Teaching With Colorado's Heritage

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Teaching With Colorado's Heritage
An Evaluation of an Education and Training Project of the
Colorado Digitization Program

During 2002-2003, the Colorado Digitization Program (CDP) offered *Teaching With Colorado's Heritage* (TWCH), a series of professional development opportunities for classroom teachers and school librarians to increase their awareness and use of primary digital source materials in teaching and thereby to enhance student learning. These professional development opportunities included three different models:

- a single **five-day summer institute** based on CDP content tied to Colorado education standards and content from the Library of Congress' (LC) American Memory Fellows Institute (AMFI). This institute was designed to involve 12 teams of classroom teachers and school librarians in face-to-face interaction with each other as well as with curators and subject experts.
- a series of **one- to two-day workshops** based on the same content and targeting a total of 12-15 teacher-librarian teams in five regions. The face-to-face workshops of this model were augmented via subsequent distance learning that utilized threaded discussions, listservs, chats, and posting of lessons and student work.
- brief presentations during a series of **one-day workshops**, including Technology in Education (TIE) seminars and other events sponsored jointly by the National Teachers Training Institute (NTTI) and Rocky Mountain PBS. Due to the limited time available at these events, only selected TWCH information could be shared.

TWCH Goals Evaluated

Of the TWCH project's seven goals, four were assessed through this Library Research Service (LRS) evaluation project:

- **Improve school librarian and teacher awareness** of digital primary resources by delivering **LC AMFI content** via a combination of **face-to-face and distance learning** techniques.
- Also improve school librarian and teacher awareness of digital primary resources by integrating TWCH content into **existing professional development opportunities** for school librarians and teachers.
- **Improve school librarian and teacher skills** at integrating digital primary resources into their lessons by augmenting **LC AMFI content** with state and local resources supporting **Colorado education standards**.
- **Expand use of digital primary resources** by librarians and teachers **in teaching**, and thereby **enhance student learning** using these resources.

Methodology

Participants in the five-day institute and the one- to two-day workshops received a post-event survey to assess their awareness and use of primary digital resources and its impact on their teaching and student learning. The survey was administered in both print and electronic formats. Questionnaires were sent to 51 participants in the two TWCH models. Completed questionnaires were received from 28 participants, including 12 from the five-day institute, 12 from the one- to two-day workshops, and four returns from participants for whom the model experienced was unknown.

Participants in one-day workshops at which TWCH content was addressed only briefly were asked to respond to a mini-survey based on the full survey administered to participants in the two TWCH models and selected members of this group were interviewed as key informants. The mini-survey, which was distributed in print format only at the end of each workshop, was completed by 39 participants in the NTTI event and 10 participants in the TIE conference. Of these 49 responses, 12 volunteered to be interviewed as key informants, and 10 were interviewed by telephone for 15 to 25 minutes.

Findings

The findings of this evaluation indicate that the TWCH project was a resounding success in achieving all four of the goals that could be addressed by this evaluation. These findings also indicate the relative effectiveness of the three tested training models, identify ways these models might be improved, and suggest other issues that such training might address.

Improving Librarian and Teacher Awareness

Participants in one-day workshops were asked about previous awareness, anticipated use, and the impact of their initial introduction to primary sources.

* 98% would recommend the single day workshop setting to learn about digitized primary sources available online
* 86% plan to share what they have learned with colleagues and friends
* 80% learned new ways to access primary sources
* 80% learned how to integrate digitized primary sources into the classroom
* 80% plan to integrate digitized primary sources into existing and new lesson plans
* 70% were unaware of digitized primary sources available on websites such as the Library of Congress' American Memory, Colorado Digitization Program's Heritage Colorado, and National Archives and Records Administration's Digital Classroom before participating in the single-day workshop
* 65% want to learn more about primary sources
* 49% indicated that their involvement in the workshop taught them what a primary source was

"The afternoon session about digitized primary sources was a huge unanticipated benefit of the National Teachers Training Institute." *-key informant interview*

"I've had previous classes on primary sources and really connected to the digitized materials. The CDP has provided some great new places to access primary sources." *-key informant interview*

"I am excited about being able to get online with primary source photos and the future possibilities." *-key informant interview*

Improving Librarian and Teacher Skills

Confidence levels are high for teachers and librarians who have participated in the Teaching with Colorado's Heritage institutes and workshops. Of the participants in the five-day summer institute and two-day/distance learning workshops:

> * 89% felt confident or very confident about enriching existing lessons by adding digitized primary source materials
> * 89% felt confident or very confident about teaching with digitized documents and text based primary sources
> * 86% felt confident or very confident about teaching with digitized photos and prints
> * 82% felt confident or very confident about creating new lessons that integrate digitized primary source materials
> * 79% felt confident about teaching with primary source materials
> * 57% felt confident or very confident about teaching with digitized maps

The post-event survey assessed the knowledge of searching and using primary source materials. The following is a summary of correct responses for the summer institute and two-day/distance learning workshops. Participants show high levels of understanding and knowledge retention.

