriptions or lab exercises

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	25.7	26.5	26.5
	No	25	71.4	73.5	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

other activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	11.4	12.9	12.9
	No	26	74.3	83.9	96.8
	3	1	2.9	3.2	100.0
	Total	31	88.6	100.0	
Missing	System	4	11.4		
Total		35	100.0		

reading materials

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completed	20	57.1	62.5	62.5
	Needed more work	11	31.4	34.4	96.9
	3	1	2.9	3.1	100.0
	Total	32	91.4	100.0	
Missing	System	3	8.6		
Total		35	100.0		

lecture notes or other handouts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completed	19	54.3	59.4	59.4
	Needed more work	11	31.4	34.4	93.8
	3	2	5.7	6.3	100.0
	Total	32	91.4	100.0	
Missing	System	3	8.6		
Total		35	100.0		

problem sets, project descriptions or lab exercises

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completed	22	62.9	64.7	64.7
	Needed more work	11	31.4	32.4	97.1
	3	1	2.9	2.9	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

other activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completed	15	42.9	50.0	50.0
	Needed more work	14	40.0	46.7	96.7
	3	1	2.9	3.3	100.0
	Total	30	85.7	100.0	
Missing	System	5	14.3		
Total		35	100.0		

Did you participate in one or more formal follow-up sessions at scheduled times?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	22.9	23.5	23.5
	No	26	74.3	76.5	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

Did you participate in one or more informal group get-togethers?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	22	62.9	64.7	64.7
	No	11	31.4	32.4	97.1
	3	1	2.9	2.9	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

Did you participate in any online follow-up?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	31.4	32.4	32.4
	No	22	62.9	64.7	97.1
	3	1	2.9	2.9	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

Did you review or site-test any materials or products developed as part of the workshop?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	54.3	55.9	55.9
	No	14	40.0	41.2	97.1
	3	1	2.9	2.9	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

Did you receive any technical assistance from the project staff?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	21	60.0	61.8	61.8
	No	13	37.1	38.2	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

Did you communicate with the staff and/or other participants by telephone?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	10	28.6	29.4	29.4
	No	23	65.7	67.6	97.1
	3	1	2.9	2.9	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

Did you communicate with the staff and/or other participants by e-mail?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	25	71.4	73.5	73.5
	No	8	22.9	23.5	97.1
	3	1	2.9	2.9	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

Did you collaborate online with any other participants or colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	25.7	26.5	26.5
	No	24	68.6	70.6	97.1
	3	1	2.9	2.9	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

Was this communication/collaboration ongoing or sporadic?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	2.9	4.2	4.2
	Ongoing	5	14.3	20.8	25.0
	Sporadic	18	51.4	75.0	100.0
	Total	24	68.6	100.0	
Missing	System	11	31.4		
Total		35	100.0		

increased content knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	10	28.6	29.4	29.4
	Some	10	28.6	29.4	58.8
	A lot	13	37.1	38.2	97.1
	4	1	2.9	2.9	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

new or more in-depth perspectives on teaching and learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	9	25.7	26.5	26.5
	Some	13	37.1	38.2	64.7
	A lot	11	31.4	32.4	97.1
	4	1	2.9	2.9	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

new or improved skills in teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	11	31.4	32.4	32.4
	Some	13	37.1	38.2	70.6
	A lot	9	25.7	26.5	97.1
	4	1	2.9	2.9	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

new or improved experimental lab techniques

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	15	42.9	44.1	44.1
	Some	8	22.9	23.5	67.6
	A lot	11	31.4	32.4	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

new or improved technological skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	4	11.4	12.1	12.1
	Some	10	28.6	30.3	42.4
	A lot	19	54.3	57.6	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

new or more in-depth knowledge of issues regarding females and minority students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	29	82.9	85.3	85.3
	Some	5	14.3	14.7	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

new information about other resources for use in teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	5	14.3	14.7	14.7
	Some	15	42.9	44.1	58.8
	A lot	13	37.1	38.2	97.1
	4	1	2.9	2.9	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

new contacts with colleagues from other institutions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	16	45.7	47.1	47.1
	Some	14	40.0	41.2	88.2
	A lot	3	8.6	8.8	97.1
	4	1	2.9	2.9	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

increased motivation or stimulation for teaching excellence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	14.3	14.7	14.7
	2	13	37.1	38.2	52.9
	3	16	45.7	47.1	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

Did you get any benefit out of the program?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	8.6	100.0	100.0
Missing	System	32	91.4		
Total		35	100.0		

preparation prior to the course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	29	82.9	87.9	87.9
	Moderate	4	11.4	12.1	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

content of the sessions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	2	5.7	6.1	6.1
	Moderate	10	28.6	30.3	36.4
	Great	20	57.1	60.6	97.0
	4	1	2.9	3.0	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

study materials used during the course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	9	25.7	27.3	27.3
	Moderate	20	57.1	60.6	87.9
	Great	3	8.6	9.1	97.0
	4	1	2.9	3.0	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

the experience of developing products or materials at the course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	3	8.6	9.1	9.1
	Moderate	9	25.7	27.3	36.4
	Great	20	57.1	60.6	97.0
	4	1	2.9	3.0	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

other hands-on learning activities, such as laboratories or computer work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	7	20.0	21.2	21.2
	Moderate	6	17.1	18.2	39.4
	Great	19	54.3	57.6	97.0
	4	1	2.9	3.0	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

materials from the course that you used in your school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	10	28.6	30.3	30.3
	Moderate	8	22.9	24.2	54.5
	Great	14	40.0	42.4	97.0
	4	1	2.9	3.0	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

presentations or practice lessons that you gave

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	12	34.3	36.4	36.4
	Moderate	12	34.3	36.4	72.7
	Great	8	22.9	24.2	97.0
	4	1	2.9	3.0	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

interactions with the instructors (both structured and unstructured)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	3	8.6	9.1	9.1
	Moderate	8	22.9	24.2	33.3
	Great	22	62.9	66.7	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

discussions of how participants would use what was learned in their own courses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	2	5.7	6.1	6.1
	Moderate	12	34.3	36.4	42.4
	Great	18	51.4	54.5	97.0
	4	1	2.9	3.0	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

informal interactions with other participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	4	11.4	12.1	12.1
	Moderate	14	40.0	42.4	54.5
	Great	15	42.9	45.5	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

follow-up activities (formal or informal)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	14	40.0	42.4	42.4
	Moderate	12	34.3	36.4	78.8
	Great	6	17.1	18.2	97.0
	4	1	2.9	3.0	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

did you develop or redesign a major or a program of studies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	48.6	53.1	53.1
	No	15	42.9	46.9	100.0
	Total	32	91.4	100.0	
Missing	System	3	8.6		
Total		35	100.0		

did you develop one or more new units?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	54.3	59.4	59.4
	No	13	37.1	40.6	100.0
	Total	32	91.4	100.0	
Missing	System	3	8.6		
Total		35	100.0		

did you revise one or more existing units?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	24	68.6	75.0	75.0
	No	8	22.9	25.0	100.0
	Total	32	91.4	100.0	
Missing	System	3	8.6		
Total		35	100.0		

did you develop one or more proposals requesting permission or funding to revise or develop materials or units?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	14.3	16.1	16.1
	No	26	74.3	83.9	100.0
	Total	31	88.6	100.0	
Missing	System	4	11.4		
Total		35	100.0		

All in all, how many units did you develop and/or revise?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	5	14.3	17.9	17.9
	1.0	3	8.6	10.7	28.6
	2.0	3	8.6	10.7	39.3
	3.0	4	11.4	14.3	53.6
	4.0	6	17.1	21.4	75.0
	5.0	2	5.7	7.1	82.1
	9.0	1	2.9	3.6	85.7
	10.0	2	5.7	7.1	92.9
	20.0	1	2.9	3.6	96.4
	37.0	1	2.9	3.6	100.0
	Total	28	80.0	100.0	
Missing	System	7	20.0		
Total		35	100.0		

Did you develop or revise these units in collaboration with one or more colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	34.3	48.0	48.0
	No	12	34.3	48.0	96.0
	3	1	2.9	4.0	100.0
	Total	25	71.4	100.0	
Missing	System	10	28.6		
Total		35	100.0		

How many of the units that you developed-revised were interdisciplinary?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	7	20.0	41.2	41.2
	1	1	2.9	5.9	47.1
	2	2	5.7	11.8	58.8
	3	1	2.9	5.9	64.7
	4	2	5.7	11.8	76.5
	5	1	2.9	5.9	82.4
	10	1	2.9	5.9	88.2
	12	1	2.9	5.9	94.1
	37	1	2.9	5.9	100.0
	Total	17	48.6	100.0	
Missing	System	18	51.4		
Total		35	100.0		

Were the units that you developed or revised interdisciplinary?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	22.9	61.5	61.5
	No	5	14.3	38.5	100.0
	Total	13	37.1	100.0	
Missing	System	22	62.9		
Total		35	100.0		

Did these units receive formal departmental or program approval?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	17.1	25.0	25.0
	Some did and some did not	1	2.9	4.2	29.2
	No or not applicable	17	48.6	70.8	100.0
	Total	24	68.6	100.0	
Missing	System	11	31.4		
Total		35	100.0		

Did you introduce new content that you learned?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	48.6	65.4	65.4
	No	9	25.7	34.6	100.0
	Total	26	74.3	100.0	
Missing	System	9	25.7		
Total		35	100.0		

How important was the change in content to the courses?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of little or no importance	1	2.9	5.9	5.9
	Of moderate importance	10	28.6	58.8	64.7
	Of major importance	6	17.1	35.3	100.0
	Total	17	48.6	100.0	
Missing	System	18	51.4		
Total		35	100.0		

Did you change the content to focus on key issues or "big ideas"?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	40.0	53.8	53.8
	No	12	34.3	46.2	100.0
	Total	26	74.3	100.0	
Missing	System	9	25.7		
Total		35	100.0		

How important was new focus to the courses?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of little or no importance	2	5.7	14.3	14.3
	Of moderate importance	6	17.1	42.9	57.1
	Of major importance	6	17.1	42.9	100.0
	Total	14	40.0	100.0	
Missing	System	21	60.0		
Total		35	100.0		

Did you introduce new experimental or lab techniques?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	48.6	68.0	68.0
	No	8	22.9	32.0	100.0
	Total	25	71.4	100.0	
Missing	System	10	28.6		
Total		35	100.0		

How important were the new techniques to the courses?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of little or no importance	2	5.7	11.8	11.8
	Of moderate importance	6	17.1	35.3	47.1
	Of major importance	9	25.7	52.9	100.0
	Total	17	48.6	100.0	
Missing	System	18	51.4		
Total		35	100.0		

Did you introduce new equipment, materials or computer software that you learned?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	51.4	69.2	69.2
	No	8	22.9	30.8	100.0
	Total	26	74.3	100.0	
Missing	System	9	25.7		
Total		35	100.0		

How important was the equipment, materials or software to the courses?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of little or no importance	2	5.7	11.1	11.1
	Of moderate importance	6	17.1	33.3	44.4
	Of major importance	10	28.6	55.6	100.0
	Total	18	51.4	100.0	
Missing	System	17	48.6		
Total		35	100.0		

Did you change teaching methods in any other way?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	54.3	73.1	73.1
	No	7	20.0	26.9	100.0
	Total	26	74.3	100.0	
Missing	System	9	25.7		
Total		35	100.0		

How important was the change in teaching methods to the courses?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of little or no importance	1	2.9	5.3	5.3
	Of moderate importance	8	22.9	42.1	47.4
	Of major importance	10	28.6	52.6	100.0
	Total	19	54.3	100.0	
Missing	System	16	45.7		
Total		35	100.0		

Have you taught one or more of the courses or units you developed or revised as a result of your participation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	20	57.1	87.0	87.0
	No	3	8.6	13.0	100.0
	Total	23	65.7	100.0	
Missing	System	12	34.3		
Total		35	100.0		

How many?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	2	5.7	11.1	11.1
	2.0	3	8.6	16.7	27.8
	3.0	4	11.4	22.2	50.0
	4.0	4	11.4	22.2	72.2
	5.0	2	5.7	11.1	83.3
	20.0	1	2.9	5.6	88.9
	25.0	1	2.9	5.6	94.4
	37.0	1	2.9	5.6	100.0
	Total	18	51.4	100.0	
Missing	System	17	48.6		
Total		35	100.0		

Have you team taught this material?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	20.0	35.0	35.0
	No	11	31.4	55.0	90.0
	3	2	5.7	10.0	100.0
	Total	20	57.1	100.0	
Missing	System	15	42.9		
Total		35	100.0		

In all, approximately how many students have completed this material?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	26.00	1	2.9	5.0	5.0
	32.00	1	2.9	5.0	10.0
	47.00	1	2.9	5.0	15.0
	50.00	1	2.9	5.0	20.0
	52.00	2	5.7	10.0	30.0
	60.00	1	2.9	5.0	35.0
	62.00	1	2.9	5.0	40.0
	100.00	1	2.9	5.0	45.0
	115.00	1	2.9	5.0	50.0
	120.00	1	2.9	5.0	55.0
	142.00	1	2.9	5.0	60.0
	150.00	3	8.6	15.0	75.0
	300.00	2	5.7	10.0	85.0
	500.00	1	2.9	5.0	90.0
	750.00	1	2.9	5.0	95.0
	999.00	1	2.9	5.0	100.0
	Total	20	57.1	100.0	
Missing	System	15	42.9		
Total		35	100.0		

Approximately what percentage of these students are female?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.00	1	2.9	5.0	5.0
	15.00	1	2.9	5.0	10.0
	45.00	1	2.9	5.0	15.0
	49.00	1	2.9	5.0	20.0
	50.00	7	20.0	35.0	55.0
	53.00	1	2.9	5.0	60.0
	55.00	2	5.7	10.0	70.0
	60.00	3	8.6	15.0	85.0
	62.00	1	2.9	5.0	90.0
	65.00	1	2.9	5.0	95.0
	70.00	1	2.9	5.0	100.0
	Total	20	57.1	100.0	
Missing	System	15	42.9		
Total		35	100.0		

Are these courses or units still being offered?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	20	57.1	87.0	87.0
	No	3	8.6	13.0	100.0
	Total	23	65.7	100.0	
Missing	System	12	34.3		
Total		35	100.0		

In-depth knowledge of subject area

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Substantially worse	1	2.9	4.2	4.2
	No difference	3	8.6	12.5	16.7
	Somewhat better	11	31.4	45.8	62.5
	Substantially better	6	17.1	25.0	87.5
	No valid comparison possible	3	8.6	12.5	100.0
	Total	24	68.6	100.0	
Missing	System	11	31.4		
Total		35	100.0		

Problem solving skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	1	2.9	4.2	4.2
	Somewhat better	14	40.0	58.3	62.5
	Substantially better	5	14.3	20.8	83.3
	No valid comparison possible	4	11.4	16.7	100.0
	Total	24	68.6	100.0	
Missing	System	11	31.4		
Total		35	100.0		

Communication skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	4	11.4	16.7	16.7
	Somewhat better	8	22.9	33.3	50.0
	Substantially better	7	20.0	29.2	79.2
	No valid comparison possible	5	14.3	20.8	100.0
	Total	24	68.6	100.0	
Missing	System	11	31.4		
Total		35	100.0		

Ability to apply new knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	1	2.9	4.2	4.2
	Somewhat better	16	45.7	66.7	70.8
	Substantially better	5	14.3	20.8	91.7
	No valid comparison possible	2	5.7	8.3	100.0
	Total	24	68.6	100.0	
Missing	System	11	31.4		
Total		35	100.0		

Critical thinking skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	3	8.6	12.5	12.5
	Somewhat better	12	34.3	50.0	62.5
	Substantially better	5	14.3	20.8	83.3
	No valid comparison possible	4	11.4	16.7	100.0
	Total	24	68.6	100.0	
Missing	System	11	31.4		
Total		35	100.0		

Ability to collaborate with others

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	6	17.1	25.0	25.0
	Somewhat better	6	17.1	25.0	50.0
	Substantially better	7	20.0	29.2	79.2
	No valid comparison possible	5	14.3	20.8	100.0
	Total	24	68.6	100.0	
Missing	System	11	31.4		
Total		35	100.0		

Ability to use advanced technology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Somewhat better	5	14.3	20.8	20.8
	Substantially better	15	42.9	62.5	83.3
	No valid comparison possible	4	11.4	16.7	100.0
	Total	24	68.6	100.0	
Missing	System	11	31.4		
Total		35	100.0		

Understanding of the scientific method

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	3	8.6	12.5	12.5
	Somewhat better	4	11.4	16.7	29.2
	Substantially better	4	11.4	16.7	45.8
	No valid comparison possible	13	37.1	54.2	100.0
	Total	24	68.6	100.0	
Missing	System	11	31.4		
Total		35	100.0		

Have you participated in any further professional development activities or workshops designed to change the content of courses or units or to improve instruction?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	26	74.3	81.3	81.3
	No	6	17.1	18.8	100.0
	Total	32	91.4	100.0	
Missing	System	3	8.6		
Total		35	100.0		

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	9	25.7	34.6	34.6
	A little	3	8.6	11.5	46.2
	Moderate	8	22.9	30.8	76.9
	Great	6	17.1	23.1	100.0
	Total	26	74.3	100.0	
Missing	System	9	25.7		
Total		35	100.0		

Have you begun any new communication or continued existing communication with experts in one or more disciplines?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	51.4	56.3	56.3
	No	14	40.0	43.8	100.0
	Total	32	91.4	100.0	
Missing	System	3	8.6		
Total		35	100.0		

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	3	8.6	16.7	16.7
	A little	4	11.4	22.2	38.9
	Moderate	9	25.7	50.0	88.9
	Great	2	5.7	11.1	100.0
	Total	18	51.4	100.0	
Missing	System	17	48.6		
Total		35	100.0		

Have you established any new research or teaching collaborations with colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	40.0	45.2	45.2
	No	17	48.6	54.8	100.0
	Total	31	88.6	100.0	
Missing	System	4	11.4		
Total		35	100.0		

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	3	8.6	21.4	21.4
	A little	2	5.7	14.3	35.7
	Moderate	7	20.0	50.0	85.7
	Great	2	5.7	14.3	100.0
	Total	14	40.0	100.0	
Missing	System	21	60.0		
Total		35	100.0		

Have you attended any professional meetings, seminars or workshops?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	82.9	90.6	90.6
	No	3	8.6	9.4	100.0
	Total	32	91.4	100.0	
Missing	System	3	8.6		
Total		35	100.0		

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	9	25.7	31.0	31.0
	A little	5	14.3	17.2	48.3
	Moderate	10	28.6	34.5	82.8
	Great	5	14.3	17.2	100.0
	Total	29	82.9	100.0	
Missing	System	6	17.1		
Total		35	100.0		

Have you delivered one or more papers at a professional meeting?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	14.3	15.6	15.6
	No	27	77.1	84.4	100.0
	Total	32	91.4	100.0	
Missing	System	3	8.6		
Total		35	100.0		

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	1	2.9	20.0	20.0
	Moderate	2	5.7	40.0	60.0
	Great	2	5.7	40.0	100.0
	Total	5	14.3	100.0	
Missing	System	30	85.7		
Total		35	100.0		

Have you made one or more presentations to local campuses or community organizations?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	31.4	34.4	34.4
	No	21	60.0	65.6	100.0
	Total	32	91.4	100.0	
Missing	System	3	8.6		
Total		35	100.0		

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	1	2.9	9.1	9.1
	Moderate	3	8.6	27.3	36.4
	Great	7	20.0	63.6	100.0
	Total	11	31.4	100.0	
Missing	System	24	68.6		
Total		35	100.0		

Have you shared any information or skills you learned with colleagues either in your institution or in other institutions?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	26	74.3	92.9	92.9
	No	2	5.7	7.1	100.0
	Total	28	80.0	100.0	
Missing	System	7	20.0		
Total		35	100.0		

Have you shared any information or skills you learned through informal discussions with one or more colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	28	80.0	93.3	93.3
	No	2	5.7	6.7	100.0
	Total	30	85.7	100.0	
Missing	System	5	14.3		
Total		35	100.0		

lave you shared any information or skills you learned through presentations to one more colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	40.0	48.3	48.3
	No	15	42.9	51.7	100.0
	Total	29	82.9	100.0	
Missing	System	6	17.1		
Total		35	100.0		

Have you shared any information or skills you learned through observation of your class or laboratory by one or more colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	13	37.1	46.4	46.4
	No	15	42.9	53.6	100.0
	Total	28	80.0	100.0	
Missing	System	7	20.0		
Total		35	100.0		

Have you shared any information or skills you learned through participation in any department or school committees on curricular change and or reform?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	51.4	62.1	62.1
	No	11	31.4	37.9	100.0
	Total	29	82.9	100.0	
Missing	System	6	17.1		
Total		35	100.0		

Have you shared any information or skills you learned through any other activities?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	22.9	29.6	29.6
	No	19	54.3	70.4	100.0
	Total	27	77.1	100.0	
Missing	System	8	22.9		
Total		35	100.0		

As a result of what you shared, have any of your colleagues modified the content of a unit or program of study?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	34.3	41.4	41.4
	No	17	48.6	58.6	100.0
	Total	29	82.9	100.0	
Missing	System	6	17.1		
Total		35	100.0		

As a result of what you shared, have any of your colleagues developed a new unit or program of study?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	25.7	31.0	31.0
	No	20	57.1	69.0	100.0
	Total	29	82.9	100.0	
Missing	System	6	17.1		
Total		35	100.0		

As a result of what you shared, have any of your colleagues attended or joined the project?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	54.3	65.5	65.5
	No	10	28.6	34.5	100.0
	Total	29	82.9	100.0	
Missing	System	6	17.1		
Total		35	100.0		

As a result of what you shared, have any of your colleagues made any other changes?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	14.3	17.2	17.2
	No	24	68.6	82.8	100.0
	Total	29	82.9	100.0	
Missing	System	6	17.1		
Total		35	100.0		

Did you encounter any barriers to implementing what you learned from your involvement with this course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	22	62.9	71.0	71.0
	No	9	25.7	29.0	100.0
	Total	31	88.6	100.0	
Missing	System	4	11.4		
Total		35	100.0		

When you took the program, did you INTEND to develop any new materials-units or modify any existing materials or units?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	21	60.0	70.0	70.0
	No	9	25.7	30.0	100.0
	Total	30	85.7	100.0	
Missing	System	5	14.3		
Total		35	100.0		

Number of hours in preparation before the course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	24	68.6	85.7	85.7
	1.0	1	2.9	3.6	89.3
	2.0	1	2.9	3.6	92.9
	3.0	2	5.7	7.1	100.0
	Total	28	80.0	100.0	
Missing	System	7	20.0		
Total		35	100.0		

Number of hours during the course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.0	2	5.7	6.5	6.5
	3.0	2	5.7	6.5	12.9
	5.0	1	2.9	3.2	16.1
	6.0	5	14.3	16.1	32.3
	8.0	3	8.6	9.7	41.9
	9.0	1	2.9	3.2	45.2
	12.0	2	5.7	6.5	51.6
	14.0	2	5.7	6.5	58.1
	16.0	1	2.9	3.2	61.3
	17.0	1	2.9	3.2	64.5
	18.0	2	5.7	6.5	71.0
	21.0	1	2.9	3.2	74.2
	23.0	1	2.9	3.2	77.4
	24.0	2	5.7	6.5	83.9
	30.0	1	2.9	3.2	87.1
	36.0	1	2.9	3.2	90.3
	40.0	2	5.7	6.5	96.8
	50.0	1	2.9	3.2	100.0
	Total	31	88.6	100.0	
Missing	System	4	11.4		
Total		35	100.0		

Number of hours after the course developing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	2	5.7	7.4	7.4
	2.0	1	2.9	3.7	11.1
	3.0	2	5.7	7.4	18.5
	4.0	1	2.9	3.7	22.2
	5.0	1	2.9	3.7	25.9
	6.0	1	2.9	3.7	29.6
	8.0	1	2.9	3.7	33.3
	10.0	4	11.4	14.8	48.1
	12.0	1	2.9	3.7	51.9
	15.0	1	2.9	3.7	55.6
	17.0	1	2.9	3.7	59.3
	20.0	1	2.9	3.7	63.0
	25.0	1	2.9	3.7	66.7
	30.0	3	8.6	11.1	77.8
	80.0	1	2.9	3.7	81.5
	99.0	5	14.3	18.5	100.0
	Total	27	77.1	100.0	
Missing	System	8	22.9		
Total		35	100.0		

Number of hours after the course implementing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	2	5.7	14.3	14.3
	3.0	1	2.9	7.1	21.4
	5.0	1	2.9	7.1	28.6
	10.0	1	2.9	7.1	35.7
	15.0	1	2.9	7.1	42.9
	20.0	1	2.9	7.1	50.0
	25.0	1	2.9	7.1	57.1
	30.0	2	5.7	14.3	71.4
	35.0	1	2.9	7.1	78.6
	40.0	1	2.9	7.1	85.7
	50.0	1	2.9	7.1	92.9
	99.0	1	2.9	7.1	100.0
	Total	14	40.0	100.0	
Missing	System	21	60.0		
Total		35	100.0		

Number of hours after the course - other?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	3	8.6	33.3	33.3
	1.0	1	2.9	11.1	44.4
	2.0	1	2.9	11.1	55.6
	5.0	1	2.9	11.1	66.7
	10.0	2	5.7	22.2	88.9
	40.0	1	2.9	11.1	100.0
	Total	9	25.7	100.0	
Missing	System	26	74.3		
Total		35	100.0		

Approxmate total number of hours

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.0	1	2.9	4.2	4.2
	6.0	2	5.7	8.3	12.5
	14.0	2	5.7	8.3	20.8
	25.0	1	2.9	4.2	25.0
	27.0	1	2.9	4.2	29.2
	30.0	2	5.7	8.3	37.5
	34.0	1	2.9	4.2	41.7
	40.0	1	2.9	4.2	45.8
	42.0	1	2.9	4.2	50.0
	60.0	1	2.9	4.2	54.2
	78.0	1	2.9	4.2	58.3
	83.0	1	2.9	4.2	62.5
	99.0	9	25.7	37.5	100.0
	Total	24	68.6	100.0	
Missing	System	11	31.4		
Total		35	100.0		

At the time you participated in the project, how many years had you been at the school where you were teaching at that time?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	1	2.9	3.0	3.0
	1.0	5	14.3	15.2	18.2
	2.0	2	5.7	6.1	24.2
	3.0	4	11.4	12.1	36.4
	4.0	4	11.4	12.1	48.5
	5.0	1	2.9	3.0	51.5
	6.0	2	5.7	6.1	57.6
	7.0	1	2.9	3.0	60.6
	8.0	2	5.7	6.1	66.7
	9.0	2	5.7	6.1	72.7
	10.0	1	2.9	3.0	75.8
	11.0	1	2.9	3.0	78.8
	12.0	2	5.7	6.1	84.8
	13.0	1	2.9	3.0	87.9
	14.0	1	2.9	3.0	90.9
	20.0	1	2.9	3.0	93.9
	21.0	1	2.9	3.0	97.0
	23.0	1	2.9	3.0	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

Which of the following best describes the school where you were employed when you took the course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Elementary school	6	17.1	17.6	17.6
	Middle school	2	5.7	5.9	23.5
	High school	26	74.3	76.5	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	5	14.3	14.7	14.7
	Female	29	82.9	85.3	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

