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USING RUBRICS TO ASSESS LEARNING THROUGH SERVICE IN MAINE

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Abstract: Maine's study group provides an array of rubrics for assessing student learning through their service work. After struggling with the many questions surrounding assessment and service-learning, these educators chose to focus on creating and collecting rubrics that could apply to the products that result from service-learning and are common to many different projects. For example, there are rubrics for oral presentations, research, portfolios, and posters. By looking at work produced in the act of providing service as well as on-demand tasks, the Maine study group helps demonstrate how teachers can "score" the performance of students' work through service.

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State Context

Despite its large geographical size, Maine’s public school system is characterized by its tight knit nature. Teachers around the state know each other, there are generally positive feelings about the state Department of Education, and people work together to provide quality educational opportunities for Maine’s students. The state adopted its Learning Results in 1997, articulating overarching guiding principles (e.g., to develop students who are creative and practical problem solvers, responsible and involved citizens, collaborative quality workers, etc.), and standards and performance indicators in eight content areas (Career Preparation, English Language Arts, Health and Physical Education, Mathematics, Modern and Classical Languages, Science and Technology, Social Studies, and Visual and Performing Arts) that specify what students should know and be able to do when they graduate from high school. The Learning Results are measured by the Maine Educational Assessment, a test that looks at both content and process outcomes. It is also left to local school districts to “develop additional assessments to measure achievement of the learning results, including student portfolios, performances, demonstrations, and other records of achievement.”¹

Coming from all over the state, members of the Maine study group met for five full days over three years to engage in a collaborative learning process around issues of assessment of learning through service. In contact with each other through other networks in addition to the state study group, they were able to focus their work on a particular need they had identified — to collect rubrics to help teachers give feedback and grades on learning through service.



Students working with local architect and contractor to build amphitheater stage.

¹From Maine’s Learning Results Statute, July 1997.

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Introduction

Clam flats are re-opened in the seaside town of Wells after being closed for nine years. Ten thousand copies of a brochure for a historical walking tour of downtown Bath are flying off the shelves of the chamber of commerce and local lodging establishments. Forty acres of littered and neglected wilderness in Auburn is transformed into a recreation area with a paved walkway, mountain biking trails, landscaping improvements, and comforts like benches and lookouts. A proud all-weather sign embraced by a stone garden and flowers welcomes students, staff, parents, and visitors to Lewiston Middle School. Are these products the work of historians, landscape architects, engineers, graphic artists, scientists, carpenters, or politicians? No, these are the products of elementary, middle, and high school students across the State of Maine, doing the work of adult professionals in the real world.

Many of these products were generated through a student-driven model of service-learning known as KIDS as Planners. KIDS as Planners is an award-winning model created by the KIDS Consortium that challenges students to identify, research, design, and implement solutions to real-life problems in their schools and communities. For over ten years, the Consortium has worked with school districts in all six New England states to train teachers and to facilitate partnerships among schools, local government, businesses, and community-based agencies. Impressed by the planning process used by students to generate valued products in their communities, the American Planning Association selected KIDS as Planners as the winner of the 1996 National Planning Award for Public Education.

As the KIDS Consortium was expanding its network to 20,000 students and 450 teachers in 20 school districts across New England, we realized the stories of teachers and students themselves were our best resource for building capacity at the local level. Unfortunately, their good practices — tools, processes, products — were largely undocumented and rarely shared. In an era of academic standards, we became increasingly concerned with how KIDS measured up as an instructional pedagogy against other strategies. If we were going to meet our capacity-building goals, we had to know, indeed to prove, that through the KIDS model, students were learning what they were supposed to be learning — and getting more “bang for the buck.”

We investigated a number of ways to measure what students were learning — comparing student scores on the Maine Educational Assessment from classrooms participating in KIDS with nonparticipating classrooms; conducting pre- and post-tests of knowledge and skills on participating students; examining the impact of KIDS on students’ aspirations over time by following their educational careers via improved grades and advanced course work taken; constructing ethnographic case

studies of classroom projects. But these strategies would not only have required extensive time and money, they would have forced us to exercise unwanted control over the classroom learning environment.

We also clung to the belief that since the products students generated looked so professional, the students *had to be learning*. We hoped to find a way for teachers, students and communities to learn what those products could tell us about student learning.

The research on authentic achievement emerged as a powerful force to help clarify our approach to the assessment of work produced through service. In 1995, Fred Newmann and Gary Wehlage from the Center on the Organization and Restructuring of Schools released *Successful School Restructuring*, a ground-breaking study on the degree to which schools in the forefront of restructuring were teaching students “to use their minds well — rigorously and creatively” (7). They based their definition of authentic achievement on standards that would also define significant adult accomplishments, such as those of artists, designers, journalists, engineers, and scientists:

“Adults in diverse fields...construct knowledge through disciplined inquiry that uses knowledge, skills, and technology. They express the results of this disciplined inquiry in written, symbolic, and oral discourse, by making things (products such as furniture, bridges, videos, or sculpture), and in performances (musical, dramatic, or athletic)...which have value beyond success in school; that is, they have aesthetic, utilitarian, or personal value to the persons constructing them and to others in the society.” (8)

We thought this definition precisely described the KIDS model of service-learning (see **Table 4-1**). Newmann and Wehlage sought to determine to what extent students in restructuring schools were learning and performing at this level and whether there was a correlation between authentic achievement and higher scores on standardized measures of achievement (they discovered there was).

But unlike most authentic assessment tasks, solving a real problem in the community results in a process that is uncontrived, uncontrolled, and unstructured; in other words, messy. Indeed, even Newmann and Wehlage did not look at the extent to which the products and performances generated by students in restructuring classrooms had “value beyond school.” “It was impractical for us to collect information on the value of student performances...it would have required interviews, surveys, or other ways of assessing the actual impact of students’ work. We simply did not have the resources and opportunity to do this.” (11)

It is this last criterion, of course, “value beyond school”, that puts the service in service-learning. It is also the criterion that transforms a simulation or hands-on learning activity into service-learning. Assessing whether a product or performance meets a real need or provides a service would demand consulting its users or consumers (e.g., historical society, conservation commission, senior citizens). Thus, solving a real problem for a real audience becomes the singular element that makes assessing