> * 96% of the respondents understand that when searching the American Memory database you can search across all collections; limit your search to specific collections; or search by specific media such as photographs
> * 93% of the respondents understand that there are searchable categories available on the Heritage website if they don't know specific terms to use when searching collections
> * When participants were asked about photographers selecting shots, perspective, angles, poses, framing, developing, and cropping, 79% correctly identified these as examples of possible bias in primary sources
> * When participants were asked if photographs were considered primary sources because they present an accurate and unbiased view of historical events, 65% correctly identified this as a false statement
> * When participants were asked to choose between searching or browsing unfamiliar digitized collections with students, 64% correctly identified browsing as the best option

* When participants were asked about changing the orientation of a map, 48% correctly identified this as a form of bias in primary sources
 *40% of the respondents could correctly identify when a lesson integrating digitized primary resources is aligned to Colorado Model Content Standards

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"Learning about the bias of photography teaches critical thinking and the process of deductive reasoning." -*key informant interview*

"The explanation on cataloging photographs is very helpful from the standpoint of searching. Recognizing the limited conventions available to describe each individual item encourages teachers and students to think critically about the process of locating needed items*." - key informant interview*

"The Library of Congress training was very helpful. I have tried to search the American Memory site before with great frustration. After this workshop I can actually find what I need." -*key informant interview*

"The material covered by the Colorado Digitization Program will be very helpful in teaching students how to manage their own Internet searching." -*key informant interview*

Expanding Use in Teaching and Learning
Only 20% of participants in the single-day workshop had prior knowledge of digitized primary sources. Of those only 13% indicated that they had used digitized primary sources in the classroom. All workshop participants overwhelmingly agreed that having digitized primary sources available online increases the likelihood of using primary sources in the classroom. All 10 key informants definitively expressed that they would be using digitized primary sources in the classroom upon returning to school in the fall. The TWCH workshops can and did serve as a catalyst to professional collaboration and knowledge sharing between colleagues.

Of the participants in the summer institute and the two-day/distance learning sessions, 96% have shared or plan to share the TWCH materials with colleagues.

* 96% of all participants indicated that the availability of digitized primary sources online increases the likelihood that teachers will use them in the classroom
* 93% of the summer institute and two-day/distance learning participants have students use primary source materials as part of their learning activities
* 89% of the summer institute and two-day/distance learning participants have used digitized primary source materials in the classroom since participating in the TWCH workshops
* 61% of the school librarians from the TWCH workshops have links to the CDP Heritage resources on their school library home page

"The Colorado Heritage website will be helpful when students need materials that are Colorado specific since there are limited resources in the library's print collection." -*key informant interview*

"The web is a difficult environment to teach students about information literacy. Having these sources available helps students understand why primary sources are the best sources." -*key informant interview*

"These sites will make it easy to incorporate primary sources into my existing lessons, they're user friendly, they are do-able." -*key informant interview*

Participants who used digitized primary source materials in the classroom following the TWCH workshops were asked to evaluate the impact of these resources.

* 75% observed increased comprehension of the subject areas using primary source materials
* 71% observed increased use of primary sources in student work
* 50% observed students developing strategies for locating digitized information
* 35% observed increased inference in student work

"Students that are visual learners will benefit greatly from the online resources." -*key informant interview*

"Photographs and pictures bring students into a subject in a different way." -*key informant interview*

The summer institute and two-day/distance learning participants were asked about their experience using digitized primary sources.

* 43% indicated that their lessons focused on searching, analyzing, and integrating digitized sources
* 21% focus specifically on primary source analysis
* 18% work with students on integrating digitized sources into their projects
* 14% work with students to develop effective search strategies.

Difficulties that were encountered using digitized primary sources included time constraints, access to materials due to hardware or software issues, managing the activities in the classroom and assessing the usefulness of the source. Time constraints pose the greatest barrier for more than 90% of the respondents followed by accessibility for 45%.

