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Prudence J. Doherty
University of Vermont, Bailey/Howe Library

Daniel L. DeSanto
University of Vermont, Bailey/Howe Library

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Closing the Loop:
CREATING DELIVERABLES THAT ADD VALUE

Prudence Doherty and Daniel DeSanto

Introduction

As special collections librarians and liaison librarians work together to create innovative experiences working with primary source material, it is important to remember students have much to offer in the collaborative design process. In this case study, Prudence Doherty, a special collections librarian, and Daniel DeSanto, an instruction librarian, describe a project they initiated and implemented with upper-level education majors at the University of Vermont (UVM). The students were pre-service teachers (student teachers working toward degree and licensure) enrolled in Social Education and Social Studies, a course that focuses on teaching methods, assessment alternatives, and resources used in the elementary (K–4) classroom. The project gave the pre-service teachers an opportunity to work with three digital collections in order to design lesson plans for elementary-aged students. The project closed the loop of learn, create, and teach by requiring students to learn evaluative approaches to working with historical material and then create lesson plans based on those approaches. By creating professional resources for other teachers, the students added value to the digital collections.

Institutional Background

Experience-based learning opportunities are an important part of a UVM undergraduate education. The university's College of Education and Social Services, which enrolls about seven hundred undergraduates, offers curricula that connect theory and practice. The elementary education program provides students with numerous opportunities "to participate in collaborative learning, authentic planning and many projects that will result in a deeper understanding of pedagogy, lesson/unit planning and assessment."[1]

The three departments of the UVM Libraries involved in this project, Information and Instruction Services (I & IS), special collections, and the Center for Digital Initiatives (CDI), have a strong commitment to collaborating with colleagues in other departments and with teaching faculty. A robust liaison librarian program provides the frame for subject librarians in I & IS to partner with faculty to deliver discipline-specific information literacy initiatives and implement innovative instructional design. Special collections also has a significant instructional focus, and special collections librarians routinely provide students with opportunities to learn about and work with primary sources. On multiple occasions, special collections librarians have worked with faculty to offer semester-long, experience-based learning opportunities. For example, first-year students in a digital history class created online exhibits using political and literary papers as well as diverse documents about Vermont cheese[2]; forty students in a Vermont history class arranged and described small manuscript collections; and seniors in a printmaking class created broadsides to help special collections celebrate its fiftieth anniversary.

The Center for Digital Initiatives, situated within special collections, makes unique digital resources freely available online, including many Vermont primary sources. Since its inception in 2009, the CDI has offered a collaborative environment that encourages students, faculty, staff, and community members to participate both as users and creators of digital collections.[3] In 2010, the CDI outreach librarian collaborated with an anthropology professor to teach a course that involved students in curatorial activities for a new digital collection.[4]

Impetus for Collaboration

UVM librarians began working with students in Social Education and Social Studies in 2010, when the course instructor, Binta Colley, inquired about opportunities for pre-service teachers to learn more about using primary source documents. Professor Colley particularly wanted students to develop skills using primary source documents and develop lesson plans around history, community, individuals, and events. The special collections librarian and the

Center for Digital Initiatives outreach librarian organized a three-hour session that included an interactive introduction to primary sources, a hands-on workshop with selected resources in special collections, and an exploration of teaching with primary sources. When the CDI librarian left the university in 2011, the history librarian joined the special collections librarian to offer the session again. Although both of these sessions were successful and well received by the instructor and the students, the librarians saw the potential for creating a more robust experience by connecting the library session directly to a class assignment or project.

In the fall of 2013, special collections librarian Prudence Doherty and the new education librarian, Daniel DeSanto, met with the instructor and suggested a project that would transform the pre-service teachers into collaborators and change the library visit from a field trip to the first phase of a semester-long project. The librarians proposed that the students incorporate primary sources from the library's digital collections into the lesson planning assignments that were already part of the course. Lesson plans based in the digital collections would then be posted to the Center for Digital Initiatives website, making the plans freely available to any educator. The lesson plans would also help the CDI meet a programmatic goal to provide resources for K–12 educators. The project was incorporated into the course in 2013 and again in 2014.

Project Scope

The lesson planning project was undertaken in several stages. For the librarians and the course instructor, preliminary preparation involved establishing learning outcomes, creating the assignment, and selecting digital collections. For the students, the project began with a library session that focused on working with and teaching with primary sources and then moved to lesson creation. Once the plans were submitted and graded, the librarians selected strong examples to include on the CDI website.

Preparation

Before the course began, DeSanto and Doherty and the course instructor established learning outcomes, created the lesson plan assignment, and selected digital collections.

LEARNING OUTCOMES

The librarians and the course instructor identified learning outcomes for the lesson planning project that focused on three areas. Pre-service teachers

needed to: (1) demonstrate critical thinking about primary source material; (2) transfer skills and knowledge to the elementary classroom; and (3) show pedagogical development as teachers. Student development in these areas was assessed using the deliverable—the lesson plans based on historical digital collections—and written student feedback.

Before college students could create lesson plans for their own K–4 students, they needed an understanding of the word "primary" and experience developing careful inquiry and observation as well as drawing inferences with primary material. Students were not expected to master these skills before they set off to create their lesson plans. Rather, the librarians and the instructor realized that the process would be iterative and that the students' abilities would be under development as they developed their lesson plans.