Table 4-1: KIDS as Planners and Authentic Assessment

Authentic Assessment Tasks (Newmann & Wehlage, p. 14)	KIDS as Planners Framework for Action (KIDS Consortium, 1996)
<p><u>Construction of Knowledge</u></p> <p>Organization of Information: Students are asked to organize, synthesize, interpret, explain, or evaluate complex information in addressing a concept, problem, or issue.</p> <p>Consideration of Alternatives: Students are asked to consider alternative solutions, strategies, perspectives, or points of view in addressing a concept, problem, or issue.</p> <p><u>Disciplined Inquiry</u></p> <p>Content: Students are asked to show understandings and/or use ideas, theories, or perspectives considered central to an academic or professional discipline.</p> <p>Process: Students are asked to use methods of inquiry, research, or communication characteristic of an academic or professional discipline.</p> <p>Elaborated Written Communication: Students are asked to elaborate on their understandings, explanations, or conclusions through extended writing.</p> <p><u>Value Beyond School</u></p> <p>Problem: Students are asked to address a concept, problem or issue that is similar to one that they have encountered or are likely to encounter in life beyond the classroom.</p> <p>Audience: Students are asked to communicate their knowledge, present a product or performance or take some action for an audience beyond the teacher, classroom, and school building.</p>	<p>Discovery: Students take ownership of a problem or issue affecting the school, neighborhood, or town. Students might generate ideas from a variety of sources — needs assessment, neighborhood walk, newspaper headlines, community leaders, public and nonprofit agencies.</p> <p>Research: Students research and collect information about the problem or issue in a variety of ways — by studying its different dimensions, such as historical or environmental, by accessing primary sources, such as local residents or professionals, and by using various information-gathering techniques, such as the telephone, letter-writing, Internet, and library.</p> <p>Goals: Students establish goals to address the problem or issue, including the project purpose and products, services, and actions that might be conducted over the short- and long-term. People, action steps, time and resources are organized and appropriated accordingly.</p> <p>Alternatives: Students consider alternatives and design a solution, making decisions based on cost, feasibility, aesthetics, and other community values and communicating their proposed solutions to school and community leaders and boards.</p> <p>Action: Students take action to implement their solution. The “solution” might be a product, a service, or an action that is need by a user group and valued by the community.</p> <p>Stewardship: Students become stewards of their vision by taking responsibility for making a good idea or an “old” idea happen and by sharing their knowledge and skills with others.</p>

the intellectual quality of student-generated products and performances so difficult and challenging — because the addition of a real audience has the potential to drive what needs to be learned and what is learned. We heard repeatedly of such challenges described as obstacles to assessing student work from teachers in our network:

“Some of my kids are doing a little of this and some a little of that.” Students might engage in different tasks related to the project, e.g., writing, surveying, or research, or they might develop expertise in different aspects of the project, such as sign design or

municipal codes.

“I don’t know what the students’ product is supposed to look like.” There might be no previous benchmarks by which to compare the “good stuff” kids are producing (e.g., master plans, oral histories, videos, nature trails), especially the quality expected at particular grade levels.

“We want the kids to be in charge.” Because students are the planners and designers, teachers are reluctant to determine in advance, for planning purposes, what products will be produced that can be assessed.

“Everybody worked on that thing.” A product like a master plan or a history museum is such a big enterprise that it’s difficult to go back after it is done to determine the contributions of individual students.

“I don’t have time to assess everything kids are learning.” Solving a problem requires students to apply content and skills from a number of disciplines, some of which their teachers may not be accountable for teaching.

“I can’t give credit for that.” Even if everything could be assessed, the structure of middle and high schools may prevent teachers from awarding credit to students in subjects they are not accountable for teaching.

“Everybody loved it! Why grade it?” Service-learning generates such magic among students and the community that teachers are often reluctant to “put a grade” on it.

“Everything keeps changing!” Many projects last longer than a year; standards met through the project may need to change as the project evolves in different stages, e.g., research, design, building, etc.

Rather than deal with these messy issues, many teachers in our network chose to assess student learning in more traditional ways, through paper and pencil tests — or not at all. Unfortunately, in many classrooms, KIDS projects served to enrich the regular curriculum instead of being planned as a unit aligned with standards. This was infinitely easier for teachers. They could still teach in traditional ways — and then make room for a little “KIDS.” But that had to change. We knew if KIDS could not be linked as an essential strategy to deliver content for which teachers were accountable, it would not survive.

The nationwide move toward “accountability” was another force emerging to drive our urgency. In May of 1997, the Maine Legislature adopted the Maine Learning Results, articulating standards for what students were expected to know and be able to do upon graduation. We fully believed that the products and performances generated by

service-learning needed to address content standards effectively in order to be endorsed at the local or state level as credible strategies for achieving the learning results. Indeed, all future funding for local school districts would depend on a consolidated application outlining how all parts of the system — mission, curriculum, instruction, assessment, professional development, resources — were aligned with the Learning Results. If service-learning was to succeed, it had to help demonstrate how students achieved the learning results through their service-learning experiences.

Maine’s Study Group

Initially, our study group wrestled with what seemed the overwhelming nature of “improving assessment of service-learning.” We realized how much we needed to learn about assessment in general, in addition to all the special issues particular to service-learning. After sifting through a variety of assessment tools we had collected, studying literature on assessment from a variety of sources, and talking with a range of teachers, we realized that many of the products we had examined — although arising from different classrooms, different grade levels, and different projects — had a lot in common. For example, a brochure, a video, and an oral presentation, although unique products, reflected common content standards and could be assessed using a tool that took into consideration such qualities of communication as purpose, organization, language mechanics, detail, and voice. Given this insight, our study group decided to develop a set of rubrics that could be used to assess student products addressing common content standards.

We found it helpful to distinguish three categories of assessment tasks that were being used by teachers across Maine’s service-learning network to assess student products and performances (**Table 4-2**). Some teachers used *on-demand assessment tasks* such as a test or assignment completed by individuals after their service-learning experience to evaluate student learning. While this fit well with more traditional practice, we knew there were products that arose directly in the act of service-learning that could be assessed as well. We identified as *anchor tasks* those assignments that arise in the course of service-learning (e.g., letters to the editor, field notes, interviews) that demonstrate individual command of a particular set of knowledge and skills. The products or performances that reflect the overall learning in a service-learning experience we labeled as *summative assessment tasks*. These include products such as a report for a public agency, a public presentation, or a portfolio that capture the learning for individuals or groups of students and are a direct result of the



An elementary student plants a tree in ELF Woods during a mentoring project.

service-learning experience. No particular type of assessment task seemed more desirable than others for us, but in combination, they serve as a powerful set of tools to capture the many dimensions of student learning — student participation, technical skills, academic standards, and community impact.

Table 4-2: Comparing Three Types of Assessment Tasks

Characteristics of Task	Anchor Task	Summative Assessment Task	On-demand Assessment Task
Student role	Individual	Individual or group	Individual
Time allowed	Fixed period—one day to one week	Long period—up to one semester	Time limitation—one class period
Connection to standards	Content and skills in one discipline	Knowledge and skills across disciplines	Content and skills in one discipline
Connection to instruction	Task linked to specific learning activity	Task linked to learning throughout the unit or project	Task tests students' ability to transfer knowledge and skills learned in project
Options	Products or performances may look different but are assessed according to the same standards	Products or performances may look different but are assessed according to the same standards	Products or performances look the same and are assessed according to the same standards
Audience	Public or classroom	Public	Classroom only
Evaluators	Self, peers, teacher, community member	Panel of teachers, parents, and community members	Teacher
Scoring procedure	Rubric, checklist, conference	Rubric with dimensions to assess different aspects of student performance	Rubric, teacher discretion
Examples	Letter to a public official Graphs, charts, drawings Poster or artifact Interview Field notes Oral presentation	Portfolio Exhibition, with oral, written, and visual elements Report for a public agency Dramatic performance Brochure	Writing task with prompt Simulation Planning exercise Test—open response or multiple choice

Stories from the Field: Service Learning Activities and Rubrics

Following are descriptions of service learning projects and examples of rubrics teachers use to assess some of the learning resulting from this work. As you will see, although the rubrics are designed around a particular type of product or performance, the content learning is often embedded in the rubric as well.