"I was inspired by how well the presenters were trained to ask the right questions in order to pull out the information. The techniques I learned will be great with students." -*key informant interview*

"Our school can't afford the print resources to do research at this high of level or currency. The benefits of having these type of source available is priceless." *-key informant interview*

"Having time to research and locate the appropriate items will be the key." *-key informant interview*

Relative Effectiveness of Different Training Models
Three statistically significant differences were found between the summer institute and the two-day/distance learning models.

* 42% of the respondents from the distance learning sessions considered **management of activities in the classroom** an area of difficulty compared with none of the respondents from the summer institute. This might suggest that teaching and learning classroom management activities is more successful when participants are within a classroom environment as opposed to a virtual environment. The length of time since the participants were actively involved in the Institute is also an important variable. Participants from the summer institute had more time to explore and work with digital materials in the classroom. This could account for the increased comfort levels managing classroom activities
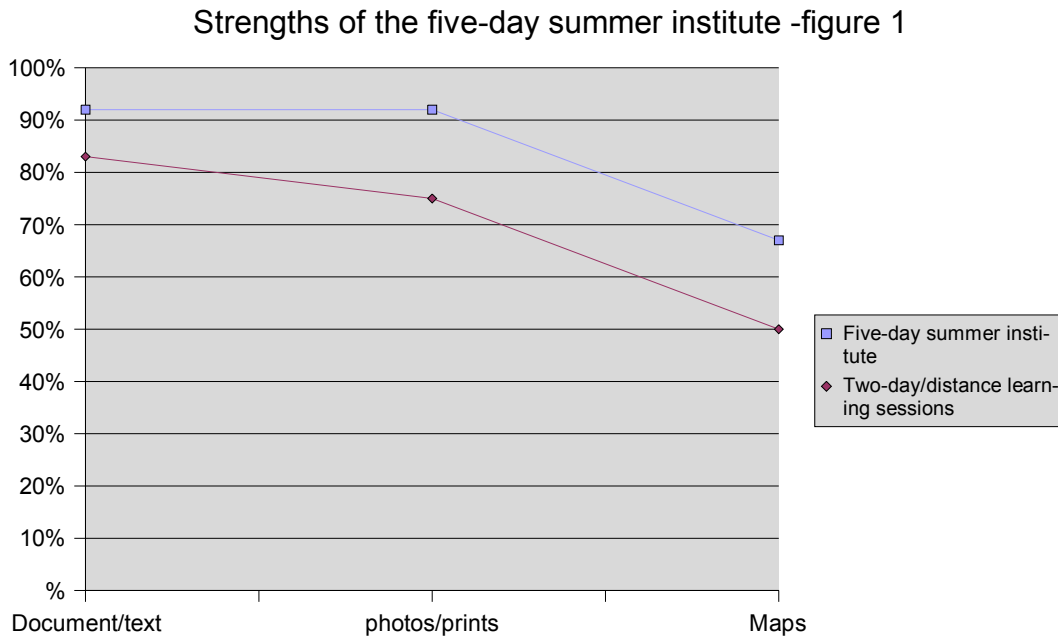
* Participants from the summer institute indicated greater **satisfaction with the Library of Congress American Memory** site while the two-day/distance learning participants were more satisfied with the **Heritage Colorado site**. 3 of the Summer Institutes' instructors were graduates of the Library of Congress American Memory Program leading to higher use of the content from the American Memory site. The two-day distance learning participants were involved with more work using the Colorado Heritage site because of expressed regional interests.

* 46% of the respondents from the summer institute incorrectly identified the **bibliographic record** as a representative summary of the intellectual contents within a collection; all of the participants from the two-day/distance learning session responded correctly to this question. Some students from the summer institute were utilized as teachers in the two-day/distance learning sessions. This trend might be attributed to a trickle-down learning effect where learning is increased through teaching. This phenomenon was studied by the National Training Laboratories. The study confirms that teaching results in the highest retention of newly learned material. Access to a 3-D model of average learning retention rates utilizing different teaching methods can be found at http://www.tcde.tehama.k12.ca.us/pyramid.pdf

Following the summer institute the Teaching with Colorado's Heritage instructional components were modified based on the first session outcomes. The fact that no one in the later model made this mistake indicates that the material concerning bibliographic records was taught more effectively in the two-day /distance learning sessions.

Descriptive statistics do not suffice to explain completely the differences among groups. Factors such as participant history, learning environment, and group interactions represent unmeasured variables.