Students were expected to demonstrate they could scale careful observation and inquiry for an elementary classroom, which is no small task when working with sources like Civil War letters or historical photos of obscure scenes. Scaling activities to this young age group was perhaps the issue that gave the librarians the most hesitation. Although students had no problem creatively finding ways to integrate primary sources into their lesson plans, doing so in a way that demonstrated depth of observation and inquiry did prove especially challenging.

ASSIGNMENT

The course instructor developed the lesson plan assignment in consultation with the librarians. In response to Common Core State Standards that stress an integrated approach to social studies as well as an increased emphasis on real world application, the assignment asked the pre-service teachers to incorporate elements of social studies into other disciplines, such as math, science, and language arts. This cross-disciplinary approach refined the instructor's earlier focus on history, community, individuals, and events.

Students were asked to generate three lesson plans that included material from an assigned CDI digital collection (or supporting physical collection), demonstrated a critical approach to working with a primary object, and were rooted in a discipline other than social studies. Final lesson plans also had to include grade level, subject areas, resources, learning objectives, assessment of objectives, procedures or steps involved, mapping to appropriate state standards (most commonly, Vermont's Common Core standards), and an estimate of time needed for completion. Students were encouraged, but not required, to differentiate instruction by creating levels of expectation for students of varying abilities.

As the team designed the assignment and library session, they attempted to model a project with a meaningful product as well as active, participatory learning during the session. For a group of pre-service teachers in a curriculum-focused course, this intentional modeling was particularly important.

DIGITAL COLLECTION SELECTION

Doherty and DeSanto selected the digital collections for the lesson plan assignment before they met with the students. They were careful to choose Center for Digital Initiatives collections that contained material appropriate for use in elementary classrooms. For the 2013 project, they asked the students to develop lesson plans for either the Porter C. Thayer Photographs, a collection of thirteen hundred photographs documenting rural life and landscape in southeastern Vermont between 1906 and 1920, or Vermonters in the Civil War, a selection of letters and diaries written by Vermont soldiers and their family and friends. The Civil War Collection includes transcripts, along with images of, the original documents. Partly because student feedback suggested it would be preferable to have all participants work with the same collection, in 2014, they selected only the Long Trail Photograph Collection, which includes nine hundred photographs of the hiking trail along the ridge of Vermont's Green Mountains were taken between 1912 and 1937.[5]
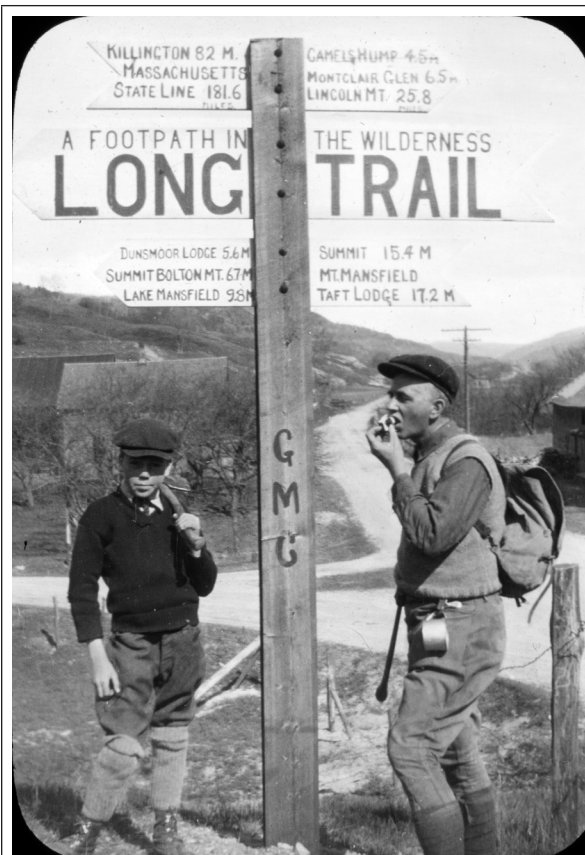

Figure 16.1. Students created lesson plans for images from the Long Trail Photograph Collection.

Library Session

The class schedule allowed the librarians to plan a library session that ran from 8:30 in the morning until early afternoon and was divided into four sections. They started with an introduction to primary sources, then offered a primary source workshop with special collections material, followed up with a discussion about pedagogical strategies for working with primary sources, and closed with an exploration of the assigned digital collections and a review of the assignment. After the library session, the course instructor distributed a reflective writing assignment students to identify areas of the visit they found especially helpful and to make suggestions about ways the session might be improved.

INTRODUCTION TO PRIMARY SOURCES

Students initially met with DeSanto, to outline the definition of a primary source and to address the difficulties associated with distinguishing a primary from a secondary source. Even in this upper-level class of pre-service teachers, it was common for students to associate primary sources with a certain format. A great deal of time was spent unpacking the notion that what makes a source "primary" is largely contextual.

Students were then asked what work they had done previously with primary sources and how they remembered the work they had done. Some in the class volunteered their own experiences of memorable assignments that allowed them to view or touch a certain object. The class discussed primary sources as hands-on teaching tools that engage students in active learning. The pre-service teachers had an initial discussion of ways they might use primary materials in their own classrooms and how they might approach close reading and interrogating a primary source with a group of early elementary-aged students. This provided a natural opportunity to formally introduce the expectations for the project.