What is your birth month?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	January	3	8.6	9.4	9.4
	February	1	2.9	3.1	12.5
	June	5	14.3	15.6	28.1
	July	2	5.7	6.3	34.4
	August	3	8.6	9.4	43.8
	September	2	5.7	6.3	50.0
	October	6	17.1	18.8	68.8
	November	3	8.6	9.4	78.1
	December	7	20.0	21.9	100.0
	Total	32	91.4	100.0	
Missing	System	3	8.6		
Total		35	100.0		

What is your birth day?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	1	2.9	3.1	3.1
	2.0	1	2.9	3.1	6.3
	3.0	1	2.9	3.1	9.4
	4.0	1	2.9	3.1	12.5
	7.0	4	11.4	12.5	25.0
	8.0	2	5.7	6.3	31.3
	10.0	1	2.9	3.1	34.4
	11.0	1	2.9	3.1	37.5
	13.0	1	2.9	3.1	40.6
	14.0	2	5.7	6.3	46.9
	15.0	1	2.9	3.1	50.0
	17.0	1	2.9	3.1	53.1
	20.0	4	11.4	12.5	65.6
	21.0	1	2.9	3.1	68.8
	22.0	1	2.9	3.1	71.9
	24.0	1	2.9	3.1	75.0
	25.0	1	2.9	3.1	78.1
	27.0	2	5.7	6.3	84.4
	28.0	1	2.9	3.1	87.5
	29.0	1	2.9	3.1	90.6
	30.0	2	5.7	6.3	96.9
	31.0	1	2.9	3.1	100.0
	Total	32	91.4	100.0	
Missing	System	3	8.6		
Total		35	100.0		

What is your birth year?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	44.0	1	2.9	3.0	3.0
	45.0	1	2.9	3.0	6.1
	48.0	1	2.9	3.0	9.1
	50.0	2	5.7	6.1	15.2
	51.0	4	11.4	12.1	27.3
	52.0	3	8.6	9.1	36.4
	53.0	2	5.7	6.1	42.4
	55.0	1	2.9	3.0	45.5
	56.0	1	2.9	3.0	48.5
	57.0	1	2.9	3.0	51.5
	58.0	2	5.7	6.1	57.6
	59.0	1	2.9	3.0	60.6
	60.0	1	2.9	3.0	63.6
	63.0	1	2.9	3.0	66.7
	66.0	1	2.9	3.0	69.7
	67.0	2	5.7	6.1	75.8
	69.0	1	2.9	3.0	78.8
	70.0	1	2.9	3.0	81.8
	71.0	2	5.7	6.1	87.9
	74.0	1	2.9	3.0	90.9
	76.0	2	5.7	6.1	97.0
	77.0	1	2.9	3.0	100.0
	Total	33	94.3	100.0	
Missing	System	2	5.7		
Total		35	100.0		

Are you Hispanic or Latino or NOT Hispanic or Latino?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Hispanic or Latino	2	5.7	5.9	5.9
	Not Hispanic or Latino	32	91.4	94.1	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

Please choose one or more categories that best indicate your race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Black or African American	1	2.9	3.1	3.1
	Caucasian	30	85.7	93.8	96.9
	9	1	2.9	3.1	100.0
	Total	32	91.4	100.0	
Missing	System	3	8.6		
Total		35	100.0		

What was your citizenship when you participated in the project?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	U.S. citizen	34	97.1	100.0	100.0
Missing	System	1	2.9		
Total		35	100.0		

Do you have an impairment or some other type of disability?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Other impairment	1	2.9	2.9	2.9
	No impairment or disability	33	94.3	97.1	100.0
	Total	34	97.1	100.0	
Missing	System	1	2.9		
Total		35	100.0		

APPENDIX C: ACTIVE CLASSROOM (AC) PARTICIPANT SURVEY

PARTICIPANT COMMENTS LOG

Karen C. Cohen and Associates
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ACTIVE CLASSROOM (AC) PARTICIPANT COMMENTS LOG

INTRODUCTION AND DISCLAIMER

DESCRIPTION AND EVALUATION OF COURSE AND FOLLOW-UP ACTIVITIES

- **During the course did you . . .**

Do any other types of activities?

- It was an introductory session. Participants could opt to take 2 days or 1 day. I took (1) day the first -- & there was a power outage.

- **In preparation for the course, were you asked to use any . . .**

Other activities?

- Type up word document
- There are 2 workshops given: (1) 3 hrs (2) 3 days/5 days web design
- Quiz, tests
- I came in by the back door. I was involved in all the above. I asked the instructor whether it would be helpful to continue with prep materials & was told yes, so I continued with my self directed preparation.

- **By the end of the professional development, to be more effective in your teaching, did you feel you needed more work with . . .**

Other activities?

- Certain aspects of AC.
- Time to set in head & then practice time.
- I needed time to implement not training per se.
- Explanation for elementary schools how you can get it on the computer.
- Content area development on line.
- At training completed but project is ongoing.
- Front Page.
- Practiced using it all summer.

IMPACT

WHAT PARTICIPANT LEARNED/COURSE VALUE TO YOU:

- **Did you get any benefit out of the program?**

Yes:

- Oh yes I did. Through the grant 12 computers were put in my room and I have developed all of my lessons on line and used them with Active Classroom. It's been a time saver and materials management aide for me.

- Yes. It's a time saver in the classroom for kids to see what they missed the day before. Some students are able to keep up with their work when absent for an extended period of time. I don't know how many parents access their student's assignments. Convenience of not having to tell students what they missed.
- Oh yes. I implemented AC in the classroom. It definitely helped the kids improve homework completion.
- In teaching and trying to learn new programs and contact colleagues it is difficult to do time wise. I know a new resource and I met new people and I'm using the resource and in contact w new colleagues.
- Yes. I created a web site that I used immediately in my classroom. My students enjoyed it and it was easy to facilitate vocabulary for example – I put the words on line and didn't have to give them out in class.
- Yes. It gave me another for approaching on line learning.
- Yes. The benefits I received were increased comfort in dealing with technology – increased understanding of Active Classroom and its use in the classroom – increased desire to use technology in the classroom.
- Yes – an enormous amount. It has allowed me to share lesson plans on-line with students' families, w students who are absent, w students wishing to review materials in preparation for exams. It has allowed me to establish links to educational and scientific web sites such as the human genome project and other current scientific areas of investigation.
- I always like to look at new things; to incorporate more technology into the classroom. New methods & techniques bring new life into teaching.
- Benefit I received was from introducing this new tool to faculty that had never seen it before.
- Yes – the benefit is good if you can get it all on the computer – bench marks, state standards, homework in reading, math, language, science, social studies & spelling – daily update is very hard to do with so many subject areas. I love the idea: get parents on, get kids on but it's time consuming.
- Yes – I think it's a good idea to put kids on computers and connect with parents. Technical information gleaned was a benefit.
- Yes. I was introduced to the program and since then have used the program in the classroom on a daily basis.
- Yes. I did. I think basically they have a good start on the Active Classroom but it needs work. The idea is to have homework & class assignments online for students to access as well as lesson plans – for my particular situation it has problems – specifically I teach a large # of classes @ the same time – my assignments then are somewhat complicated – the software was difficult to implement under these circumstances.
- Helps me & my kids a lot. I post all my outlines on it. I have linked web sites to it. Parents monitor it for homework – It's great to keep up if absent. Students like to see what was missed when absent.

- Yes. It stimulated me to be better organized and in the chronology or timing of my lesson plans. It also stimulated me to put my lesson plans in a format suitable for the Internet, which made students able to study on their own.
- Most definably – the things I was looking for were there: the idea as a homework hotline – I know that ½ of my students have home computers. I have always had difficulty in finding the time to keep absent students, upon their return, abreast of the lessons missed! It allowed me to be 2 people at one time – to be accessible to all my students on two different levels at the same time.

  I teach French III & IV – both levels are IB – very challenging – One level of students on one day does the lesson plans posted on the A/C web site while the other level can be engaged in conversation time with me.
- Oh yes. I loved it. I just wish I had time to do it. I had never dealt with how to change a web site. It's completely foreign to me – it was an eye opening experience to computer technology for me.
- Definitely. I've been a teacher for over 15 years and I've been doing Active Classroom for 2 years and its made me a better teacher, due in part to collaboration with colleagues across the country. It keeps me in tune with new technologies. I've seen my students gain interest. They are more motivated. They prefer to work through the computer.
- Yes, many times over. It gave us more central contact w parents as well as students. It gave directions for parents to monitor child's activities.
- Yes. Increased knowledge of online technology increased use of web site resources.
- Yes – easy ways to develop lesson plans & correlate standards.
- Yes, a lot of parent communication that opened up doors daily that normally wouldn't have been there. And it gave students more responsibility. They know exactly what went on if absent from class.
- Increased ability to communicate w students & families. Easier access to standards helps in development of lesson plans.
- The program allowed me to use technology in the classroom and it made lesson planning easier. It allowed me to use the Sunshine State Standards with my curriculum and to incorporate ESOL strategies.
- Sure. I enjoyed seeing what they are having high school students learn. It is not applicable for my first grade gifted & kindergarten classes. It is designed for children at an independent level.
- Yes – I was able to do lesson plans in a more organized way and I was able to better communicate with parents & students and I also learned how to use Front Page. Front Page allows me to organize my materials and have them on the web so students can access them.
- Certainly, the big benefit: it keeps my skills up to date. It provides another way for the students & parents to keep in touch with the class – 24 hours a day.
- Yes – provided me with an organization tool. It is an on-line lesson plan thing. I do all my lessons on the computer – kids can see, parents can see, and my paperwork is reduced!

- Yes – basically it's a really easy way to let your students & parents know what's happening. It's a great communication tool.

No ù Why not?

- No because even if this school purchases the program I won't be here next year. The time of year that we did training was so closet to the end of school year it was too late to implement.
- Because I couldn't continue using the program since I have a Macintosh computer at home where I do all my planning and I have America on line – it seems that Active Classroom worked with Internet Explorer only. Mr. Waterman told us that we could not add content in using a Macintosh. But when I came home I couldn't add assignments using my Mackintosh at home. But I was able to add "assignments" using the Mackintosh at the workshop where the equipment was new & a version of ibooks – a lap top not a desk top – they're cordless – I have an older version of ibooks and it didn't work. It typed my input but I couldn't save it but I could see it.
- Some classrooms have several computers in the room. I have a very old computer and a TV aid which is difficult for the students to see. If I had a large TV screen w computers my kids could access in the classroom I could use it. We were told if we used AC, we didn't have to make hard copies. Then we found out at the workshop that you had to make hard copies of what you put on AC so you are doing it twice so this was of no benefit to me.

No Response: [2]

IMPACT ON YOUR CURRICULUM:

- **During or as a result of your participation . . .**

Did you develop one or more proposals requesting permission or funding to revise or develop materials/units?

- I received a $10,000 grant and a $2000 grant that were used, in part, towards Active Classroom incorporation into my classroom.

- **Please describe in your own words the changes you made to your classes as a result of your participation in the project. [INTV: THIS INCLUDES DESCRIPTION OF NEW CLASSES.]**

Positive:

- My entire course is now run through Active Classroom. All of my notes & worksheets are on-line. All of my information that I use for my classes is stored electronically.
- Basically the major change was that I got the kids to use the computer and/or internet as a true learning tool.
- Incorporated new ideas. Students are using technology. Student derived work [??] teacher derived dry lecture is an outcome. [??]
- I put vocabulary on line instead of the board. I had students take quizzes on line instead of in classroom. I had them to go the labs & use the links I put in the computer for them to research. This made the students more self-directed.

- I intended to utilize the Active Classroom technology to expand my students' learning in content and technology.
- I established & maintained three web pages: chemistry including molecular visualization, AP Biology, & one called BioLab. I established & maintained on Active Classroom.com where I post all my chemistry labs & demos along with summaries of their key concepts, vocabulary & principles. I have incorporated interactive computer learning in my classroom.
- New: I (we) created a web site for the scan competencies that students could use to build their portfolios. Old lessons incorporated were updated and new lessons were created. Because of the Active Classroom – we had the tool to make everything accessible to our students.
- It gave me a new window on how to teach. I became more student centered instead of teacher centered. I became more student group work oriented rather than teacher directed. I do the introductory lesson the first day and then I become a facilitator. The downside is that it takes more time and I see that we don't cover as much curriculum — content takes longer to cover, the students take their time, it's longer but better learned.
- The major change would be in the evaluation (end of unit). It will give a more authentic assessment. More creative activity allowed students more independence in exploring subject matter on the Internet.
- My children were able to come to the computer and read the instructions for the day on each course – I tried to set it up to do reading & computer together. They are 2nd graders – this was midway through the term. They were excited but I didn't have enough computers for everyone to use – I have 26 kids in class.
- The students have access to the daily agenda, class notes grades – available on line at any time from home – and parents also have access to all the same information as their students do –
- I typed up all my notes so they became more organized & focussed. While I'm teaching my notes are on a TV monitor so the kids have a visual typewritten format to look at.
- I decided to add some lessons on medical technology & bio-technology in order to broaden the scope of my curriculum – drafting and design.
- One of the rare split level classes I had was this past year. Having A/C allowed me to conduct two separate levels efficiently in my classroom at the same time. One group looked at A/C on the screen for their assignment while at the same time I can actively engage students in the other level in conversational French. Therefore, 4 of the 4 language components were met: speaking & listening, reading & writing. My motivation was primarily to get help on managing state required standard skills (FCAT). This I achieved much more easily through using A/C. You go on line with your lesson plan and you call up the FCAT standards to plan the lesson around. We are required to teach those skills and to show evidence that they have been taught. By doing this on line I can see what's been done as can my administrator and this cuts out an enormous block of time necessary to hand write and then submit all of the required paperwork.
- What got me started with this was the establishment of links such as links to the Bronte Parsonage Museum/UK so that my students could research for a Bronte

term paper. This went so well that the subsequent authors we studied like Elie Wiesel we went to their web sites – we were on a mission to see what web sites went with what authors for additional background information. The idea exploded – there is only one mandatory term paper so we made little projects. All this evolved because I went to AC training & learned about links.

- Basically I revised a program that was designed initially for upper level students to use as a program for my lower level students. The new programs we designed were for students at home so they could receive (at home) the actual prep lab work, the resource lessons and self check worksheets to keep up with the class.
- My units now are more structured with rearrangement of material. I moved a few things around, in 3 or 4 different units, for the restructuring of the presentation of the unit.
- More technology centered more internet based content.
- Increased use of program – we use it on a weekly basis. I try to incorporate more communication with parents.
- The grant we wrote allowed students to make products for the language impaired pre-K classes, in the woodworking shop and in the technological lab. The Active Classroom allowed us to put up web sites for students to access – we had our calendars marked to allow parents to know when we were in lab. Time lines were posted for product completion. Lesson plans were accessed by school administrators. Teacher info/collaboration was accessible through postings.
- The content was more standard based ed focus. Goals were clearly stated with matching activities. Both goals & activities were better communicated to students & families.
- Allowed me to utilize the internet and to use the internet effectively.
- New unit: I was able to develop a project for my AP chemistry students using the technology taught at the workshop. The revisions: I was able to use the technology learned at the workshop for modifying existing units so that students could have additional resources to use.
- It made my advanced students more independent. They were responsible for checking the homework calendar & printing out all assignments. For my lower level students I gave them basic instruction in Internet skills and basic computer skills. I have advanced students and drop-out-prevention students.

Neutral:

- I was planning to make changes at the beginning of the semester. I introduced my students to the program but 2 weeks into the program I found that I couldn't continue using it. I only put in two days of assignments.

Negative:

- Basically the idea is to have lesson plans on line – the software needs improving in that with more interactive use of internet – as I put in more lessons and assignments it became unmanageable so I stopped using it. There are 2 ways to manage – only one for me for my complexities – one [?] is not enough. I already have my own web sites with a lot of lessons on it.

No Response: [8]

SUSTAINED EFFECTS:

- **If you have taught this course/these courses more than once since participating in the project, how did what you did as a result of your participation change over time? [INTV PROMPT: FOR EXAMPLE, DID YOU INCREASE OR DECREASE WHAT YOU DID? DID IT BECOME MORE KEY?]**

Positive:

- Over time the web sites have grown from 1 to 3 and expanded and increased in sophistication.
- Students became independent learners.
- What I do is put assignments on the web site. I can now write pages that are interactive. Each year I change the content per page in each lesson and I change (increase or decrease) the exercises on the work sheets and labs. So when I see what goes right in a year I can make everything that follows a little better each successive year.
- To summarize I have been delaying the introduction of 3 dimensional modelling techniques until students have quite enough of 2 dimensional techniques. Now I include more of three dimensional because the students are capable of performing at a satisfactory level. AC caused me to enumerate each of my units. When I compared this with my goals I discovered some holes and developed these units to fill the holes.
- A major breakthrough suggested by another teacher was to actually plan online in lieu of handwriting the day's lesson plans. This way once planned it could be either/or printed out and called up. I did this basically only with my split level classes. I now want to do all my classes in this fashion.
- The links became more key and I plan to find more links and improve the online availability next year. What is neat is that I have computers in my classroom now that are connected to the Internet. Students find things & save them under "Favorites."
- I've increased student participation in all the courses I've taught over two years. The main course developed I've just finished teaching. It's too early to evaluate it.
- It became more key – I do shop – Students learned quality. Our goal was to teach craftsmanship and quality. Active Classroom prepared students; i.e. time line, agenda, daily & monthly calendars for expectation – access of content on web connected with lab schedules.
- Since I was more comfortable with it I could and did add to it. It became more effective in the classroom. Ex: added resources from internet i.e. Front Page into Active Classrooms and to communicate with the parents.

Neutral:

- I would say that you learn from mistakes. I have made minor changes since inception. More notes on line – more information et al.

Negative:

- It really didn't change much.

No Response or N/A: [21]

BARRIERS TO SUSTAINED EFFECTS:

- **Is the course/Are these courses still being offered?**

Yes: [20]

- Yes I plan to do this next year – I need the summer to find out how to implement successfully.

No ù Why not?

- #1 No one was going to spend time developing lesson plans to use in Sept. & Oct. fall '02 because if no funding is available the teachers would have to pay out of pocket. So no funding the lesson plans implemented have no continued access. Plus there are free online instruction materials available – myclass.net is one example advertised as no cost to teacher and although immediately accessible it's not as good as AC.
- Not at this point this year. We are winding down. I will refine mine for next year – September semester.
- Our team teaching of the units did not continue past the initial presentation. I was an elementary teacher until August of 2002. No longer in the classroom, I can't teach the unit anymore as it was designed for a self contained elementary classroom.

No Response or N/A: [10]

IMPACT ON STUDENTS:

- **Please describe, in your own words, the impact on your students of the changes you made as a result of your participation in the project.**

Positive:

- My students love going online for information. They are more attentive to the computer.
- I felt the kids became somewhat more enthusiastic about the material – the content.
- Built critical thinking skills in more than one area. What can be applied in one area can be applied to another.
- Some students didn't bother with technology and as a result the vocabulary project online was a zero. But the ones who accessed the assignment online improved considerably. There was a lot of collaboration with students who accessed Active Classroom.
- Today, my students can walk into class with no knowledge about a particular molecule or metabolic pathway and leave 45 minutes later with a beginning sophistication that would have been rare among college students before now. My students can walk into the classroom with no understanding of a photoreversible phytochrome interact on the computer for example with photo and visualize molecules such as a photoreversible phytochrome. Whereas in the past it would not have been subject matter in a high school setting: too boring, too abstract. Now they enjoy looking at molecules, awesome, basically.

- Made things available to the students. I can't be there all the time for all the students. With AC they can research on their own.
- They became more independent in their learning and took more responsibility for solving problems and their overall achievement in projects.
- (1) more group work (2) technology based delivery (3) they've become more independent because I facilitate their learning not dictate their learning (4) they feel less intimidated in asking questions (5) reading level improvement because they're using the web site
- It's an accessory to post what we do in class, homework assignments links for extra help – It's a convenience for the students, the ability to access information easily.
- The kids enjoy computers. Using the computer is a motivation for kids. It gets their attention.
- They have access to the assignments in case of absence or I case of the need to do make-up work. It gives some students exposure to using the internet that they would not normally have.
- Students are learning at a more rapid rate because they are interested in the content of the new units and therefore perform better because of their higher interest level.
- It gave them an independence and a collaboration for working together that they would not have experienced without AC. They had to learn self pacing, follow written instructions in a 2nd language. They had fewer excuses for not doing the work because it was all spelled out on the computer accessible at home and at school. Without AC I could not have survived as a teacher teaching 2 levels at the same time.
- I think it's important in education to keep up w the times to infuse technology into your curriculum. It adds another aspect of involvement in a collaborative way.
- I would say a higher level of motivation and keeping a student on task longer during the class period. For instance if they are working out of a test book their attention span is 15 minutes. It's a much longer attention span when they click back & forth between resources and labs & worksheets and doing so with others in teams of 2 or 3.
- An increased motivation to learn & more responsibility with content. One of the purposes of the Active Classroom is to do work at home because the agenda page is made accessible to the students at home.
- Increased motivation. More technical skills. Greater interest in technology.
- Active Classroom gave me the ability to be more organized, more focussed which impacts their entire curriculum in my shop.
- The students had a clearer understanding of the key concepts or goals being taught. They also developed more independent learning skills.
- The students were better able to use technology – main advantage.
- As a result of the training session I have included the use of computers in my classroom to a much greater degree and have been able to expose my students to a variety of material.

- Advanced students: They were more organized & took more responsibility for the class work. It gave them more freedom. It gave them time management/better study habits at home. Low level students: It provided them the opportunity to use technology. A lot of them don't have home computers or the opportunity to learn technology properly.

Neutral:

- There wasn't any impact on students. The classroom ran more smoothly.
- Kids could access all lesson plans – no change as yet.

Negative:

- If it worked when I just had a few things in, it would be very beneficial but I had too many components – 15 - 20 assignments became unmanageable using AC for me.

No Response: [7]

IMPACT ON NON-CLASSROOM ACTIVITIES:

- **Please tell me in your own words what you feel the major impacts were.**

Positive:

- It's made me want to learn more about technology and using technology in the classroom.
- I'm trying to encourage other teachers in my grade level to learn about the impact of Active Classroom and want to come aboard. I think it's a great communication tool for parents, for teachers, for kids. For 20 – 25 teachers to participate/have internet access to the program and tech support and a management fee/it costs $500. I can't afford this out of pocket just for me to use. 20 to 25 teachers could split the cost. My PTA could afford to cover the costs but more people need to be exposed and it's really a county/state fiscal responsibility.
- Once you've introduced something it has a domino affect – to what degree you don't know but there is an influence there. You have to hope that influence is used that will incorporate Active Classroom.
- I have another tool to use to diseminate my curriculum. Students have another avenue to communicate w me. Parents can communicate with me and access the lessons, too, and they like that.
- It just offered another avenue to an online classroom. If we get a chunk of money to spend I would look into Active Classroom more – ESF has gone with blackboard.com with ESF.
- Increased my comfort level with using technology. Increased my vocabulary using the computer. Stimulated my creativity when using the computer.
- Examples: I've held workshops for other science teachers at other schools/new collegues – beginning teachers where I've shared the Active Classroom and they've left with lesson plans and skills immediately useable and useful in their classrooms.

- I presented “New Millennia HS,” my project developed on Active Classroom, at the State Conference telling everyone they could have it by using the web site. I also presented to everyone in my field at a Volusia County meeting.
- More of a sense of collaboration with my peers.
- (1) Active Classroom is going to present a countywide template for lesson plans. (2) Template will eliminate paperwork/copies of lesson plans countywide. (3) Active Classroom will increase school to home communications – relieves parent anxiety and fills the need to know and allows the administrator to know at any time what’s happening in every classroom on campus. (4) Be a mentor to a beginning teacher as a blueprint lesson plan, scheduling et al.
- If I had been able to use AC it would have helped me to be better organized in the sense that my students could know at all times what the assignments were even when absent. I had 2 students who were out with injury & surgery and unable to use my equipment with this AC training I had to spend time I don’t have reviewing all their assignments of several weeks.
- It’s reduced my paper load. I don’t have to do things 3 or 4 times it’s just always there.
- Educators need to keep up with students facility with new technology. AC motivated me to move on with the modern world. Before this I felt inadequate. I felt more connected with the modern world. I was excited to see how this relieved so much stress for me, made teaching more enjoyable. And I shared this information informally with my colleagues at every opportunity.
- I think the collaborations with other schools across the country & with experts in their specific fields (for me math & physics) such as CCTT (DOE grant). It’s broadened my scope as well as the people resource to address questions & concerns & share ideas.
- To get more teachers to use online lesson planning tools. For me, I integrated online institutes for curriculum development with Active Classroom.
- Increased teacher awareness of Active Classroom. Our district just accepted electronic lesson plans as acceptable format and I think this is because of our influence – we recommended it be used to the [?] (teacher) as alternates to paper lesson planning –
- I spoke w future teachers @ the [?] Florida & discussed Active Classroom as a way to communicate with students & parents. I articulated to 3rd, 4th, 5th grade parents about Active Classrooms and spoke at faculty meetings. I discussed how it has helped me in writing lesson plans & the ability to integrate plans w Sunshine State Standards.
- Again, it’s increased understanding of standard based education and the necessity and the importance of communicating with families.
- During the Active Classroom training I learned valuable internet skills that I was able to take with me to other professional development activities.
- 1) Most important impact: I’ve been able to do daily lesson plans on-line and our school requires written daily lesson plans. This is the first year that the school system has accepted daily lesson plans using Active Classroom – unfortunately we still have to print them out.

- It makes it easier for me to write out my lesson plans. I am taking another AC training this summer presented by a collegue and I will probably add more view notes for kids to study for tests and add more labs on line.
- I've become a trainer and I've trained at other schools and I'll be training this summer. I use AC every day – the more proficient I become the more I use it. I am the site administrator at my high school.

Neutral:

- It is a great idea. It is so hard to get it all on. How do you condense 6 subjects into one page & all the evaluations? People are talking about this.
- The major impact gave me the desire to use the internet to communicate with parents & students and to help me to organize my lesson plans. It would be nice to have a product that would do this for me but this one doesn't quite do it.
  Really neat, anyplace in the world, with internet access, you could access your own lesson plan & assignments!
- The only impact for me is the updating each day of the lesson plans on the computer.

Negative:

- There were none for me.
- None.
- There was no major impact.
- I can't think of any.
- None on non-classroom activities for me.
- There are none because I've not implemented anything yet.

No Response: [3]

IMPACT ON BROADER COMMUNITY:

- **Have you shared any information or skills you learned with colleagues either in your institution or in other institutions . .**

Through any other activities? (Please specify.)

- In staff development teacher training skills.
- Spreading the word.
- Personal development, union meetings, school improvement meetings.
- I'm the head of Student Advisory Council correlate chair person.
- A trainer of AC for the system; at my school I'm project administrator.
- State conference, county meeting.

- **To the best of your knowledge, as a result of what you shared . . .**

Have any of your colleagues made any other changes? (Please specify.)

- One of my collegues who took training uses it all the time.