What each training model does best

### Strengths of the five-day summer institute -figure 1

Participants from the five-day summer institute were more confident using digitized primary sources in the classroom.

- 92% of the participants in the summer institute felt confident teaching with digitized photos and prints compared with 75% of the participants in the two-day/distance learning sessions. (See figure-1)
- 92% of the participants in the summer institute felt confident teaching with digitized documents and text based primary sources compared with 83% of the participants in the two-day/distance learning sessions. (See figure-1)
- 67% of the participants in the summer institute felt confident teaching with digitized maps compared with 50% of the participants in the two-day/distance learning sessions. (See figure-1)

This suggest that learning how to use digitized primary resources in the classroom is more effective when participants are physically present. The participants from the summer institute also have been working with digitized primary sources longer which adds to the higher confidence levels.

Strengths of the two-day/distance learning sessions - figure 2
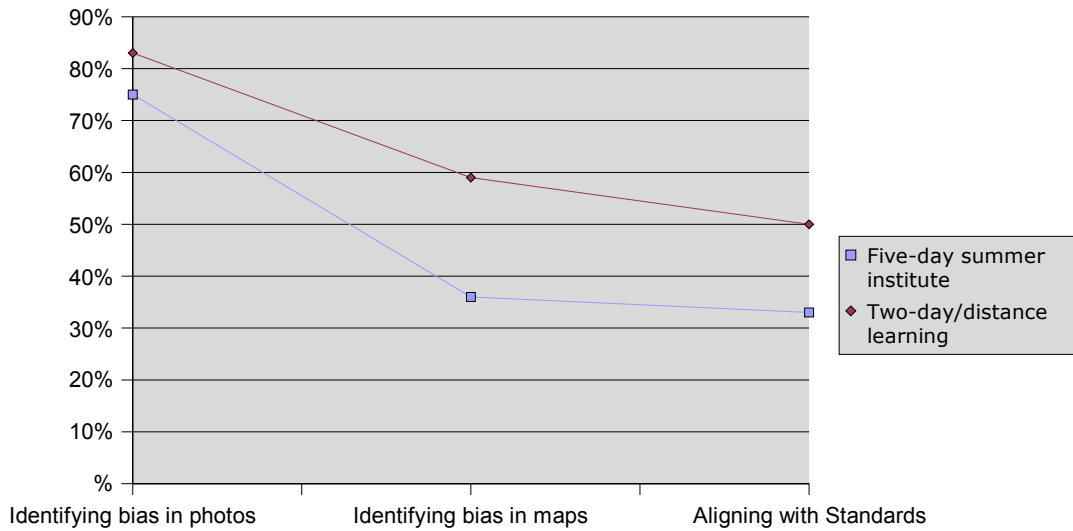
The participants from the two-day/distance learning sessions showed greater comprehension of bias in primary sources and alignment with model content standards than those participants from the week-long summer institute

* 83% of the participants from the two-day/distance learning sessions correctly identified examples of bias in photographs compared with 75% of the summer institute participants. (see figure-2)
* 59% of the participants from the two-day/distance learning sessions correctly identified examples of bias in maps compared with 36% of the summer institute participants. (see figure-2)
* 50% of the participants from the two-day/distance learning sessions understood how lessons using digitized primary sources align with Colorado Model Content Standards compared with 33% of the summer institute participants. (see figure-2)

These findings suggest that learning to analyze digitized primary sources and align their use with Model Content Standards was more effective during the two-day/distance learning sessions. Based on the experiences and outcomes of the summer institute instructional components were modified to more clearly define bias, the purpose of the bibliographic record, and alignment with standards. The amount of time students worked with the course materials impacted the level of comprehension as well. The students involved in the distance learning piece had 3 weeks prior to the class and 2 weeks following the class to utilize the online utilities such as threaded discussions, class postings, and class activities.

The National Teachers Training Institute (NTTI) and Rocky Mountain PBS partnerships were also highly successful. Participants in the one-day programs were receptive and provided positive feedback on mini-surveys and key-informant interviews. As mentioned

earlier responses to the mini-survey indicate that 70% of the teachers and librarians participating in these workshops were unaware of digitized primary sources. Following their introduction to the TWCH resources 65% were interested in learning more. Introducing the TWCH content within established training programs provides opportunities to increase awareness of digitized primary sources and inspires educators to increase their use of technology.