DeSanto reminded students, to be successful, they would need to be active learners rather than passive receptors. They would be responsible for using what they learned to create materials for their own would-be classrooms. This was also the first time the librarians delivered a message that would be repeated throughout the day: "Your work is important. It has an audience. Others teachers may use your lessons." Completed lesson plans would be evaluated and the most effective would be included on the Center for Digital Initiatives website as teaching resources for other teachers. While the librarians were excited to have students help improve the usability and outreach resources for the UVM Libraries' digital collections, the more important goal was to create a sense of purpose for the assignment and a feeling of ownership and pride about one's work—something important to both the college-aged and elementary-aged student.

SPECIAL COLLECTIONS WORKSHOP

Although Special Collections at the University of Vermont includes a comprehensive Vermont research collection heavily used by faculty and students, as well as community members, most of the students enrolled in Social Education and Social Studies had never visited the department, and most had not used original primary sources for their own research projects. Given a growing emphasis in K–12 schools on having elementary, middle-level, and secondary students conduct inquiries with primary sources, it was important to bring pre-service teachers to special collections to work with primary sources related to the assigned digital collections, even for a short period of time.

For the workshop in special collections, Doherty selected materials in various formats related to topics covered in the selected digital collections. In 2014, for example, students examined letters, brochures, maps, trail photography, newsletters, and guidebooks that illustrated six Long Trail topics, including creating the trail and shelters, advice about hiking the trail, stories about notable hikes, land use planning and threats to the trail corridor, mapping the trail, and photographing the natural environment, facilities, and hikers. Five or six items were available for each topic. After a brief introduction, small groups of students examined items in at least two of the six topics for thirty-forty minutes. A worksheet (see Appendix 16A) posed questions to help guide their observations. The questions asked the students to describe an item, identify its creator and intended audience, summarize the content, and suggest themes and topics the item illustrates or supports. The students then shared their observations and ideas for how the items might be used in a classroom project.

The pre-service teachers learned firsthand how powerful it can be to work with historical documents, and how such documents can help their students connect with past people, events, and activities. As one student wrote in a post-library session reflection, "There just doesn't seem to be a more engaging method of learning about history than physically handing something from the time period." In the reflections, many students wished for more time to examine the special collections materials and for more time to talk about them. Some students returned later in the semester to look more closely at the selected items, and several used them to create the lesson plans they submitted.

WORKING WITH PRIMARY SOURCES IN THE CLASSROOM

Scott McLaughlin, an adjunct history professor and the co-director of Turning Points in American History, a Common Core, standards-based professional development program for pre-service and in-service Vermont educators, led the next part of the library session. McLaughlin presented strategies

to help the students incorporate primary sources into lesson plans. He shared several handouts that described qualitative and quantitative observations for different types of primary resources, outlined critical historical thinking skills, and listed various forms of historical analysis that included very helpful examples of questions to ask.[6] He presented two widely used strategies for analyzing and interpreting primary sources: one aimed at middle and high school students (the "5 C's", for concentration, connection, context, conclusions, contingency) and a second, simpler approach for elementary students ("SOAP," for source, occasion, audience, purpose).[7] The students then worked together to apply the strategies to historical images from the Porter C. Thayer Photographs.

Figure 16.2. Students analyzed and interpreted this photo from the Porter C. Thayer Collection and determined that it depicts a farm auction.

McLaughlin's presentation took the students from working with primary sources as learners, as they did during the Special Collections workshop, to working with them as educators. One student described this section as "very teacher-oriented." Another student wrote that the presentation provided a process that she could implement to help her elementary students become critical thinkers and be actively engaged with the study materials. The librarians hoped students would incorporate similar observational and analytical methods into their lesson plans.

DIGITAL COLLECTION EXPLORATION

To wrap up the library session, the students met again with the education librarian and the class instructor to go over assignment expectations and to begin exploring the digital collections. DeSanto reiterated to students that the intended audience for the lesson plans was practicing teachers. He stressed that not all lessons would be chosen for inclusion; rather, the librarians would be very selective in choosing which plans to include. For a lesson plan to be included it would need to follow the required format, provide an engaging activity for elementary students, and demonstrate a critical approach to working with the primary source. The librarians and the instructor made it clear that there was a very high bar to be met in order for a lesson plan to be posted to the CDI website.

The final activity of the library session turned students loose in the digital collections to begin examining their lesson planning source material. Students browsed the collections and began a cursory review of the digitized photographs and letters that they might select. Some students began to brainstorm initial ideas for lesson plans. This last activity was informal and minimally facilitated by the education librarian, yet many students identified it as a highlight or culmination of the session. As one student wrote, "Throughout my time spent looking at the online primary sources, I learned tons of new information…I am eager to begin planning these lessons." It was apparent by the end of the day, students had transformed their view of the collections from quirky, old documents to practical and powerful teaching resources.

Lesson Plan Selection and Posting

The education librarian conducted two follow-up visits with the students later in the semester. The first check-in was a time for the class to ask questions now that they had begun their lesson planning work. The librarian also brought collection-specific items to this session—in one instance, Civil War letters representing the Vermonters in the Civil War Collection, and in another, hand-colored glass lantern slides representing the Long Trail Collection. The intent was to rekindle students' connection to the collections as well as excitement for the project. The second visit came a few weeks before lesson plans were due and provided a final chance for students to ask for help if they needed it.

Lesson plans were initially submitted to the instructor who graded them and then sent them to the education librarian. While the instructor was solely responsible for grading, the librarians were solely responsible for selecting lesson plans to be posted to the CDI website. The education librarian read all submitted lesson plans and selected an initial list for inclusion on the website. The special collections and education librarians then reviewed the initial list of selected plans and settled upon a final list to be included on the site.

