3 PLANNING SERVICE-LEARNING CLASSROOM ASSESSMENTS: A DISTRICT OF COLUMBIA CASE STUDY

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Abstract

The District of Columbia Public Schools Assessment Study Group chapter uses an assessment planning process to demonstrate how service-learning can help students meet challenging academic standards. The chapter provides a road map for planning assessments, offers tools to help in the planning process, and illustrates these processes and tools with examples from actual District of Columbia Public Schools (DCPS) service-learning projects. The projects were linked to specific academic goals and DCPS performance standards.

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The State Context

Before we look at the work of our study group, it is important to point out where the District of Columbia Public Schools (DCPS) were in relation to the advent of service-learning and another critical reform; namely, the use of academic standards and how this informed our case study.

Service-Learning In 1992, the Board of Education for the DCPS instituted a graduation requirement of 100 community service hours for all students beginning with the 1995 graduation class. Students could select organizations, agencies, groups and individuals on their own or participate in agencies, groups or individuals in which they were placed through the Community Service Liaisons at their local school.

The goals of the community service program were to increase students' perception of self-worth, provide experiences for students to contribute to society without receiving monetary payment and prepare students better for the world of work. Community service opportunities should:

(i) be developmentally appropriate and supervised by a responsible adult;
(ii) emphasize the responsibilities and obligations of life as well as the enjoyment of its privileges;
(iii) promote career exploration and work force skills; and
(iv) emphasize benefits to both community and student.

During the 1993-94 school year, the DCPS Office of Community Service and Service-Learning Programs began oversight of system-wide community service attainment and the introduction of service-learning as an educational strategy in conjunction with the system's curriculum reform efforts. From 1994 through 1997 the Office of Community Service and Service-Learning Programs conducted training in service-learning as an educational strategy through staff development, summer courses for in-service and/or graduate credit, and professional development institutes for design teams in every senior high school and half of the junior high schools in the district. Service-learning teams were established in every high school and comprised the community service liaison, an AmeriCorps VISTA member, three to seven classroom teachers, and two service-learning youth council members. The training sessions provided instruction for more than 300 junior high and senior high school classroom teachers on linking community needs and services to existing curriculum and classroom practices. During the 1998-99 school year, service-learning training and efforts were focused on ninth grade teachers and students in conjunction with the city-wide School to Careers Initiative.

Academic Standards Currently, the DCPS have content standards for English Language Arts, Mathematics, Science, Art, Music, Health and World Languages. These are described in the *Standards for Teaching and Learning*, which was revised in April of 1999. Performance Standards, available for English Language Arts, Mathematics and Science, were developed in conjunction with the University of Pittsburgh and the National Center for Education and the

Economy. DCPS also have benchmarks for English Language Arts and Mathematics — descriptions of what students should be able to do by grades 3, 5, 8, and 11. In addition, DCPS assess students with the Ninth Edition of the Stanford Achievement Test (Stanford 9). Since 1998, students who score below basic on the Stanford 9 test are required to go to summer school.

Between 1996 and 1999, however, the system experienced several radically significant organizational changes. In 1997, the policy-making authority of the elected Boards of Education was suspended and replaced by a Congressionally-appointed panel, the Emergency Board of Trustees, which appointed a new superintendent. After one year he resigned; he was replaced by the current superintendent in 1998. During this period, the school system moved from performance-based education to standards-based education and experienced major reductions in central office personnel.

Chapter Organization

Part I describes the work of the Service-Learning Assessment Study Group and provides an overview of the case study project.

Part II describes two service-learning projects conducted by ninth-grade Algebra classes at Banneker Senior High School in the District of Columbia. It outlines features to consider in developing an assessment plan and uses examples from the Neighborhood Clean Up. Finally, it introduces a process for aligning classroom assessments to standards with examples from an "Alcohol in the Community" project that describes ways to design student tasks and scoring guides.

Part III describes lessons learned from this project and suggests improvements.

PLANNING SERVICE-LEARNING CLASSROOM ASSESSMENTS:
A District of Columbia Case Study

Introduction

Like our peers throughout the nation, we educators in the District of Columbia Public Schools (DCPS) face the challenge of helping students meet content and performance standards. With standards-driven education, students must demonstrate that they have mastered the content or skill and that they are able to use it. This view of education requires classroom teachers to do more than transmit information and then move on to the next unit.