- Some people have come to me to tell me that they implemented AC.
- I know that many page submissions that are posted to Active Classroom are made by students in classes in other parts of the country – & it validates teachers in many parts of the country.
- One of the science teachers encourages kids to access for make-up work. I teach international baccalaureate – we were trying to use Active Classroom for IB as a calendar of events, upcoming tests. It's probably not in operation – IB ran into same problem: management of too extensive sites.
- One of the women in our department is a technology contact person – once a month she shares technology inovative ideas – AC was p . . .
- Incorporating Active Classroom in their own classrooms.

BARRIERS TO IMPLEMENTATION:

- **Did you encounter any barriers to implementing what you learned from your involvement with this course?**

No: [8]

Yes ù Please tell me about these barriers.

- It's difficult to get technology in the classroom for all students. There is no funding for this. Once there are computers in the room its difficult to maintain properly – and there is no funding for maintenance and for additional software and hardware. I tried to write a grant once. I was not funded.
- I tried to set the AC program up for the following year. I really wanted to set up the lesson plans but it was too confusing between county & state standards and remembering where I clicked and what I clicked until I figured out a system. Then I needed the help of a colleague to handle the mechanics, first time, to allow me to set up lesson plans. As a result it was over 1-1/2 years between my training session and implementation.
- There were several technology glitches. The fault appears to be within our system plus the necessary free time to correct. I had trouble getting everything we were supposed to be able to do on AC to work. Al problems have been communicated to Steve Waterman. I've been able to correct a few problems but not all due to lack of time to be able to manipulate the technology.
- I didn't implement because it was too close to the semester end – I didn't want to change stream in my organizational patterns. Steve Waterman said the schools have to pay for access to the program and I know my school I'm assigned to next year won't pay for this program. Therefore, it was a waste of my time to implement.
- I would be in an unofficial salesperson capacity if I were to share A/C outside of anyone not participating in the grant. So it's a difficult position to be in that the questions posed are asking.
- I changed jobs so I am no longer in the classroom. I've accepted the position in staff development. Although I cannot use Active Classroom with students I have constant contact with teachers and state that Active Classroom is a useful tool.

- When the program was being developed, I ran into problems of making it do what I wanted it to. It had bugs in its infancy. I ran for technical help because I was not able, initially, to do what I needed done.
- Teachers who don't have computers in their classroom get discouraged. They link it – I work it. I like the idea of Active Classroom and I never see it in front of me. I don't get feedback. They miss day to day impact of the power of technology in action. It's a huge drawback. The teachers who really utilize Active Classroom have a lot of computers in their classrooms.
- There are some glitches with software when I was using Microsoft word & paste it into the Active Classroom format it changes the roman numeral formatting or looses them. It's confusing to slower kids to have to renumber. When I cut & paste a chemical equation w arrows and pluses they change into very strange symbols – I emailed the facilitator -- & her answer was NO. It also changes quotes & question marks & it double spaces my single spaced copy.
- The workshop training was not compatible with my equipment. During the course when we got to the addition of content section we were informed that you could not add content on a Mackintosh. I was excited to take this staff development workshop. I knew about AC and Front Page and that it would be beneficial for me and for my students so I signed up.
- Short bursts in staff development is ineffectual for sustaining true change. Teachers need more professional time and they need the expert with them. Very few are willing or able to do this on their own time. One or two day training sessions are not enough for most teachers with Active Classroom.
- Not enough time. How do you cover all the subjects being taught in elementary grades?
- The software doesn't provide file management tools for searching & organizing into sub folders.
- Next year I'll probably be able to give drafting software to all my students so that through A.C. I can assign homework and explain the assignments so they can be done at home. I'm not able now to assign homework that requires drafting software. AC will be the vehicle I will use to communicate lesson plans.
- Time constraints with teaching 3 different levels and then finding the nerve to let go of old fashioned habits in lesson planning and take up a new technique.
- I wanted a student to help me but I couldn't find my password. When I needed it the password was at home in the notes. My student said he wasn't authorized to get into Active Classroom. I think there was grant money to pay students to be aides to help teachers in developing computer technology. But there is just no time. I got along without it for 23 years and so without assistance it will just sit out on web.
- Time – lack of enough hours in a day.
- One day training in a large group is impossible. One day training in a group of five people maximum would be possible to learn how to implement. And I have several preps but only one planning hour. Therefore it's impossible for me with 150 students to update my four different classes on a daily basis. And we found out Active Classroom doesn't have either Spanish accents & punctuation or

Japanese alphabet etc. Therefore what you type in becomes grammatically incorrect.

- Lack of Time – the amount of time it takes to make a change, as a teacher, is always there and never enough.
- Lack of time. I did have technical problems using my home computer.
- Time is a hard barrier for a teacher: Time for implementing lesson plans – never enough time – time to daily input lessons into the computer.
- Lack of time & lack of resources. The school promised to purchase Front Page for teachers. I was able to obtain Front Page from another source when they failed to do as promised.
- Trying to get the most updated version of Microsoft page – a school problem – I hope it will be taken care of by the fall semester.

No Response: [3]

- **When you took the program, did you *intend* to develop any new courses or modify any existing courses or units? [CIRCLE ONE ANSWER.]**

Yes: [20]

- I planned to use w teacher training at school. Because funding to continue is an "if" I did not spend any time developing.

No Please explain.

- I thought it would be too time consuming & difficult. But it wasn't and so I did develop & revise unit plans.
- I wanted a way to communicate with my students' families and none of this had anything to do with what I presented in class.
- My initial involvement was 3 summers ago – a one day training session. Initially I hadn't planned to but as a result of training impact I attended more training and then made revisions.
- We were pretty much thrown into staff development. No advance information – No advance preparation since I did not know what to expect. Very informal handling at our school of staff development.
- Not because of AC 1 day training session. It was not presented for this.
- I took it because the assistant principal said "take it, it's good." I didn't know what I was getting into.
- I went in without any plan to implement. I saw what it was about and liked it and implemented it.
- We were just asked to do this at our school site. We were asked to bring our lesson plans to the workshop. We had option of when we wanted to attend – then go from there on whether to implement or not was my understanding.
- Because I didn't think it would lead to that. I didn't really know what AC was and that I would change curriculum – I was encouraged to attend by my administration & it was a highly recommended training as a help in lesson plan preparation.

No Response: [7]

DEMOGRAPHIC INFORMATION:

- **Which of the following best describes the school where you were employed when you took the course?**

Other (Please specify.)

- Magnet school & we have several academies and an NAI program collaborate w UNC.

- **What is your date of birth? Month–Day–Year**
- 8-27-1952
- 10-10-71
- 10–17–1953
- 8-7-1956
- 7-7-1952
- 12-8-1955
- 6-20-1953
- 12-25-1976
- 10-20-1967
- 6-13-1944
- 1-21-1958
- 1951
- 12-30-1951
- 10-27-1959
- 8-8-1958
- 1-3-1966
- 6-7-1974
- 12-31-1951
- 12-14-1950
- 6-29-1976
- 12-28-1948
- 9-22-1967
- 2-11-1957
- 1-30-1952
- 12-2-1945
- 11-07-1970

- 7-20-1951
- 10-14-1963
- 10-24-1969
- 11-1-1977
- 6-20-1960
- 9-4-1950
- 11-15-1971

No Response: [1]

- **INTV: Those are all of my questions. Thank you very much for your help in completing this interview. Would you care to add any other comments about your experience(s) with the project or the impact of the program on your teaching or on your students' learning?**

Positive:

- It's changed my life for the better. I now know 500 more projects I want to do.
- If they could just make the file managing better. The workshop was fine – that one major point for one makes it unusable. It seems to me it should be easy to fix.

  I did email Marshall Ransom a long time ago about the problem. I never heard back. I had not followed up – did anyone follow-up? I have been a programmer for 19 years. I use the internet in class on a regular basis. My goal in taking this course was to prompt others to use AC.
- When you have taught 18 years it's very hard for veteran teachers to let go of old ways. But the time and energy spent and the training saves countless hours of work. So that this is a really great investment of time. Now all you have to do is press a button and the work you've typed into the computer is there! At the same time you feel good; training helps dispel the fear of computers.
- In a Math Dep't Chair – with 20 teachers under me – we now are 80% users.

Neutral:

- I think the system for me will be good once I have the time and more training to implement the set up in the computer.
- I was at MHS when Cathy was developing Active Classroom but I had no input. In fact I was told that Mr. Ransom was in charge of the project. Initially AC was designed for use by physics teachers and students working in pairs and with Internet computer access. The way Cathy operates is fantastic.

  Now, the way AC developed it is formatted for use with other disciplines for use by students which presumes internet access at school and at home and enough computers to go around in the classroom or computer lab.

  I signed up for the training taking the option for (1) day only, the 1st of 2 day session. We had an introduction to this introductory session of 3 hours before the electric failure; an underground transformer blew. The session was ended and I had appointments scheduled the following day I couldn't cancel.

  I plan to enroll for a summer session. I'm now off the server and can't get back on to develop lesson plans. I'm teaching now at a brand new school which

opened its doors Aug. '01 so this year there has not been any time to track anything else & AC next year is not a mandate.

At my school this coming year we will have limited access basis to AC for those teachers who received training and have time to implement. The variables include: how you save documents on PDF files or word files, whether or not you use graphics; whether or not your students complete answers on line and then respond; and whether or not you have the additional time it takes to input information into the computer and prepare a format for the students using paper & pencil who don't have computer/internet access.

If you have the time it's a good product and once up it gets easier to adjust as time goes by. If you have to plan a unit for your classes on paper it adds more time to reconfigure on the computer.

- The interview has only taken 20 minutes. I didn't call back because I've been out sick part of the time the past few weeks and at the end of the year there is so little time and I heard the interview ran 40 min.

Negative: [None]

No Response: [20]

SUGGESTIONS OR COMMENTS:

Positive:

- Active Classroom is a valid program beneficial to everyone in the school community at every level: parents, students, teachers and administrators. Since cost is the issue and everyone benefits from the program, program costs should be borne by county and/or state education funds. Local school funding is not equitable.

  Because of the time commitment required to develop the ideas learned in training sessions after school in service courses should be scheduled during school hours with teachers released to attend intensive one day workshops.
- Continue the domino effect!
- I think Cathy Colwell is a genius for developing Active Classroom. I think it's a very useful and important tool for teachers.
- I don't think this survey captured the umbrella of these training sessions – that of taking the entire curriculum and putting it on-line for 24 hour access.

  This course has enabled the teachers in our schools to meet the needs of a large majority of minority students. We serve disadvantaged students. With this grant we are able to serve all of our students and they are achieving levels of sophistication in science that is not encountered in the ordinary high school. Remedial: In my classroom my students learn DNA sequencing. They learn molecular visualization. You wouldn't expect to see this in the normal high school and I have 40% minority students in class and a significant number ate ESOL students!

  Note to Karen: With respect to the environment my web address is Web HTTP://mainland.CCTT.org/biolab – WEXK – what every citizen should know about our planet – I gave him Concord Consortium ESF web page info – in exchange he gave me [the above: "what every citizen should know about our planet"] for you.

- I took a one day workshop. I don't want to spend time on phone for interview when I've not implemented the program. Next year I'll start putting everything on the site. I've set it up on the computer now for the kids. Next year I'll start putting everything on.
- I would like to see a nice Active Classroom manual for dummies.
- The grant started with exemplary lesson plans developed so that new teachers could get an inquiry based lesson plan – experiments, projects, tests, debates – taught teachers how to work backwards -- & have a testing system in place.

  NDL came next – & was integrated with writing institute.

  Active Classroom is an instrument that has a web based delivery of content – daily agenda – calendar format – web based classes – not necessarily web sites – a document for parents – a summary for parents, for county – large overview of 9 week curriculum plan – Accountability of state of Florida to see lesson plans on demand – Mrs. Graham, principal, wants it to be online not to come to office –
- 90% of students have access – Volusia County put out accountability standards – web based – we taught teachers how to write the document on *word* that's web based delivery of curriculum. Parents take workshops – parents first/teachers second – I saw as a parent first how wonderful this communication now teachers come to training for their students.
- Active Classroom is a very helpful tool. You have to play with it until you know how it works. That's it!
- I really liked it. Plugging in standards is tedious. I found it easier to use for daily lessons. I'm experimenting on how to use so it is functional for me – NOT KIDS.
- I will implement in the fall. I'm enthusiastic but this year with Guard duty and finishing my education doctorate I had no time. I also coach baseball.
- It's a very useful tool!
- I'm working on implementation. I need more time to develop & implement AC as I am working on my credentials – 3 or 4 weeks more. I just put 6 computers in my room. I teach US history and will use AC to keep parents informed, for my calendar of work assigned, for make up work assignments. For the moment I will stay away from giving quizzes on the computer.
- The main thing is the convenience of my lesson plans and everything I do is kept as a curriculum history to be adjusted easily. And anyone can use it.

  Print them up if you need to – lesson plans. Or send them to if you need to – lesson plans. Plus students like the computers – yes, you have to supplement with other things other than computers.

  Motivational, on task, involved.

  Hardest task is keeping the calendar up toe date daily.

  It's been a God Send. It's all on record to be adjusted. The plans are connected to the standards. No more file cabinets!!!
- It's a very easy system to develop & to use. It's a nice extra feature for parents.
- I really believe in the program. I'm going to be a trainer now – I'll train teachers this summer – 3 full days.

- My trainer, Cathy Colwell did a wonderful job & helped w any problems – It brought my students & parents closer to me as a teacher w this communication tool. Kids & parents email me daily – It helps my partner & I to stay organized. We will use this next year. We currently have 2 sites. We will combine them: Team Teaching Grades 4-5 gifted program –

  We gained continuing ed points. Should more time be required during initial training session(s), compensation should be given in points or pay to those needing extra training.
- It's a very valuable program in terms of communicating with students & families. Any teacher would benefit and all teachers should be exposed to this program in some format.
- I'll be teaching Active Classroom this summer & fall in the county – county adopted this training. I'm on maternity leave for one year. One on one w Cathy Colwell, I received my training, plus one day at the group sessions offered.
- It's a really good program. Easy to use. I suggest it be adopted by the Department of Education. The parents loved it as they could be kept informed as to the class curriculum schedules and it helped with students who were sick for periods of time. They could keep caught up by getting all the lecture notes posted on Active Classroom.

  I will be doing 3 full days every week of workshops to train teachers around the county on how to incorporate Active Classroom in their own classroom and how to use this to help decrease lesson plan paperwork.

  I'm on maternity leave for one school year. I think when teachers can see that their time pays off 10 fold in the future they will take the time to learn how to incorporate Active Classroom. So I agreed to spend at least 3 days a week with teachers in training for adoption of Active Classroom.
- I think it's a great tool and I will attend more training sessions this summer so I'm ready to implement on the first day of school/fall semester '02.
- My colleague @ NSBHS who are big users of are: [names], science teachers and [name].
- I think the most influential part of the workshop was its teacher, Mrs. Colwell. She is a very dynamic teacher and role model. She is what made this program good for me/work for me.
- I am curious why the Dep't of Ed needs to know about this grant. It's the wave of the future. I feel I'm a step ahead of the game. It makes it so much easier to do lesson plans. Kids see what's assigned & when it's due. I hope the grant is renewed so that all teachers across the country can plug into the Internet as well as the students and parents.

Neutral:

- I think it's something I have to work out. It's a matter of having to upload Word documents so that the students can click on it. I have no time to ask for help at school. Computers are often changed in classroom – will they be compatible with mine at home?
- I am a first year teacher. I already had a web site that has similar features and is not as complicated. It only takes 5 – 10 minutes a daily. When AC training one day session was offered half the year was over and I didn't have time to

implement anything new. I really don't know if I will have time next year. We will have brand new textbooks and it will only be my 2nd year of teaching.

- Although I took a one day training my only use of Active Classroom is to look for other web resources.
- Please work on glitches. In reality, the glitches tend to make the students look harder at the postings and that effect is probably a plus for students.
- I had sufficient training our 1 day only training session but not enough time to implement. We are hoping this summer to figure out how to get this started. We are 4 elementary teachers – 4th and 5th grade classes – and plan to get together, informally, to see how to implement as a modest beginning.
- I was unable to implement but implemented it exposed more students to content online – it increased communication between school and home and it is a new method for delivering content to the students.
- Specific workshops by subject area content that are teacher friendly. Then we would not have a problem. It's a good idea, Active Classroom/Front Page.
- I'm taking the advanced workshop I Active Classroom one day in the summer. I teach Phys Ed and the State Standards for my field were not in the AC data bank. I like the idea of being able to communicate with the parents. However, I had no time to establish this.

  [Another teacher] and I addressed a faculty meeting and shared the information we learned at our one day training session. As a result Steve Waterman came for one day and held a workshop on AC for 15 faculty members at our elementary school.
- It's good but I had a hard time to keep up to date. I need to come up with a way to do this that doesn't take me ½ hour, daily, to modify.
- July 1st starts a new school year – we are on a year round schedule. I started implementation. I could have used more training time at the workshop. The way courses were scheduled we were going on a vacation the next day. I'll work over my break and be ready to go next semester.
- I am a health science high school teacher who took AC training 6/27 – 29 and began implementation only to discover that I needed more time, more training.

Negative:

- When this grant first started at Mainland HS it was not very organized. People in recruiting were not knowledgeable about what recruiters were supposed to do. Much more training should be given to recruiters.

  People who lack computer skills are scared to get involved. These are the biggest disadvantages – otherwise it's very worthwhile.
- My colleagues who expressed interest and/or enthusiasm in AC had no way to experiment or explore Active Classroom because you need a password. My first web site (in my school in Somerset MA) can still be accessed. "my school on line.com" provides easy access and its free and I'm still linked to it.
- Not particularly helpful for most of the people taking the course here when people were not certain whether there was to be any follow-up. To try to incorporate lesson plans online takes a lot of time for a potential dead-end project. One day training with out of area instructor w no one on campus in a technical area, an

area in which time is a requirement, plus the need for further instruction is probable added difficulties and made the decision not to implement easier.

- My only comment would be it could have been handled differently at our school site. It could have been handled better – more preparation time more organization in terms of preparing us for what we were going to experience.
- For me it was a waste of my time at home. Hours & hours typing and trying to implement lessons plans into a machine that would not save the work.

  We have technology equipment problems at my school – computers that don't work – it's so difficult to get maintenance. In our district technology is new to our schools. Lack of personnel and too many problems at this time.

  There were other participants at this workshop who were disappointed to learn that you would not be able to input content on a Mack computer and upset to find out that in order to use this program it would require the purchase of computers at home and at school. 90% of all the computers in LA <u>are macs</u>.
- The training session was only one day. I'm not computer literate; besides that I had too much to do. Even though I know it's accepted at our school district it's on the back burner for me.

  We worked with Steve Waterman. We were 4 teachers from Horizon working together. The FCAT deadlines were around the corner and they took priority. Back burner for AC.
- That whenever teachers sign in to a ½ day or 1 day training don't do this anymore unless there will be a set up for sustained training schedules with technical support given as needed so that teachers can develop their sites with the experts nearby. Otherwise there should be additional incentives given – pay or credits – to cover the appropriate training time necessary to meet the individual needs and computer skill level of teachers who enroll.
- I wasn't able to keep up with A.C. Further, I'm moving to another school district out of state.
- I took a one day training session and did not implement it as I could or should. Time is a very big barrier for me and my student level is very low. I plan to take at least one more day of training with [name] in June and then decide about implementation. One day training sessions with a new concept to internalize requires more time than was allotted. My students are at risk. They don't look at the computer, for the most part, to check assignments, research information, et al.
- For me AC is very time consuming. For instance we do attendance on-line, & in triplicate. If 15 students are absent filling in the student ID # next to the name takes a big part of my day. I'm dep't chair in Spanish I teach levels 2, 3, 4 & AP and I'm the Spanish Club faculty adviser. Plus I do ESOL translations for my school. The last one was 24 pages long.

  My students told me that they can go into Active Classroom under a teacher's name but couldn't find my assignments, they couldn't locate the materials. I called Cathy Colwell in a panic to learn that lesson plans need to be activated every two weeks or they won't come up –

  In my classroom the TV monitor screen is large but the image comes out as 13" – too difficult to read and all the copy doesn't make the screen. Active Classroom is wonderful if you have all the equipment that comes with it and have enough time in training.

No Response: [5]

Comments Recorded in the Third Person by Interviewer

Positive: [None]

Neutral:

- I spoke with [name]. She did not implement because it was too time consuming a system for her. Second reason was that she did not bother this year because lesson plans from the computer were not acceptable – next year she will be ready to go with AC.
- [Name] wanted to use but didn't get it together, for her submitting lesson plans seemed cumbersome.
- This teacher has a 5 month old baby. She had to get off the phone in the middle of the interview and I was not invited to call back to complete what we could do. She teaches 1st grade. She understood and enjoyed the presentation of Active Classroom but it's not applicable for 1st graders, she feels.

Negative: [None]

Notes from Interviewer

- One reason for the no answer rings of all teachers at Deland HS & perhaps other schools is that the school is wired for phones throughout and it's entirely possible that they have yet to be connected! Mr. Kong says either no instrument or no switchboard hook-up.
- Mainland High School's principal told every teacher she would like them to attend a workshop on Active Classroom. She wanted every teacher's course outline connected to the Sunshine State Standards. The goal is to have the entire system/volusia County engaged in the use of Active Classroom.
- 30 teachers 1 day registered into system took time away from training. Group was too large to be beneficial. Small groups of 5 people or less in a one day training would work.

APPENDIX D: National Digital Library Quantitative Findings

read any background or other reading materials or lab materials?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	22	61.1	61.1	61.1
	No	14	38.9	38.9	100.0
	Total	36	100.0	100.0	

complete any surveys to assist your skill level, interests, teaching responsibilities or objectives?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	16	44.4	44.4	44.4
	No	20	55.6	55.6	100.0
	Total	36	100.0	100.0	

identify a unit you wanted to develop or other ways you anticipated incorporating project information at your home school?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	36	100.0	100.0	100.0

prepare a project or problem to work on during the course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	34	94.4	94.4	94.4
	No	2	5.6	5.6	100.0
	Total	36	100.0	100.0	

do any other types of activities?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	35	97.2	100.0	100.0
Missing	System	1	2.8		
Total		36	100.0		

did that include incorporating and synthesizing interdisciplinary content?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	34	94.4	94.4	94.4
	No	2	5.6	5.6	100.0
	Total	36	100.0	100.0	

teaching methods?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	32	88.9	88.9	88.9
	No	4	11.1	11.1	100.0
	Total	36	100.0	100.0	

lab technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	30	83.3	85.7	85.7
	No	5	13.9	14.3	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

new technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	80.6	80.6	80.6
	No	7	19.4	19.4	100.0
	Total	36	100.0	100.0	

reading materials

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	11.1	11.1	11.1
	No	32	88.9	88.9	100.0
	Total	36	100.0	100.0	

lecture notes or other handouts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	22.2	22.9	22.9
	No	27	75.0	77.1	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

problem sets, problem descriptions or lab exercises

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	13.9	14.3	14.3
	No	30	83.3	85.7	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

other activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	5.6	5.9	5.9
	No	32	88.9	94.1	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

reading materials

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completed	28	77.8	77.8	77.8
	Needed more work	7	19.4	19.4	97.2
	3	1	2.8	2.8	100.0
	Total	36	100.0	100.0	

lecture notes or other handouts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completed	29	80.6	80.6	80.6
	Needed more work	6	16.7	16.7	97.2
	3	1	2.8	2.8	100.0
	Total	36	100.0	100.0	

problem sets, project descriptions or lab exercises

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completed	17	47.2	47.2	47.2
	Needed more work	18	50.0	50.0	97.2
	3	1	2.8	2.8	100.0
	Total	36	100.0	100.0	

other activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completed	19	52.8	54.3	54.3
	Needed more work	15	41.7	42.9	97.1
	3	1	2.8	2.9	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

Did you participate in one or more formal follow-up sessions at scheduled times?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	30.6	30.6	30.6
	No	25	69.4	69.4	100.0
	Total	36	100.0	100.0	

Did you participate in one or more informal group get-togethers?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	20	55.6	55.6	55.6
	No	16	44.4	44.4	100.0
	Total	36	100.0	100.0	

Did you participate in any online follow-up?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	10	27.8	27.8	27.8
	No	25	69.4	69.4	97.2
	3	1	2.8	2.8	100.0
	Total	36	100.0	100.0	

Did you review or site-test any materials or products developed as part of the workshop?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	25	69.4	69.4	69.4
	No	11	30.6	30.6	100.0
	Total	36	100.0	100.0	

Did you receive any technical assistance from the project staff?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	52.8	52.8	52.8
	No	17	47.2	47.2	100.0
	Total	36	100.0	100.0	

Did you communicate with the staff and/or other participants by telephone?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	13.9	13.9	13.9
	No	31	86.1	86.1	100.0
	Total	36	100.0	100.0	

Did you communicate with the staff and/or other participants by e-mail?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	50.0	50.0	50.0
	No	18	50.0	50.0	100.0
	Total	36	100.0	100.0	

Did you collaborate online with any other participants or colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	16.7	16.7	16.7
	No	30	83.3	83.3	100.0
	Total	36	100.0	100.0	

Was this communication/collaboration ongoing or sporadic?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Ongoing	4	11.1	21.1	21.1
	Sporadic	15	41.7	78.9	100.0
	Total	19	52.8	100.0	
Missing	System	17	47.2		
Total		36	100.0		

increased content knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Some	13	36.1	36.1	36.1
	A lot	23	63.9	63.9	100.0
	Total	36	100.0	100.0	

new or more in-depth perspectives on teaching and learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	1	2.8	2.8	2.8
	Some	15	41.7	41.7	44.4
	A lot	20	55.6	55.6	100.0
	Total	36	100.0	100.0	

new or improved skills in teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	5	13.9	13.9	13.9
	Some	20	55.6	55.6	69.4
	A lot	11	30.6	30.6	100.0
	Total	36	100.0	100.0	

new or improved experimental lab techniques

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	7	19.4	19.4	19.4
	Some	18	50.0	50.0	69.4
	A lot	11	30.6	30.6	100.0
	Total	36	100.0	100.0	

new or improved technological skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	8	22.2	22.2	22.2
	Some	18	50.0	50.0	72.2
	A lot	10	27.8	27.8	100.0
	Total	36	100.0	100.0	

new or more in-depth knowledge of issues regarding females and minority students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	25	69.4	69.4	69.4
	Some	9	25.0	25.0	94.4
	A lot	2	5.6	5.6	100.0
	Total	36	100.0	100.0	

new information about other resources for use in teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Some	12	33.3	33.3	33.3
	A lot	24	66.7	66.7	100.0
	Total	36	100.0	100.0	

new contacts with colleagues from other institutions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	14	38.9	38.9	38.9
	Some	17	47.2	47.2	86.1
	A lot	5	13.9	13.9	100.0
	Total	36	100.0	100.0	

increased motivation or stimulation for teaching excellence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	16	44.4	44.4	44.4
	3	20	55.6	55.6	100.0
	Total	36	100.0	100.0	

Did you get any benefit out of the program?