Excitement about the possibilities of using digitized primary sources in the classroom was a common thread in the key-informant interviews. Interview participants indicate that learning through primary sources help kids connect with the human aspect of history. Visual resources such as photographs and prints helps students to engage the subject introspectively and inspires critical thinking, a key component in information literacy.

"The lesson plans provided by the CDP will help to expand my use of technology in the classroom." *-key-informant interview*

"Choosing an object from the Heritage Colorado Treasure and hypothesizing about what the object was, why it has been preserved, and who made it was an exercise that placed you in the students shoes. This was an eye-opening experience." -key-informant interview

"I will never forget, the civil war photographs taken from a newspaper in the South and a newspaper in the North. They looked liked the exact same pictures at first glance but then you notice that the photographer has changed the uniforms on the soldiers bodies. I was so shocked, I went home and told everyone. I will definitely use these resources in my teaching"-key-informant interview

Areas for Improvement

This assessment speaks not only of the success of the Teaching with Colorado's Heritage program but will provide insight for program improvements. The complex nature of primary sources and digitized objects can be a challenge to teachers. Each object is unique and presents the perspective of an individual or group of people. The elements that make primary sources so valuable in teaching are the same elements that make primary sources difficult to find, interpret, and incorporate.

To increase the effectiveness of the TWCH training improvements should be made teaching:
* The inherent bias of primary sources
Some respondents mistakenly perceived primary sources as accurate and unbiased views of historical events.
* The usefulness of the bibliographic record.
Some respondents mistakenly perceived the bibliographic record as a representative summary of the intellectual content of a collection.
* Search strategies
The differences between searching and browsing were widely misunderstood. Over half of the participants did not retain the knowledge of searching the collections using subject headings.
Modifications to the learning components between the summer institute and the two-day/distance learning session increased the level of understanding and retention.

Appendix H – Library Research Service Report

Post Survey Profiles - Grade Level - figure 3
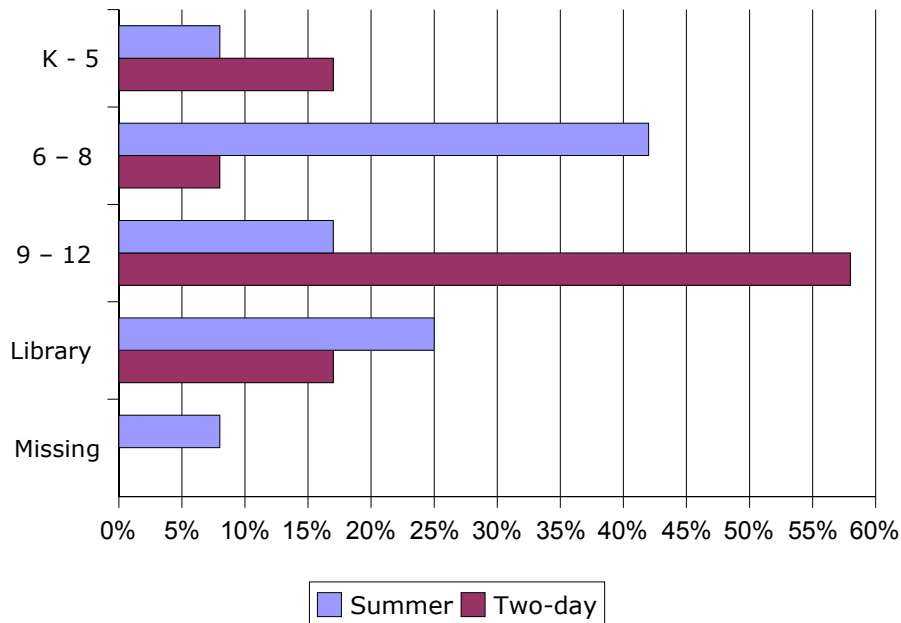
Continually refining course content based on research and measurement will further the success of the Teaching with Colorado's Heritage program.