Assessing Math Skills through Architectural Drawings

Since 1996, students from Wiscasset High School in Maine have been working to make the Morris Farm, an agricultural education and recreation center, safe and accessible to the public. During the second year of the project, students designed and built a map and brochure display case for the farm. As an assessment task to address mathematical understanding, students produced scale drawings of the display case.

According to Deanna Bailey, Co-Director of the Farm, the task proved to be a seamless connection to curriculum and instruction. An architect visited the class to teach the principles of design. To help them understand the concept of faces, students produced sketches of the farm's hen house. As a class, students discussed what they wanted their display case to look like, including size and incline. Then, Deanna taught students how to apply a ruler to actualize their ideas and to measure and convert to scale.

Students were given a week of in-class time to complete the task, which included drawing the five faces of the case — front, back, bottom, top, and side. During this time, they had access to their teacher, their fellow students, and a variety of community volunteers, including carpenters and construction workers. Each student submitted individual drawings and received an individual grade.

The task demanded that students demonstrate mathematics content standards related to computation skills, geometry, measurement skills, and mathematical reasoning. Each drawing, which had to be accurate and neatly labeled (“the same as any architect”) was scored against a checklist that reflected both the Learning Results and “what I thought was most important for them to do within the drawings in order for them to be useful later.”

The task not only provided the teacher and students with feedback on their math skills, it was critical to the next stage of the project. “We could not go forward unless they understood what they had done because everything we were going to build was related to those drawings and they needed to be able to use them,” Deanna explained. In fact, students had to go back and do some redesign. Then, as a class, students determined the materials they needed to build the display case, including the type, quantity, thickness, and weight of wood.

According to Deanna, the task was more than an excellent measure of math skills. “Students were very engrossed as they were doing it. The kids developed a real strong sense of self-confidence in their ability to conceptualize something in their head, to put it onto paper, and the final step, to build it. They were very proud of their drawings.”

An Analytic Rubric for Assessing Oral Presentations

During their junior year at Orono High School in Maine, every student designs and implements an action plan for a 30-hour service-learning project. As an assessment task, students prepare a 10- to 15-minute oral presentation for an audience that includes their family and friends, site supervisor, community mentor, and a teacher of their choice. This task affords students the opportunity to describe their performance in the community, to summarize their work, and to demonstrate a skill too rarely seen in this school. As Connie Carter, service-learning coordinator, observes, “Our students have so little opportunity to speak before anybody. Even parents came to the school who had never been in our school before because it was the first time that their kid had been featured doing something individual.”

Students were asked to organize presentations around the following questions: What was the need or problem? What did you do? What changes resulted from your experience? What recommendations do you have for further work to address the problem or issue?

Oral presentations were scored by educators against an analytic rubric based on ideas and content, organization, language, and delivery (**Table 4-3**). To ensure inter-rater reliability, evaluators had students conduct practice presentations to establish benchmarks for performance. Afterwards, every student received a one page evaluation, prepared by the service-learning coordinator, as part of a comprehensive assessment of their performance on all required written, visual, and oral products.

The assessment was most closely aligned with the English Language Arts content standard related to the stylistic and rhetorical aspects of speaking, including the ability to “explore ideas, to present line of thought, to represent and reflect on human experience, and to communicate feelings, knowledge, and opinions.”

As a result of the assessment, teachers also learned how much students had enjoyed and grown from their service-learning experiences. “The message that came across to us was that this was the right thing to do,” Connie explained. Teachers also had the opportunity to see a side of students that they did not normally see and to understand what they were capable of doing in an independent project. But they also learned something else: that students needed much more preparation and practice with their public speaking skills. “I was surprised by the number of options that kids have. When students give an oral talk, teachers say, ‘well, if you’re not comfortable getting up in front of the class, you can turn in a written report.’ That is really doing the student a disservice. Now, we’re developing a new rubric that we will share with the English department and service-learning students so that we are clear about the

same standards. We all share a responsibility for teaching our students to speak in public and to communicate orally.”

Table 4-3: A four-level analytic rubric to guide and assess oral presentations.

Analytic Rubric for Oral Presentation			
<p>5 Ideas and Content</p> <ul style="list-style-type: none"> purpose and main ideas are clear and focused strong, supporting details contribute to audience understanding highly successful attempt to adapt content and details to audience and purpose 	<p>5 Organization</p> <ul style="list-style-type: none"> highly effective introduction brings audience to topic clear organizational structure enhances audience understanding of purpose and message a well-designed conclusion matches content and purpose of speech 	<p>5 Language</p> <ul style="list-style-type: none"> precise, descriptive language makes a strong impact figurative or creative language evokes clear images and an appropriate emotional response from audience grammar and usage almost entirely correct 	<p>5 Delivery</p> <ul style="list-style-type: none"> effective eye contact supports audience involvement effective variations in rate, volume, tone, and voice inflection are appropriate to audience and purpose fluent delivery
<p>4 Ideas and Content</p> <ul style="list-style-type: none"> purpose and main ideas are clear supporting details are relevant but may not be consistently strong successful attempt to adapt content and details to audience and purpose 	<p>4 Organization</p> <ul style="list-style-type: none"> effective introduction brings audience to topic clear organizational structure is relatively easy to follow planned conclusion may lack subtlety but still matches content and purpose of speech 	<p>4 Language</p> <ul style="list-style-type: none"> words that work but do not create a strong impact attempts at colorful language occasionally evoke an appropriate emotional response from audience, but may seem awkward or overdone grammar and usage are usually correct 	<p>4 Delivery</p> <ul style="list-style-type: none"> eye contact present but may not be made consistently with all members of audience effective rate, volume, tone and voice inflection are appropriate to audience and purpose generally fluent delivery
<p>3 Ideas and Content</p> <ul style="list-style-type: none"> identifiable main idea and purpose may be unfocused supporting details are often limited, overly general, or slightly off-topic an attempt to adapt content and details to audience and purpose 	<p>3 Organization</p> <ul style="list-style-type: none"> introduction either underdeveloped or awkward organizational structure occasionally unclear conclusion underdeveloped, obvious, or fails to match content and purpose of speech 	<p>3 Language</p> <ul style="list-style-type: none"> words rarely hold audience interest; occasional mundane expressions or clichés attempts at colorful language are awkward or forced distracting lapses in grammar or usage 	<p>3 Delivery</p> <ul style="list-style-type: none"> minimal eye contact with audience, some reading of content some rate or volume inadequacies; little variation in tone and voice inflection somewhat halting delivery with frequent space fillers such as “um”, “like”, “you know”, “whatever”
<p>2 Ideas and Content</p> <ul style="list-style-type: none"> main ideas or purpose unclear too little supporting detail or too much irrelevant, inaccurate, or redundant material minimal or unsuccessful attempts to take audience or purpose into account 	<p>2 Organization</p> <ul style="list-style-type: none"> introduction extremely underdeveloped or missing limited organizational structure is confusing conclusion extremely underdeveloped or missing 	<p>2 Language</p> <ul style="list-style-type: none"> words are flat or vague; colorful language is exaggerated and forced frequent errors in grammar and usage interfere with meaning 	<p>2 Delivery</p> <ul style="list-style-type: none"> little or no eye contact; speaker reads content rate is too fast or slow; volume is too loud or soft; monotone or highly erratic voice inflection halting delivery with frequent distracting fillers such as “um”, “like”, “you know”, “whatever”

Writing as a Summative Assessment Task Wells is a small seaside town on the southern coast of Maine bustling with visitors and retirees. Although the Wells-Ogunquit Community School District is well-known for its cutting edge reform efforts, many people without children in school often question what they view as the high cost of their schools.