During the selection process, DeSanto found that even the selected lesson plans needed some editing. He edited for voice, style, and grammar to ready the plans for dissemination. Students frequently shifted tenses, awkwardly used the passive voice, or continually repeated phrases like "The teacher then does…" or "The students then will…" This latter issue arose from a lesson planning convention students had encountered earlier in their coursework. The writing in the plans improved dramatically in the second year after providing students with models of successful lesson plans from the previous year.

Once lesson plans were selected, DeSanto emailed the student creators to obtain permission to edit the plans and post them to the site.[8] The requests for permission began with congratulations, moved on to ask that students review and approve an edited version of their lesson plan, and concluded by providing an opt out if they did not want their plan included. If students did not respond after two email attempts by the specified date, DeSanto proceeded to post their lesson plans with the understanding that content could be removed at any time. In nearly every case, however, students responded and granted permission, usually with a reaction of excitement for having their lesson plan selected. One student responded, "I am honored. Glad you liked it. Thanks for letting me know," and another, "Please use them! I'm very flattered and excited. Let me know when they'll be published so I can send the link to my family."

Two examples of student lesson plans selected for posting, "Packing Up and Adding Up" and "Graphing Text with Civil War Letters," are presented in Appendix 16B. Both plans provide engaging, interactive activities for elementary students and encourage critical and reflective interaction with primary sources. The sample lesson plans also follow the assigned format and fulfill the expectation that skills from multiple disciplines would be incorporated. From a teacher's perspective, they provide food for thought and a good starting point for a teacher to tweak, customize, and apply ideas to other primary resources or the needs of a particular classroom.

Conclusion

Impact

The lesson planning project made a meaningful impact on both the students and librarians involved. The project succeeded in changing student perceptions of primary sources, developing students' regard for strategic approaches to teaching with primary sources, and modeling active and participatory learning. The project also made a lasting impact on the librarians by opening new avenues of collaboration, expanding possibilities for collection outreach, and encouraging further exploration into the best practices for teaching with primary sources.

STUDENT IMPACT

The librarians and the course instructor wanted students to improve their critical thinking about primary source material, transfer the skills and knowledge they gained in the project to their work with elementary-aged students, and develop their own teaching pedagogy. The student feedback and finished lesson plans demonstrate all the pre-service teachers made at least some progress in two of these three areas and some made progress in all three.

Most students indicated a change in thinking occurred regarding the usefulness and impact of primary sources. As stated earlier, much of the feedback pointed to the final session of the library visit day as especially eye-opening. The feedback indicated their heightened awareness of the collections as teaching resources and a shift in their perceptions of usefulness and utility.

Although students responded quite well to the introduction of teaching strategies for working with primary sources (SOAP, 5C's), transferring those strategies to the elementary classroom was the most challenging aspect of the assignment for the pre-service teachers. Some student lesson plans were able to demonstrate careful critical engagement when scrutinizing a historical object with an elementary-aged classroom. However, many more lesson plans lacked this careful approach and opted instead for a quick introduction of the photo or letter before hopping to content-area activities. As one student reflected, "When using primary sources, we can't just throw the materials at our students and expect them to know what to do with them or even what they are. We need to guide them through the process of closely examining and reading them to help them make connections." It was heartening to see some students come to this realization during the course of the library session, but many students failed to include the "guiding them through the process" section in their lesson planning. While this was disappointing, asking undergraduates to transfer a teaching approach they have only just learned is an ambitious enterprise.

Student feedback generally pointed to an appreciation for the way the librarians modeled a participatory teaching environment. Some students provided positive feedback on these efforts, "[The librarians] didn't just stand in front of the room and lecture to us. They engaged us in every step of the way. I felt involved in my own learning. I felt like there were plenty of times to participate and be an active learner." Other students appreciated these efforts but were less specific in making the connection to their own learning. Whether consciously noted or not, the librarians' purposeful modeling was important for this group of pre-service teachers. The more exposure students have to engaging, hands-on curricular design, the more likely they will be to implement an active-learning approach in their own classrooms.

Many students made claims about incorporating primary resources into their curriculum when they get the chance. "I can … see myself using pictures

and other artifacts in my lessons as a form of engagement and creativity." "I want to integrate primary sources not just in the social studies aspect of the classroom but every other subject as well." Hopefully, their experience with the lesson planning project will offer curricular tools to those who find themselves in their own classrooms one day. Throughout, the librarians treated the pre-service teachers with the same seriousness and respect they might afford a group of seasoned classroom teachers. In one of the most meaningful student comments, a student stated, "I felt as though the staff at the library saw us as a group of young adults that will someday be great teachers." Setting this type of tone for the project was crucial to making progress with any of the outcomes described above.

LIBRARIAN IMPACT

The librarians undertook the lesson planning project to help pre-service teachers gain confidence and skills working with primary sources and to add content to the digital collections. In addition to meeting these goals successfully, the project expanded their teaching practices.