Conclusions
The Teaching with Colorado's Heritage Institute is a successful adaptation of the Library of Congress' American Memory Fellows Institute on a state level. This program serves as a model to other states developing similar access to primary sources. The effectiveness of the program will ensure sustainable training for school librarians and teachers of all learning styles. Never before have primary sources been so readily available. Teaching educators how to use this point of access will have a prolific effect on the way technology is used in education. All types of learners are important. Websites like Heritage Colorado and the Library of Congress American Memory provide flexibility and increased access to cultural materials into the classroom. This access is particularly valuable to students and teachers in rural communities where opportunities to learn using research collections is limited. Each model encompasses strengths that can be woven together in future programs to further the positive impacts that such training provides.
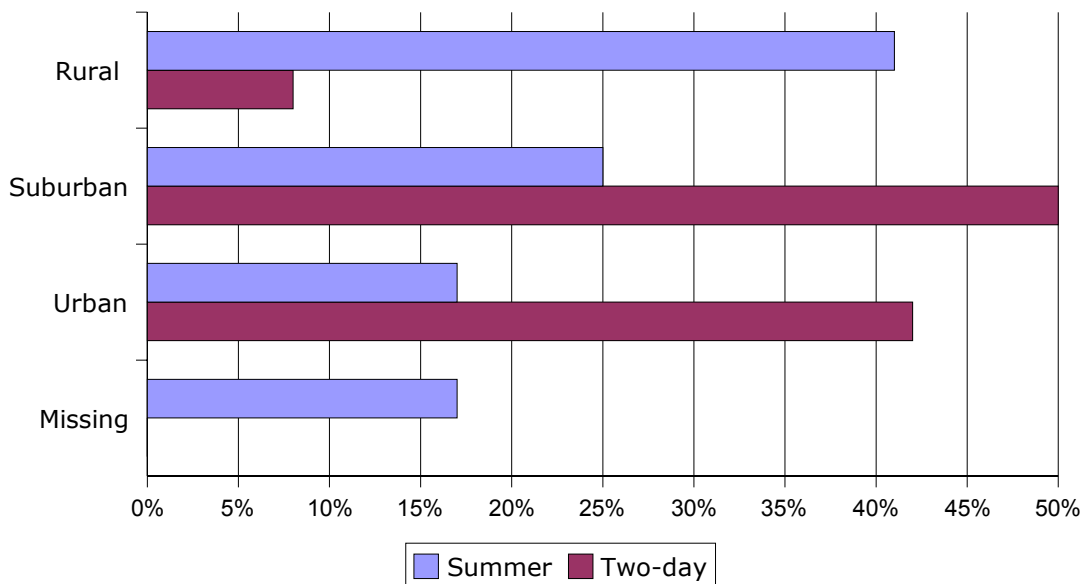
Appendix

Post-event Survey Profiles

There were 16 respondents from the five-day summer institute, and 12 respondents from the two-day/distance learning sessions. The following charts summarize grade level (figure-3), subjects taught (figure-4), and location of school (figure-5).

Post Survey Profile - Subject - figure 4
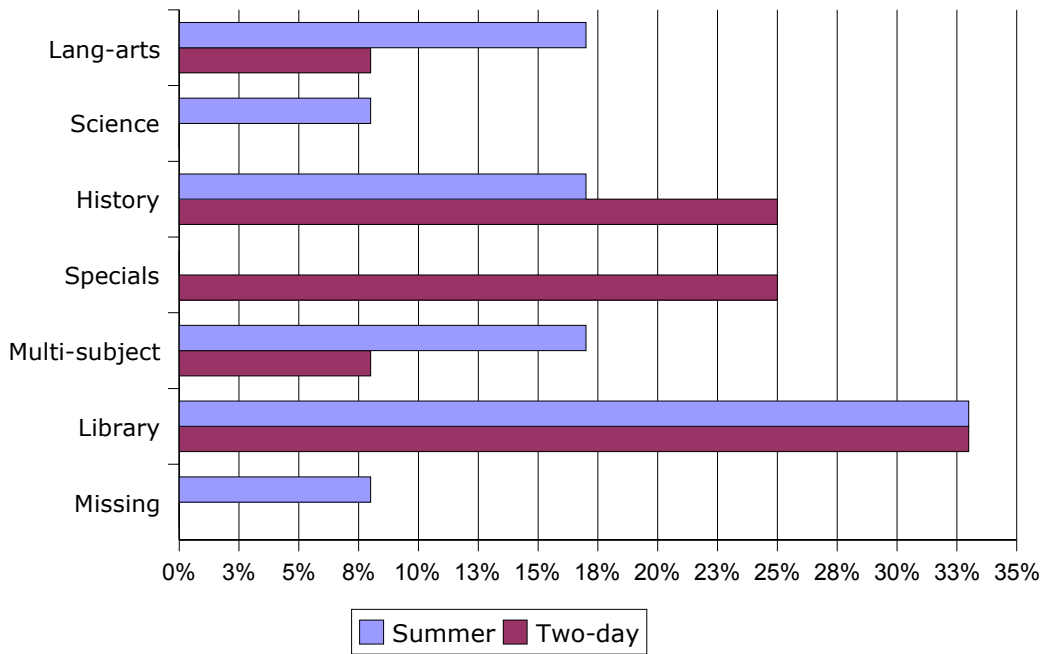
Post Survey Profile - Location - figure 5