In 1995, the new principal at Wells Junior High School wanted to start a community tradition that had worked well at his previous school. Soon, the Generations project was born. What started off as a one-day community service project providing Thanksgiving dinner for the elderly has turned into a dynamic 18-week instructional unit in Reading/Language Arts and a popular ritual for 200 grateful senior citizens. The school's sixth grade is in charge of the dinner from start to finish, serving on committees to design invitations and place mats, publicize the meal, plan the menu, solicit community donations for food, serve as wait staff at the event, and entertain their guests. Since there are no nursing homes or senior organizations in the community, students have to be doubly creative in getting word out — posters, flyers, newspaper advertisements, church announcements, even the school's marquee on busy Route 1 — is used. The Thanksgiving dinner has become so popular that there is even a take-out service for seniors who cannot travel to the event.

The instructional component of the Generations unit focuses on reading, literature and culture, writing and speaking, and research (**Figures 4-1** and **4-2**). Every student prepares for and conducts an interview with an elderly person about their life and times. Then, as a summative assessment task, they craft a short story focusing on an aspect of the aging process using details, characters, or themes gleaned from their interviews. After endless drafts and revisions, the stories are bound and distributed to seniors as well as to libraries in the district. Stories are assessed using peer editing rubrics, teacher conferences, and the district's scoring guide for writing.

Grade 5-8 English/Language Arts Learning Results	
<u>A. Process of Reading</u>	5. Understand stories and expository texts from the social and cultural contexts in which they were created. 6. Identify accurately both the author's purpose and the author's point of view.
<u>B. Literature and Culture</u>	7. Recognize complex elements of plot. 13. Demonstrate understanding of enduring themes of literature
<u>E. Process of Writing and Speaking</u>	2. Use planning, drafting, and revising to produce on-demand a well-developed, organized piece of writing that demonstrates effective language use, voice, and command of mechanics.
<u>G. Stylistic and Rhetorical Aspects of Writing and Speaking</u>	1. Write stories with an identifiable beginning, middle, and end.
<u>H. Research-Related Writing and Speaking</u>	7. Make limited but effective use of primary sources when researching topics.

Figure 4-1: *Learning Results for the Generations Unit.*

The Language of Literature Unit (approx. 18 weeks)

Short stories and poems in **bold** indicate **Generations** literature

Core Short Stories

- "The Most Dangerous Game", R. Connell — setting, characterization
- "The Sea Devil", A. Gordon — setting, plot
- "the Tell-Tale Heart", E.A. Poe — mood, point of view, character
- "If Cornered, Scream", P. Thurmond — plot
- "The Lie", K. Vonnegut — character, point of view
- "**The Moustache**", R. Cormier — character, theme
- "**The Treasure of Lemon Brown**", W. Meyers — character, theme, point of view
- "**Another April**", J. Stewart — theme

Poetry

- "**Do Not Go Gentle into That Goodnight**", D. Thomas
- "**To the Virgins to Make Much of Time**", R. Herrick
- "**Mother to Son**", L. Hughes
- "**If I Had My Life to Live Over Again**", N. Starr
- "**A Crabbit Old Woman Wrote This**"

Novels

- Staying Fat for Sarah Byrnes*, C. Crutcher
- A Wizard of Earthsea*, U. LeGuin
- The Taking of Room 114*, M. Glenn

Literary Skills taught in this unit

- Plot
- Characterization
- Setting
- Mood
- Point of view
- Theme

Speaking/Listening Skills taught in this unit

- Conducting an interview

Writing Skills taught in this unit

- Essay
- Creating interview questions — level of questioning
- Creating a realistic-fiction short story with an elderly character as the central character

Figure 4-2: *Literature, reading, writing and speaking, and research were the instructional components of the Generations unit.*

Using Portfolios to Capture Learning Across Subject Areas

In 1992, Brian Flynn, an English teacher at Edward Little High School in Auburn, Maine challenged his students to decide how to improve the snake trail, a broken tar path winding through forty acres of wilderness behind the school — and a notorious hangout for truants and troublemakers. Seven years later, hundreds of students have completely transformed the woods into a recreational area for school and community use. Features include a paved walkway, landscaping and erosion control improvements, lookouts and benches, entrance sign and garden, cross country and mountain biking trails, a greenhouse, an amphitheater, and an archaeological dig.

At the sophomore level, a team of four academic teachers in math (Tina Vanasse), science (Shelly Cahpman), English (Brian Flynn), and history (Ryan Laroche) use the ELF Woods Project as a common experience to integrate the disciplines. Each year, students identify and design a field project where they apply their knowledge and skills from math, science, English, and history to improve the wilderness area behind their school. Assessment is performance-based:

- *Fieldwork:* Students use the fieldwork rubric to rate their

performance on a scale of 1– 4 at the end of each day (anchor task; see **Table 4-4**).

- *Daily journals*: Each day at the end of their field work and in each of their academic classes, students write a journal entry in which they reflect on the tasks they have undertaken, obstacles encountered, and accomplishments achieved. Emphasis is on relation to content (anchor task).
- *Journal summaries*: At the conclusion of each three-week session, students submit a five-paragraph summary that synthesizes their favorite daily journal entries from math, science, English, history, and team lab (anchor task).

Every three weeks, students meet in conference with their teachers to discuss and review fieldwork, daily journals, and journal summaries. Individual scores and grades are determined in each category.



Students plant perennials around greenhouse.