		Frequency	Percent
Missing	System	36	100.0

preparation prior to the course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	35	97.2	97.2	97.2
	Moderate	1	2.8	2.8	100.0
	Total	36	100.0	100.0	

content of the sessions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	1	2.8	2.8	2.8
	Moderate	10	27.8	27.8	30.6
	Great	25	69.4	69.4	100.0
	Total	36	100.0	100.0	

study materials used during the course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	3	8.3	8.3	8.3
	Moderate	14	38.9	38.9	47.2
	Great	19	52.8	52.8	100.0
	Total	36	100.0	100.0	

the experience of developing products or materials at the course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	1	2.8	2.8	2.8
	Moderate	13	36.1	36.1	38.9
	Great	22	61.1	61.1	100.0
	Total	36	100.0	100.0	

other hands-on learning activities, such as laboratories or computer work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	2	5.6	5.7	5.7
	Moderate	14	38.9	40.0	45.7
	Great	19	52.8	54.3	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

materials from the course that you used in your school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	2	5.6	5.6	5.6
	Moderate	17	47.2	47.2	52.8
	Great	17	47.2	47.2	100.0
	Total	36	100.0	100.0	

presentations or practice lessons that you gave

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	6	16.7	16.7	16.7
	Moderate	16	44.4	44.4	61.1
	Great	14	38.9	38.9	100.0
	Total	36	100.0	100.0	

interactions with the instructors (both structured and unstructured)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Moderate	10	27.8	28.6	28.6
	Great	24	66.7	68.6	97.1
	4	1	2.8	2.9	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

discussions of how participants would use what was learned in their own courses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	1	2.8	2.8	2.8
	Moderate	14	38.9	38.9	41.7
	Great	21	58.3	58.3	100.0
	Total	36	100.0	100.0	

informal interactions with other participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Moderate	18	50.0	50.0	50.0
	Great	18	50.0	50.0	100.0
	Total	36	100.0	100.0	

follow-up activities (formal or informal)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	15	41.7	41.7	41.7
	Moderate	16	44.4	44.4	86.1
	Great	5	13.9	13.9	100.0
	Total	36	100.0	100.0	

did you develop or redesign a major or a program of studies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	52.8	52.8	52.8
	No	17	47.2	47.2	100.0
	Total	36	100.0	100.0	

did you develop one or more new units?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	24	66.7	66.7	66.7
	No	12	33.3	33.3	100.0
	Total	36	100.0	100.0	

did you revise one or more existing units?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	23	63.9	63.9	63.9
	No	13	36.1	36.1	100.0
	Total	36	100.0	100.0	

did you develop one or more proposals requesting permission or funding to revise or develop materials or units?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	2.8	2.8	2.8
	No	35	97.2	97.2	100.0
	Total	36	100.0	100.0	

All in all, how many units did you develop and/or revise?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	3	8.3	8.6	8.6
	1.0	16	44.4	45.7	54.3
	2.0	6	16.7	17.1	71.4
	3.0	4	11.1	11.4	82.9
	4.0	3	8.3	8.6	91.4
	5.0	1	2.8	2.9	94.3
	9.0	1	2.8	2.9	97.1
	20.0	1	2.8	2.9	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

Did you develop or revise these units in collaboration with one or more colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	52.8	57.6	57.6
	No	13	36.1	39.4	97.0
	3	1	2.8	3.0	100.0
	Total	33	91.7	100.0	
Missing	System	3	8.3		
Total		36	100.0		

How many of the units that you developed-revised were interdisciplinary?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	5.6	10.0	10.0
	1	7	19.4	35.0	45.0
	2	3	8.3	15.0	60.0
	3	3	8.3	15.0	75.0
	4	3	8.3	15.0	90.0
	5	1	2.8	5.0	95.0
	9	1	2.8	5.0	100.0
	Total	20	55.6	100.0	
Missing	System	16	44.4		
Total		36	100.0		

Were the units that you developed or revised interdisciplinary?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	47.2	89.5	89.5
	No	2	5.6	10.5	100.0
	Total	19	52.8	100.0	
Missing	System	17	47.2		
Total		36	100.0		

Did these units receive formal departmental or program approval?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	16.7	18.2	18.2
	Some did and some did not	1	2.8	3.0	21.2
	No or not applicable	26	72.2	78.8	100.0
	Total	33	91.7	100.0	
Missing	System	3	8.3		
Total		36	100.0		

Did you introduce new content that you learned?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	25	69.4	73.5	73.5
	No	8	22.2	23.5	97.1
	3	1	2.8	2.9	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

How important was the change in content to the courses?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of moderate importance	17	47.2	65.4	65.4
	Of major importance	9	25.0	34.6	100.0
	Total	26	72.2	100.0	
Missing	System	10	27.8		
Total		36	100.0		

Did you change the content to focus on key issues or "big ideas"?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	21	58.3	61.8	61.8
	No	13	36.1	38.2	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

How important was new focus to the courses?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of moderate importance	11	30.6	52.4	52.4
	Of major importance	10	27.8	47.6	100.0
	Total	21	58.3	100.0	
Missing	System	15	41.7		
Total		36	100.0		

Did you introduce new experimental or lab techniques?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	23	63.9	67.6	67.6
	No	11	30.6	32.4	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

How important were the new techniques to the courses?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of little or no importance	1	2.8	4.3	4.3
	Of moderate importance	14	38.9	60.9	65.2
	Of major importance	8	22.2	34.8	100.0
	Total	23	63.9	100.0	
Missing	System	13	36.1		
Total		36	100.0		

Did you introduce new equipment, materials or computer software that you learned?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	16	44.4	47.1	47.1
	No	18	50.0	52.9	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

How important was the equipment, materials or software to the courses?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of little or no importance	1	2.8	6.3	6.3
	Of moderate importance	7	19.4	43.8	50.0
	Of major importance	8	22.2	50.0	100.0
	Total	16	44.4	100.0	
Missing	System	20	55.6		
Total		36	100.0		

Did you change teaching methods in any other way?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	38.9	41.2	41.2
	No	20	55.6	58.8	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

How important was the change in teaching methods to the courses?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of moderate importance	9	25.0	64.3	64.3
	Of major importance	5	13.9	35.7	100.0
	Total	14	38.9	100.0	
Missing	System	22	61.1		
Total		36	100.0		

Have you taught one or more of the courses or units you developed or revised as a result of your participation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	28	77.8	82.4	82.4
	No	6	16.7	17.6	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

How many?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	9	25.0	39.1	39.1
	2.0	7	19.4	30.4	69.6
	3.0	2	5.6	8.7	78.3
	4.0	1	2.8	4.3	82.6
	5.0	2	5.6	8.7	91.3
	15.0	1	2.8	4.3	95.7
	45.0	1	2.8	4.3	100.0
	Total	23	63.9	100.0	
Missing	System	13	36.1		
Total		36	100.0		

Have you team taught this material?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	30.6	39.3	39.3
	No	14	38.9	50.0	89.3
	3	3	8.3	10.7	100.0
	Total	28	77.8	100.0	
Missing	System	8	22.2		
Total		36	100.0		

In all, approximately how many students have completed this material?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	6.00	1	2.8	3.6	3.6
	12.00	2	5.6	7.1	10.7
	17.00	1	2.8	3.6	14.3
	19.00	1	2.8	3.6	17.9
	20.00	3	8.3	10.7	28.6
	24.00	2	5.6	7.1	35.7
	27.00	1	2.8	3.6	39.3
	28.00	1	2.8	3.6	42.9
	50.00	1	2.8	3.6	46.4
	60.00	2	5.6	7.1	53.6
	84.00	1	2.8	3.6	57.1
	90.00	2	5.6	7.1	64.3
	100.00	1	2.8	3.6	67.9
	120.00	2	5.6	7.1	75.0
	140.00	1	2.8	3.6	78.6
	150.00	2	5.6	7.1	85.7
	160.00	1	2.8	3.6	89.3
	200.00	1	2.8	3.6	92.9
	300.00	1	2.8	3.6	96.4
	350.00	1	2.8	3.6	100.0
	Total	28	77.8	100.0	
Missing	System	8	22.2		
Total		36	100.0		

Approximately what percentage of these students are female?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12.00	1	2.8	3.7	3.7
	40.00	2	5.6	7.4	11.1
	43.00	1	2.8	3.7	14.8
	48.00	1	2.8	3.7	18.5
	50.00	10	27.8	37.0	55.6
	55.00	3	8.3	11.1	66.7
	60.00	3	8.3	11.1	77.8
	65.00	2	5.6	7.4	85.2
	75.00	1	2.8	3.7	88.9
	80.00	1	2.8	3.7	92.6
	85.00	1	2.8	3.7	96.3
	90.00	1	2.8	3.7	100.0
	Total	27	75.0	100.0	
Missing	System	9	25.0		
Total		36	100.0		

Are these courses or units still being offered?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	16	44.4	61.5	61.5
	No	8	22.2	30.8	92.3
	3	2	5.6	7.7	100.0
	Total	26	72.2	100.0	
Missing	System	10	27.8		
Total		36	100.0		

In-depth knowledge of subject area

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	3	8.3	11.1	11.1
	Somewhat better	14	38.9	51.9	63.0
	Substantially better	5	13.9	18.5	81.5
	No valid comparison possible	5	13.9	18.5	100.0
	Total	27	75.0	100.0	
Missing	System	9	25.0		
Total		36	100.0		

Problem solving skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	4	11.1	14.8	14.8
	Somewhat better	8	22.2	29.6	44.4
	Substantially better	7	19.4	25.9	70.4
	No valid comparison possible	8	22.2	29.6	100.0
	Total	27	75.0	100.0	
Missing	System	9	25.0		
Total		36	100.0		

Communication skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	6	16.7	22.2	22.2
	Somewhat better	12	33.3	44.4	66.7
	Substantially better	4	11.1	14.8	81.5
	No valid comparison possible	5	13.9	18.5	100.0
	Total	27	75.0	100.0	
Missing	System	9	25.0		
Total		36	100.0		

Ability to apply new knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	1	2.8	3.8	3.8
	Somewhat better	10	27.8	38.5	42.3
	Substantially better	9	25.0	34.6	76.9
	No valid comparison possible	6	16.7	23.1	100.0
	Total	26	72.2	100.0	
Missing	System	10	27.8		
Total		36	100.0		

Critical thinking skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	2	5.6	7.7	7.7
	Somewhat better	12	33.3	46.2	53.8
	Substantially better	6	16.7	23.1	76.9
	No valid comparison possible	6	16.7	23.1	100.0
	Total	26	72.2	100.0	
Missing	System	10	27.8		
Total		36	100.0		

Ability to collaborate with others

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	2	5.6	7.7	7.7
	Somewhat better	9	25.0	34.6	42.3
	Substantially better	6	16.7	23.1	65.4
	No valid comparison possible	9	25.0	34.6	100.0
	Total	26	72.2	100.0	
Missing	System	10	27.8		
Total		36	100.0		

Ability to use advanced technology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	3	8.3	11.1	11.1
	Somewhat better	12	33.3	44.4	55.6
	Substantially better	5	13.9	18.5	74.1
	No valid comparison possible	7	19.4	25.9	100.0
	Total	27	75.0	100.0	
Missing	System	9	25.0		
Total		36	100.0		

Understanding of the scientific method

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	1	2.8	3.7	3.7
	Somewhat better	12	33.3	44.4	48.1
	Substantially better	2	5.6	7.4	55.6
	No valid comparison possible	12	33.3	44.4	100.0
	Total	27	75.0	100.0	
Missing	System	9	25.0		
Total		36	100.0		

Have you participated in any further professional development activities or workshops designed to change the content of courses or units or to improve instruction?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	26	72.2	72.2	72.2
	No	10	27.8	27.8	100.0
	Total	36	100.0	100.0	

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	6	16.7	24.0	24.0
	A little	4	11.1	16.0	40.0
	Moderate	11	30.6	44.0	84.0
	Great	3	8.3	12.0	96.0
	5	1	2.8	4.0	100.0
	Total	25	69.4	100.0	
Missing	System	11	30.6		
Total		36	100.0		

Have you begun any new communication or continued existing communication with experts in one or more disciplines?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	38.9	38.9	38.9
	No	22	61.1	61.1	100.0
	Total	36	100.0	100.0	

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	1	2.8	7.1	7.1
	A little	6	16.7	42.9	50.0
	Moderate	4	11.1	28.6	78.6
	Great	3	8.3	21.4	100.0
	Total	14	38.9	100.0	
Missing	System	22	61.1		
Total		36	100.0		

Have you established any new research or teaching collaborations with colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	50.0	50.0	50.0
	No	18	50.0	50.0	100.0
	Total	36	100.0	100.0	

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	3	8.3	15.8	15.8
	A little	6	16.7	31.6	47.4
	Moderate	7	19.4	36.8	84.2
	Great	3	8.3	15.8	100.0
	Total	19	52.8	100.0	
Missing	System	17	47.2		
Total		36	100.0		

Have you attended any professional meetings, seminars or workshops?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	30	83.3	85.7	85.7
	No	5	13.9	14.3	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	15	41.7	50.0	50.0
	A little	7	19.4	23.3	73.3
	Moderate	6	16.7	20.0	93.3
	Great	2	5.6	6.7	100.0
	Total	30	83.3	100.0	
Missing	System	6	16.7		
Total		36	100.0		

Have you delivered one or more papers at a professional meeting?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	11.1	11.1	11.1
	No	32	88.9	88.9	100.0
	Total	36	100.0	100.0	

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	1	2.8	33.3	33.3
	Moderate	2	5.6	66.7	100.0
	Total	3	8.3	100.0	
Missing	System	33	91.7		
Total		36	100.0		

Have you made one or more presentations to local campuses or community organizations?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	38.9	38.9	38.9
	No	22	61.1	61.1	100.0
	Total	36	100.0	100.0	

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	3	8.3	21.4	21.4
	A little	5	13.9	35.7	57.1
	Moderate	4	11.1	28.6	85.7
	Great	2	5.6	14.3	100.0
	Total	14	38.9	100.0	
Missing	System	22	61.1		
Total		36	100.0		

Have you shared any information or skills you learned with colleagues either in your institution or in other institutions?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	31	86.1	96.9	96.9
	No	1	2.8	3.1	100.0
	Total	32	88.9	100.0	
Missing	System	4	11.1		
Total		36	100.0		

Have you shared any information or skills you learned through informal discussions with one or more colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	32	88.9	91.4	91.4
	No	3	8.3	8.6	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

Have you shared any information or skills you learned through presentations to one more colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	22	61.1	62.9	62.9
	No	13	36.1	37.1	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

Have you shared any information or skills you learned through observation of your class or laboratory by one or more colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	25.0	25.7	25.7
	No	26	72.2	74.3	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

Have you shared any information or skills you learned through participation in any department or school committees on curricular change and or reform?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	25.0	27.3	27.3
	No	24	66.7	72.7	100.0
	Total	33	91.7	100.0	
Missing	System	3	8.3		
Total		36	100.0		

Have you shared any information or skills you learned through any other activities?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	25.0	26.5	26.5
	No	25	69.4	73.5	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

As a result of what you shared, have any of your colleagues modified the content of a unit or program of study?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	21	58.3	60.0	60.0
	No	14	38.9	40.0	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

As a result of what you shared, have any of your colleagues developed a new unit or program of study?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	19.4	20.0	20.0
	No	28	77.8	80.0	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

As a result of what you shared, have any of your colleagues attended or joined the project?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	33.3	34.3	34.3
	No	23	63.9	65.7	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

As a result of what you shared, have any of your colleagues made any other changes?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	5.6	5.9	5.9
	No	32	88.9	94.1	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

Did you encounter any barriers to implementing what you learned from your involvement with this course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	16	44.4	44.4	44.4
	No	20	55.6	55.6	100.0
	Total	36	100.0	100.0	

When you took the program, did you INTEND to develop any new materials-units or modify any existing materials or units?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	20	55.6	57.1	57.1
	No	15	41.7	42.9	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

Number of hours in preparation before the course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	32	88.9	94.1	94.1
	4.0	1	2.8	2.9	97.1
	15.0	1	2.8	2.9	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

Number of hours during the course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5.0	1	2.8	2.8	2.8
	6.0	1	2.8	2.8	5.6
	8.0	1	2.8	2.8	8.3
	10.0	4	11.1	11.1	19.4
	12.0	1	2.8	2.8	22.2
	14.0	3	8.3	8.3	30.6
	16.0	5	13.9	13.9	44.4
	20.0	2	5.6	5.6	50.0
	21.0	1	2.8	2.8	52.8
	24.0	1	2.8	2.8	55.6
	30.0	1	2.8	2.8	58.3
	32.0	1	2.8	2.8	61.1
	35.0	5	13.9	13.9	75.0
	40.0	5	13.9	13.9	88.9
	42.0	1	2.8	2.8	91.7
	45.0	1	2.8	2.8	94.4
	56.0	1	2.8	2.8	97.2
	99.0	1	2.8	2.8	100.0
	Total	36	100.0	100.0	

Number of hours after the course developing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	4	11.1	11.4	11.4
	1.0	1	2.8	2.9	14.3
	2.0	2	5.6	5.7	20.0
	3.0	3	8.3	8.6	28.6
	4.0	2	5.6	5.7	34.3
	5.0	4	11.1	11.4	45.7
	7.0	2	5.6	5.7	51.4
	8.0	1	2.8	2.9	54.3
	10.0	9	25.0	25.7	80.0
	12.0	1	2.8	2.9	82.9
	20.0	1	2.8	2.9	85.7
	24.0	1	2.8	2.9	88.6
	40.0	1	2.8	2.9	91.4
	99.0	3	8.3	8.6	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

Number of hours after the course implementing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	1	2.8	3.7	3.7
	1.0	1	2.8	3.7	7.4
	2.0	2	5.6	7.4	14.8
	3.0	3	8.3	11.1	25.9
	4.0	1	2.8	3.7	29.6
	5.0	4	11.1	14.8	44.4
	8.0	1	2.8	3.7	48.1
	9.0	1	2.8	3.7	51.9
	10.0	3	8.3	11.1	63.0
	12.0	1	2.8	3.7	66.7
	15.0	2	5.6	7.4	74.1
	25.0	1	2.8	3.7	77.8
	30.0	1	2.8	3.7	81.5
	99.0	5	13.9	18.5	100.0
	Total	27	75.0	100.0	
Missing	System	9	25.0		
Total		36	100.0		

Number of hours after the course - other?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	2	5.6	11.8	11.8
	1.0	1	2.8	5.9	17.6
	2.0	3	8.3	17.6	35.3
	3.0	1	2.8	5.9	41.2
	5.0	2	5.6	11.8	52.9
	10.0	3	8.3	17.6	70.6
	20.0	4	11.1	23.5	94.1
	50.0	1	2.8	5.9	100.0
	Total	17	47.2	100.0	
Missing	System	19	52.8		
Total		36	100.0		

Approxmate total number of hours

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10.0	1	2.8	2.9	2.9
	14.0	1	2.8	2.9	5.9
	15.0	1	2.8	2.9	8.8
	16.0	1	2.8	2.9	11.8
	19.0	1	2.8	2.9	14.7
	20.0	1	2.8	2.9	17.6
	21.0	1	2.8	2.9	20.6
	23.0	1	2.8	2.9	23.5
	24.0	2	5.6	5.9	29.4
	31.0	1	2.8	2.9	32.4
	34.0	1	2.8	2.9	35.3
	37.0	2	5.6	5.9	41.2
	38.0	2	5.6	5.9	47.1
	40.0	1	2.8	2.9	50.0
	48.0	1	2.8	2.9	52.9
	50.0	2	5.6	5.9	58.8
	54.0	1	2.8	2.9	61.8
	55.0	1	2.8	2.9	64.7
	58.0	1	2.8	2.9	67.6
	60.0	2	5.6	5.9	73.5
	62.0	1	2.8	2.9	76.5
	70.0	1	2.8	2.9	79.4
	71.0	1	2.8	2.9	82.4
	75.0	1	2.8	2.9	85.3
	80.0	1	2.8	2.9	88.2
	99.0	4	11.1	11.8	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

At the time you participated in the project, how many years had you been at the school where you were teaching at that time?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	4	11.1	11.4	11.4
	2.0	3	8.3	8.6	20.0
	3.0	2	5.6	5.7	25.7
	4.0	3	8.3	8.6	34.3
	5.0	3	8.3	8.6	42.9
	6.0	1	2.8	2.9	45.7
	7.0	2	5.6	5.7	51.4
	8.0	3	8.3	8.6	60.0
	9.0	1	2.8	2.9	62.9
	10.0	2	5.6	5.7	68.6
	13.0	1	2.8	2.9	71.4
	14.0	1	2.8	2.9	74.3
	15.0	2	5.6	5.7	80.0
	16.0	1	2.8	2.9	82.9
	17.0	1	2.8	2.9	85.7
	19.0	1	2.8	2.9	88.6
	22.0	1	2.8	2.9	91.4
	23.0	2	5.6	5.7	97.1
	25.0	1	2.8	2.9	100.0
	Total	35	97.2	100.0	
Missing	System	1	2.8		
Total		36	100.0		

Which of the following best describes the school where you were employed when you took the course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Elementary school	9	25.0	25.0	25.0
	Middle school	3	8.3	8.3	33.3
	High school	20	55.6	55.6	88.9
	Other	4	11.1	11.1	100.0
	Total	36	100.0	100.0	

What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	8	22.2	22.2	22.2
	Female	28	77.8	77.8	100.0
	Total	36	100.0	100.0	

What is your birth month?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	January	3	8.3	8.8	8.8
	February	2	5.6	5.9	14.7
	March	1	2.8	2.9	17.6
	April	1	2.8	2.9	20.6
	May	8	22.2	23.5	44.1
	June	1	2.8	2.9	47.1
	July	2	5.6	5.9	52.9
	August	2	5.6	5.9	58.8
	September	2	5.6	5.9	64.7
	October	6	16.7	17.6	82.4
	November	3	8.3	8.8	91.2
	December	3	8.3	8.8	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

What is your birth day?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.0	2	5.6	5.9	5.9
	4.0	1	2.8	2.9	8.8
	6.0	1	2.8	2.9	11.8
	7.0	3	8.3	8.8	20.6
	8.0	2	5.6	5.9	26.5
	9.0	1	2.8	2.9	29.4
	10.0	1	2.8	2.9	32.4
	11.0	1	2.8	2.9	35.3
	12.0	1	2.8	2.9	38.2
	13.0	1	2.8	2.9	41.2
	15.0	2	5.6	5.9	47.1
	17.0	1	2.8	2.9	50.0
	18.0	1	2.8	2.9	52.9
	20.0	1	2.8	2.9	55.9
	23.0	1	2.8	2.9	58.8
	24.0	3	8.3	8.8	67.6
	26.0	1	2.8	2.9	70.6
	27.0	2	5.6	5.9	76.5
	28.0	3	8.3	8.8	85.3
	30.0	3	8.3	8.8	94.1
	31.0	2	5.6	5.9	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

What is your birth year?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	39.0	1	2.8	2.8	2.8
	41.0	2	5.6	5.6	8.3
	46.0	2	5.6	5.6	13.9
	47.0	2	5.6	5.6	19.4
	48.0	3	8.3	8.3	27.8
	49.0	2	5.6	5.6	33.3
	50.0	2	5.6	5.6	38.9
	51.0	1	2.8	2.8	41.7
	52.0	1	2.8	2.8	44.4
	53.0	2	5.6	5.6	50.0
	54.0	1	2.8	2.8	52.8
	55.0	3	8.3	8.3	61.1
	57.0	3	8.3	8.3	69.4
	58.0	1	2.8	2.8	72.2
	60.0	2	5.6	5.6	77.8
	62.0	1	2.8	2.8	80.6
	68.0	1	2.8	2.8	83.3
	69.0	1	2.8	2.8	86.1
	71.0	1	2.8	2.8	88.9
	72.0	2	5.6	5.6	94.4
	75.0	1	2.8	2.8	97.2
	76.0	1	2.8	2.8	100.0
	Total	36	100.0	100.0	

Are you Hispanic or Latino or NOT Hispanic or Latino?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Hispanic or Latino	2	5.6	5.9	5.9
	Not Hispanic or Latino	32	88.9	94.1	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

Please choose one or more categories that best indicate your race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	American Indian or Alaskan Native	2	5.6	5.9	5.9
	Asian	1	2.8	2.9	8.8
	Caucasian	31	86.1	91.2	100.0
	Total	34	94.4	100.0	
Missing	System	2	5.6		
Total		36	100.0		

What was your citizenship when you participated in the project?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	U.S. citizen	36	100.0	100.0	100.0

Do you have an impairment or some other type of disability?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No impairment or disability	36	100.0	100.0	100.0

APPENDIX E: NATIONAL DIGITAL LIBRARY (NDL) PARTICIPANT SURVEY

PARTICIPANT COMMENTS LOG

Karen C. Cohen and Associates
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Weston, MA 02493, U.S.A.

NATIONAL DIGITAL LIBRARY (NDL) PARTICIPANT COMMENTS LOG

INTRODUCTION AND DISCLAIMER

DESCRIPTION AND EVALUATION OF COURSE AND FOLLOW-UP ACTIVITIES

- **During the course did you . . .**

Prepare a project/problem to work on during the course?

- Didn't have time.

Do any other types of activities?

- Learning styles.
- Printed off – brainstorming.
- Developed search strategy model.

- **In preparation for the course, were you asked to use any . . .**

Other activities?

- Searching – working w students.
- Whole series of activities w other teachers covered multi ages, misconceptions, prior knowledge of other disciplines and their potential lessons.

- **By the end of the professional development, to be more effective in your teaching, did you feel you needed more work with . . .**

Other activities?

- More in depth would have been nice.
- Developing lesson plans. I could have used more time to develop interdisciplinary unit.
- Time to do similar exercises – practice!
- More time.
- The resource was so massive we only touched areas briefly. It was a 2 day workshop. No depth only a brush stroke.

IMPACT

WHAT PARTICIPANT LEARNED/COURSE VALUE TO YOU:

- **Did you get any benefit out of the program?**

Yes:

- Yes I got a lot. Because there is such a vast amount of resources that would not be available to us otherwise except through this site. Its available to us – the records that would not be available; the music, the art, original written documents all accessible through this site. It's really overwhelming – I use it every day in my classroom. You couldn't get all this information out of history books.

- Yes – when I teach library skills the emphasis is on library and resources and inquiry and so the primary sources can be used as a back up to the idea. When they are brainstorming to look at the primary sources gives the students a new direction.
- Oh yes I did. Just being introduced to the digital library in itself was an incredible amount of information. It has such a great source of American History and it's digitized and collections are being so rapidly digitized.
- That it certainly increased my knowledge about the NDL and how it could be incorporated in a classroom.
- It gave me an excellent perspective on primary sources. It motivated me to share the information with collegues. It greatly extended my knowledge of the technical aspects of the audio and video capabilities of computers in the classroom.
- Yes. When we learned how to do a bookmark – when people bookmark their pages it can't be lost and we learned how to keep the pages intact. This was totally new to me. I had never visited the Library of Congress. I like the way it was approachable – the links to use to get at specific information sought.
- Yes. The biggest benefit was the realization of the wealth of information available to us from the Library of Congress. In the 60's I spent a great deal of time at the Library of Congress but it wasn't until I took this course did I realize what a vast collection was there.