Just as standards are becoming part of the educational landscape, more and more teachers are incorporating service into their instructional practice. Service-learning offers students unique learning opportunities that connect students to the broader community. Both standards-based education and service-learning promise to better prepare students for the future. However, they pose new challenges for teachers. For example, how do teachers reconcile these new demands on their planning and instructional time? How do they weave these different elements into seamless learning opportunities?

Teachers are faced with finding ways to expand their repertoire of instructional and assessment strategies to help them teach to high standards. For teachers using service-learning as an education strategy, it is critical to design and carry out service-learning activities that align curriculum, instruction, and assessment. What sorts of processes or tools are available that can do just that? We believe assessment is the key.

As a Study Group we wanted to know what teachers need to support them in their efforts to integrate service-learning into their classroom instruction and then systematically determine how well their students are progressing toward standards. In this case study, conducted by one mathematics teacher, we explore ways to plan assessments that measure whether students are meeting the learning objectives or academic standards by participating in service and producing related work. It should be noted that the assessment planning models we apply to this case study were developed after the teacher led these service-learning experiences. We use the case study to illustrate the assessment planning model and to show both elements he used well and those he could have enhanced in the assessment of student learning.

We offer two practical approaches for crafting a curriculum-based service-learning project and systematically assessing student learning. In doing so, we focus on the *planning* phase of assessment process. It is in the planning stage that we define our purpose for assessing, how we will assess, and what we will do with the assessment information. Assessment, in our view, must go beyond simply evaluating and ranking

students. Assessment should be a part of instruction and it should inform a teacher's choice of instructional strategies. For assessment to accomplish all of this, it must be thoughtfully planned.

Part I: DCPS Service-Learning Assessment Study Group

The context and the process played an important role in the work of the Study Group. The District of Columbia Public Schools witnessed considerable change during our tenure (*see State Context)*. The Study Group itself went through several phases to achieve its goals and objectives. The product of this process is this case study of two service-learning initiatives involving two ninth grade classes that explored the use of service-learning through the assistance of their Algebra teacher in 1998. The focus of the case study centered on the assessment planning process. We found the work of Herman, Aschbacher & Winters (1992) and Mitchell (1996) useful in discussing the process.

The Study Group Process The DCPS Service-Learning Assessment Study Group was formed in 1997 and coordinated by the Office of Community and Service-Learning Programs. The study group met every two weeks during its first year and less frequently during the second year. The Study Group began by reviewing the current use of service-learning in the schools, by learning more about assessment theory and strategies, and by examining the District's progress toward implementing content and performance standards. To accomplish this, the Study Group read and discussed current literature and considered local data from a number of sources. First, an informal survey of service-learning projects was conducted. Simultaneously, the Study Group created a list of criteria for judging the projects and for selecting a project to use as a case study. Based on these criteria, two projects were selected for the case study: *The Neighborhood Clean Up Project* and *Alcohol in the Community*. Both projects were planned by the Mathematics teacher and a VISTA volunteer and were carried out by two-ninth grade Algebra classes at Banneker Senior High School; they took an estimated 130 hours to complete.

Once the projects were selected as the case study, we needed to gather additional data from the teacher and student participants. We interviewed the teacher to

(a) elicit primary data on how the service-learning project was conducted;
(b) identify how student learning was assessed; and
(c) provide insights on how future projects could be modified.

The Study Group also developed a written questionnaire to elicit student reflections and attitudes about the project. The survey was administered anonymously by a member of the Study Group. Finally, the teacher provided several documents that were developed in conjunction with the service-learning projects: a project overview and exemplars of student work (graphs, student letters and surveys). We are grateful to Russell

Jeter, III of Banneker Senior High School for providing us with these documents.

Part II: Planning Assessments

Our Study Group decided to focus on the planning aspect of the assessment cycle because the assessment plan directs other stages of the assessment process — how we collect information, how we analyze and interpret it and how we use the information. We also wanted to focus on how standards could be incorporated in the development of authentic classroom assessments because we feel such assessment provides the richest source of information on what students are learning; how well they are learning it, and how well they have been taught.

In Section A, we introduce a six-step process for planning assessments and use the Neighborhood Clean Up Project to illustrate the process. In Section B, we focus on developing classroom assignments and scoring guides that are linked to academic standards, using the Alcohol in the Community project as an exemplar.

Section A. Aspects of the Assessment Planning Process

An important part of the student assessment process is the planning stage. An assessment plan should address basic questions such as: (i) the purpose for assessing and the use of assessment results (ii) who to assess (iii) what to assess, (iv) how to assess and (v) when and how often to assess. Herman, Aschbacher and Winters (1992), in *A Practical Guide to Alternative Assessment*, provide a useful straightforward six-step process:

1. Determine the purpose of assessment.
2. Identify primary instructional goals.
3. Determine priority outcomes.
4. Select assessment tasks.
5. Describe the assessment task.
6. Set criteria and scoring procedures.