Table 4-4: Fieldwork Rubric for Performance-Based Assessment

Fieldwork Rubric					
Evaluation Elements	4	3	2	1	0
Time on task (3)	90 – 100%	80 – 89%	70 – 79%	60 – 69%	Less than 60%
Positive impact (2)	Makes strong, positive impact	Makes positive impact	Makes modest impact	Has no impact	Makes negative impact
Self-discipline (2)	Always demonstrates self-discipline	Consistently displays self-discipline	Generally displays self-discipline	Seldom displays self-discipline	Never displays self-discipline
Directions (1)	Always listens to and understands directions	Consistently listens to and understands directions	Generally listens to and understands directions	Seldom listens to and understands directions	Never listens to and understands directions
Language (1)	Always uses appropriate language	Consistently uses appropriate language	Occasionally uses appropriate language by accident	Sometimes uses inappropriate language	Deliberately uses inappropriate language
Tools & Equipment	Always takes responsibility for use and care of tools and equipment	Consistently takes responsibility for use and care of tools and equipment	Generally takes responsibility for use and care of tools and equipment	Seldom takes responsibility for use and care of tools and equipment	Never takes responsibility for use and care of tools and equipment

At the end of the second semester, students construct a portfolio using artifacts from their fieldwork and their academic classes, such as interviews, notes, tests, essays, research papers, sketches, labs, and journals. Students then present their portfolios individually in an exit performance to a panel of school and community members. The 45-minute interview is carefully structured: 5 minutes for students to introduce their portfolios, 15 minutes for students to present their best work in each subject area, 10 minutes for students to reflect on their growth as a learner, 5 minutes for students to describe their most positive experience from the last year, and 10 minutes for panelists to ask

questions of students. Panelists score exit interviews using a rubric with three levels (**Figure 4-4**). Each panel includes three people from the school or community — staff, faculty, parents, business leaders, state representatives, even the mayor. Through a series of open response questions, students are also given an opportunity to provide feedback on the process.

Three-Level Scoring Rubric for Exit Interview			
Student			Date <u>00/00/00</u>
Title/Topic	Exit Performance		
Class	Sophomore Team		
Teacher			Grade <u> </u>
Prompt	Please highlight the description which best matches the student's performance in each category.		
Standard			
Performance Element	Level 3	Level 2	Level 1
Content	The student clearly defines each topic and thoroughly explains what knowledge has been acquired.	The student clearly defines each topic and adequately explains what knowledge has been acquired.	The student generally defines each topic and partially explains what knowledge has been acquired.
Skills	The student thoroughly demonstrates the skills that have been mastered.	The student adequately demonstrates the skills that have been mastered.	The student partially demonstrates the skills that have been mastered.
Growth as a Learner	The student thoroughly demonstrates how she/he has grown as a learner.	The student adequately demonstrates how she/he has grown as a learner.	The student partially demonstrates how she/he has grown as a learner.
Composure	The student displays confidence and poise.	The student displays adequate composure.	The student displays a lack of composure.
Verbal Delivery	The student's speech is loud and clear.	The student's speech is understandable.	The student's speech is partially understandable.
Eye Contact	The student consistently makes eye contact.	The student frequently makes eye contact.	The student seldom makes eye contact.
Response to Interview	The student responds to interview questions thoroughly and demonstrates a high level of comprehension.	The student responds to interview questions adequately and demonstrates a competent level of comprehension.	The student responds to interview questions partially and demonstrates a low level of comprehension.
For Teacher Use Only: Content/Skills Average Score: _____ X 4 = _____ Growth as a Learner Score: _____ X 3 = _____ Presentation Average Score: _____ X 1 = _____ Response to Interview Score _____ X 2 = _____ Total Score: _____ = _____ <div style="text-align: right; font-size: small;">(Strategic Learning Technologies, Inc. 1996-1997)</div>			

Figure 4-4: Three-level scoring rubric for exit interview in ELF Woods project.

Exit performances have proved extremely valuable in demonstrating student knowledge and skills gained through service-learning. Indeed, “the more people see it, the more people want to see all kids do it.” Now, the district is considering expanding exit performances to all seniors as a requirement for graduation.

Using a Variety of Tasks to Assess Learning

Famous for its world class beaches, the town of Wells has been exploring ways to encourage tourism away from the coast by enhancing public access to its vast environmental resources. Recently, the Conservation Commission acquired 300 acres of land known as the Effie Fenderson Wildlife Commons. Not much was known about the property, so the town enlisted the seventh grade students at Wells Junior High School to investigate. Through a series of field trips, students mapped the topography, described microhabitats, tested soil and water quality, and sketched and classified the plants and animals that inhabited the area.

Students’ information will be used by the Conservation Commission to decide how the land should be put to use. As development turns increasingly inland toward less congested areas of the town, farms, wetlands, and forests are slowly disappearing. In order to test what they learned about the value of smart land-use planning, students complete an on-demand assessment task. Students are given a map of an area with a variety of habitats. They are then asked to design a community where 10,000 people will live, work, and play, making land-use decisions about where, given the type of habitats available, to place single-family and cluster housing, manufacturing plants, mining operations, agricultural farms, commercial stores and services, public recreation areas, roads and parking, and public facilities such as schools, utilities, hospitals, post office, sewage treatment plant, town office, fire, water, and police. The task demands that students make decisions that balance the environment with development, applying their knowledge about the ecological and economic value of different kinds of habitats gleaned from their field work at the Fenderson Wildlife Commons.

Through their on- and off-site field work, 7th grade students at Wells Junior High School learn content across the sciences (Figure 4-5).

Science teacher Bruce Fearon engages students in a variety of anchor, summative, and on-demand assessment tasks in order to assess student learning. Each different task provides a different piece of evidence and provides a more detailed picture of student learning. Through this comprehensive approach, Bruce is able to assess learning on a wide range of science standards and students are able to see how the pieces of their learning fit into a larger whole captured in their land use plans for the Wildlife Commons. Some of the assessment tasks used include:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▶ Biology
microbiology — protozoa and bacteria food chain — needs of living things, including food, temperature, oxygen/carbon dioxide, water, and life functions plants — parts and functions, tree identifications, and uses ▶ Chemistry
acids/bases
chemical changes/physical changes | <ul style="list-style-type: none"> ▶ Earth Science
ecosystems/habitats
erosion/weathering
meteorology — water cycle
astronomy — seasons, day and night ▶ Physical Science
magnetism ▶ Technology
use of satellites |
|---|--|

Figure 4-5: 7th grade science curriculum connected to fieldwork.

Tree identification: Students construct a booklet of pressed leaves, mounted with correct classification information (anchor task).

Temperature and pH: Students take and record air and water temperature and pH in each of three different habitats in the Wildlife Commons (anchor task).

Ecosystems and Food Chains: Students construct and present a conservation poster that illustrates 25 – 40 scientific terms learned in the project (summative assessment task— see **Figure 4-6**).

Oral Presentation: Students present their data to the Wells Conservation Commission (summative assessment task).

Land-Use Planning: Students design a land-use map for a community where 10,000 people will live work, and play (on-demand assessment task).

Conservation Poster				
Criteria	Organization	Color	Neatness/Spelling	Message
5	Very organized User friendly	Many colors 6+	Very neat Words spelled correctly	Easily understood message/clear understanding of concepts
3	Somewhat organized Usable	Multiple colors 3-5	Neat/Some words misspelled	Message understood. Some question about understanding of concepts.
1	Lacks organization	Few colors	Needs work	Difficulty understanding message
	___+	___+	___+	___ = _____(Total)
20= A+ 17-19= A 14-16= B 11-13= C 8-10= D 7= Ask for help				

Figure 4-6: *Conservation Poster rubric*

SOAR: A Framework for Looking at Different Types of Assessment

Finally, it can be helpful for teachers to differentiate among the different kinds of assessment that can occur during service-learning. In School Administrative District #51, students in the tiny village of Cumberland, Maine are involved in all kinds of service-learning, from harvesting an apple orchard as a student-run business to publishing the history of the Cumberland Fair. Through the assistance of district administrators, teachers are encouraged to use a four-part assessment template called SOAR (**Table 4-5**) in order to capture the many dimensions of student learning.