  This year I teach 6th graders. I used to teach 7th and 8th and thought how wonderful this resource would be for my students. However, the 6th graders focus on ancient civilizations and other areas not particularly covered by the Library of Congress. Because I was exposed to the National Digital Library I think of changing back to 7th and 8th grade classrooms to explore this vast resource with my students.
- Yes. Better understanding of the information available in the digital library that helps me incorporate that information and the website in my lesson plans.
- Yes. It gave me a new source of original information to use especially with my social studies students. I have been able to give the other teachers in the building the original sources of information to use with their classes. An example: the 6th grade teacher was doing a unit on the Japanese internment. We have nothing basically in our little library and I was able to direct her to the site for some first person accounts.
- Yes. Obviously the value of the Library of Congress site offers a wealth of materials and wide variety of materials – video and sound clips, photo, handy, ready to use lessons with materials to work with.
- Yes. I was introduced to new technology. Of especial value the four areas above that I answered as receiving a lot of value: content of sessions, perspective on teaching and learning, increased motivation for teaching excellence and new information on resources.
- Yes. I made copies of materials/the handouts and web pages from the Library of Congress – 15 sets for teachers in my department (History) – and I tried to share with them what I learned. I learned how to navigate the site and to gain resources to implement in my classroom.
- Yes. I am a media specialist. I help teachers to use the internet/print and non-print materials. I find that a lot of teachers do not use primary resources with their students in their research papers. I've shown quite a few teachers the Library of

Congress site to encourage them and their students to seek primary resources in research projects.

- Absolutely – a lot. It made me aware of resources that were available that I had not taken the time to find and it expanded the information base for students.
- The class I took showed us how to use the LOC as a resource I didn't know about and it has documents that I was unaware of that I can use as a resource in my classroom – a 2nd grade classroom.
- I learned more about American Memories and the instructors showed me ways to incorporate the Library of Congress site into my lessons.
- Yes. As a media specialist it was another resource for students and teacher. A tool that I could present to them to make their final research or product better.
- Oh yes. The benefit of using the digital library so it enhanced my government curriculum. Being able to learn how to use the digital library and to see all that it had to offer.
- Yes. I am a curriculum specialist. The benefit for me was I can now offer teachers a method and resources to use with their students. I assist teachers with social studies resources and helping with lesson planning.
- Absolutely. It opened a new avenue of software or resources available across the discipline. Additional tools for a media specialist to use, to offer to students and teachers.
- Oh yes. I thought that the site was very exciting. I learned a lot of new ways to integrate disciplines. And I couldn't wait to share this with my collegues at school and I've been sharing all over the place.
- Yes I did. Basically what I did was to go from not being able to access information off the internet very well to a level where I could integrate sound, primary sources, photographs into computer presentations. I have taught my students to do these things as well.
- I gained a good working knowledge negotiating the Library of Congress site. And it gave me some techniques for me to use with students in the classroom, such as if you have only one computer in the classroom, things that you can do in class through preprinting of visuals, capturing images for projection, for group activities.
- Oh yeah. I found out that whole area existed and how to access it. Great resource – kids get first hand pictures to see what really happened. The KIDS benefited me. I'm a technology coordinator.
- Yes. I finally understood the backwards assessment model that's something we are suppose to be teaching and this was the only full explanation given of this concept. The unit that we designed was peer reviewed and that was a big benefit. They were patient and exacting; as a result our unit was great – the best I've ever designed.
- Oh yes. I think it was great. A good program and interesting. Besides integrating technology it showed you different resources and ways to integrate to suit your classroom by showing you how to walk the walk and telling you how to talk the talk.
- Yes, because I was more aware of primary resources for students to access during research and for teachers to enhance their lessons.

- Yes I did. Just the knowledge of what is available through the digital library. For instance I have used the sheet music, photographs of cars et al to enhance what I'm teaching.
- Yes. The program was most beneficial to me giving me the chance to explore the NDL and to find out what resources were available for use as an educator, on the internet.
- Absolutely. For me just being aware that American memory (the whole Library of Congress) resources are all available o-line.
- I did!! Probably the main benefit is the whole concept of using the technology to access primary resources.
- Yes, in fact I used the lesson plans we helped to create at workshop in my lesson plans this year. Through use I did quite a bit of modification. It was a huge teaching [?]. We set it up as group of 2 students so I had 12 projects going on times 4 -- so I'm changing it to groups of 4 next year.

  Second thing – I underestimated how well the students could get around on the web and locate the kinds of info required to complete project. I was amazed. They found web sites for me that I kept and subsequently incorporated. I had no idea how much is out there.
- Absolutely. First to become knowledgeable on the data base and how it can be manipulated. The opportunity to really collaborate with my building peers and colleagues across the district. It exposed me to the wealth of materials outside the obvious ones. In terms of limited time I have been able with this training to use technology in a different way.
- The benefit was to take back information to staff, to students, and to implement. The purpose of the program is to integrate w curriculum where possible not to work w other colleagues.
- Basically they took us to the site and we did video conferencing with the Library of Congress. It gave me additional resources to be able to show the students how to do reports and gain a lot of information.
- Some. It was a new found resource for me.

No ù Why not? [None]

No Response: [None]

WHAT PARTICIPANT LEARNED/COURSE VALUE TO YOU:

- **I'm going to read a list of possible course features, and I'd like you to tell me how much of a contribution each of the following made to what you got out of the course . . .**

Follow-up activities (formal or informal) . . .

- Teammates told me that doing this in the classroom was too difficult and they would never use it.

IMPACT ON YOUR CURRICULUM:

- **During or as a result of your participation . . .**

Did you revise one or more existing units:

- Last year – it was never used.
- Practice unit at training.

Were the unit or units that you developed/revised interdisciplinary?

- Chemistry and history to create products – lip balm, toys, et al.

- **Please describe in your own words the changes you made to your classes as a result of your participation in the project. [INTV: THIS INCLUDES DESCRIPTION OF NEW CLASSES.]**

Positive:

- What I did was that I now have my children, every day, work out of the L.O.C. in areas of their interests to learn research techniques. The time allotment is one hour – 8 and 9 year olds. I first taught them what was available in each of the different sites in the L.O.C. and they are required to choose one topic of interest within each of the different sites and report on it.
- It raised the interest level in the project. It changed how they arrived at their research ideas. I learned how to use and to focus the projector, how to download the recordings and the comparisons and contrasts you can do with primary resources. It's a real directed approach I give these at risk students. Students are instructed to find a particular primary source. They learned how to site the source and then how to incorporate the findings in their research.
- For the one class it was teaching teachers and for this I used the Learning Page to introduce them to the NDL. I used some of the same lessons and activities from my training to train my teachers.
- I incorporated the NDL web-site in my internet presentations to my students. I utilized some of the audio materials within my Internet presentations with my students and I included 1 of [?] showing the web-sites in audio, visual, and print activities in my research lesson with my students.
- The unit I developed was for the Civil War where we were going to use the actual letters and notes rather using 2nd or 3rd hand references. Most of the changes were in sections of primary source information rather than 2nd and 3rd resource information was built around primary source references.
- We (my colleague and I) are showing teachers how to get their students to use better skills in researching. When we went into the LOC we showed teachers how to do a more in depth research to find it faster and easier.
- I implemented use of the web-site in American Memories and other portions of the collection. And my students access the web-site daily for information and facts – current events background, historical data, art projects.
- Primarily I took material that we had received at the training and revised it so it fit the teachers I'm teaching. My class was a technology class. Most teachers are either not computer literate or novices. I trained them how to access and retrieve information from the Library of Congress resource.
- For teachers: we taught a new unexplored area to the teachers. I added a unit to my classroom. For the student we did a primary source unit. With the teachers we taught the whole Library of Congress course to a degree that mirrored what I had learned at the training session.

- I developed a web page “going to Library of Congress” to be used by teachers in their classrooms. Plus an introduction of the NDL training content at workshops held for media specialists with primary source instructions to be offered to their classroom teachers.
- I revised units of study to incorporate more student involvement in researching information through the web-site. The Great Depression and Civil Rights Movement were the units of study I revised. Revisions were made for more student directed learning.
- It was for an English project that the head of the English Department was doing on American Authors. I basically introduced him to the web site and showed him how it worked, showed him how this site could be implemented by students into their projects. As a result he required, as a component of this American Author Project, his students to find a primary resource.
- I developed a unit which followed the development of musical changes in history. This was from the recorded music on the web-site; music dating back to the 20’s through to the present.
- Basically, most of the teachers did not have experience using the Library of Congress at all. So we basically looked at the Library of Congress to enhance the lessons that were already there. For example: in a history class they produce a WWII scrapbook and the Library of Congress became a resource. Please note more examples an be given if necessary.
- My teachers changed their delivery methods for the students. For some students I showed the website also and they used this as their own research projects.
- It was a staff development module at our high school to introduce teachers to the National Digital Library. How to access it and search strategies.
- I teach government to seniors. I had my senior honor students look at and compare presidential inauguration addresses – a selection of 4 representing different times and different people. I also used it to look up key congressional bills when we did the unit on the Congress.
- I didn’t get a lot of work done on revisions. Basically I brought into my lesson plans photographs and maps to provide an historical and social context to our literature.
- I accessed clips of animated cartoons from the historical archives which provided a background for contemporary animation students.
- My teaching has become more student centered. We have more cooperative learning and that cooperative learning uses more technology.
- The change made was that music, art, and computer usage were woven into the schematic unit.
- It was a large interdisciplinary unit that covered SS, science, art, research skills and technology skills. There were 65 of us who took the training – 1 classroom teacher and 4 specialists. The program was tried out on the classroom of the lead teacher. I worked on the computer lab with the students and they learned how to put together a slide show in Kidpik
- Classes were changed by changing the focus to connect all pieces of the curriculum puzzle for the students. I believe that participation in the project

allowed me to focus more on the we of technology and then that technology was able to link all the subject areas and units so that students gained a global picture of the course rather than parallel units they never connect: World War I to WWII to Korea to Vietnam – the technology allowed students to find the common link. It was great.

- At any opportunity I referred the students to the collection of American Memories data base for use in their research. New: we (the team) were working on decades as the focus. As the project progressed we became more aware of issues in each decade and then changed the emphasis of the strands/key topics.
- For one project, the 1920's, I had the students put together a scrapbook of the culture of the time period. The photographs and information to my knowledge had not been as easily accessed before. One group activity consisted of a painting of a scene from the Salem witch trials put onto a transparency. Students viewed transparencies in their group and then answered the questions posed addressing the painting for purposes of discussion, and presentation in front of the class. It was a new way for me to introduce a unit and get the students more involved.
- The unit that we participated in was on Peyote Indians and from that unit we developed lesson plans in several different disciplines: art, science, English and social studies. Each of the lessons we came up with focussed on a different skill. We looked at the desert eco-system and how the Peyote Indians adapted to life in that ecosystem. I used the resources available from NDL including photographs.
- I changed the focus of their research paper to include information about the history of their vacation. I developed a small unit on integration that dealt with the immigrant experience on the West Coast. Students were asked to describe what it felt like to be an immigrant.
- In both I allowed the students more time to hunt and find original documents, and share findings with others; much more exploratory and stimulating. The best part was watching students find things by accident and springboard this newly acquired information.
- I checked out "I" books (portable computers). This was important resource for students learning through lab and research. They had to find a recipe on line for the product they were creating. On-line was aide for experiment rather than teacher. Student initiatives were increased – additional options. One group made sparklers. They contacted a person in Sweden for instructions. They got a recipe for chemicals of gooey gloppy mess. One chemical was like jello and by not boiling they made a mess and called Sweden to learn how to correct mistake.
- Basically we developed a whole new unit. It changed the way we teach Nevada History and Nevada symbols. For example, quit making. We're integrating more technology use with teaching of social studies. We: art teacher, librarian, music teacher and me, the computer person.
- First of all I tend to do more integration of major ideas and I tend to use more visualization.

Neutral:

- I only expanded on what I already used – ex. photos of covered wagons – I took three photos of the LOC. For 3 weeks the covered wagon photo display was on classroom walls.
- All that we did was to incorporate as supplemental material to enhance the curriculum – I assist teachers as a librarian.
- As a team we did not use this unit revised the year of the training and I am not a classroom teacher. As a school librarian I was there as team facilitator, head collaborator and now am no longer at this high school.

Negative: [None]

No Response or N/A: [2]

- **Have you taught one or more of the courses or units you developed/revised as a result of your participation?**

Yes.

How many?

- All (5).
- Two.
- 2 sessions.
- 1.
- One.
- 4 different times – opportunity for all teachers to attend.
- English, history and art classes and teachers – 15.
- Both – (1) teachers (1) students

Have your team taught this material?

Yes.

- 4 teachers took the LOC and presented this to staff.
- Each trainer had a section to teach but we were not in the classroom together.
- Sometimes I talk first to the teacher then we team teach in the media center.
- With the teachers.

No.

- Not with my students.
- Not yet – the in service summer training hopefully will develop this approach.
- With the students.

SUSTAINED EFFECTS:

- **If you have taught this course/these units more than once since participating in the project, how did what you did as a result of your participation change over time? [INTV PROMPT: FOR EXAMPLE, DID YOU INCREASE OR DECREASE WHAT YOU DID? DID IT BECOME MORE KEY?]**

Positive:

- I've only taught it once. As I teach it next year and become more familiar I'm sure that there will be revisions to be made.
- It's been a one time presentation, however we (my computer class and my reading class) visit the LOC site sporadically.
- We are on a semester system so these units have been repeated. I've learned that incorporation works and plan to expand on the premise in other disciplines beginning with social studies projects. The Language Arts department chairman did not attend the NDL workshop but he is very pleased with the results of our collaboration.
- Mainly I have improved it, tweaked here and there. The learning is more student-centered and I continue to work in this area to make it more hands-on, more student directed.
- I think what I did was to give my 1920's project more of a social emphasis rather than a political emphasis.

Neutral:

- I need to fine tune the implementation but I'm not very proficient as yet in the downloading of sound. How to save a unit on jazz for instance – the downloading to a folder for quick access I'm not good at at the moment.
- No I did not make any modifications over time. Not necessary.
- The only change was in the pacing of the material. Or changes to content or focus.
- N/A – I'm revising down to 4 students per project.
- Nothing changed. No time. But I have ideas for revising the entire curriculum.

Negative:

- No change over time.

No Response or N/A: [25]

BARRIERS TO SUSTAINED EFFECTS:

- **Is the course/Are these courses still being offered?**

Yes: [17]

- In progress and as a continuum in my classrooms. Hopefully I can make them better next year.
- To my students.
- On the web-site.

- These will be things that we continue to work on. I've used the Library of Congress site. This is my first year as a media specialist.
- With minor modifications. There will be more students per project plus control of cash for chemical purchases not in budget.

No ù Why not?

- We will probably offer it again – maybe the next school year.
- Having attended the training April 24-25 '02 there was time to implement only one unit of the three developed. School ends June 6. I'll introduce the 2 units not implemented as yet and continue with the one we are working with currently.
- No for teachers. In my school district we are not allowed to repeat in service courses given to the teachers!! If it's not taken when offered it's a missed opportunity. If I modify the LOC site presentation I will be able to present the information again. We have a grading program system in our district which prohibits the repeat of in-service training sessions.
- It was an introductory lesson. If I teach history next year I will reintroduce this material instead of government, which I am teaching this year.
- It was a one time staff development for this school year. No plans to do it again but it could be offered upon request.
- I did not have enough time to teach them this last quarter but I will do so next fall.
- It's part of my program and I am in a different school. I was in computer art and graphic design at the high school. Now I'm in a fine art program at a middle school.
- Not this year but anticipated as a course of study next fall.
- It was just targeted at one class where the entire schematic unit was just taught to that one class.
- This year is finished – next year in the fall semester.

No Response or N/A: [10]

IMPACT ON STUDENTS:

- **Please describe, in your own words, the impact on your students of the changes you made as a result of your participation in the project.**

Positive:

- They have gathered information that they were not familiar with previously. And they were able to view documents they would not have seen anywhere else. There are five discussion groups. They edit each other's report and then present them. The process is to edit, to discuss, and to report and each student goes through this process. It creates learning within the group and as individuals and their level of awareness is high as is their interest level.
- They know the difference between the primary and secondary source. They can't get to primary sources – so this is a primary resource of itself as well as the only resource of information these students have access to as a primary source. They are restricted to this campus.

- The changes I made. I made the information clearer to and easier to understand. And I think the changes made the material more interesting for my students. They became better listeners and the assignments I gave them were better done.
- They enjoyed reading actual accounts and were often surprised about what actually happened as opposed to the record in the history book. They were able to compare and to make decisions about events rather than being told what they should know about it.
- Students eagerly ask for permission to utilize the web-site not only for classroom activities but for questions they formulate on their own. They are problem solving and synthesizing and teaching me about other information available that I had not as yet accessed.
- It made them [the teachers] aware of the resource available to them and the ways they can use it in their teaching.
- I think students had a greater awareness of that time period in real people's lives from researching information they found on web-site. They looked at pictures and read entries written by real people rather than my expounding in front of the class.
- The impact was little because these students were seniors when they finally discovered what a primary source is. There was not time then to go into depth with the premise. Next year the implementation of research of primary sources for use by students in their research projects will be introduced at a lower grade level so that students have time to build on finding, and incorporating and interpreting primary resources.
- They were introduced to a new web-site and its capabilities. I demonstrated my unit and introduced the web-site to my students to show them what they could do on their own and then we moved on because this was a government class.
- I have no measurement of the staff development module I presented 4 times. For students: it's another place I can send a student to. It's another avenue of getting information I can provide for my students. I treat it as a tremendously rich base for my patrons at the media center. It's a little complicated to search so you have to hold hands for the search.
- It gave the students the opportunity to expand on their knowledge of government.
- Because my illusionary base was expanded I was able to expand theirs (the students i.e.).
- I think my students are more interested in history and they are more willing to work independently.
- The students were able to participate in an interdisciplinary unit that they would not otherwise have had.
- I've only done this once with one class and because of exposure to this wonderful resource they are somewhat better than before doing this unit. We are an elementary school.
- My students received knowledge of the subject area that had never been introduced to them before. The project allowed them to identify their multiple intelligence and enhance that multiple intelligence through cooperative learning.

- I think the students became more alive – the time period becomes more real. I think my students get surprised by what they find. I'm not certain how much self-directed research my students do, however.
- It just gave me another resource to use in teaching various concepts. It gave my students more resources to use, also.
- Some students benefited from the information available on-line. Seeing things up close and personal was good. Other students are not computer comfortable. With some kids it's difficult to make a difference, to motivate them.
- I think that they were able to get more out of the content and sustain the understanding of information.
- I believe that the students became much more independent thinkers. Prior laboratories had an ingredients list together w step by step instructions. Also they were told what the objectives for learning were. This could be checked out (the results) through friends taking some course, in prior years. I had students tell me that this was the best laboratory experience ever. A lot of those remarks were made by girls who don't like science. Excitement – they could make lotion by themselves – learn by doing. Tremendous difference between products males chose to make vs. females.
- The ability to download videos and use in power point.
- I think that more enthusiasm was given to the unit I developed by my students.

Neutral:

- They had 3 extra pictures added to the other pictures I had found in books.
- My students think it's boring, generally. You would think that the Library of Congress would generate interest. Some kids appreciated the opportunity to have contact with a great collection of American life – history.

Negative: [None]

No Response or N/A: [11]

IMPACT ON NON-CLASSROOM ACTIVITIES:

- **Please tell me in your own words what you feel the major impacts were.**

Positive:

- The impact for me was the need to research this site. The real influence on me was my ability to get away from textbooks by doing research and the need for the search that leads to information not readily available to you. I have gained a greater appreciation for the need to research and to uncover significant facts to further my desire for excellence in teaching.
- You get a different angle on ideas for implementation. For instance, when I took Power Point training to become a trainer to provide in-service training on P.P. this summer, it enabled me to develop a hyper link to American Memories so I can demonstrate at the powerpoint in service workshops the scope of sources of this NDL site that my teachers can use in their classes; a double outcome of my summer in service training workshops.

- When in discussions with other teachers I always suggest that they check out NDL. It's a great resource, especially the digital collections when they are developing projects.
- I think just the increased awareness and the knowledge about the collections and how accessible they are using digital and online methods.
- Just the knowledge of the NDL site and the resources it provides to collegues in teaching primary sources and primary sources for students in doing research.
- Just access to materials – we're a very small very rural school.
- I'm now aware of the resource and that I can find photos to put in my curriculum – I teach 7 year olds.
- The impact was just in seeing the LOC. I have never been there in person (Library of Congress).
- I've been working on finding information for a grant to purchase additional computers for my classroom and school to allow students and teachers easier access to the information available from the National Digital Library. The promise of the proposal basically is for teachers to better meet the Standards on a state and national level. The information is compiled but my grade level assignment is pending. Informal sharing of information available in the library or just making the website available to teachers resulted in increased feedback and discussion for me.
- It made me more aware of information that is available in the classroom.
- Just realizing the wealth of materials gathered by LOC and that its made easily available.
- A rich source of information for media specialists and teachers.
- To become aware of the web-site and all of the components and its application at the media center. I can work with students and teachers at the Center one-on-one. I was one of three people sent by C_2T_2 to Las Vegas for additional NDL training in order to train others at NDL workshops selected from the Nov 6 and 7 NDL participants.
- It gave me more resources to work with teachers and students. Being a first year media specialist I needed this type of information. I was formerly a chemistry teacher.
- Major impact helping people gain awareness of this resource. Hopefully in the future we can offer more training specifically NDL training.
- Gave teachers another avenue to teach their standards and it's a very good learning tool for students.
- As stated before – NDL is a very valuable tool. Free to all to use.
- One of the major impacts for me was not to be fearful of using the NDL. I used it to develop a powerpoint program after the training for my classroom.
- In my position as a computer lab coordinator I offered the NDL as a resource to all the teachers I worked with and wrote about in my newsletter – technobabble.
- The acquisition of more resources and knowledge.

- I'm able to integrate technology at a much higher level and I'm teaching my colleagues as well as my students in what I learned at the NDL workshop.
- Method of assessment and interdisciplinary teaching. As a result of this training I've gotten sharper at making student assessments. Therefore I am better able to understand how they are doing.
- Just knowledge about a wonderful resource out there.
- The NDL training has expanded my knowledge through the introduction of resources available to me as a teacher that are in and outside of the community (global knowledge).
- For me just knowing that all the information is available – it's exciting and reliable and trustworthy, and organized; all through the Internet.
- We were working as an interdisciplinary team on the NDL project so I have been in constant communication with my colleagues/other members of the team and I would not have been in constant communication otherwise.
- I've just finished the implementation. Since then I've not been engaged in non-classroom activities. However, what I've learned I've passed along to my 12 year old daughter and it's helping her learn.
- Major impacts were looking at lesson plan design 180° opposite what I used to look at. Usually when you set up creation of unit you have things in your head and work towards connections for a whole. Here you take the whole and break it apart. Here you throw away at times, some of your favorite activities but it's better for the students. Here going backwards, you can examine what fits best for end result and for students' learning overall.
- It has allowed me to share this resource with other professionals in my field.
- Techniques of presentations – available resources.

Neutral:

- I made a very short presentation to social studies teachers in 2 different high schools. I offered to work individually or as a department project to train those teachers in the use of NDL. To date there have been no takers. I duplicated materials from my workshop to use as hand-out information. The last NDL training sessions this fall I could not get any teachers to sign up – 5 days meant too many days out of the classroom.
- It's one more resource for students or teachers.
- Just another place to get information for research. I will use this tool more.
- Major impacts – training could have been completed in 3 sessions as it is supplemental material.

Negative:

- Nothing on non-classroom activities.

No Response or N/A: [1]

IMPACT ON BROADER COMMUNITY:

- **Have you shared any information or skills you learned with colleagues either in your institution or in other institutions . . .**

Through presentations to one or more colleagues?

- Of the photos downloaded.

Through any other activities? (Please specify.)

- Forthcoming presentation on DL to school boards.
- Presented to adult community groups.
- Quarterly departmental meetings.
- My presentations in my subject area for the district.
- General department meetings.
- My family.

- **To the best of your knowledge, as a result of what you shared . . .**

Have any of your colleagues attended or joined the project?

- One signed up for summer workshop.
- Not offered again.

Have any of your colleagues made any other changes? (Please specify.)

- We are building within our internet. We have a folder in which teachers put units they developed for use by other staff members.
- The colleagues who took training last month are not able to implement until fall.
- I think they have used the web-site in their own research and have begun to think about changes. But actually making changes at this point, I don't know but do not think so.
- Some colleagues have used my unit.

BARRIERS TO IMPLEMENTATION:

- **Did you encounter any barriers to implementing what you learned from your involvement with this course?**

No: [20]

Yes ù Please tell me about these barriers.

- My lack of technical expertise.
- The only barrier would be that some teachers might not feel confident enough to incorporate NDL into their content area. NDL is not that easy to navigate. It's pretty involved. You need to be computer savvy and familiar with NDL before it can be an effective resource.

- Only the fact that the language of the material was not written for 5th grade level reading. They wrote and spoke differently. They tried to decipher the writing/penmanship – plus the flowery language – I did a lot of translating.
- Time restraints. Not enough hours – it's the end of this school year.
- Lack of having hardware and computer access for multiple students.
- I am not a classroom teacher anymore. My job was changed to that of computer lab specialist. I am at a year round school. There is a frantic pace here – block scheduling – two tracks on one track off. So finding the time to teach the site and then to integrate the information or skills of research into the lesson plan requires time that is not available to colleagues who could be interested.
- Only lack of time.
- Absolutely. Well I still have a one computer classroom. And there was no computer lab until the last week in the school year. We have the issues of parental consent to use the internet, lack of funding for any new software or hardware. There is some resistance by administrators to buy in to using technology at this level. Our servers keep crashing. Too many viruses.
- Lack of available computers in a lab situation for students, teachers reluctant to use technology, lack of time to plan implementation, no assessment of technical skill levels prior to or during training.
- What happened at our school – our principal was transferred without warning so staff development came to a halt. Long term plans are on hold until we know what is going to happen.
- The amount of time it takes to put it together. It was very, very time consuming. The more we developed the project the more info we became aware of and wanted to include so that the project mushroomed beyond our time constraints. We were unable to implement due to the fact of one team member's family illness combined with other time consuming factor interfered.
- The restrictions on curriculum. Just how little time is allowed for covering material. We are always under time constraint. In addition we have just one computer lab with 30 computers. My classes have 56+ students per class for a six week period until faculty could be hired. Now we are 30+ per class size. This one lab center is shared with 16 other teachers.
- We don't have the printing technology. I can't have my students do what I learned because we don't have Photoshop photoediting. They don't have access to printers and the school doesn't give us print cartridges etc.
- The fact that I don't have internet access in my classroom. So I have to get my kids into the library setting – a library under construction, which only can service half the student body in my classes at a time. They take turns and work in groups. It's okay; not the best – better than nothing.
- The only barrier was a monetary barrier. I had no idea of how much the chemicals and other ingredients, per project, cost. When you have 12 projects, per class, times 4 classes – 48 projects – it adds up and over budget by $150 to $250 – out of pocket and kids pooled money and we did fundraiser and school picked up some. My whole budget for year is only $1,000.

- Major barriers. Convincing others it's a great idea. It's very beneficial, but it takes a great deal of time to implement because it changes the way of teaching. You show students how to do more of their research on the web. My course training was in much too late to change the curriculum for this semester.
- Social studies at my school is the redheaded step child. It is seen as academic but not relevant. We don't test in the social studies area on the proficiency tests. There are computers available but lack of software puts time constraints on the use of the computer lab. It cuts into the time necessary to cover the syllabus.