"Teaching with Colorado's Heritage"
Educator Institute - Post Workshop Assessment

This survey is designed to assess the level of retention and the impact of primary source awareness attained through the "Teaching with Colorado's Heritage" Educator Institute. Your participation will be important for improving the approach used in future classes and will provide an instrument of measurement for the Colorado Digitization Program development.

This part of the survey is designed to assess the impact of primary source awareness attained through the "Teaching with Colorado's Heritage" Educator Institute.

1) Have you used digitized primary source materials in the classroom since participating in the "Teaching with Colorado's Heritage" Educator Institute?
(Mark one)

- Yes - If yes, what impact has this resource had? (Mark all that apply)

  - Increased use of primary sources in student research
  - Increased student inference in reports
  - Increased comprehension of the subject areas using primary source material
  - Developing strategies for locating digitized information.

- No - If No, why not? (Mark all that apply)

  - Topic being taught didn't have primary source materials available
  - I did not have the time to do the research
  - I didn't think about primary source materials available to me
  - No access or inadequate access to the web
  - Other, please describe:

_____
_____
_____
_____

2) How confident are you in teaching with primary source materials? (Mark one)
- Very confident
- Confident
- Moderately confident
- Not confident

3) How confident are you at enriching existing lessons by adding digitized primary source materials? (Mark one)
- Very confident
- Confident
- Moderately confident
- Not confident
- I've never integrated digital primary source materials with existing lessons

Appendix H – Library Research Service Report

4) How confident are you with creating new lessons that integrate digitized primary source material? (Mark one)
- Very confident
- Confident
- Moderately confident
- Not confident
- I've never created new lesson plans that integrate digitized primary source material

5) How confident are you in teaching with:

	maps	photos/prints	documents/texts
Very confident			
Confident			
Moderately confident			
Not confident			
Not applicable			

6) Do you have your students use primary source materials as part of their learning activities? (Mark one)
- Yes
- No

7) When using primary source materials in the classroom do your lessons generally focus on teaching the students how... (Mark one)
- to search for primary sources
- to analyze primary sources
- to integrate primary sources into report
- All of the above

8) What aspect of using primary source materials in the classroom did you find most difficult? (Mark all that apply**)**
- Types of activities that can be used with the source
- Time constraints
- Managing the activities in the classroom
- Assessing the usefulness of the source
- Accessing online material due to hardware/software issues.

9) Have you had an opportunity to share your knowledge of primary source materials with professional colleagues? (Mark one)

- Yes, have presented
- Yes, scheduled to present
- Plan to
- No

10) To be answered by library media specialists only: Do you have a link to CDP Heritage website on your school website? (Mark one) Yes
- Yes
- No

Do you have a link to the Colorado Virtual Library on your school website? (Mark one)
- Yes
- No

11) Please rank your satisfaction with the Library of Congress American Memory website for locating primary source materials. (Mark one)

- Very Satisfied
- Satisfied
- Dissatisfied
- Very dissatisfied
- Neither satisfied nor dissatisfied

12) Please rank your satisfaction with the Heritage Colorado website for locating primary source materials. (Mark one)

- Very Satisfied
- Satisfied
- Dissatisfied
- Very dissatisfied
- Neither satisfied nor dissatisfied

This part of the survey is designed to assess the level of knowledge of searching and using primary source material

13) If you do not know a specific term you'd like to search in the Heritage Colorado database, can you select from a list of browse-able categories. (Mark one)
- True
- False

14) Subject words used in searching Heritage Colorado are taken from the title of the record.
(Mark one)
❑True
❑False

15) When searching the American Memory database, you can search across all collections or limit your search to specific collections. (Mark one)
- True
- False

16) **When searching the American Memory database, you can limit your search to a specific media such as photographs & prints, maps, etc.** (Mark one)
1.True
   False

17) Would searching or browsing be better when exploring an unfamiliar topic with students? (Mark one)
- Searching
- Browsing
- No difference

18) What is (are) the best reason(s) for using the bibliographic records of primary sources? (Mark all that apply)
- Provides documentation information for citing the source
- Has subjects and keywords for further searching
- Lists secondary sources for students to look at
- Provides a representative summary of the intellectual contents within the collection