Table 4-5: Template Showing Four Types of Assessment

Assessment Type	Goal	Examples
Subjective	hidden learning	written essays, journals, classroom participation, debates
Objective	mastery of knowledge	writing task
Authoritative	quality of product/service	engineer's seal building permit planning board approval
Reflective	student self-assessment	class sharing journal conference open response survey

At Greely High School, for example, an Industrial Arts class was challenged to design a foundation for the town's gazebo that would meet all engineering and building code requirements, use only a backhoe for equipment, and demand only a volunteer work force for labor. As an objective assessment, students completed a short-answer written test to demonstrate their knowledge of building code requirements and structural engineering factors. Then, each student submitted a design with a blueprint and materials list, which was subjectively assessed through a class discussion. A final design was submitted and evaluated by a local engineering firm and the town's building inspector (authoritative assessment). The result was not a grade, but a building permit. Reflective assessment was an in-class discussion on the lessons learned through the project.

There are multiple opportunities for assessment in the course of a service-learning experience. The authentic work produced by students in service can itself embody one of the best assessments of student learning.

Conclusion

As the Maine study group explored assessment practices for service learning, we came to recognize that good assessment for student learning through service is not that different from good assessment for any learning. In any learning experience, students create some type of product or performance that demonstrates their knowledge and skills. The "trick" in service-learning seems to lie in *formalizing the assessment process to tie it clearly to desired learning results*.

Sometimes, the service itself is a product that shows evidence of learning. These are often the *summative assessment tasks* that can be assessed with a rubric describing the characteristics of quality work. In addition, as students work through the KIDS as Planners process, there can be numerous *anchor tasks* that link directly to a particular learning result. A plot survey can show the student's command of scientific processes and plant identification; a letter to the select board demonstrates students' writing ability and understanding of the social issues impacting their town. These assignments within the service-learning experience can focus attention on particular learning results and allow students to

produce authentic evidence of their knowledge and skills. But even when these authentic tasks are unwieldy or not directly tied to learning results, teachers can use on-demand assessment tasks to assess student learning. A test, writing assignment, or simulation can be used to test the student's ability to transfer knowledge and skills contextualized in a particular service-learning experience to a similar situation, thus providing evidence of growth.

In the end, it is not the service-learning that is being assessed but the learning that results from service. We know our students learn through their service. Assessing this learning asks teachers to look for products and performances that reflect student achievement of learning results. As we found through our study, these products are there, or we can require them "on-demand." Documenting, providing feedback, and reporting on these products simply asks teachers to apply the assessment tools, such as rubrics, they would use for in-class products. Although we know good assessment of service-learning is not easy, it is not essentially different from assessment of any student learning. We found that when we became clear on what learning results we were targeting and what evidence students produced, we were able to develop assessment processes that not only helped score student learning, but also allowed students to grow as they reflected on their learning.

The Maine Study Group Story

In the spring of 1996, Maine joined the National Study Group on Assessment and Service-Learning to help us bring focus to our primary question: how do we assess the intellectual quality of student work generated through service-learning? Maine's Study Group on Service-Learning and Assessment was convened from May 1997 through June 1998. Our selected group consisted of eight members: one third grade teacher; two high school service-learning coordinators, two teachers of alternative education (one based at a high school and the other at an environmental education center), a team of four academic high school teachers who rotated meetings and occupied one slot; an assessment specialist with the Maine Math and Science Alliance; and the senior program manager of the KIDS Consortium.

Maine's study group met for a total of five full-day meetings, using the process of collaborative inquiry as a common framework. We began our inaugural meeting by examining products generated from service-learning projects — brochures, portfolios, reports, field guides. Playing detective, we examined these artifacts and worked backwards to determine the standards and the learning activities that led to these products. How much these proud and silent witnesses could tell us about the students who created them surprised us. Ultimately, this process of inquiry helped us generate a list of fifteen questions that would drive the focus of our work (**Figure 4-7**). At our second meeting, the study group focused on the resources available to respond to our unanswered questions about assessment. Using the process of collaborative inquiry, we looked at classroom assessment tools, guides and templates developed by teachers, assessment networks, and state Departments of Education across the country. Through this process, we considered which tools were

Our Questions on Classroom Assessment

- By what standards should we assess the quality of student work?
 - Technical standard**
For example, do you assess whether a student-designed gazebo employs the elements of design (architectural), demonstrates correct mathematical measurements (engineering), can be built on an identified piece of property (political or environmental), or reflects the New England character of the town (aesthetic or historical)?
 - Participation standard**—acquiring the skill (completion) versus applying the skill (performance)
For example, a music student who performs in an ensemble has already exceeded basic proficiency in the standard.
 - Academic content standards** in one or more disciplines, i.e., specific performance indicators in the Learning Results
 - Community impact** of the product or service
For example, to what extent do we assess students' efforts to eliminate pollution based on their water quality data?
 - Discovery or problem-solving standard**
For example, when something goes wrong, or when students acquire new information, are they flexible enough to make changes to integrate this data?
 - Utility** of the product or service
For example, to what extent do tourists use and enjoy a walking tour brochure that students have created?
- How do you hold students individually accountable for academic content demonstrated in a group product?
- How can we identify a common set of learning activities, or anchor tasks, in which all students can be engaged and assessed, when they are producing a group product?
- By what standards do we assess individual participation in a group project, including progress toward individual goals, ability to function effectively in a group, and demonstration of the Guiding Principles in the Learning Results? Tools in use include checklists, portfolios, exit interviews, presentations, exhibitions, and journals.
- How do you assess group process, including goals, activities, and effectiveness?
- Should the project drive the production of all student work?
- Which comes first, the standards or the project? Do we need to figure out all the standards in advance?
- What happens when the project has outgrown the curriculum?
- How have pedagogues similar to service-learning approached assessment? What resources have they created?
- Within a project, is it more important for students to have the opportunity to improve on their weaknesses or to enhance their strongest skills and talents? To what extent and to what level of proficiency?
- How can we award "credit" or "competency" for interdisciplinary knowledge and skills gained through an experience that occurred through the structure of a single course? **or** How do we bring teachers of different disciplines "on board" with service-learning?
- How can we make assessments both meaningful internally (to give feedback to students and teachers) and externally (to provide a common validation for parents and community)? Video is a good feedback mechanism.
- What traditional tests or assessment tasks can be used to assess whether students can transfer project-specific knowledge or skills to a new context?
- Should we limit assessment to content standards in one discipline? In other words, is it necessary and feasible to look at everything?
- Is service-learning a more effective strategy at delivering "concept" or "content", i.e., the Guiding Principles versus Performance Indicators in the Learning Results? Is application, the context in which students put it all together, more important than discrete knowledge and skills?

Figure 4-7: *The Maine Study Group's Questions About Assessment*

most useful and why, and which ones were lacking. Knowing what tools the field had developed, we zeroed in on what useful end product Maine's study group could develop, given our limited time and resources.