No Response or N/A: [None]

- **When you took the program, did you *intend* to develop any new courses or modify any existing courses or units? [CIRCLE ONE ANSWER.]**

Yes: [21]

- I wanted to investigate the resource and see what was appropriate to use.
- "Now is your chance to develop something you wanted to do but never had the time" was the carrot that brought me aboard this project.

No ù Please explain.

- I went just for curiosity to see what was available. I had some expectations and went away excited. And then I took subsequent training offered by NDL within a tri county area at a technical training center.
- No, prior to the course. After the course, yes. I plan to work on implementation this summer. One example is the discovery of a Nevada ranch valley in the collection who happen to live 40 minutes from my school. We hope to invite them to our school to provide further insight into ranching in the West. I envision this for our entire school and piggyback off this opportunity: a living history!
- Because I wasn't sure what I was going to find.
- Because I'm not in classroom. I just intended to share info with media specialists.
- I didn't know what the workshop was even about. I volunteered to go and went in without any expectations.
- No. I knew nothing about the course until I attended the 1-day training session.
- My purpose was to see whether this was a good resource for our teachers and whether there were teaching methods to be gained.
- Because of my role – I'm to teach teachers not students directly.
- I intended to learn about the site and to pass this along to my colleagues as their computer lab coordinator. When I went for training I knew that I would be without a classroom but not forever.
- Basically I was told to show up to the in service by my department chair. She had knowledge but didn't communicate it to me – a newcomer in the department.
- I didn't know it was part of it until I got there.
- When we went we had no idea why we were there. We were told to go and did so. The we is 3 faculty members; 2 teachers and a librarian (social studies and English). The English teacher taught seniors, the social studies teachers taught juniors so their curriculum didn't match.

- I was selected to attend these workshops. But I knew nothing about the course being offered. And I did not know that I was going to be developing a unit as part of the course.
- I didn't have any expectations. When I was first given the opportunity to attend I knew nothing about it. I was chosen to take training by my administrator.
- When I took the program I thought it was to learn about and learn to implement the National Digital Library and to integrate it into the curriculum. However, it turned into writing lesson plans – and that was not what I expected nor what my teachers wanted. We spent a minimum of 2 days writing lesson plans.

No Response: [None]

DEMOGRAPHIC INFORMATION:

- **Which of the following best describes the school where you were employed when you took the course?**

Other (Please specify.)

- Vocational high school.
- Technology magnet school.
- High school technology magnet school.
- 5th and 6th grades.
- Curriculum center, school district office.
- Supplementary institutional residential school for boys ages 12 – 18 who are sent by judges for a 6 – 8 month stay. We have a 10% recividison rate.

- **What is your date of birth? Month–Day–Year**
- 1-04-1950
- 6-24-1953
- 5-28-1947
- 5-27-1960
- 5-28-1951
- 10-15-1955
- 5-31-1958
- 3-7-1972
- 11-15-1955
- 10-17-39
- 10-18-1953
- 8-31-1950
- 10-7-1957
- 12-9-1949

- 11-28-1949
- 4-11-1962
- 5-3-1969
- 1947
- 11-7-1948
- 2-24-1941
- 12-23-1972
- 7-12-1948
- 1-03-1957
- 10-30-1958
- 5-27-1952
- 5-13-1957
- 9-8-1955
- 12-24-1941
- 7-6-1976
- 1946
- 2-8-1946
- 10-10-1975
- 8-30-1954
- 9-20-1960
- 1-26-1968
- 5-30-1971

No Response: [None]

- **INTV: Those are all of my questions. Thank you very much for your help in completing this interview. Would you care to add any other comments about your experience(s) with the project or the impact of the program on your teaching or on your students' learning?**

Positive:

- This workshop was only offered once to a limited number of teachers for a 2 day workshop. I believe it is to [be] offered again this summer.

Neutral: [None]

Negative: [None]

No Response: [34]

SUGGESTIONS OR COMMENTS:

- For me I think 30 hours of training time is optimum amount of time necessary to manipulate and to move freely through the Library of Congress site. We were allotted only a certain amount of time for training by the consortium I belong to and that was not enough time, I feel.

  But the instructors offered to come to our district to work with staff or to work with me online teaching me how best to present to staff how best to use the LOC as a resource and a teaching tool in all disciplines.

  For instance there are technical aspects too to using this as a resource. I hold a one hour lab each week with my students to train them on how to capture information from the site and put it into power point information.

  The wonderful thing is that my NDL instructor actually worked with the librarian at the Library of Congress to add components to this digitized library source of value to classroom teachers.
- The instructors were wonderful and their presentation dealt with a higher order of thinking skills. We did activities that used this higher order. Unfortunately, my computer skills are moderately literate. I'm older so it takes longer to become technically proficient, but I'm working on it.
- Just keep digitizing those collections. I love them.
- In one of the collections shown during training – possibly Life in the West – some of the participants recognized people in the photographs as lifelong residents of Nevada that they knew. Wow – here is a remote rural Nevada family being featured in this rare extensive world wide collection – the Library of Congress.

  It's in one of the major feature collections. Right on the front page – you didn't have to stumble across the information. We are very remote and rural – 1 room school houses in the school district. So this was really Big.
- I have the summer to play with this. During the school year it's hectic. I plan to incorporate information from this site in my lesson plans for next year and continue this incorporation over time.
- It would be fun to do a week long summer workshop in order to complete development of more in depth units of materials from the Library of Congress. As an example we spent a lot of time on American Memory Section. I'd like to learn about other sections of this web-site.
- Along with my students I'm very excited about the opportunities for information available with NDL. It really has opened my eyes as to the importance of our culture, our history, our customs and the development of those over the years. It shows the pride people should have in their country and the accomplishments we've achieved. It's available to students and helps them understand that no matter where they live they can have an impact on their community and history. I have a strong streak of patriotism and my students are so excited that at recess time they ask if they can go log on to LOC.com. They can't wait then to test me with their findings.
- I think until teachers as a whole become more comfortable with technology – teachers will step out and try new things but there will be resistance. The site is fabulous.

  We can't force anything but the teachers are missing the boat. *I think this survey in places was redundant.

- I attended an April workshop. It's too soon to have implemented the program. But I'm excited to introduce this LOC web-site to the students – 169 juvenile delinquents. The school has digital equipment. I can make poster enlargements. I am going to coordinate a program with Ida McBride, librarian and Steve Albrecht, author and auto shop instructor who also took training in NDL.
- Excellent workshop. Especially helpful in social studies area. I think we have to be very careful as educators to select appropriate materials, from this rich resource, of information, and set a criteria for students to access information.

  Excellent resource of information – supplemental to curriculum. This is more applicable for older students as an access resource than for the lower grades.
- I think if there were hard copies of materials made available to purchase or to find in the library, with respect to what was introduced on the website – an outline of how-to-find it/where it is, or teaching strategies, that are used on the web site, to entice teachers to go there and look and research – in hard copy it might entice teachers unfamiliar with the website to find time to search if there were an instruction manual.
- Frankly I was satisfied with the sessions. It was very effective. The training and internet access must both be available to teachers if we are to develop an impact with NDL training. There will be another 2 day training workshop for teachers in June in Florida.
- I wish this training was made available to more teachers. If it were offered county wide, as staff development, they would get a lot more utilization out of it. Participation seemed to be by invitation only. My invitation came through the district office in October for the Nov. 6 and 7 workshops.

  The presenters did an excellent job. It's a phenomenal resource. NDL. It's not subject driven. You have to develop savvy to search to develop what you want.
- I would like to be invited to participate in a continuation of that workshop. However, I don't believe its been offered nor created. Dr. Cohen – Miss Carn sends greetings. "She probably won't remember me but it was a pleasure to meet her."
- Another issue. We are a technology based magnet school where the new technology goes only to the magnet classrooms – computer labs. I'm the government and history teacher without access to these computer labs and software. Our curricular labs are 3 years old not bad but no access to the latest technologies is available to academic classrooms.

  I think that this training with the Library of Congress needs to be offered at least three times a year so that everyone can be introduced to this material. The media specialist can be a great asset to the teaching community. However this unfortunately is dependent upon how much they choose to share with their collegues.
- For me as a librarian I felt that this was a very valuable course for me to guide students and teachers in areas or sources that they might not have found otherwise. I would really have enjoyed it with a different team with more proficient technology skills.
- Because I have a music, art and theatre background as the librarian on this team I was more of a classroom teacher than the other 2 members of my team. Therefore we were able to develop a truly interdisciplinary unit. Although at my school we are the only arts magnet school – at the elementary level in the district.

- The opportunity to go and have the hands on training to learn how to utilize the site was wonderful. And then in my particular job to go out to the teachers and share this knowledge – to let them know it was there. Great!
- We were the very first class to do this workshop in our county. I've heard from others that the structure and number of training sessions altered somewhat; the presenters learned in the doing. Our group added sessions and the presenters enlarged their vision for outcomes. I'm really glad I went and that I was on the forefront. We have enough computers – but our "proxima" equipment is very limiting to the growth of the use of technology by teachers.
- I enjoyed the course. It's hard to go from a school where you are very technically advanced to a school where technology is not up to date – at least not in the academic classrooms in this school.
- Education is not a priority in reality. It's only a priority in politics and campaigning. As long as the kids aren't home giving their parents grief too many parents don't care what environment their kids are in.

  I don't have a classroom. I'm up in a laboratory/storage area of the library. It has cavernous echos. During school hours, since the beginning of the school year, there has been construction ongoing. Teachers are managing classrooms in book storage areas w enough space for 12 squeezed in but substituting as a classroom for 28 students! Obviously not conducive to either teaching or learning – Our portable classrooms went to the prison's court rejuvenation kids. Nevada rank is 48th in education funding.
- It made much more sense to do in summer rather than during the school year. To not have to worry about getting substitutes for classroom during the 5 day training or whether classes are going well was a plus for me.
- I found the whole thing worthwhile. It's going to impact how I teach. 5 days out of the classroom is just too much regardless of how great the program is. Make it one day less.
- It was really beneficial. I've used the ideas and I've used the presentation techniques in both my profession and in terms of other organizations I belong to. I'm an active member of NEA. I sit in on boards etc.

  In terms of lack of a computer lab for social studies it is due probably to lack of money, lack of space, lack of status for my discipline and the lack of political will to allocate resources in a manner that would really benefit kids most: systemic hinderances.

Neutral:

- I took training – a 10 hour session the end of April. We were told that training sessions usually were of longer duration. We received information packets with email addresses to call for additional help.

  I am at an elementary school. I teach 3rd grade curriculum and technology to my students. I am also a technology trainer for the district. We are winding down now with only 2-1/2 weeks of school left. I will train colleagues after school ends so that they can review, over the summer, how to access the Library of Congress. Integration of LOC information at the elementary level takes more thinking on how best to incorporate than for higher grade levels.
- I took the 10 hr. training session the end of April in Elko for the express purpose of being able to find a complete picture of automobile development through its history to the present to augment a video that I have on automobiles. To date I

have written a manual on car parts for my students. I hope to put together an additional book on the history of the automobile using information and photos from the Library of Congress. To date the information on the LOC is not as thorough as I am seeking. Their photos are sufficient.

I have a computer in my room now and I'm expecting an additional computer and the institution has a computer lab open to my students at prescheduled times. I have students in class 3 hours daily over a six week period.

The course was good. I could have used more training. I am still investigating how I will/can use the limited information that I was able to find. It's my understanding that new information is being added continually.

- With respect to the big staff reductions in our 5 county consortium, Elko, Humboldt, Pershing, Landers and Ely there has been only one major gold mine shut down but also major layoffs at the mines because the price of gold is low. The layoffs make a big impact on student population figures and our teachers get reassigned or laid off then rehired.
- Obviously, there has not been time to implement. However, I don't have an internet access in my classroom. I only have 50 minutes per week in the computer lab, therefore, the computer skills assigned work comes first and there is not enough time in the lab for that. Also, the school does not have an adobe photo shop program. Therefore we can't print out any photos. And last, my position has been cut so I wouldn't be at this school next year.
- I think the initial 2 day workshop I took could have been a little longer to allow more hands-on time. After 2 days you walked out with an idea but with nothing concrete. As a media specialist this was fine for me. Classroom teachers, I feel, need a concrete example of a classroom lesson plan. The sharing of information is good but better is a pairing of teachers – interdisciplinary – to develop a plan together for individual or collaborative use in the classroom.

  There were pairs from most schools attending the workshop I participated in I've been additionally trained to be a workshop leader but to my knowledge no further NDL workshops have been scheduled.
- 5 days training – 2 days spent working on team teaching. My team members were functional illiterates on the computer.
- The only comment I have is that the evaluation instrument should be answered by email or by U.S. mail not by telephone – by telephone at school it's been very difficult.
- I'm in a "remote location" ½ hour from downtown Las Vegas. When we finished this workshop they wanted us to do follow-up. Follow-up was not possible – no time, young family, no funding. The instructors giving in-service were great.

Negative:

- I was disappointed the kids weren't interested. Maybe I wasn't prepared enough because I was overloaded at the time I took the NDL workshop.

No Response: [11]

Comments Recorded in the Third Person by Interviewer

Positive:

- Heather Usko is a ½ day kindergarten teacher this year who took NDL training in Elko. She was a 5th grade elementary school classroom teacher and hopes to be reassigned. She plans to implement NDL at the first available opportunity.

Neutral: [None]

Negative:

- This interviewee is a librarian. She was very upset that this course was not as expected in terms of the goal as advertised. The telephone survey she felt was not relevant as this course/training was designed as supplemental (material) to curriculum development not a key anything.

Curriculum Writing Group

During the course, did you…

read any background or other reading materials or lab materials?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	31	79.5	81.6	81.6
	No	7	17.9	18.4	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

complete any surveys to assist your skill level, interests, teaching responsibilities or objectives?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	21	53.8	55.3	55.3
	No	17	43.6	44.7	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

identify a unit you wanted to develop or other ways you anticipated incorporating project information at your home school?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	36	92.3	94.7	94.7
	No	2	5.1	5.3	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

prepare a project or problem to work on during the project?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	37	94.9	97.4	97.4
	No	1	2.6	2.6	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

do any other types of activities?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	30	76.9	85.7	85.7
	No	5	12.8	14.3	100.0
	Total	35	89.7	100.0	
Missing	System	4	10.3		
Total		39	100.0		

During the course, most of the people indicated they did all of the things listed, but almost all the participants reported that they identified a unit they wanted to develop or prepared a project or problem to work on during the project. The least number of people completed surveys.

did that include incorporating and synthesizing interdisciplinary content?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	74.4	87.9	87.9
	No	4	10.3	12.1	100.0
	Total	33	84.6	100.0	
Missing	System	6	15.4		
Total		39	100.0		

teaching methods?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	32	82.1	97.0	97.0
	No	1	2.6	3.0	100.0
	Total	33	84.6	100.0	
Missing	System	6	15.4		
Total		39	100.0		

lab technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	30	76.9	90.9	90.9
	No	3	7.7	9.1	100.0
	Total	33	84.6	100.0	
Missing	System	6	15.4		
Total		39	100.0		

new technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	32	82.1	97.0	97.0
	No	1	2.6	3.0	100.0
	Total	33	84.6	100.0	
Missing	System	6	15.4		
Total		39	100.0		

The teachers said that their project experience most often included teaching methods and new technologies.

In preparation for the project, were you asked to use any…

reading materials

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	26	66.7	68.4	68.4
	No	12	30.8	31.6	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

lecture notes or other handouts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	48.7	50.0	50.0
	No	19	48.7	50.0	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

problem sets, problem descriptions or lab exercises

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	46.2	47.4	47.4
	No	20	51.3	52.6	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

other activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	35.9	37.8	37.8
	No	23	59.0	62.2	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

Most teachers said they were asked to use reading materials and lecture notes or other handouts.

By the end of the professional development, to be more effective in your teaching, did you feel you needed more work with…

reading materials

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completed	26	66.7	70.3	70.3
	Needed more work	11	28.2	29.7	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

lecture notes or other handouts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completed	27	69.2	73.0	73.0
	Needed more work	10	25.6	27.0	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

problem sets, project descriptions or lab exercises

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completed	12	30.8	32.4	32.4
	Needed more work	25	64.1	67.6	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

other activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completed	11	28.2	30.6	30.6
	Needed more work	25	64.1	69.4	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

The most often cited areas that needed more work were problem sets, project descriptions or lab exercises followed by other activities.

Now, in terms of follow-up activities:

Did you participate in one or more formal follow-up sessions at scheduled times?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	16	41.0	43.2	43.2
	No	21	53.8	56.8	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

Did you participate in one or more informal group get-togethers?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	24	61.5	64.9	64.9
	No	13	33.3	35.1	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

Did you participate in any online follow-up?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	74.4	78.4	78.4
	No	8	20.5	21.6	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

Did you review or site-test any materials or products developed as part of the workshop?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	24	61.5	64.9	64.9
	No	13	33.3	35.1	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

Did you receive any technical assistance from the project staff?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	28	71.8	75.7	75.7
	No	9	23.1	24.3	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

In terms of follow-up activities, most teachers indicated they either participated in online follow-up or received technical assistance from the project staff.

After the course…

Did you communicate with the staff and/or other participants by telephone?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	48.7	51.4	51.4
	No	18	46.2	48.6	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

Did you communicate with the staff and/or other participants by e-mail?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	74.4	78.4	78.4
	No	8	20.5	21.6	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

Did you collaborate online with any other participants or colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	23	59.0	62.2	62.2
	No	14	35.9	37.8	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

After the course, most wrote that they communicated with other participants by e-mail.

Was this communication/collaboration ongoing or sporadic?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Ongoing	5	12.8	17.2	17.2
	Sporadic	24	61.5	82.8	100.0
	Total	29	74.4	100.0	
Missing	System	10	25.6		
Total		39	100.0		

For those who did communicate with other participants, most indicated that their communications were sporadic.

IMPACT

What the participants learned; what was of value to them

To what extent did the course give you…

increased content knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	11	28.2	28.9	28.9
	Some	16	41.0	42.1	71.1
	A lot	11	28.2	28.9	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

new or more in-depth perspectives on teaching and learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	3	7.7	7.9	7.9
	Some	15	38.5	39.5	47.4
	A lot	20	51.3	52.6	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

new or improved skills in teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	7	17.9	18.4	18.4
	Some	19	48.7	50.0	68.4
	A lot	12	30.8	31.6	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

new or improved experimental lab techniques

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	11	28.2	28.9	28.9
	Some	20	51.3	52.6	81.6
	A lot	7	17.9	18.4	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

new or improved technological skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	10	25.6	26.3	26.3
	Some	19	48.7	50.0	76.3
	A lot	9	23.1	23.7	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

new or more in-depth knowledge of issues regarding females and minority students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	27	69.2	71.1	71.1
	Some	10	25.6	26.3	97.4
	A lot	1	2.6	2.6	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

new information about other resources for use in teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	4	10.3	10.5	10.5
	Some	17	43.6	44.7	55.3
	A lot	17	43.6	44.7	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

new contacts with colleagues from other institutions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	7	17.9	18.4	18.4
	Some	14	35.9	36.8	55.3
	A lot	17	43.6	44.7	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

increased motivation or stimulation for teaching excellence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or none	3	7.7	7.9	7.9
	Some	19	48.7	50.0	57.9
	A lot	16	41.0	42.1	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

When average scores were computed for these responses, participants gave the highest ratings to new or more in-depth perspectives on teaching and learning (2.45). The next highest ratings (2.34) were for new information about other resources for use in teaching and increased motivation or stimulation for teaching excellence. The lowest rating was given to new or more in-depth knowledge of issues regarding females and minority students.

Did you get any benefit out of the program?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	34	87.2	89.5	89.5
	No	4	10.3	10.5	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

Only four people wrote they got no benefit from the program.

Participants' Evaluation of Aspects of the Project

How much of a contribution did each of the following make to what you got out of the project?

preparation prior to the project

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	20	51.3	55.6	55.6
	Moderate	12	30.8	33.3	88.9
	Great	4	10.3	11.1	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

content of the sessions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	4	10.3	11.1	11.1
	Moderate	15	38.5	41.7	52.8
	Great	17	43.6	47.2	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

study materials used during the project

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	5	12.8	13.9	13.9
	Moderate	15	38.5	41.7	55.6
	Great	16	41.0	44.4	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

the experience of developing products or materials at the project

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	4	10.3	11.1	11.1
	Moderate	10	25.6	27.8	38.9
	Great	22	56.4	61.1	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

other hands-on learning activities, such as laboratories or computer work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	9	23.1	25.0	25.0
	Moderate	12	30.8	33.3	58.3
	Great	15	38.5	41.7	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

materials from the project that you used in your school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	8	20.5	22.2	22.2
	Moderate	16	41.0	44.4	66.7
	Great	12	30.8	33.3	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

presentations or practice lessons that you gave

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	9	23.1	25.0	25.0
	Moderate	17	43.6	47.2	72.2
	Great	10	25.6	27.8	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

interactions with the instructors (both structured and unstructured)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	4	10.3	11.1	11.1
	Moderate	9	23.1	25.0	36.1
	Great	23	59.0	63.9	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

discussions of how participants would use what was learned in their own projects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	5	12.8	13.9	13.9
	Moderate	13	33.3	36.1	50.0
	Great	18	46.2	50.0	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

informal interactions with other participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	4	10.3	11.1	11.1
	Moderate	8	20.5	22.2	33.3
	Great	24	61.5	66.7	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

follow-up activities (formal or informal)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Little or no	16	41.0	44.4	44.4
	Moderate	11	28.2	30.6	75.0
	Great	9	23.1	25.0	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

When average ratings were calculated for these contributions, participants rated most highly informal interactions with other participants, followed by the experience of developing products or materials at the end of the project. The lowest ratings for contribution were preparation prior to the course and follow-up activities.

Impact on Your Curriculum

During, or as a result of your participation…

did you develop or redesign a major or a program of studies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	31	79.5	86.1	86.1
	No	5	12.8	13.9	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

did you develop one or more new units?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	33	84.6	91.7	91.7
	No	3	7.7	8.3	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

did you revise one or more existing units?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	27	69.2	75.0	75.0
	No	9	23.1	25.0	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

did you develop one or more proposals requesting permission or funding to revise or develop materials or units?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	17.9	19.4	19.4
	No	29	74.4	80.6	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

Most of the participants indicated they developed one or more new units. Seven wrote they developed one or more proposals requesting permission or funding to revise or develop materials or units.

All in all, how many units did you develop and/or revise?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	1	2.6	2.9	2.9
	1.00	9	23.1	25.7	28.6
	2.00	9	23.1	25.7	54.3
	3.00	5	12.8	14.3	68.6
	4.00	3	7.7	8.6	77.1
	5.00	1	2.6	2.9	80.0
	6.00	2	5.1	5.7	85.7
	8.00	1	2.6	2.9	88.6
	10.00	1	2.6	2.9	91.4
	20.00	2	5.1	5.7	97.1
	50.00	1	2.6	2.9	100.0
	Total	35	89.7	100.0	
Missing	System	4	10.3		
Total		39	100.0		

Just under half the participants developed or revised three or more units.

Did you develop or revise these units in collaboration with one or more colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	30	76.9	88.2	88.2
	No	4	10.3	11.8	100.0
	Total	34	87.2	100.0	
Missing	System	5	12.8		
Total		39	100.0		

Almost ninety percent of the participants developed their units in collaboration with others.

How many of the units that you developed-revised were interdisciplinary?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	7	17.9	23.3	23.3
	1.00	6	15.4	20.0	43.3
	2.00	7	17.9	23.3	66.7
	3.00	5	12.8	16.7	83.3
	4.00	1	2.6	3.3	86.7
	10.00	1	2.6	3.3	90.0
	20.00	2	5.1	6.7	96.7
	50.00	1	2.6	3.3	100.0
	Total	30	76.9	100.0	
Missing	System	9	23.1		
Total		39	100.0		

Just over half the participants wrote that two or more of the units they developed or revised were interdisciplinary.

Were the units that you developed or revised interdisciplinary?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	24	61.5	70.6	70.6
	No	10	25.6	29.4	100.0
	Total	34	87.2	100.0	
Missing	System	5	12.8		
Total		39	100.0		

Seventy percent of the participants described the units they developed as interdisciplinary.

Did these units receive formal departmental or program approval?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	17.9	20.6	20.6
	Some did and some did not	4	10.3	11.8	32.4
	No or not applicable	23	59.0	67.6	100.0
	Total	34	87.2	100.0	
Missing	System	5	12.8		
Total		39	100.0		

Of those who answered the question, about half wrote that at least some of their units received formal departmental or program approval.

Now I'd like to ask you to be more specific about the types of changes you made in units or teaching as a result of participation in the project.

Did you introduce new content that you learned?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	46.2	52.9	52.9
	No	16	41.0	47.1	100.0
	Total	34	87.2	100.0	
Missing	System	5	12.8		
Total		39	100.0		

How important was the change in content to the projects?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of moderate importance	12	30.8	66.7	66.7
	Of major importance	6	15.4	33.3	100.0
	Total	18	46.2	100.0	
Missing	System	21	53.8		
Total		39	100.0		

Did you change the content to focus on key issues or "big ideas"?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	27	69.2	79.4	79.4
	No	7	17.9	20.6	100.0
	Total	34	87.2	100.0	
Missing	System	5	12.8		
Total		39	100.0		

How important was new focus to the projects?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of moderate importance	8	20.5	29.6	29.6
	Of major importance	19	48.7	70.4	100.0
	Total	27	69.2	100.0	
Missing	System	12	30.8		
Total		39	100.0		

Did you introduce new experimental or lab techniques?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	25	64.1	73.5	73.5
	No	9	23.1	26.5	100.0
	Total	34	87.2	100.0	
Missing	System	5	12.8		
Total		39	100.0		

How important were the new techniques to the projects?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of little or no importance	3	7.7	12.0	12.0
	Of moderate importance	8	20.5	32.0	44.0
	Of major importance	14	35.9	56.0	100.0
	Total	25	64.1	100.0	
Missing	System	14	35.9		
Total		39	100.0		

Did you introduce new equipment, materials or computer software that you learned?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	43.6	50.0	50.0
	No	17	43.6	50.0	100.0
	Total	34	87.2	100.0	
Missing	System	5	12.8		
Total		39	100.0		

How important was the equipment, materials or software to the projects?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of little or no importance	1	2.6	5.9	5.9
	Of moderate importance	7	17.9	41.2	47.1
	Of major importance	9	23.1	52.9	100.0
	Total	17	43.6	100.0	
Missing	System	22	56.4		
Total		39	100.0		

Did you change teaching methods in any other way?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	46.2	52.9	52.9
	No	16	41.0	47.1	100.0
	Total	34	87.2	100.0	
Missing	System	5	12.8		
Total		39	100.0		

How important was the change in teaching methods to the units?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Of moderate importance	6	15.4	33.3	33.3
	Of major importance	12	30.8	66.7	100.0
	Total	18	46.2	100.0	
Missing	System	21	53.8		
Total		39	100.0		

The highest proportion of participants indicated that they changed the content to focus on key issues or “big ideas”, followed by introducing new experimental or lab techniques. The new focus on big ideas and the change in teaching methods were judged of highest importance by the participants.