For DeSanto, the lesson-planning project opened new avenues for collaborative and innovative instruction with primary sources. After seeing how positively education students reacted to working with original primary sources, DeSanto recognized the multidisciplinary appeal of these sources and he and Doherty now routinely collaborate to share unique primary sources with undergraduates from different disciplines. DeSanto took one such collaboration a step further by creating an online tutorial for a class called "Interrogating White Identity," in which students use primary material to contextualize readings on white slavery and subjugation.[9]

For Doherty, the lesson planning project confirmed the benefits of collaborating with students as creators. Following the lesson planning project, she initiated collaborative projects that asked students to provide deliverables using special collections materials. As part of a larger management plan for one of UVM's natural areas, she worked with a team of graduate students who planned and completed a research guide.[10] In another semester-long collaboration that included an instruction librarian and a geography professor, food systems graduate students created physical and virtual library exhibits as a capstone project.[11]

The lesson planning project also prompted Doherty and DeSanto to continue exploring best practices for teaching with primary sources, individually and with other instruction and special collections librarians. As a member of the library's Educational Services Working Group, Doherty arranged a well-attended workshop for UVM faculty and librarians, where Robin Katz and Julie Golia presented the strategies they developed during the Brooklyn Historical Society's Students and Faculty in the Archives Project.[12]

Lessons Learned

The authors' list of lessons learned can be divided into two broad categories, project organization and pedagogy. In terms of organization, Doherty and DeSanto agree that the lesson planning project would benefit from a strong introduction, a clear conclusion, and in between, good communication channels. In the future, librarians would visit a class early in the semester to present the project. The instructor, the librarians and the students would then draw up and sign an agreement detailing roles, responsibilities, and deliverables. The collaborators also need effective methods to communicate following the library session. Librarians would work with the instructor to use the course management system (Blackboard) to check in, have discussions, and review and comment on draft lesson plans. A short program where students describe the project and share their work with a small group of librarians and education professors could mark the successful conclusion of the project and provide an opportunity for the students to deliver a professional presentation.

Doherty and DeSanto learned a number of lessons about training pre-service teachers to work with primary sources. The lesson planning project demonstrated students are clearly motivated when asked to use what they are learning to a make a professional contribution. Recognizing that knowledge transfer is hard and takes time, the librarians would like to explore ways to give students more practice at analyzing and interpreting primary sources after the library session. A short assignment asking the students to analyze one of the photographs or documents they are using for their lesson plans would be helpful. The librarians would also like to provide additional opportunities for the students to practice teaching with primary sources, emphasizing the importance of including a critical approach to primary material when designing their elementary classroom curricula. This could be as simple as asking students to submit draft lesson plans for review by the instructor, the librarians, and their fellow students. Some of this work might be done in online discussion forums.

The librarians recognize the project design needs to include more targeted and more frequent evaluations, both to support the students and to assess the project. To help guide the students as they create their lesson plans, the librarians would distribute an assessment rubric along with the assignment. They would use the rubric to select plans for inclusion on the CDI website and to give the students additional feedback about their plans. The reflective writing assignment about the library session provided much useful feedback, but the librarians would like to get formal student input again after the lesson plans are completed to help evaluate student progress during the semester. In 2013 and 2014, the librarians and the instructor evaluated the completed lesson plans separately; in the future, they should share their evaluations.

Next Steps

The education faculty member who taught Social Education and Social Development left UVM in 2015, ending the multi-year collaboration. Yet, because the lesson planning project demonstrated the value of improving education majors' pedagogical skills with primary sources, DeSanto is currently making contacts with other faculty members in the Education Department to find a new cohort for the project. The lesson planning project could be even more effective if it focused on a cohort of pre-service educators who will be teaching middle and secondary school students.

As instructors, both DeSanto and Doherty are seeking effective ways to "teach the teacher." The lesson planning project relies heavily on a relatively brief interaction during which pre-service teachers learn, adopt, and produce work based on the pedagogical model introduced by the librarians. To be as effective as possible during this short timeframe, the librarians are currently investigating innovative instructional design approaches such as flipping the classroom, designing post-session activities, and embedding online modules in the class LibGuide to make the most of their instructional time in the project's next iteration.

Whatever form the project's next iteration may take, Doherty and DeSanto will need to assess any new instructional situation for student motivation, appropriateness of collections, faculty buy-in, and the possible impact made on selected collections. The instructional situation described here provided a rich opportunity because student pre-service teachers came to the project with a vested interest in thinking and working collaboratively outside the walls of their classroom. The instructor believed in the value of the project, and the librarians were able to identify collections that would allow students to successfully complete the assignment and would benefit from the addition of teaching resources. Those looking to implement a similar project would do well to assess student and faculty motivation, as well as the fit of their own collections before moving forward.

If an instructional situation does present a good fit for incorporating this model, the results can be incredibly rewarding. When students are asked to "close the loop" and give something back to the resources with which they interact, they rise to the occasion by bringing their own expertise and creative approaches. Students are capable of making valuable contributions, given the opportunity. Although coordinating a project like this one may be time consuming, there are many benefits for student learning, collection outreach, and building collaborative partnerships.

Appendix 16A. Lesson Planning Project, Special Collections Worksheet

Topic: _____

1. **List at least 4 items in the group. Pick one item to analyze—indicate it with an x.**

2. **What is the format of your item? Circle one:** Book, article, photograph, brochure, letter, other.

3. **Describe the physical characteristics of your item.** Things to note: size, paper, format, number of pages, binding, typeface, color, illustrations, printed or handwritten, condition, legibility.

4. **How did the item or come into being?** Who created it? When? What was the purpose of creating it? Who was the intended audience?