We discuss each of these steps and illustrate them using examples from the Neighborhood Clean Up Project described in **Figure 3-1**. The activities planned for the project are shown in **Table 3-1.**

Neighborhood Clean Up Project

A Neighborhood Clean Up Project conducted by a ninth-grade algebra class at Banneker High School was selected for the case study. The project was intended to address the ongoing problem of pollution and waste on the streets and sidewalks of the neighborhoods surrounding the Banneker High School community. The immediate objectives of the project were:

- to teach students about the environmental pollution problem in the community
- to engage students in a neighborhood clean-up; and
- allow students to use their algebra skills to mathematically analyze the amount of waste generated on different neighborhood blocks over periods of time.

The long-term objective of the project was to allow students to extend their mathematical skills outside the classroom in order to help solve real community problems. To accomplish these objectives, students were to

- use their pollution data to write to environmental policymakers; and
- educate the school and community about waste.

The students worked with the District of Columbia Department of Public Works and other adults to accomplish this task. As they picked up the garbage, they sorted it by type. Later, in class, the students graphed the type of trash, the area they cleaned, and the amount of time it took to clean it up. They graphed this data to illustrate the magnitude of the litter problem, determine how much waste accumulates in the community over a period of time, and compare the amount of waste on different neighborhood blocks. They created various graphs, ratios, and comparisons and learned to interpret what they meant. They then communicated what they had learned in one of many ways, such as letter writing, educational brochures, posters, and videos. Students also wrote letters to public officials about the litter. The final phase of the project included reflection and celebration to encourage the students to reflect on and appreciate the need for the service and its ultimate impact on the community. This phase was also an evaluation of the project and its level of success, and was therefore an opportunity to recognize and applaud students' efforts. Such appreciation can be as simple as a "thank you" over the school intercom, a visit from an official, or a certificate. For this project, students received a certificate from the Washington Wizards and tickets to a Wizards basketball game. Several students cited the award as an incentive for participating in service in the future.

Figure 3-1: *The Neighborhood Clean Up Project.*

Table 3-1: Activities planned for the Neighborhood Clean Up Project

Neighborhood Clean Up Project Planned Activities		
Description of Activities	**In Classroom**	**Out of Classroom**
Introduce the Neighborhood Clean Up Project	x	
Speaker addressing pollution and waste issues	x	
First neighborhood clean up on Georgia and Sherman Avenues		x
Do mathematical data analysis of amount of waste collected and create graphs	x	
Second neighborhood clean-up on Georgia and Sherman Avenues (one week after first clean up)		x
Do mathematical analysis of amount of waste collected and create graphs for second clean-up	x	
Compare data of first and second clean-up and create graphs of comparisons.	x	
Discuss findings and determine possible steps that the students might take to help with problems of waste and pollution.	x	
Work on final projects, including letters to policy makers, educational brochures, posters, videos, etc.	x	x

Reflect on work and attitudes about project and make a plan for project improvement and continuation	x	

Step One: Purpose of Assessment We assess students for many reasons; therefore, determining the purpose of assessment is fundamental to the process (**Table 3-2**). How will the results be used? Most purposes fit into two general categories. If the purpose is *achievement*, we focus on outcomes or products of student learning to determine student grades, placement in a special program or to monitor progress. If the purpose of assessment is *diagnosis and improvement*, we focus on process and outcomes and use the results to look at students' strengths and weaknesses, identify appropriate instructional programs, or identify the types of learning strategies students use.

Table 3-2: The Purposes of Assessment

Purposes of Assessment					
Achievement			**Diagnosis and Improvement**		
Outcomes/Products of Student Learning			Process and Outcomes		
Grades	*Placement*	*Monitor Progress*	*Strengths & Weaknesses*	*Prescribing Appropriate Programs*	*Identifying Student Strategies*

Identifying the purpose of assessment is important because it determines how students will be assessed; the types of tasks they will be asked to perform; and how their performance will be rated. That purpose should be linked to the *instructional goals* (what students are taught and expected to learn) and *outcomes* (what they have actually learned). The assessment measures how well students have met the instructional goals. The purpose and instructional goals together provide the information necessary for selecting and scoring the assessment task.