Have you taught one or more of the courses or units you developed or revised as a result of your participation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	28	71.8	87.5	87.5
	No	4	10.3	12.5	100.0
	Total	32	82.1	100.0	
Missing	System	7	17.9		
Total		39	100.0		

Almost ninety percent of the teachers have taught one or more of the units they developed as a result of participating.

How many?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	12	30.8	44.4	44.4
	2.00	5	12.8	18.5	63.0
	3.00	2	5.1	7.4	70.4
	4.00	2	5.1	7.4	77.8
	5.00	1	2.6	3.7	81.5
	6.00	1	2.6	3.7	85.2
	8.00	1	2.6	3.7	88.9
	10.00	1	2.6	3.7	92.6
	12.00	1	2.6	3.7	96.3
	30.00	1	2.6	3.7	100.0
	Total	27	69.2	100.0	
Missing	System	12	30.8		
Total		39	100.0		

Have you team taught this material?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	23.1	32.1	32.1
	No	19	48.7	67.9	100.0
	Total	28	71.8	100.0	
Missing	System	11	28.2		
Total		39	100.0		

Of those answering the question, about a third have team-taught the material.

In all, approximately how many students have completed this material?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	22.00	1	2.6	3.7	3.7
	25.00	1	2.6	3.7	7.4
	30.00	1	2.6	3.7	11.1
	35.00	1	2.6	3.7	14.8
	36.00	2	5.1	7.4	22.2
	50.00	1	2.6	3.7	25.9
	60.00	2	5.1	7.4	33.3
	80.00	2	5.1	7.4	40.7
	85.00	1	2.6	3.7	44.4
	100.00	3	7.7	11.1	55.6
	120.00	2	5.1	7.4	63.0
	150.00	1	2.6	3.7	66.7
	200.00	2	5.1	7.4	74.1
	220.00	1	2.6	3.7	77.8
	240.00	1	2.6	3.7	81.5
	250.00	1	2.6	3.7	85.2
	500.00	1	2.6	3.7	88.9
	600.00	1	2.6	3.7	92.6
	1000.00	1	2.6	3.7	96.3
	1650.00	1	2.6	3.7	100.0
	Total	27	69.2	100.0	
Missing	System	12	30.8		
Total		39	100.0		

Approximately what percentage of these students are female?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	33.00	1	2.6	3.7	3.7
	40.00	3	7.7	11.1	14.8
	47.00	1	2.6	3.7	18.5
	48.00	1	2.6	3.7	22.2
	50.00	14	35.9	51.9	74.1
	55.00	1	2.6	3.7	77.8
	60.00	4	10.3	14.8	92.6
	75.00	1	2.6	3.7	96.3
	90.00	1	2.6	3.7	100.0
	Total	27	69.2	100.0	
Missing	System	12	30.8		
Total		39	100.0		

The total number of students who have completed these materials was 6,149 or an average of 228 per teacher. The average percentage of female students was 52.5%.

Are these courses or units still being offered?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	23	59.0	76.7	76.7
	No	7	17.9	23.3	100.0
	Total	30	76.9	100.0	
Missing	System	9	23.1		
Total		39	100.0		

Of those answering the question, over three-quarters reported the courses or units are still being offered.

Impact on Students

Compare the average level of knowledge and skills of students who completed the courses/units you developed or modified as a result of your participation in the project with the knowledge and skills of students who have completed similar courses/units you taught previously.

In-depth knowledge of subject area

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	1	2.6	3.8	3.8
	Somewhat better	13	33.3	50.0	53.8
	Substantially better	12	30.8	46.2	100.0
	Total	26	66.7	100.0	
Missing	System	13	33.3		
Total		39	100.0		

Problem solving skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	1	2.6	3.6	3.6
	Somewhat better	18	46.2	64.3	67.9
	Substantially better	9	23.1	32.1	100.0
	Total	28	71.8	100.0	
Missing	System	11	28.2		
Total		39	100.0		

Communication skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	4	10.3	15.4	15.4
	Somewhat better	10	25.6	38.5	53.8
	Substantially better	12	30.8	46.2	100.0
	Total	26	66.7	100.0	
Missing	System	13	33.3		
Total		39	100.0		

Ability to apply new knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	2	5.1	7.1	7.1
	Somewhat better	12	30.8	42.9	50.0
	Substantially better	14	35.9	50.0	100.0
	Total	28	71.8	100.0	
Missing	System	11	28.2		
Total		39	100.0		

Critical thinking skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Somewhat better	17	43.6	60.7	60.7
	Substantially better	11	28.2	39.3	100.0
	Total	28	71.8	100.0	
Missing	System	11	28.2		
Total		39	100.0		

Ability to collaborate with others

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Somewhat worse	1	2.6	3.6	3.6
	No difference	5	12.8	17.9	21.4
	Somewhat better	6	15.4	21.4	42.9
	Substantially better	16	41.0	57.1	100.0
	Total	28	71.8	100.0	
Missing	System	11	28.2		
Total		39	100.0		

Ability to use advanced technology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	5	12.8	20.8	20.8
	Somewhat better	6	15.4	25.0	45.8
	Substantially better	13	33.3	54.2	100.0
	Total	24	61.5	100.0	
Missing	System	15	38.5		
Total		39	100.0		

Understanding of the scientific method

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difference	3	7.7	13.6	13.6
	Somewhat better	11	28.2	50.0	63.6
	Substantially better	8	20.5	36.4	100.0
	Total	22	56.4	100.0	
Missing	System	17	43.6		
Total		39	100.0		

All the items had an average rating of 4.00 or higher (somewhat better). The highest ratings were given to ability to apply new knowledge (4.43) and in-depth knowledge of subject area (4.42). The lowest rating (4.23) was given to understanding the scientific method.

Impact On Non-Classroom Activities

Have you participated in any further professional development activities or workshops designed to change the content of courses or units or to improve instruction?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	31	79.5	86.1	86.1
	No	5	12.8	13.9	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	3	7.7	9.7	9.7
	A little	5	12.8	16.1	25.8
	Moderate	8	20.5	25.8	51.6
	Great	15	38.5	48.4	100.0
	Total	31	79.5	100.0	
Missing	System	8	20.5		
Total		39	100.0		

Have you begun any new communication or continued existing communication with experts in one or more disciplines?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	21	53.8	58.3	58.3
	No	15	38.5	41.7	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	3	7.7	14.3	14.3
	A little	3	7.7	14.3	28.6
	Moderate	11	28.2	52.4	81.0
	Great	4	10.3	19.0	100.0
	Total	21	53.8	100.0	
Missing	System	18	46.2		
Total		39	100.0		

Have you established any new research or teaching collaborations with colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	26	66.7	72.2	72.2
	No	10	25.6	27.8	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	2	5.1	7.7	7.7
	A little	3	7.7	11.5	19.2
	Moderate	14	35.9	53.8	73.1
	Great	7	17.9	26.9	100.0
	Total	26	66.7	100.0	
Missing	System	13	33.3		
Total		39	100.0		

Have you attended any professional meetings, seminars or workshops?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	36	92.3	100.0	100.0
Missing	System	3	7.7		
Total		39	100.0		

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	8	20.5	22.2	22.2
	A little	4	10.3	11.1	33.3
	Moderate	13	33.3	36.1	69.4
	Great	11	28.2	30.6	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

Have you delivered one or more papers at a professional meeting?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	10	25.6	27.8	27.8
	No	26	66.7	72.2	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	1	2.6	10.0	10.0
	A little	2	5.1	20.0	30.0
	Moderate	4	10.3	40.0	70.0
	Great	3	7.7	30.0	100.0
	Total	10	25.6	100.0	
Missing	System	29	74.4		
Total		39	100.0		

Have you made one or more presentations to local campuses or community organizations?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	48.7	52.8	52.8
	No	17	43.6	47.2	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

Amount of impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	1	2.6	5.3	5.3
	A little	6	15.4	31.6	36.8
	Moderate	6	15.4	31.6	68.4
	Great	6	15.4	31.6	100.0
	Total	19	48.7	100.0	
Missing	System	20	51.3		
Total		39	100.0		

Most of the teachers reported doing all of the above non-classroom activities with the single exception that a quarter reported presenting papers at professional meetings. Those who participated in further professional development activities rated the impact the greatest (Average = 3.13 out of a possible 4). Those who attended professional meetings rated their impact the least (Average = 2.75 out of a possible 4).

Impact On Broader Community

Have you shared any information or skills you learned with colleagues either in your institution or in other institutions?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	32	82.1	97.0	97.0
	No	1	2.6	3.0	100.0
	Total	33	84.6	100.0	
Missing	System	6	15.4		
Total		39	100.0		

Have you shared any information or skills you learned through informal discussions with one or more colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	33	84.6	91.7	91.7
	No	3	7.7	8.3	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

Have you shared any information or skills you learned through presentations to one more colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	23	59.0	65.7	65.7
	No	12	30.8	34.3	100.0
	Total	35	89.7	100.0	
Missing	System	4	10.3		
Total		39	100.0		

Have you shared any information or skills you learned through observation of your class or laboratory by one or more colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	23	59.0	65.7	65.7
	No	12	30.8	34.3	100.0
	Total	35	89.7	100.0	
Missing	System	4	10.3		
Total		39	100.0		

Have you shared any information or skills you learned through participation in any department or school committees on curricular change and or reform?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	25	64.1	71.4	71.4
	No	10	25.6	28.6	100.0
	Total	35	89.7	100.0	
Missing	System	4	10.3		
Total		39	100.0		

Have you shared any information or skills you learned through any other activities?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	30.8	35.3	35.3
	No	22	56.4	64.7	100.0
	Total	34	87.2	100.0	
Missing	System	5	12.8		
Total		39	100.0		

Almost all the participants have shared information or skills they learned with colleagues either in their institution or in any other institution and they most often did that sharing with colleagues either at their institution or in other institutions..

To the best of your knowledge…

As a result of what you shared, have any of your colleagues modified the content of a unit or program of study?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	21	53.8	60.0	60.0
	No	14	35.9	40.0	100.0
	Total	35	89.7	100.0	
Missing	System	4	10.3		
Total		39	100.0		

As a result of what you shared, have any of your colleagues developed a new unit or program of study?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	16	41.0	45.7	45.7
	No	19	48.7	54.3	100.0
	Total	35	89.7	100.0	
Missing	System	4	10.3		
Total		39	100.0		

As a result of what you shared, have any of your colleagues attended or joined the project?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	15	38.5	42.9	42.9
	No	20	51.3	57.1	100.0
	Total	35	89.7	100.0	
Missing	System	4	10.3		
Total		39	100.0		

As a result of what you shared, have any of your colleagues made any other changes?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	16	41.0	45.7	45.7
	No	19	48.7	54.3	100.0
	Total	35	89.7	100.0	
Missing	System	4	10.3		
Total		39	100.0		

Most of the participants reported their colleagues modifying the content of a unit or program of study.

Barriers To Implementation

Did you encounter any barriers to implementing what you learned from your involvement with this project?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	13	33.3	36.1	36.1
	No	23	59.0	63.9	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

A third of the responding participants reported encountering barriers to implementing what they learned from their involvement in the project.

When you took the program, did you INTEND to develop any new materials-units or modify any existing materials or units?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	31	79.5	83.8	83.8
	No	6	15.4	16.2	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

Over eighty percent of the participants reported that they did intend to develop new materials or units or modify existing materials or units.

Time Related to the Course

Number of hours in preparation before the project

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	6	15.4	16.2	16.2
	1.00	2	5.1	5.4	21.6
	2.00	8	20.5	21.6	43.2
	3.00	3	7.7	8.1	51.4
	3.50	1	2.6	2.7	54.1
	4.00	4	10.3	10.8	64.9
	5.00	3	7.7	8.1	73.0
	9.00	1	2.6	2.7	75.7
	10.00	3	7.7	8.1	83.8
	12.00	2	5.1	5.4	89.2
	20.00	2	5.1	5.4	94.6
	50.00	1	2.6	2.7	97.3
	150.00	1	2.6	2.7	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

A few of the participants spent large amounts of time in preparation before the project. The average was 9.85 hours.

Number of hours during the project

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	16.00	6	15.4	16.2	16.2
	18.00	1	2.6	2.7	18.9
	20.00	4	10.3	10.8	29.7
	24.00	8	20.5	21.6	51.4
	27.00	1	2.6	2.7	54.1
	30.00	5	12.8	13.5	67.6
	32.00	1	2.6	2.7	70.3
	36.00	1	2.6	2.7	73.0
	40.00	2	5.1	5.4	78.4
	44.00	1	2.6	2.7	81.1
	50.00	2	5.1	5.4	86.5
	72.00	1	2.6	2.7	89.2
	80.00	1	2.6	2.7	91.9
	96.00	1	2.6	2.7	94.6
	100.00	1	2.6	2.7	97.3
	200.00	1	2.6	2.7	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

The average number of hours spent during the project was 37.9.

Number of hours after the project developing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	1	2.6	2.7	2.7
	1.00	1	2.6	2.7	5.4
	2.00	1	2.6	2.7	8.1
	3.00	3	7.7	8.1	16.2
	4.00	1	2.6	2.7	18.9
	5.00	2	5.1	5.4	24.3
	6.00	1	2.6	2.7	27.0
	8.00	3	7.7	8.1	35.1
	10.00	4	10.3	10.8	45.9
	12.00	1	2.6	2.7	48.6
	16.00	1	2.6	2.7	51.4
	20.00	1	2.6	2.7	54.1
	24.00	1	2.6	2.7	56.8
	25.00	2	5.1	5.4	62.2
	30.00	1	2.6	2.7	64.9
	40.00	2	5.1	5.4	70.3
	50.00	1	2.6	2.7	73.0
	56.00	1	2.6	2.7	75.7
	60.00	2	5.1	5.4	81.1
	80.00	1	2.6	2.7	83.8
	100.00	1	2.6	2.7	86.5
	120.00	1	2.6	2.7	89.2
	160.00	1	2.6	2.7	91.9
	200.00	2	5.1	5.4	97.3
	480.00	1	2.6	2.7	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

The average number of hours spent in development after the course was 51.2.

Number of hours after the project implementing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	4	10.3	10.8	10.8
	3.00	2	5.1	5.4	16.2
	4.00	1	2.6	2.7	18.9
	5.00	1	2.6	2.7	21.6
	8.00	1	2.6	2.7	24.3
	10.00	2	5.1	5.4	29.7
	15.00	1	2.6	2.7	32.4
	18.00	1	2.6	2.7	35.1
	20.00	4	10.3	10.8	45.9
	25.00	1	2.6	2.7	48.6
	30.00	1	2.6	2.7	51.4
	40.00	2	5.1	5.4	56.8
	50.00	1	2.6	2.7	59.5
	56.00	2	5.1	5.4	64.9
	60.00	1	2.6	2.7	67.6
	90.00	2	5.1	5.4	73.0
	100.00	1	2.6	2.7	75.7
	125.00	1	2.6	2.7	78.4
	160.00	1	2.6	2.7	81.1
	200.00	1	2.6	2.7	83.8
	360.00	2	5.1	5.4	89.2
	384.00	1	2.6	2.7	91.9
	1000.00	2	5.1	5.4	97.3
	2160.00	1	2.6	2.7	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

The average number of hours implementing the project was 176.8.

Number of hours after the project - other?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	12	30.8	32.4	32.4
	1.00	1	2.6	2.7	35.1
	2.00	3	7.7	8.1	43.2
	2.50	1	2.6	2.7	45.9
	3.00	2	5.1	5.4	51.4
	4.00	1	2.6	2.7	54.1
	5.00	2	5.1	5.4	59.5
	6.00	1	2.6	2.7	62.2
	8.00	1	2.6	2.7	64.9
	16.00	1	2.6	2.7	67.6
	20.00	1	2.6	2.7	70.3
	25.00	1	2.6	2.7	73.0
	30.00	4	10.3	10.8	83.8
	40.00	2	5.1	5.4	89.2
	45.00	1	2.6	2.7	91.9
	100.00	1	2.6	2.7	94.6
	200.00	2	5.1	5.4	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

The average number of hours spent after the project on other activities was 23.0.

Approximate total number of hours

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	22.00	1	2.6	2.7	2.7
	27.00	1	2.6	2.7	5.4
	31.00	1	2.6	2.7	8.1
	32.00	1	2.6	2.7	10.8
	34.00	1	2.6	2.7	13.5
	35.00	1	2.6	2.7	16.2
	38.50	1	2.6	2.7	18.9
	47.00	1	2.6	2.7	21.6
	51.00	1	2.6	2.7	24.3
	61.00	1	2.6	2.7	27.0
	62.00	1	2.6	2.7	29.7
	63.00	1	2.6	2.7	32.4
	64.00	1	2.6	2.7	35.1
	66.50	1	2.6	2.7	37.8
	69.00	2	5.1	5.4	43.2
	70.00	1	2.6	2.7	45.9
	72.00	1	2.6	2.7	48.6
	74.00	1	2.6	2.7	51.4
	105.00	1	2.6	2.7	54.1
	122.00	1	2.6	2.7	56.8
	136.00	1	2.6	2.7	59.5
	156.00	1	2.6	2.7	62.2
	190.00	1	2.6	2.7	64.9
	213.00	1	2.6	2.7	67.6
	240.00	1	2.6	2.7	70.3
	250.00	1	2.6	2.7	73.0
	317.00	1	2.6	2.7	75.7
	407.00	1	2.6	2.7	78.4
	442.00	1	2.6	2.7	81.1
	474.00	1	2.6	2.7	83.8
	550.00	1	2.6	2.7	86.5
	590.00	1	2.6	2.7	89.2
	835.00	1	2.6	2.7	91.9
	1194.00	1	2.6	2.7	94.6
	1204.00	1	2.6	2.7	97.3
	2744.00	1	2.6	2.7	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

The average total number of hours spent related to the project was 301.5.

Demographic Information

At the time you participated in the project, how many years had you been at the school where you were teaching at that time?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.33	1	2.6	2.7	2.7
	1.00	3	7.7	8.1	10.8
	2.00	7	17.9	18.9	29.7
	2.50	1	2.6	2.7	32.4
	3.00	5	12.8	13.5	45.9
	6.00	1	2.6	2.7	48.6
	7.00	5	12.8	13.5	62.2
	8.00	3	7.7	8.1	70.3
	9.00	1	2.6	2.7	73.0
	10.00	1	2.6	2.7	75.7
	12.00	2	5.1	5.4	81.1
	13.00	2	5.1	5.4	86.5
	14.00	1	2.6	2.7	89.2
	15.00	1	2.6	2.7	91.9
	19.00	1	2.6	2.7	94.6
	22.00	1	2.6	2.7	97.3
	26.00	1	2.6	2.7	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

The average number of years that the participants had been at their school was 7.16.

***W*hich of the following best describes the school where you were employed when you participated in the project?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Elementary school	8	20.5	21.6	21.6
	Middle school	1	2.6	2.7	24.3
	High school	24	61.5	64.9	89.2
	Four year college	1	2.6	2.7	91.9
	University	1	2.6	2.7	94.6
	Other	2	5.1	5.4	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

Almost two-thirds of the participants were at the high school level.

What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	4	10.3	11.1	11.1
	Female	32	82.1	88.9	100.0
	Total	36	92.3	100.0	
Missing	System	3	7.7		
Total		39	100.0		

Only about one in nine participants was male.

What is your birth year?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	42.00	1	2.6	2.7	2.7
	43.00	1	2.6	2.7	5.4
	45.00	1	2.6	2.7	8.1
	46.00	2	5.1	5.4	13.5
	47.00	2	5.1	5.4	18.9
	48.00	1	2.6	2.7	21.6
	49.00	1	2.6	2.7	24.3
	51.00	1	2.6	2.7	27.0
	52.00	1	2.6	2.7	29.7
	53.00	1	2.6	2.7	32.4
	54.00	2	5.1	5.4	37.8
	55.00	2	5.1	5.4	43.2
	56.00	2	5.1	5.4	48.6
	57.00	1	2.6	2.7	51.4
	59.00	4	10.3	10.8	62.2
	60.00	2	5.1	5.4	67.6
	61.00	1	2.6	2.7	70.3
	63.00	1	2.6	2.7	73.0
	64.00	2	5.1	5.4	78.4
	66.00	2	5.1	5.4	83.8
	68.00	1	2.6	2.7	86.5
	70.00	1	2.6	2.7	89.2
	71.00	1	2.6	2.7	91.9
	72.00	1	2.6	2.7	94.6
	74.00	1	2.6	2.7	97.3
	77.00	1	2.6	2.7	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

The average age of participants was forty-five.

Are you Hispanic or Latino or NOT Hispanic or Latino?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Hispanic or Latino	2	5.1	5.4	5.4
	Not Hispanic or Latino	35	89.7	94.6	100.0
	Total	37	94.9	100.0	
Missing	System	2	5.1		
Total		39	100.0		

Two of the participants described themselves as Hispanic or Latino.

Race Category

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	American Indian or Alaska Native	1	2.6	2.6	2.6
	Black or African American	5	12.8	13.2	15.8
	Caucasian	32	82.1	84.2	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

About a sixth of the participants described themselves as minorities.

What was your citizenship when you participated in the project?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	U.S. citizen	37	94.9	100.0	100.0
Missing	System	2	5.1		
Total		39	100.0		

All the participants indicated they were U.S. citizens.

Any Impairment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Hearing	1	2.6	2.6	2.6
	No Impairment	37	94.9	97.4	100.0
	Total	38	97.4	100.0	
Missing	System	1	2.6		
Total		39	100.0		

Only one of the participants indicated an impairment: hearing.

CCTT CURRICULUM LOG
VETERAN TEACHER SURVEY

Karen C. Cohen and Associates
9 Cliff Road • Weston, MA 02493 • U.S.A.

CCTT CURRICULUM LOG
VETERAN TEACHER SURVEY

- **During the course did you do any other types of activities?**

Positive:

All incorporated in unit worked on as a team.

Lap top writing.

Curriculum development.

Created activities.

Role playing delivery methods.

With Sue Kopa.

No Response: [26]

- **In preparation for the course, were you asked to use any other activities?**

Positive:

Several areas to look at. Metighe and Wiggins material and do activity.

Think about writing topics and bring in materials to be adopted in plan.

Additional internet readings.

Web quest, and Apple computer web site posting. Presenter: technology into curriculum.

Engage in email conversation.

Preplan a unit.

We wrote web-based sites.

Communications prior to start of wkshp.

Bring biology and textbooks.

Lab assessments, web sites.

Web site.

Lab hands on activities.

Neutral:

Don't remember.

Can't remember.

No Response: [18]

- **By the end of the professional development, to be more effective in your teaching, did you feel you needed more work with other activities?**

Unit development.

Internet readings nice closure.

Didn't have enough time.

Lesson planning so much work.

Units – 3 people worked – took longer to brush up.

Pull together hard copy for students incomplete.

Re-do, relearn to grasp meaning to process info.

3 people 3 different states teach at home school.

Not enough clarity. Needed more support materials.

One-on-one with experts. More collaborations.

Can't recall specifics – 2+ years ago.

Some activities on every unit needed more time to develop.

- **Did you participate in any online follow-up?**

Attempted to but no.

No Response: [31]

- **After the project did you collaborate online with other participants or colleagues?**

Tried to but no go.

No Response: [31]

- **Did you get any benefit out of the program?**

Positive:

I did but the biggest problem was that the project we did was out of my content area. It was high school standards and I'm a middle school teacher. But we were going to work on a high school standard – the lady I was paired with was a middle school teacher who had been moved into a high school classroom. From out of state we did not email communicate.

I was working on developing a lab. Three of us collaborated. This year I'm working on national certification using the lab developed at this institute. Really valuable! National wants you to design a lab yourself, not a cookbook lab. Certificate good for 10 years. I get 6% [?] base pay rate hike.

Yes. This was at a time when new standards were coming in across the country, so the program focused my attention on them and helped me to write curriculum that address those standards. Also, the *Backward Design* concept still informs my teaching and I use the process with teachers I mentor.

Some – I'm looking at the way the lessons were put online. I benefited by seeing a new way of writing up an entire unit.

Contact with staff members in y hometown to work on this project. Bouncing ideas off of people in the class/feedback.

Yes. The benefit was learning to teach to the content standard and how to do that – a reverse approach starting with the standard to give life to the unit rather than starting with the material, i.e., text, paper, project and having no idea how that is meeting the content standard for the course.

I reviewed my use of curriculum as it relates to what is essential in the classroom. I learned how to better sort out valuable activities as opposed to interesting activities. And I made contact with professionals to improve my teaching which is still ongoing.

New ideas on how to approach a particular unit such as stioehemtry [?].

The process and the background design was more theoretical than practical for me prior to the training. The application of the whole process was useful. I work with pre-service leaders in science. After this workshop I had a better understanding of standards. It positioned me to approach the process from a different perspective. For example, the use of the atlas in this process became real. The collaboration with peers was also useful. In our group the chemistry teacher was trying to build a unit using atlas finding specs [?] getting ideas from others' conceptual understanding became real. The other usefulness – I worked with elementary teachers building a unit on matter. They were missing a content area and I was able to find this missing gap for them with this process.

The benefit I received was first the collaboration with other teachers. Also the integration of all technologies in all curricular areas – integrating curricular areas themselves. Effective performance evaluations and the evaluations themselves. Also the most effective uses of technologies in the classroom.

Yes. I gained a deeper understanding of how to teach to the standards and how to look at the standards and determine what part of that would meet my students' needs.

The benefit was being introduced to technological resources available at no cost for the classroom.

Yes. First of all skills teaching for success. Second, teaching towards mastery and for a deeper understanding. Third, increased my technological skills or possibilities.

The CCTT program enabled me to expand my teaching knowledge in science especially as well as pedagogy. It's allowed me to share and learn with others. The CCTT experience was thorough. People were helpful. All around great experience. I participated 2 times.

I learned a great deal about "Backward Design" and continue to read up on it and introduce it in in-service training.

The benefit was related to meaningful curriculum development. I very much use the "backward design" method for curriculum development. It makes sense to me to use your assessment (summative) as an umbrella over the lessons to be able to look at what it is you want the students to understand before coming up with activities and labs. So often teachers prepare lessons and activities and after a period of time come up with a test to see what they've done in class. I don't think this is an effective strategy for students' learning process.

Also this type of curriculum mapping promotes formative assessment as a vehicle that dries the curriculum!

I was assigned to work on a team of 4th grade classroom teachers at the project. I am a kindergarten teacher. After the project, back at my school I introduced curriculum mapping to the new 4th grade teachers at our school. I gained a leadership role. The project involvement increased my own background knowledge in an area of curriculum I use with my children while I help 4th grade teachers map out this content for their 4th grade students. To be teamed with higher level classroom faculty and to be engaged with them in curriculum development was a challenge met and of benefit to me in all ways.

Before I went I did not know that this program existed. I got a good foundation in the goals and objectives of the program, which has changed my teaching slightly to help me to reach some of my objectives, which are also in line with the objectives of the CCTT.

Yes. I think the benefit was in the collaboration with other peers and consultants who could analyze our content to help us better develop a curriculum for the targeted population. Also of benefit was the use of the technology with an understanding of how it could be integrated in your daily lessons.