5. **What is the item about? Summarize the content very generally. Note any content of particular interest to you.**

6. **What themes or topics does the item illustrate or support?**

7. **How might you use the item in a classroom project? Or, what investigations does it suggest?**

Appendix 16B. Sample Lesson Plans

Lesson 1

Title: Packing Up and Adding Up

Grade Level: 4

Topic: Social Studies, Mathematics

Resources Needed:
- Image from the Center for Digital Initiatives Long Trail Collection: Clarence P. Cowles on Stark Mountain http://cdi.uvm.edu/collections/item/hwccr03b02017
- Early 1900s Long Trail hiking supply list (can be found in the University of Vermont Special Collections)
- Current Long Trail hiking supply list, including weights. http://sectionhiker.com/long-trail-gear-list/
- Pencils
- Thought journals
- Math journals
- Clip boards

Student Learning Objectives:
- Student will learn about what people needed to pack for a Long Trail hike in the early 1900s versus what they need to pack for a Long Trail hike today.
- Students will continue to learn about adding decimals.

Assessment of Stated Objectives: See rubric below.

Standards:
Vermont Grade Level Expectations
Subject: Mathematics
Grade: Grade 4
Standard/GE Stem: Standard 7.6: Arithmetic, Number, and Operation Concepts
Expectation: M4: 4 Accurately solves problems involving multiple operations on whole numbers or the use of the properties of factors and multiples; and addition or subtraction of decimals and positive proper fractions with like denominators. (Multiplication limited to 2 digits by 2 digits, and division limited to 1-digit divisors.)

Procedures:

INTRODUCTION (7–10 MINS):

a.   The previous day was dedicated to introducing decimals and addition of fractions. Students completed a worksheet to test their skills and understanding. Students will begin by reviewing this worksheet to refresh their memory.

b.   Copies of the image "Clarence P. Cowles on Stark Mountain" (in the "Resources" section) are passed around for all students.
     Students take 1 minute to silently observe the photo.
     Students take 2 minutes to record in their Thought Journals their ideas about what they see in the photo and what they can infer about the photograph. Students share ideas in a group or with the class for 2 minutes.

c.   Introduce the lesson and the exploration of what hikers brought with them on the Long Trail back in the early 1900s (when this photo was taken) and what hikers bring with them today.

BODY (20–23 MINS):

a.   Packing lists, both past and present, are handed out (attached). Students work in small groups (2–3 students) and write in their Thought Journals the similarities and differences between the historic and the modern-day packing lists.

b.   Each group gets 1–2 categories (i.e. "Hygiene" or "Shelter/Sleep System"). Groups work together to add up the total weight in ounces they would need for their category(ies), both past and present (this part should take no longer than 15–20 minutes).

CLOSURE (10 MINS):

a.   Students come back together with their weight amounts and they add up the totals together as a class to calculate the final pack-weight "then and now," in ounces.

b.   The instructor converts this number to pounds.

c.   The class discusses the similarities and differences students noted in their Thought Journals as well as the weight differences of the gear used hiking in the early 1900s and hiking now.

d.   The class finishes with a discussion of how important decimals are in our everyday life. If a hiker didn't know the exact weight of everything in their backpack, the pack could end up much, much heavier than anticipated.

Time Allotment: 1 class period of 40 minutes per class
Lesson plan created by Danielle E. Hall-Potvin 5/5/2014

Packing Up and Adding Up Rubric					
Student Learning Objective	Assessment of Stated Objective	Not There Yet	Getting There	You've Got It!	Additional Comment
1) Student will learn about what people needed to pack for the Long Trail hikes in the early 1900s vs. what they need to pack for the Long Trail today.	1) Student will be able to explain the similarities and differences between what hikers packed for their Long Trail hikes in the early 1900s vs. today.	Student is unable to explain any similarities or differences between the packing lists of the early 1900s and present-day.	Student is able to explain some similarities and differences between the packing lists of the early 1900s and present-day.	Student is able to explain most of the similarities and differences between the packing lists of the early 1900s and present-day and offers some explanation as to why these differences and similarities exist.	
2) Students will learn more about adding decimals.	2) Student will be able to add several decimal numbers together accurately.	Student is unable to add any decimal numbers together	Student attempts to add decimal numbers together, makes a few minor addition errors but understands the concepts behind the process.	Student is able to add multiple decimal numbers together without error and with confidence.	

Packing Up and Adding Up Gear List	
Backpack	
Gossamer Gear Mariposa Plus	21.5 oz.
Gossamer Gear 1/3 NightLight	1.1 oz.
Gossamer Gear Medium Hip Pocket	0.7 oz.