19) When students are interpreting a primary source what is the best way they can confirm accuracy? (Mark all that apply)

- By making observations about the primary source
  - Ask others what they think
  - Using other primary and secondary sources to do follow up research
  - By writing a report about the primary source

20) Photographs are considered primary sources because they present an accurate and unbiased view of historical events. (Mark one)
  - True
  - False

21) Photographers choosing shots, perspective, angles, poses, the frame, developing, and cropping are all examples of _____ in photographs? (Mark one)
  - Artistic merit
  - Quality control
  - Bias
  - Criteria for teacher or student selection
  - Effectiveness

22) Changing the orientation of a map presents a form of... (Mark one)
  - Scale
  - Bias
  - Convention
  - Status

23) You know that a lesson is aligned to Colorado Model Content Standards when your assessment measures the level of understanding of the _____ standard (Mark one)
  - ❑assessed
  - ❑addressed
  - ❑analyzed
  - ❑aligned

Demographics

What subject(s) do you teach?

What grade level(s) do you teach?
  - K-5
  - 6-8
  - 9-12
  - Librarian

Which of the following most accurately describes the location of your school?
  - ❑Rural
  - ❑Suburban
  - ❑Urban

Teaching with Colorado's Heritage Workshop Assessment

1) Were you aware of digitized primary sources available on websites such as the Library of Congresses' American Memory, Heritage Colorado, and NARA's Digital Classroom before this workshop?
(Mark only one)
No
Yes - If yes, have you used digitized primary source materials in the classroom?

No
Yes

2) Does the availability of digitized primary sources online increase the likelihood that you will use them in your classroom?
(Mark only one)
No
Yes

3) Because of my involvement in this workshop today I...
(Mark all that apply)
…**have** learned what primary sources are.
…**have** learned new ways to access primary sources.
…**have** learned how to integrate primary sources into the classroom.
…**want** to learn more about using digitized primary source.
…**will** integrate primary sources into my existing and new lesson plans
…will share what I have learned with colleagues and friends.

4) Would you recommend this type of setting to learn about primary sources that are available online?
(Mark only one)
No – If no, why?
_____
_____
_____

Yes

5) Would you like to be involved in a 15-minute key informant interview to assess the effectiveness of this workshop? Participants will be entered into a lottery for a $50.00 gift certificate from Amazon.com.
No
Yes

Name:_____

Phone

_____
_____

Key-informant Interview Guide

CDP Teaching With Colorado's Heritage

1) Why did you attend the NTTI/TIE conference?

2) What did you like best and least about your introduction to digitized primary resources such as the Colorado Digitization Program's Colorado Heritage site and the Library of Congress' American Memory Project?

3) What memorable impressions did the presenters leave you with about the issues of critical thinking, search skills, bias, integration and use?

4) As a result of your introduction to digitized primary sources, do you think you will use them regularly in the classroom? Why or why not?

5) How do you believe these resources will help you teach your students about the issues of critical thinking, search skills, bias, integration and use?

6) Have you experienced or do you anticipate any issues (finding appropriate primary sources, technology access, time constraints, teacher/principal support) when using digitized primary source materials in the classroom?

7) What could be changed about or added to the Colorado Heritage site to make it more readily useful to you?

Lessons Using Primary Source Material

(30 more will be loaded into the website by May 30th, 2004)

Lesson QuickPick

Select a Lesson ▾

The following lessons and activities have been created by cultural heritage institutions and educators around Colorado, using digitized collections that are available through *Heritage Colorado* and other on-line databases of primary source material. Many of these lessons are aligned with Colorado Model Content Standards.

 lessons created by educators at 'Teaching with Colorado's Heritage' Workshops and piloted in the classroom.

Chose a Grade Level: 1-5 | 6-8 | 9-12 | Multi-age

Grades 1-5

Colorado Alpine Plants
Denver Botanic Gardens, Colorado Native Plant Society, and the Denver Chapter of the North American Rock Gardening Society

Students learn how to search and use the Colorado Alpine Plants Database to find out information about plant adaptations, habitats and weather to create a visitors guide to the alpine, a hiking journal and more.

Colorado Coal Field War Lessons
Colorado Coal Field War Project, University of Denver

Students use primary source materials to learn about life in the Southern Colorado coal mines, the Ludlow Massacre and music of the coal mining industry. Many primary and secondary sources on Ludlow,

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