Another way of looking at preparing and presenting curriculum for/to my students.

Yes – all of the above. What I've learned was a whole mind shift towards curriculum instruction and assessment.

I had a chance to interact with experts both at the college level and with my colleagues. At the college level the professionals have a unique perspective on student learning. They offered techniques that worked for them in their teaching and with their kids.

The process was important. The backward design, rewriting with CCTT format, using the format was beneficial to see how teachers could teach and kids could learn. It was process over product. There wasn't enough time for the journey. So much more development time for teachers during any one year to continue the building of format. Too bad!

Yes. I'm a professional development specialist. I give workshops myself. This Institute [gave me] more insight to pass on to the teachers I work with. It validated some things I was thinking, a new way of looking at standard assessments, and it also validated my thinking about goals. It made good sense. It gave me a deeper understanding of standard based learning.

I attended the workshop for Backward Design and then was provided the opportunity to attend a workshop with the same focus under different organization. The second time around it was more clear. For me it had less ambiguity, less technical. I walked away the second time with a much clearer picture than I had after completing the first institute, CCTT Curriculum Mapping Institute.

Yes. I felt that the workshop was beneficial for helping me use technology in my classroom and prioritizing the skills I want to teach.

Increased knowledge in science content area. Increased knowledge of "Backward Design." Increased knowledge of content standards.

I felt more professional, that my job was more important because people were investing time and energy in me. Plus in my case any time I called Elaine Westbrook she would come to me and work side by side. This improved my teaching techniques so that I was enthusiastic and wanted to share with other teachers. So after my initial participation I wrote 100 articles for educational journals, 2 books, 20 units for the project and completed my National Board Certification.

Negative:

My role and teaching career changed right after taking this course. The *Backward Design* was new to me and I learned how to put it to use but didn't use it. I work well with parents and some teachers preparing reading materials now in the Title I program.

I am not actually in the classroom. I participated in order to help the teachers invited from my school to write curriculum.

Little or none. I felt rushed and it was fine working with the other two teachers. Everyone has their own agenda. We are on a budget crunch. I can't afford to buy the materials to use in the classroom with the students. I would not use the

backward design. You are there for 40 hours – my unit – 5 days. I decide my objectives when teaching a lesson. I've nearly always written another unit using what I've learned. Sue Koba can't explain things well. The science instructor man [?] left and didn't explain well.

No Response: [1]

- **Please describe in your own words the changes you made to your classes as a result of your participation in the project.**

Positive:

More inquiry based learning.

What I've done – I revised my major unit. I do focus more on essential understanding or learning. I've also integrated more hands-on technology in my classroom.

For in-service training sessions, change in focus to standards base for science education. Change in focus in assessment process. We used more formative assessments.

What I did – I looked more at how kids learned along the way – the process rather than the end product. Building a process rather than content area.

I started out talking about ecology – a [?] biotic and none biotic – living and nonliving – we discussed what it needs to live. That's an example of the living object-focus of lesson discussion.

I focussed on what was really important for kids to know and learn, a fundamental understanding. And in doing that I found that the students realized that this was of value. It was student centered; a totally different paradigm than what I had done before. I found this very effective.

Basically I introduced the major concepts, followed by more of a learning cycle format providing students more time to explore and find meaning.

I think it was the way I approached presenting the different curriculum and incorporated an inquiry method, particularly in my research unit and also the diversity unit.

The major change was the introduction of more technology integrated across the disciplines. My students now use computer software for introduction and remediation of new content materials The unit that was developed was used in the classroom, out in the community and with state employees. At a state park students learned the concepts then applied and analysed them in an outdoor setting; 4^{th} and 5^{th} grade level students learning about the environment to learn about the eco system and factors that affect it. The students helped Park Rangers. These factors, in part, then were turned into games to play so that learning would not be all work.

More discovery learning and different lab techniques to better emphasize and allow the students to understand major concepts.

I rewrote my objectives for some of my existing curriculum to include higher level thinking and higher value standards for my children to achieve. I also changed my teaching style to cater more to the variety of learning styles of my students. However, the biggest impact was in making all units taught interdisciplinary.

The changes relate to how I develop curriculum. Long-term planning is now a way of life for me.

I changed the way I was conducting professional development sessions with preK-12 science and math teacher training undergraduates through the introduction of the "Backward Design" model. I still feel I have more to learn about the process and so continue my own reading in this area.

I focussed more on content standards and breaking these standards down into more understandable ideas for the children. I used more inquiry based/student based learning.

In teaching in a setting that was more hands-on, active, student driven experiences.

Going from lecture note format to a constructivist approach where students are creating their own products.

I looked at motivating factors of my students and incorporated different identified best practices into my teaching methods. I used these methods to increase motivation, participation, and understanding of the materials for more students.

I used more performance based and hands-on assessment modes versus the paper-pencil mode. I changed my delivery of the lessons themselves by integrating technology into my presentations and into the children's portions.

The standards the atlas the whole idea of backward design was the changes I made to instruct in process of curriculum development.

The colleague I worked with gave me different labs and experiments that she made from the "backward design." I used bits and pieces.

I now use on-line communications more effectively with my students and parents. I'm better able to assess key topics, and the use of time is better managed in the classroom.

I'm more of a project centered teacher rather than so many tasks. I do more things that are more genuine authentic assessment tools having attended the workshop.

I used more varied instructional approach covering all learning styles and visual, auditory, tactile, evaluating by experiment to replace the tests. The students did experiments instead of a test.

For research papers the use of technology was added including online sources. It brought together in one place all of the topics that we use to teach the research paper. And all of this then was accessible to students both at school and on home computers.

The lab and the "work" became more student focussed/inquiry based. I changed it so the students had to figure out what the lab would be.

I use the term "backward design" and try to focus on the broader issue rather than tiny issues. National Standards were looked at to better adapt lessons to standards and not get bogged down in vocabulary.

Neutral:

Does not apply. I'm a supervisor, not in the classroom.

What I developed I could not use in the classes I taught because it was not applicable to my grade level.

No Response: [4]

- **If you have taught this course/these units more than once since participating, how did what you did as a result of your participation change over time?**

Positive:

Before vs after. I changed focus not time. I did lecture/lab/follow-up. Now I do lab/follow-up/extension. The students are much better doing the lab the new way.

I've changed the sequence. It's a flexible resource one can plug in for the needs of the students in any given semester or class. My honors kids need it less than my academic kids. Plus with the units being out there students an take their pick.

Maybe I made some changes – otherwise it worked well the two times taught.

I did the same thing. Each student creates their own product. My format remained the same; students' creations varied.

Over time I was able to offer the teachers better resources. With each presentation/session I was able to add or to subtract information or to supply more critical data.

I have continued to modify my approach and the way my content is approached.

I have improved the unit to make it more student friendly but the material is the same.

I did not change over time.

The biggest change was to make all curriculum units interdisciplinary. This change made the greatest impact on my students. Otherwise, in the teaching methods my only change was to be, as usual, flexible to the capabilities of the children at the time in introducing any-all new materials.

Better because I got feedback from students which I incorporated into the next sessions.

Over time the units became fine tuned with additional strategies as needed.

One unit became an introductory piece in the diversity unit. The other unit I extended the length and depth of my research unit. I expanded each time I taught it.

Modifications occurred after to reflect the ability of students and their understanding.

I dabbled with it with different technologies that were imbedded in units. Eventually the content drove the technology, not the technology driving the content. t his was pretty incredible.

What happened was that I began to teach in a broader perspective more than just one fact. I've always taught with real life connections and I tried after the institute to make the connections more relevant to my students.

I constantly strive to find the way to make the students have more interaction and participation and less lecture time in my classes.

Neutral:

I'm only beginning the 2nd time. I've spent more time on exploring the topic before the lecture and getting into detail and vocabulary.

I've only taught one unit once. However, I noted that I need to spend more time in developing multi-level grouping of students rather than random selections for partners.

I have not taught it more than once, in the spring 2003.

It did not change over time.

No Response: [12]

- **Is the course or unit/Are these courses or units still being offered?**

Yes: [16]

No ô Why not?

Because I am no longer in the classroom. I don't even teach science any more and my unit was on living things. I did share with other 2nd grade teachers. I would expect that in part my unit will be or may have been incorporated into my colleagues' curriculum.

These were my own personal units. I am no longer a classroom teacher. I'm not aware that they are being used by other teachers.

We dropped it. Our integrated science was so pushed [?]. The units we created were integrated not as direct standards only to be covered. This was mandated to be dropped. Now, I'm no longer in the classroom to teach biology. Only at North High did the creative approach get dropped at the instigation of parents and students.

Our school actually disbanded the course – an integrated course that one unit was a part of – our school went back to conventional ways of teaching concepts of chemistry and biology. Students' parents felt that material presented [in] the new ways resulted in low test scores . . . unlearned content material.

Intra Net is where the unit is now. It's just with North High School. I don't [know] whether CCTT still offers it.

I'm no longer in the classroom. [Another teacher] has a huge unit we jointly created.

Because of the multilevel grouping problem that as yet is not worked out. But one unit will be given later in this school year.

No Response: [9]

- **Please describe, in your own words, the impact on your students of the changes you made as a result of your participation in the project.**

Positive:

The participation in this project made me reevaluate the lessons I teach. Is the teaching just for fun or do I have an outcome. And so I have cut out lessons just fun. Now they achieve the standards of the state, the district, and the nation!

Yes. Some reluctant learners were more engaged because of the authenticity of both the approach and the end product.

When the groups were good together the students learned effectively the problem solving method.

I think it was their ability to be empowered.

I think that they have a clearer understanding of the big picture of this unit. I think I have a higher interest and this is reflected in students gaining higher grades and doing better work.

I felt that students got hooked. I had a lot of students continue on in science. They learned more and enjoyed it to keep at it longer.

Students integrated more technology and focussed more on standards – ages 10 – 11 years.

My students became more selective and learned to question ideas and concepts and to be more critical thinkers.

They had more enjoyment during the boring part; less of the old rote and memorization. Getting at main terms vs. all terms was great.

The students are getting a different type of project. They do experiments with chemicals. The impact begins at the beginning. They can discover fundamental reasons behind chemical reactions themselves. They answer what and why.

I think that my students saw doing of a research paper in a new light – more sophisticated, more technology based than it had been for them heretofore. Accessibility at home when they needed information – where the parents could see assignments. Did everyone take advantage? Heck no.

My students are more inclined to use technology to do research and analysis of data. They now communicate effectively using technology. My students are held to a higher standard of thinking than they previously had been.

Technology had a great impact on the students and they gained a lot more knowledge compared with previously used method.

I felt that my 4th graders became more interested in the material being taught. They appeared to gain a better understanding of the material. Participation was improved as well as their improvement in teamwork with better communication.

I believe it had a very positive impact on students' understanding of content. The skills that I learned permitted me to better assess the needs of my students. Using formative assessment allowed me to recognize and meet their needs so they could achieve more. I think one of the key things is having units developed in a very thoughtful manner allowed me, as a teacher, to modify the curriculum as student needs arose. This preparedness permits flexibility for developing game plans.

One of the biggest things was introducing science curriculum into reading units I teach. But by making the content interdisciplinary the students gained so much more exposure to all of the content area being introduced.

Increased use of discovery learning with an increase of understanding by the students.

My students loved to be learning again. They were actively engaged in their own learning process. It also improved their decision making skills.

I think students benefitted because I finally learned to teach in a way that makes sense for student learning.

Perhaps they were more engaged because it was there in front of them. They could grasp the content better.

Most lessons are more student based. Therefore they are required to think more, do more, achieve more.

In the end my students became more independent at questioning and designing science investigations.

There are more elementary teachers teaching science. They have now a better understanding of the processes and science education as observing, hypothesizing, planning, interpreting, communicating, questioning.

Neutral:

It was a mixed impact. Some of my teachers hated the concept. It was too complex. Other teachers loved the process. With more time, training and understanding more teachers would like it and put the process to good use. It's a great concept but a very different approach from what teachers know and practice.

Negative:

I did not see a whole lot of impact on the students unfortunately. I felt it was better but students and parents felt that it wasn't. This was just felt in the school I was in, not in the Omaha public school system.

No Response: [7]

- **Please tell me in your own words what you feel the major impacts were.**

Positive:

The major impacts were we basically did a mirror of what was done at the institute. There was a district change in focus on how we go about teaching science education.

The focus of standards and bringing them down for the classroom teacher's use. The people I work with deal with content standards that sometimes are disjoined and it has helped me to give the staff members a new tool to show them how to reach their goals with standards.

We are a science magnet school so we are continuously developing curriculum so we have used the backward design model.

A better understanding of curriculum content[?]. And it also impacted on my other professional development activities learning.

The unit I use I share and exchanged with my colleagues. The skills I learned in the workshop I use to implement tests and activities in the classroom. I get more confident in student centered activities. Our unit World War I is used in world history and U.S. history classes.

I did see teachers from other states. It was helpful the exchange of ideas. I did come up with a new unit and implement some of the lessons.

Basically the whole change of how we think curriculum and instruction should be delivered.

It redeveloped awareness. It was a reflection of past strategies that as an instructor I presented but that I had forgotten about. It helped me to evaluate my methodology and the strategies I use when teaching.

Teaching to a higher standard with more original thinking by the students for discovery. My presentations have been influenced by what I learned at CCTT – trying new activities to get students to do in-depth analytical thinking.

For me, I think that being able to collaborate with other educators was the greatest impact. I've remained in touch with the presenter, Dr. Susan Koba, and I've collaborated with the high school and elementary school leaders since taking this course.

The benefits of participation and skills acquired increased my confidence as a teacher, an educator, and has allowed me to share these skills and knowledge with colleagues. The professional growth has led to success in the classroom

which in turn has increased invitations to me to share these recognized successes at professional meetings with my peers.

The depth of my understanding for the use of “backward design” process in curriculum development.

I think it helped me to improve my teaching skills by allowing me to look at my strengths and weaknesses. By having done this I could evaluate how I taught and what I taught. I learned to better assess what I wanted my kids to know and how I would best get there.

It changed the way I view assessments technologies. Now I look at everything through this CMI lens.

Because of my learning in CCTT Mapping I’ve worked at my school and at the state level as a consultant in curriculum writing. I am now a key leader, in our state, with the Building of Presence program from NSTA.

1) Changing my thinking about curriculum design. 2) I have a good basis for backward design and I share this with colleagues. 3) All the foundations are laid to communicate as a continuing resource for curriculum mapping.

I think when I headed off to other conferences and we spoke of how we present our materials, other people thought curriculum mapping to be a good idea. We shared ideas.

1) Inquiry and assessment of students. 2) Changes in how I was delivering units. 3) Attempts to change my teaching methods.

I went to a science conference in CA so I have been able to share many ideas about “backward design” models with colleagues at conferences as well as with colleagues in my school. I’ve been able to make natural connections and enrich my own learning about “backward design.”

Increased focus on curriculum standards.

It allows you to see the process differently. It allows you to take content and deliver a way of learning. You’re not just giving; you are allowing them to explore and to extend their knowledge base. People are not all on the same page. We are not in the same place. I was able to bring people up to par in how to present materials as a result of this Institute.

It allowed me to meet with, interact, and exchange ideas with some of the best teachers in our area. And when I travelled extensively this summer I got a chance to make a connection with educators nationally.

The biggest thing for me as a veteran teacher was the reevaluation of how I deliver the curriculum to my students, and being able to meet the new standards.

Mostly improved research and accessibility of resources.

On CCTT I used the backward approach to justify the end of what I’m doing at the beginning. It’s made me preplan my lessons in advance and give the students a syllabus so they know what is expected. I will be making a presentation at UNO using the Curriculum Mapping method for colleagues attending a refresher course.

Major impact was in bringing the mapping and backward design to other colleagues and promoting the reevaluation of why we do what we do.

The major impact was to focus my classroom instruction on the national, state, district goals. It makes me more [word?] for the content I’m giving my students to achieve the goals set.

Neutral:

Very few teachers were using the "backward design." As a resource person my explanations of concept were just surface. The greatest impact for me was in the presentation's process gained from the CCTT Curriculum Mapping Institute.

- **No Response:** [4]

- **Have you shared any information or skills you learned with colleagues either in your institution or in other institutions, through any other activities? (Please specify.)**

I started a technology club – techno savvy kids and colleagues were members.

Hit them all. [All activities listed on the survey.]

Job embedded professional development.

Curriculum writing.

NSTA activities.

Informal discussions at NSTA, inquiry workshops, etc. I used my unit to complete course for "Community of Excellence" in mathematics and science "CEMS." I received an A+ and my certificate.

Invitations to address NSTA state conference. Nat'l Career and Technical Ed. Conf. in Las Vegas.

My students have to do independent research to get their diploma – one of my students wrote a 3,000+ word paper on one of the lab techniques.

Creation and design of our own handwriting curriculum.

- **Have any of your colleagues made any other changes? (Please specify.)**

I have some colleagues in English Dept. who have put together a research paper unit that has come to fruition as a result of the Institute.

One person published 40 articles – has been asked to write a book regarding curriculum mapping and end results.

I know that Mrs. [Name] made changes using backward design.

As far as really focussing on the content standard then breaking the standards down to meet student needs.

I've instructed my student teachers to do curriculum planning using the backward design and have been their mentor in this endeavor.

They have given presentations to other groups. They now use technology tools that were presented to me. They write applications for grants and apply for speaking engagements.

Every single one of my teachers implemented Backward Design after being introduced to it in in-service training.

I have now several people who now integrate technology into their teaching.

They have made changes in their assessments.

I think the way they approach curriculum now. Their way of thinking about instruction has changed.

I believe they are focussing on backward assessment model to write their own tests.

The two teachers I work with have made changes in laying out the unit; looking at the big picture to see what they wanted to take place; looking at the end expectations; much more detailed in the design of units.

- **Did you encounter any barriers to implementing what you learned from your involvement with this project?**

No: [18]

Because teachers I consult with gained knowledge of the project.

Yes ô Please tell me about these barriers.

I'm not in a classroom.

Collaborating with teachers, not in my building, was very much a barrier – not being able to meet with them face to face was difficult to follow through in development of units.

The units on the drawing board were not completed. Our group had too much distance between us. Despite the fact of email and the world wide web availability they lack the personal interaction necessary to complete the units under development; and they were good.

One was money. If you wanted to integrate technology that really worked, it was expensive. So I took on the role of grant writer to obtain the necessary technology for my classroom and colleagues' classrooms and to bring in to the classrooms technology experts. Two was that of limited resources, limited space, slow downloading of technology.

Resistance with change. Difficult to get people to change. The integrated approach was not as conducive to teaching the core facts mandated.

Time! The units were more encompassing than previous units, requiring more time to develop and to implement – and time is a scarce resource.

Availability of technology time. Availability to get back together – keep in touch with colleagues for purposes of evaluating the product we put together.

The complexity of the design itself was a barrier. For one 2-day workshop it was a lot of information, a very complex topic hard to implement. To fully implement the "backward design" process requires multiple training sessions and on-going support to be fully implemented.

Financial barriers – equipment failure to implement the technology the workshop represents. It depends on the department you are in the depth of equipment.

Technology – not enough available in the classroom. The curriculum is too extensive – what we are expected to teach in a year – there isn't enough to cover. My unit needs 3-1/2 weeks' study and we are lucky to get 1-1/2 weeks to implement it. The rigorous testing schedule we are mandated to do cuts away on time needed to cover material in class.

After this workshop I didn't return to my classroom. Actually, the promotion was not anticipated at the time, although I was aware that it was a possibility.

No Response: [4]

- **When you took the program, did you intend to develop any new material/units or modify any existing material/units?**

Yes: [24]

No ô Please explain:

I didn't [think] that this was the purpose of the workshop.

My goal was to teach Backward Design to teachers not to develop curriculum units on my own.

I didn't know I had a problem. Afterwards I felt that I was strategically placed with experienced teachers who thought they were there to write for the website. I thought I was there for curriculum development methodology. I thought Susan Koba selected me to be in this group because of my training background and thinking system. The experienced teachers and I butted heads. But evolution occurs! I've seen so many teachers redo this institute and revise their thinking – initially, philosophically I was on board but without the necessary implementation skills. Now I have them.

One, because of my role in the CCTT was not to revamp or revise any unit. Two, because of the work I did – I do more pedagogy than content for undergraduates planning to teach.

I'm not a classroom teacher.

I'm a principal not a classroom teacher. You give up a lot of creativity.

No Response: [2]

- **Which of the following best describes the school where you were employed when you took the project?**

Other (Please specify.):

PreK – 4th grade science magnet school Spanish and technology.

Teacher Administrative Center, elementary curriculum consultant.

Administrative Center, Omaha, Neb.

Magnet elementary – science, Spanish, technology.

Central Office Center where all teacher support is housed, data collected.

Lothrop Magnet Center, primary/elementary.

Specialize in Spanish, science, technology magnet elementary school.

- **Would you care to add any other comments about your experience(s) with the project or the impact on your teaching or your students' learning?**

Positive:

I really enjoyed. I felt it was a very valuable program.

I miss not having CCTT workshop being given. It was a quality program and should be continued at the very least as refresher courses. Were it to be marketed it probably would be self-sustaining.

We have an action research project in Omaha. We are a school district which requires students to have 3 years of math and science to graduate; the only district in Nebraska. There is an emphasis on African Americans' education. The

program is called CPMSA. It allows us to see how students are improving with it first step as participation-attitude-achievement assessments.

CCTT opened a lot of doors and windows. We use the backward design in CPMSA. The whole mindset in our district is wonderful.

Institute was well organized. The setting in Vegas was great and nice to be in a warm climate. Your time at the workshop was well utilized. Great to be on a college campus again when students were away.

The most effective workshop attended of three was the workshop in which my colleagues and I wrote our own curriculum for our buildings and our department, not cross curricular writing.

When we came together in these workshops and had to develop on-the-spot curriculum this was less than beneficial. There was less-to-little follow through because the team members were from all over the country. Therefore, more time was needed at these workshops to complete units before everyone got away.

For me, it was a great experience. To become totally involved with the process it took 3 times attending the workshop. One workshop attendance would not have been effective for me and for most participants it wasn't.

The content was a standard not at my students' level nor had I ever worked with this content.

If I had been involved with my level it would make a difference. I personally didn't get as much out of the content; it was just content over my head. But the backward design and teaching to the standards was helpful.

I filled out a questionnaire on computer at the website. Another teacher at my school told me I needed to fill it out. It took many hours. But at the sessions no one I spoke with seemed to have filled this out or even been aware of the survey. Nor was it discussed at any session. Therefore, I was in the wrong place. I'm at a science magnet school. We seem to need to be represented at these trainings. I should not have been there.

It was worthwhile but I didn't have a chance to implement. However, I did encourage colleagues to take the program.

The curriculum mapping is extremely valuable for gaining a better understanding of your curriculum and its content standards.

Inquiry based learning leads to greater understanding for students for the standards of all curriculum mapped units.

Neutral:

The traditional method of curriculum development doesn't address learning, how to understand. It just expresses student regurgitation of information, not what they know or how to gain problem solving skills. The CCTT workshops were too short. Therefore, the denial process set in and those teachers who were affected returned to take more workshops.

Put questionnaire on-line.

The great thing was that you had a conference where you developed units. But time ran out. We returned home with unfinished units. We did have one in service day following to work on project. Still not enough time.

I would suggest more follow-up on your part (those who ran institute). If we had an assigned time to follow-up with a specific agenda – similar to the format of the initial training with relaxed format/set time frame – we provide the venue, resources, et al. – then you would have a product to share nationally.

It was great but hit or miss unfortunately.

FB of CCTT: Bridge the gap. We were brought to the mountaintop. Because of time constraints and distance we didn't get to the promised land/completed project.

For the data to be correct you need to separate the surveys of teacher participants from professional development participants.

I believe that there should be on-going development for trainers in order to support teacher workshop participants' grasp of this complex teaching method. To use this method in the classroom successfully a teacher needs more than a one or two shot workshop training session.

It would have been nice to have had information ahead of time, an overview of the project, the criteria expected before you attended.

I would have thought that it would have been more beneficial to have had more teachers involved instead of being top heavy with participants in administration.

As a consultant to help foster curriculum development it would have been better to have had an equal number of classroom teachers in the mix of educator participants to bring back the shared information from supervisor to staff and from peer to peer. It makes a greater impact when knowledge can be stored and you learn together.

Negative:

They need to decide what they really want to know. My answers must be directed to specifics. If I felt that this survey would be of help I would continue. But we are all lousy professionals. I don't have the time for nonessentials. Ask specifically. Increase scope and size!

Not enough preparation ahead of time to meet the objectives of the workshop. We spent a whole lot of time developing curriculum to meet national standards. If you weren't able to complete the creative thinking at the meeting there weren't any provisions for follow through nor was there enough preparation for the workshop hours.

Maybe my negativity came from the lady I was working with. The unit we developed needed 40 more hours of time to implement. If I'm going to get through my mandated curriculum – to meet the standards – there was not enough time to develop using CMI method.

Another problem was the instructor. He was never around. He was from some other area. He gave zero feedback. I don't even remember his name. He was a science teacher, I think, from Minnesota.

Susan Koba's delivery should be presented in ½ day not the 2 days of instruction time it took – a waste of time!

I took my training in Las Vegas – Briez was great The technology person, from Minnesota, tried to help us out.

For quite a while we had a problem with the server. Doug Jackson knows He also arranged for a professional day to continue development of the unit.

I think that this evaluation needed to be done within 3 – 4 months following the workshop. It needed a second evaluation as follow-up to be given within 6 months of the first.

If I had not spent time after the workshop developing the unit used I might not have introduced any strategies into my classroom. I was excited initially to implement the unit. But now I'm foggy – 2 years after the fact is too late.

"Backward Design" is not a new technology to me. It's a good teaching tool that I've used for years without knowing this label. The CMI workshop was too intensive for the time that was allotted. So much to do – too much to reflect upon. The writing was not difficult. There was so much being offered, and although we worked hard, too much to accomplish in the time frame. Then when you return to the daily routine there is never time.

We were told that we were expected to attend this workshop with an idea. So we, our group, developed a project to bring to the conference. However, this was not what was expected and therefore this conference was not what I expected. Our group with Elaine Westbrook was shot down – we were told we couldn't enter with any preconceived project.

It was a degrading experience. Our prepared offering was not "on task." It's too bad that we were not properly instructed as to proper expected preparation for attendance. Evidently, preparations had a change of focus for this exercise, one in which we were not informed. Then, at the workshop, our team was split up. There was a mixup in presentation. Then there was no follow-up.

Obviously this was a disorganized organization.

Better follow-up is necessary. Find the page on the internet so we can go back to it. Where is the address? There was very little follow-up.

We've spoken to Dr. Koba and Elaine Westbrook about not being able to access the information. It was an unrealistic goal we achieved despite the fact that there has not been any feedback from our finished submission – whether they were in a format expected? Were good? Incorrect at all? We spent 40 hours developing a unit and got no feedback.

I want to complain bitterly that we don't have enough technology in the classroom in order to carry out my units the way they need to be presented and to make it more interesting for the kids.

It was the people teaching the course that made the time spent less than beneficial for me.

The survey would have been much easier done on-line. You could see the questions proceeding and following each other to determine how to respond rather than a constant stream of audio with kids unattended sitting in your room diverting attention.

No Response: [8]