Packing Up and Adding Up Gear List	
Mountain Laurel Designs Medium Pack Cover	2.0 oz.
Gossamer Gear Internal Pack Liner	1.7 oz.
Skunklight Skylight-Solar Powered LED	0.6 oz.
Mini REI Thermometer	0.3 oz.
Shelter & Sleep System	
2 Easton Stakes	0.6 oz.
Sea-to Summit 13L Waterproof Stuff Sack	1.1 oz.
REI Kilo 20 Down Sleeping Bag	28.7 oz.
Medium Wool Socks for Sleeping	2.6 oz.
Patagonia Capilene 1 Bottoms	5.8 oz.
Patagonia Capilene 1 Crew	6.0 oz.
Hennessy Hammock Ultralite Assembly	22.7 oz.
Hennessy Hammock Tarp	8.2 oz.
Hennessy Hammock Undershield (Optional)	9.0 oz.
Hennessy Hammock Overshield (Optional)	3.0 oz.
Hydration	
3 L Platypus Bladder	1.4 oz.
3 L Platypus Bladder	1.4 oz.
General Ecology First Need Water Filter/Purifier	15.9 oz.
Platypus Hose and Camelback Bite Valve	2.1 oz.
Kitchen	
MLD Bear Bag System (Bag, Rope, Rock Sack, Carabineer)	3.1 oz.
OPSACK Odor Barrier Bag	1.1 oz.
Outdoor Research Helium Stove Stuff Sack	0.5 oz
Snow Peak 700 Titanium Pot and Lid	4.2 oz.
Snow Peak Gigapower Titanium Stove in Plastic Case	3.8 oz.
Toob Tooth Brush/ Paste (Full)	1.3 oz.
Long Handled Titanium Spoon	0.4 oz.
MSR Pack Towel	0.7 oz.
Head Net Ditty Bag	

Packing Up and Adding Up Gear List	
Maps	1.3 oz.
Black Polypro Glove Liners	1.2 oz.
Mountain Hardware Polypro Hat	0.8 oz.
Bandana	0.8 oz.
Outdoor Research Windproof Balaclava	2.3 oz.
Extra Clothing	
Cocoon Polarguard Pullover Vest with Helium Ditty Bag	6.4 oz.
Mountain Hardware Cohesion Rain Pant	10.00 oz.
Navigation	
Id/Cash/Coinage/Credit/Health Ins-Omniseal Ziploc	0.9 oz.
Suunto a10 Compass	0.9 oz.
Digital Camera	5.8 oz.
Brunton LED Lantern	3.0 oz.
Green Equinox Essential Bag	
Prescriptions/Nalgene Bottle (5 Days)	0.5 oz.
2-Pair Macs Ear Plugs in Snack Bag	0.1 oz.
Small Dental Floss	0.4 oz.
Photon Freedom LED Light With Hat Clip	0.7 oz.
Swiss Army Classic Knife	0.7 oz.
Grey Ditty Bag (Murphy)	
Gear Repair	3.8 oz.
First Aid/Emergency Kit	4.8 oz.
Hygiene	
Small Bottle Purell Hand Sanitizer	1.4 oz.
Small Bottle Dr. Bronner's Soap	0.9 oz.
Ben's 100% DEET	1.25 oz.
Base Pack: Weight In Pounds	**12.5 lbs.**

Lesson Plan 2

Title: Graphing Text with Civil War Letters

Grade Level: 3

Topic: Mathematics, Social Studies, Vermont History

Resources Needed:
- Pens, pencils, markers
- A flip chart
- Link cubes (if necessary)
- Letters from the Vermonters in the Civil War Collection

Learning Context:
As stipulated by the Common Core standards, students in the third grade are expected to understand and be able to collect, record and analyze data in basic forms such as a bar graph or line plot. Students will benefit from being able to practice these necessary skills through a historical lens. They will be asked to look for patterns and themes in the letter collection, which will improve their abilities to analyze data from multiple angles while simultaneously getting them to explore common concerns and opinions during the Civil War era. Ultimately students will be gaining perspective across subject areas. This will lead to future instruction on more complex forms of data analysis, possibly from a scientific standpoint as well.

Student Learning Objectives:
- Students demonstrate understanding of the texts' content by extracting commonalities and patterns from the letter correspondences.
- Students will be able to represent data gathered from the collection's letters and diary entries in a scaled bar graph.

Assessment of Stated Objectives:

Student Learning Objective	Assessment	Below Expectation (1)	At Expectation (2)	Above Expectation (3)
Students demonstrate understanding of the texts' content by extracting commonalities and patterns from the letter correspondences.	The student will read 1 or 2 letters from the collection, comparing what they find to their group members in order to gather data for the bar graph.	The student does not read their assigned letters or compare what he/she found to group members.	The student reads 1 letter from the collection and compares what they find with group members.	The student reads 2 or more letters from the collection and compares what he/she finds with group members, picking out themes on their own before sharing results with group members.

Student Learning Objective	Assessment	Below Expectation (1)	At Expectation (2)	Above Expectation (3)
Students will be able to represent data gathered from the collection's letters and diary entries in a scaled bar graph.	The student will contribute to his/her group's presentation of their data in a scaled bar graph by fulfilling his/her assigned role.	The student does not fulfill his/her role when gathering, analyzing and presenting data.	The student fulfills his/her role when gathering, analyzing and presenting data.	The student fulfills his/her role and proactively finds patterns in the data collected among group members.

Standards:
USA—Common Core State Standards (June 2010)

Subject: English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects
Grade: 3
Content Area: Informational Text K–5
Strand: Reading
Domain: Range of Reading and Level of Text Complexity
Standard: 10. By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2–3 text complexity band independently and proficiently.

Subject: Mathematics
Grade: 3
Domain: Measurement and Data 3.MD
Cluster: Represent and interpret data.
Standard: 3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.

Differentiation:
Struggling learners will be allowed to use link cubes as manipulatives in order to put together bar graphs before writing them down. Each link will represent one piece of data, which they can then link together like a three-dimensional bar graph to show how many of each pattern/theme they found after collecting their data. *Advanced* learners will calculate the mean, median, mode and range of their respective data sets.