In our example, assessment in the Neighborhood Clean-Up Project was conducted for achievement purposes since students earned partial credit toward a class grade. Students could earn up to 15 points for creating a graph and 10 points for writing a letter to the President of the United States and the Mayor of the District of Columbia.

However, the Neighborhood Clean Up provided a number of other opportunities for assessing students. Some of these could have focused on improvement (i.e., assessing student strengths and weaknesses or identifying strategies for improving student performance). For example, students could have been assessed on their strengths and weaknesses in drafting their final letter. Students were given an outline listing the criteria for drafting the letter. In the outline, students were to identify themselves; describe what they did; ask what the President could do about the problem; and suggest what they felt could be done. The teacher also provided the students with a template for the letter, indicating where to place the name and address of the sender; name and address of the addressee; proper salutation; and closing. A checklist showing which elements of the letter had been completed would have given the teacher information on the help individual students might require to finish the

final product. In other words, phases of the letter writing exercise could have been assessed both for achievement and diagnosis/improvement.

Step Two: Identify Primary Instructional Goals

Specifying instructional goals in advance is critical to the assessment planning process. Knowing what students should be able to do at the end of a class activity, course unit, or course makes the process not only useful but also fair to students (Herman, Aschbacher & Winters, 1992).

The Neighborhood Clean-Up Project linked instructional goals, expected learning activities, and assessment strategies (**Table 3-3**).

Table 3-3: Learning Goals and Activities Aligned with Assessment.

Neighborhood Clean Up Plan		
Goals	Activities	Assessment
Understand the effects of waste on the environment and the community. Relate math to a community issue. Present and compare statistical information using graphs and ratios	Determine how much waste accumulates in the community over a period of time Compare the amount of waste on different neighborhood blocks Create various graphs, ratios, and comparisons and be able to explain what they mean. Communicate what has been learned in one of many ways such as letter writing, educational brochures, posters, and videos	Check for Accuracy* Rubric for Graphs** Assess quality and accuracy of letters, brochures, and other final projects

* The teacher observed teachers conducting "spot checks" to see how students were completing the task.

** Based on the teacher interview, students could get up to 15 points in their graphing task and up to 10 points for the letter to the Mayor and the President. The scoring included five points for each of the following criteria: accuracy, completeness and neatness.

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Step Three: Determine Priority Outcomes

Determining priority outcomes is another step in the planning process that should be addressed. By narrowing down what students are expected to learn, the task of designing the assessment of that learning becomes more manageable. Herman, Aschbacher and Winters (1992) suggest asking five questions to determine the knowledge and skills you want your students to learn:

1. What important cognitive skills do I want my students to develop?
2. What social and affective skills do I want my students to develop?
3. What metacognitive skills do I want my students to develop?
4. What types of problems do I want them to be able to solve?
5. What concepts and principles do I want my students to be able to apply?

An adaptation of these questions along with an example to illustrate each are listed in **Table 3-4**.

Table 3-4: Questions to Help Determine Outcomes, with Sample Answers

Questions to Ask on Priority Outcomes	
Question	**Illustration**
What important cognitive skills do I want my students to develop?	*Use algebra to solve everyday problems*
What social and affective skills do I want my students to develop?	*Develop teamwork skills*
What metacognitive skills to I want my students to develop?	*Learn problem-solving strategies*
What types of problems do I want them to be able to solve?	*Use research skills to raise awareness about a community problem*
What concepts and principles do I want my students to be able to apply?	*Describe and discuss the effects of waste on the environment and the community*

The Neighborhood Clean Up priority outcomes were linked to the project goals. Cognitive skills were addressed by the use of Algebra to solve a neighborhood problem. Students worked in teams to collect litter in the surrounding neighborhood, giving them an opportunity to develop social and affective skills. By engaging in problem-solving (creating a graph and writing a letter to public officials), students were developing metacognitive skills. Students presented and compared statistical information using graphs to raise awareness about a neighborhood problem. Finally, students used math to gain a better understanding of the effects of waste in the environment and the community.

Step Four: Select Assessment Tasks An important next step to the planning process is selecting assessment tasks. Herman, Aschbacher & Winters (1992) suggest that an assessment task should:

- match specific instructional intentions
- represent content and skills expected of students
- enable students to demonstrate their progress and capabilities
- be authentic, real-world
- be interdisciplinary in approach
- measure several goals

Table 3-5 summarizes these assessment features with examples from the Neighborhood Clean Up Project. In the examples, we look at the two products planned in the project (graph and letter). Items in parentheses () indicate features that were not stated explicitly in the plan, but which could have been pursued in a more interdisciplinary approach.