Our study group decided to develop a set of rubrics that could be used to assess student products addressing common content standards. We realized that many of the products we had examined had a lot in common. Whether through a poster, a pamphlet, or a museum exhibit, students can demonstrate the ability to communicate while representing their understanding of certain content outlined in the Learning Results.

Our next step was to identify those content standards in the Learning Results that we thought were common to most service-learning projects. Our final list included fifteen standards from the content areas of Career Preparation, English Language Arts, Health and Physical Education, Mathematics, Science and Technology, and Social Studies (**Figure 4-8**). Our study group felt that these standards were addressed by most service-learning projects in any grade level or classroom, whether a high school water quality monitoring project or a third grade cemetery restoration. We then clustered content standards that seemed related into the same categories, arriving at four cross-disciplinary areas — communication, reasoning, research, and personal and social responsibility.

Now our charge was to develop rubrics to assess knowledge and skills in each cluster, make recommendations for assessment tasks — products and performances — to which the rubrics could be applied, and field test them (*see Appendix, Tables 4-6 through 4-9*). This was much more challenging and confusing than we had anticipated, partly because we invited teachers from outside our study group to participate in the tool development. It was difficult to create ownership for the necessity of these tools from professionals who had not been on our journey from the beginning. We also encountered resistance to field testing the rubrics. By this time it was June, and our tool developers were reluctant to apply the rubrics to student work that may or may not have been intended to address the content standards reflected in the rubrics. Two of our study group members did pilot them, but it was not the massive field testing we had hoped for: the research rubric was applied to forest management plans developed by seventh grade students in a science class; the communication rubric was applied to student essays written by high school students who had done field work to transform the wild woods behind their school a recreation area; and the rubrics for reasoning and personal, civic, and social responsibility remained untested.

Technical Assistance Strategies To provide technical assistance, we conducted an “Assessment Academy” — a two-day event held at Sunday River, Maine with thirty-five teachers from across New England. The Academy was planned by Jill Rosenblum, the assessment specialist serving on our study group, and delivered with the help of KIDS staff and study group members. A unique feature of the event was the engagement of teachers as learners in a real service-learning project to design a feasibility study for the Franklin County Rail-Trail Project. First, students and staff from Maine School Administrative District #58 presented their efforts to design an 86-mile bike loop connecting all the towns in their school district along an abandoned rail corridor. Then, academy participants worked in committees with invited community experts to brainstorm research questions on different dimensions of the

Maine Learning Results Common to Service-Learning Projects

Research

▶ **Career Preparation - C. Integrated and Applied Learning**

Students will demonstrate how academic knowledge and skills are applied in the workplace and other settings.

▶ **English Language Arts - D. Informational Texts**

Students will apply reading, listening, and viewing strategies across all areas of curriculum.

▶ **English Language Arts - H. Research-Related Writing and Speaking**

Students will work, write, and speak effectively in connection with research in all content areas.

▶ **Science and Technology - J. Inquiry and Problem-Solving**

Students will apply inquiry and problem-solving approaches in science and technology.

Communication

▶ **English Language Arts - E. Processes of Writing and Speaking**

Students will demonstrate the ability to use the skills and strategies of the writing process.

▶ **English Language Arts - F. Standard English Conventions**

Students will write and speak correctly, using conventions of standard written and spoken English.

▶ **English Language Arts - G. Stylistic and Rhetorical Aspects of Writing and Speaking**

Students will use stylistic and rhetorical aspects of writing and speaking to explore ideas, to present lines of thought, to represent and reflect on human experience, and to communicate feelings, knowledge, and opinions.

▶ **Science and Technology - L. Communication**

Students will communicate effectively in the applications of science and technology.

Reasoning

▶ **English Language Arts - A. Process of Reading**

Students will use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what they have read.

▶ **Mathematics - J. Mathematical Reasoning**

Students will understand and apply concepts of mathematical reasoning.

▶ **Science and Technology - K. Scientific Reasoning**

Students will learn to formulate and justify ideas and to make informed decisions.

Personal and Social Responsibility

▶ **Career Preparation - A. Preparing for the Future**

Students will be knowledgeable about the world of work, explore career options, and relate personal skills, aptitudes, and abilities to future career decisions.

▶ **Health and Physical Education - E. Communication Skills**

Students will understand that skillful communication can contribute to better health for them, their families, and their peers.

▶ **Health and Physical Education - C. Personal and Social Interactions**

Students will demonstrate responsible personal and social behaviors in physical activity settings.

▶ **Social Studies - A. Civics**

Students will understand the rights and responsibilities of civic life and employ the skills of effective civic participation.

Figure 4-8: *The Maine Study Group chose to focus on 15 standards from the Maine Learning Results*

trail work — mapping, land ownership, geology, history, finance, transportation, and community involvement. The service project brought to life all of the messy issues teachers deal with when it comes to assessment, particularly students becoming experts in different aspects of the work. The one element that each group did have in common was research: no matter what the topic (e.g., mapping or history), each

committee was responsible for submitting a plan identifying essential questions they would research, sources of information (archival, survey, observation, interview, library), organization and presentation of information, action steps, resources, and people or agencies that would be helpful in the research process. This was exactly the kind of learning activity that happened in most KIDS projects and that could be assessed using the study group's research rubric (**Appendix, Table 4-6**).

Besides research, there are, of course, content-related activities unique to a rail-trail project, such as conducting title searches, designing bridges, or surveying user groups. Teachers identified all of the possible learning and service activities that might emanate from the feasibility study and the content from the Learning Results that would be addressed. Then, teachers designed an assessment task based on a learning activity in which all students might be engaged. In this way, teachers had a first hand opportunity, as learners, to discover how content common and unique to service-learning projects could be assessed.

The study group also served as a forum to share the classroom assessment tools developed by individual teachers for use in their projects. Some were developed with input from students. Others reflected standards related to academic disciplines, and in many cases, the Learning Results. Some tools could be applied to a variety of projects and products, others not. What we learned through sharing was that assessment was not the external, high stakes game it seemed at the beginning. It was not solely about holding teachers and students accountable for grades. Assessment helped teachers enhance student learning, inform teacher choices about instruction, guide student behavior, and monitor student progress. We learned that assessment can help build support for service-learning by demonstrating to other teachers, administrators, parents, and community members the content and skills manifested in the products and performances generated by students.