Procedures:

ORIENTATION:

Students will presumably have been introduced to the collection already. They will be familiar with the content and understand what kinds of topics the letters generally cover. Students will be split up into groups of 4 or 5, depending on the class size. The class will review the concepts of basic data collection: looking for data, recording data, graphing data, and analyzing data for patterns and themes. Students will also be familiar with graphing in a bar graph. This lesson is aimed at practicing using a scaled graph.

Students will read pre-selected passages from each letter that have common themes such as battle, death, money, family, food, soldiers, etc. Helpful prompt questions will be used to direct students: "What do the authors write about most? What are they thinking about as soldiers or family members of soldiers? Do they mention things like battle, or family? What words do you see in the letters the most?"

Students in groups will read 10–15 letters altogether. They will read each letter through once, then go back and read it a second time looking for words or phrases that appear more than once, circling them as they go. For example, if the word 'family' pops up more than once, a student would circle it and keep track on a tally sheet how many times the word is mentioned. The group members will then compare data on which words are occurring most frequently.

Once each group has identified 5 or 6 words/phrases that appear frequently, the instructor will provide materials to graph the data.

The instructor will assign a role to each group member. One student will be the group manager to make sure group members are on task. One student will be the materials collector who will be in charge of the graphing materials, one member will be the recorder, and another group member will be the presenter.

TEACHING/LEARNING PROCESS:

The instructor will circulate the room as the students read their letters and look for common words/phrases. Students should be on-task identifying words/phrases, recording data in tally charts, and graphing their findings.

CLOSURE / WRAP UP:

Each group will be called on to present. The presenter will speak for their group. Each group will be asked which words/phrases they found most frequently and why they think these words are mentioned most often. Peers will ask questions as time permits.

Time allotment: a class period of 60 minutes per class
Lesson plan created by Kathryn Seelen 4/17/2013

Notes

1. University of Vermont College of Education and Social Services, "Why is Everyone Talking about UVM's Elementary Education Program?" Accessed March 1, 2016. https://www.uvm.edu/~doe/elementary/?Page=ugrad.html.
2. "Frances Parkinson Keyes;" "Restless Lady: The Life and Times of Frances Parkinson Keyes;" "Consuelo Northrop Bailey;" "Vermont Artisan Cheese," *UVM Digital Exhibits*, http://badger.uvm.edu/omeka/.
3. University of Vermont Libraries, "Center for Digital Initiatives," http://cdi.uvm.edu/collections/index.xql.
4. Robin M. Katz, "Teaching Cultural Memory: Using and Producing Digitized Archival material in an Online Course," in *Past or Portal? Enhancing Undergraduate Learning through Special Collections and Archives*, ed. Eleanor Mitchell, et al. (Chicago: Association of College and Research Libraries, 2012): 179–185.
5. The Porter C. Thayer Photographs, Vermonters in the Civil War, and Long Trail Photos are available through the Center for Digital Initiatives, University of Vermont Libraries, http://cdi.uvm.edu/collections/index.xql.
6. Scott McLaughlin, "Historical Methods Guide," *Turning Points in American History*, http://www.turningpointsinamericanhistory.org/teacher_tools/Historical_Methods_Guide.pdf; Elise Guyette, "Think Historically (6.6 Being an Historian) to Put Yourself Back In Time," *Turning Points in American History*, http://www.turningpointsinamericanhistory.org/teacher_tools/Historical_Thinking_Skills.pdf; Elise Guyette, "Social Studies Inquiry Method," *Turning Points in American History*, http://www.turningpointsinamericanhistory.org/teacher_tools/Social_Studies_Inquiry_Method.pdf.
7. The Five C's worksheet was adapted from "The Six Cs of Primary Source Analysis," developed by Nicole Gilbertson and David Johnson at the University of California, Irvine History Project, http://www.humanities.uci.edu/history/ucihp/wh/6cs_Primary_Source.pdf. SOAP (Source / Occasion / Audience / Purpose), SOAPS, and SOAP-STone are variations of a graphic organizer adapted for primary document analysis.
8. Center for Digital Initiatives, University of Vermont Libraries, "Lesson Plans," http://cdi.uvm.edu/about/lessonplans.
9. Daniel DeSanto, "HDFS 41: Examining Primary Sources," http://library.uvm.edu/guide_on_the_side/tutorial/circassian-beauty.
10. Prudence Doherty and NR 378 Students, "Colchester Bog Natural Area," http://researchguides.uvm.edu/colchester-bog.
11. University of Vermont Libraries, "Working the Landscape: Vermont's Fields, Trails & Forests," http://badger.uvm.edu/omeka/exhibits/show/fsaseminar.
12. Information about the Students and Faculty in the Archives project can be found at *TeachArchives.org*, http://www.teacharchives.org.

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Doherty, Prudence and NR 378 Students. "Colchester Bog Natural Area." http://research-guides.uvm.edu/colchester-bog.

Guyette, Elise. "Social Studies Inquiry Method." *Turning Points in American History*. http://www.turningpointsinamericanhistory.org/teacher_tools/Social_Studies_Inquiry_Method.pdf.

Guyette, Elise. "Think Historically (6.6 Being an Historian) to Put Yourself Back in Time." *Turning Points in American History*. http://www.turningpointsinamericanhistory.org/teacher_tools/Historical_Thinking_Skills.pdf.

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University of Vermont Libraries. "Working the Landscape: Vermont's Fields, Trails & Forests." http://badger.uvm.edu/omeka/exhibits/show/fsaseminar.