Appendix 4A: Four Rubrics for Assessing Project-Based Learning

Table 4-6: Research Rubric

Criteria	0 No Demonstration	1 Attempted Demonstration	2 Partial Demonstration	3 Proficient Demonstration	4 Sophisticated Demonstration
Identification of Problem	No attempt to identify a problem	Poses a question for inquiry	Formulates a question with a plan for inquiry that identifies skills, knowledge, people, tools or other resources associated with the solution	Formulates a question with a plan for inquiry that details the skills, knowledge, people, tools and other resources from one disciplinary perspective needed to answer that question	Formulates a compelling question with a plan for inquiry that details the skills, knowledge, people, tools and other resources from two or more disciplinary perspectives needed to answer that question
Variety of Sources	No attempt to collect data	Collects qualitative or quantitative information from primary or secondary sources	Uses technology to identify and collect qualitative or quantitative information from primary and secondary sources	Uses technology to identify and collect qualitative and quantitative information from a variety of primary and secondary sources, e.g., print, archival, observation, survey, and/or interview	Uses technology to identify and collect qualitative and quantitative information across a variety of disciplines from a variety of primary and secondary sources, e.g., print, archival, observation, survey, and/or interview
Data Collection	No attempt to record data	Records and/or references observations, concepts, or details from primary or secondary sources	Records, interprets, and/or references relevant observations, concepts and details from primary and secondary sources	Applies standards to properly record, interpret, and reference relevant observations, concepts and details from primary and secondary sources	Consistently applies standards to properly record, interpret, and reference relevant observations, concepts and details from primary and secondary sources across a variety of disciplines
Validity of Data	No attempt to evaluate data	Information is recognized as fact, opinion, or generalization	Information is current and recognized as fact, opinion or generalization	Information is current and accurate and differentiated by fact, bias, opinion or generalization	Information across a variety of disciplines is current and accurate and differentiated by fact, bias, opinion or generalization
Representing Data	No attempt to represent data	Data is represented in written or graphic form	Data is represented in written or graphic form using appropriate technical terms	Data is summarized in written and graphic form using technical terms appropriate to the field of study	Data across a variety of disciplines is synthesized in written and graphic form using technical terms appropriate to the fields of study

Table 4-7: Communication Rubric

Criteria	0 No Demonstration	1 Attempted Demonstration	2 Partial Demonstration	3 Proficient Demonstration	4 Sophisticated Demonstration
Purpose	No product	Unclear purpose or main idea	Communicates an identifiable purpose and/or main idea for an audience	Achieves a clear and distinct purpose for a targeted audience and communicates main ideas with effectively uses techniques to introduce and represent ideas and insights	Achieves a clear and distinct purpose for a targeted audience and communicates main ideas using a variety of techniques to introduce and represent ideas and insights
Organization	No product	Organization is unclear; introduction, body, and/or conclusion are underdeveloped, missing or confusing	Organization is occasionally unclear; introduction, body or conclusion may be underdeveloped	Organization is clear and easy to follow; introduction, body and conclusion are defined and aligned with purpose	A clear organizational structure enhances audience understanding; introduction, body and conclusion are well defined, effective, and aligned with purpose
Language Mechanics and Usage	No product	Limited variety of sentence structures and lengths; significant errors in grammar, word usage, spelling, capitalization, punctuation, and/or pronunciation	Limited variety of sentence structures and lengths or significant errors in grammar, word usage, spelling, capitalization, punctuation, and/or pronunciation	Variety of sentence structures and lengths and no significant errors in word usage, grammar, spelling, capitalization, punctuation and/or pronunciation	Engaging variety of sentence structures and lengths ; word usage, grammar, spelling, capitalization, punctuation and pronunciation almost or entirely correct
Detail	No product	Supporting details and/or visuals are missing, irrelevant, inaccurate, or inappropriate	Supporting details and/or visuals are relevant but limited, overly general, or inconsistently provided	Relevant use of supporting details; e.g., analogies, comparisons, examples, descriptions, AND/OR visuals; e.g., symbols, diagrams, graphs, tables, maps, models	Uses a variety of clear, pleasing, and relevant supporting details or visuals that contribute to the audience's understanding
Voice	No product	Some use of descriptive language and wording that may appear mundane, forced, or awkward	Use of descriptive language or wording to communicate a personal style	Effective use of descriptive language and transitional devices to express a personal style with a discernable voice and to enhance and connect ideas	Consistent and effective use of descriptive language and transitional devices that move, engage, or teach the audience

Table 4-8: Reasoning Rubric

Criteria	0 No Demonstration	1 Attempted Demonstration	2 Partial Demonstration	3 Proficient Demonstration	4 Sophisticated Demonstration
Verify and evaluate information	Makes no attempt to evaluate resources or data	Attempts to evaluate some resources but draws no reasonable conclusions	Evaluates some resources and data OR evaluates data and resources but draws incomplete or inaccurate conclusions	Evaluates resources and data accurately, considering credibility of sources, verification of findings, and reasonableness	Evaluates and verifies resources and data by generating original data to compare with others' findings OR by locating additional primary sources
Draw conclusions and make appropriate applications	Makes no attempt to draw conclusions or make appropriate applications	Attempts to draw conclusions from research or data analysis but they are inaccurate or irrelevant to the project	Draws some conclusions that are accurate or relevant to the project and/or uses some of the information appropriately in planning and carrying out activities	Draws accurate conclusions that are relevant to the project from research or data analysis AND uses the information appropriately in planning and carrying out activities	Draws accurate, relevant conclusions from research or data analysis and applies them in an insightful or sophisticated way in planning and carrying out activities
Justify and support decisions, strategies, findings, and solutions	No explanation or justification of decisions, strategies, findings, and/or solutions	Explanation used to justify and explain decisions, strategies, findings, and/or solutions is not relevant to the project	Explanation used to justify and explain decisions, strategies, findings, and/or solutions is not connected to information gathered while completing the project OR is incomplete	Explanation used to justify and explain decisions, strategies, findings, and/or solutions is complete and is supported by evidence gathered while completing the project	Explanation used to justify and explain decisions, strategies, findings, and/or solutions is complete and is supported by evidence gathered while completing the project AND includes relevant information from the student's experience beyond the requirements of the project

Table 4-9: Personal, Social and Civic Responsibility Rubric

Criteria	0 No Demonstration	1 Attempted Demonstration	2 Partial Demonstration	3 Proficient Demonstration	4 Sophisticated Demonstration
Personal	Unaware of responsible personal behavior	Recognizes responsible personal behavior but is unable to explain its importance in a physical activity setting	Able to explain responsible personal behavior but is unable to demonstrate it consistently in a physical activity setting	Able to explain and demonstrate responsible personal behavior in a physical activity setting, including safe and appropriate etiquette and conduct	Able to explain the importance and impact of responsible personal behavior in society
Social	Unable to recognize a competent leader and/or group mentor	Recognizes a competent leader and/or group member, but is unable to identify the skills necessary to function as one	Able to identify the leadership and membership skills necessary to function as a member of a team in a school, family, or community setting and the causes of conflict within these settings	Able to describe and demonstrate the leadership and membership skills necessary to function as a member of a team in a school, family, or community setting and to use strategies to prevent or solve conflict within these settings	Consistently acts as a leader and as a productive group member in a variety of school, family, and/or community settings and incorporates conflict prevention or resolution skills into daily experiences
Civic	Unable to identify a public policy issue in our democracy	Able to identify a public policy issue in our democracy	Able to identify and describe a public policy issue in our democracy	Able to identify and evaluate a public policy issue in our democracy and to explain the importance of active, informed attentive citizen participation in addressing that issue	Actively participates in solving a civic problem and articulates the impact of his/her actions on public policy and constitutional democracy

References

F. Newmann and G. Wehlage, *Successful School Restructuring*; Madison, Wisconsin: Center on Organization and Restructuring of Schools, University of Wisconsin — Madison; 1995.