Table 3-5: Assessment Tasks for Neighborhood Clean Up Project

Selecting Assessment Tasks		
Features	**Neighborhood Clean-Up Examples**	
	Graph	**Letter**
Matches Specific Instructional Intentions	**Use models, equations, and graphs to solve problems and to describe and analyze relationships among variables**	(Expository writing)
Represents Content and Skills Expected of Students	**Mathematics: Analysis and graphing skills**	(English Language Arts)
Enables Students to Demonstrate Their Progress and Capabilities	(Could have used drafts of a variety of graphs and submitted to others for feedback)	(Drafts of letter could be reviewed through writer's workshop and peer editing)
Authentic, Real-world	**Summarized numerical data gathered in the community**	**Writing to inform public officials about research findings and concerns**
Interdisciplinary in Approach	(Could have asked students to write about their graphing process or to analyze the societal implications of the data)	**Integrates Mathematics & Language Arts**
Measures Several Goals	(Students could design a study on neighborhood trash that would apply the scientific method. This would add to the problem solving aspects of project.)	(By extending the study to analyze the political and economic implications of the data, a wider variety of goals could be met.)

In the Neighborhood Clean Up, we found that the two tasks included most of these features. Creating graphs demonstrated the use of mathematical skills and was appropriate for the content area being taught. Drafting letters to public officials provided another way for students to demonstrate their understanding of the community problem. The tasks were consistent with the instructional intentions. The tasks also were appropriate for the content and skills expected of the students (math skills and written communication). The tasks were designed to allow students to demonstrate their capabilities; however, the teacher could have included more tasks designed to show student progress. The tasks were also authentic (i.e., aimed at a real audience) and gave students an opportunity to address a community issue.

The letter writing task was interdisciplinary in that it allowed students to apply their math skills and explain the nature of the neighborhood problem to public officials using writing skills. The writing task could have gone further if the assignment had been planned by teachers in both disciplines. If this had occurred, the writing task could have emphasized a specific writing skill such as narrative, expository or persuasive writing. Thus the task would have measured more than one goal, applying a mathematical concept and communicating to public officials, in writing, the need for the Neighborhood Clean Up and how it was done.

Step Five: Describe the Assessment Task Once learning goals and priority outcomes are identified, the next step is to describe the assessment task. This is very important because students,

their parents, and others should know what students are being asked to produce. To help guide this process, we include a checklist describing the major steps in **Table 3-6** (from Herman, Aschbacher & Winters, 1992:42). The first column describes the major steps; the second column provides more specific information to consider for each step. It is important to be specific about each of these steps. The assessment task should also take into account how best to assess the content, whether it is language arts, mathematics, science or social studies; how that content has been taught; and how students are expected to perform the task (i.e. in writing or orally).

Table 3-6: Generic Task Description Checklist

Task Description Checklist	
Outcomes to Be Measured	Description of instructional goals Content/Topics Rules/Process for selection
Assessment Administration Process	Group/individual Materials/Equipment Administration instructions Help allowed Time allowed
Actual Question/Problem/Prompt	Format Audience Options available Student directions
Scoring	Rubric/Criteria Scoring Procedures Use of Scores

The Neighborhood Clean Up plan included outcomes to be measured ("Goals"), and tasks to be completed ("Activities"). Students were assessed individually on their performance of the tasks that were assigned. A statement of the scoring (i.e. criteria) was included in the plan; however, the scoring procedures and use of scores were not mentioned in the plan. We learned about them during our interview with the teacher. **Table 3-7** illustrates how the Neighborhood Clean Up Project information could be represented using the task description checklist in **Table 3-6.**

Table 3-7: Neighborhood Clean Up Example

Neighborhood Clean Up Task Description Checklist	
Outcomes to Be Measured	Understand the effects of waste on the environment and the community. Relate math to a community issue. Present and compare statistical information using graphs and ratios.
Assessment Administration Process	Student performance will be assessed individually on creating a graph and writing a letter to public officials about the Neighborhood Clean Up.
Actual Question/ Problem/ Prompt	Determine how much waste accumulates in the community over a period of time. Compare the amount of waste on different neighborhood blocks. Create various graphs, ratios, and comparisons and be able to explain what they mean. Communicate what has been learned in one of many ways such as letter writing, educational brochures, posters, and videos.
Scoring	Students will create a graph and write a letter to public officials. Students will be graded on the accuracy, completeness and neatness of the graph and the letter. Students can earn a maximum of 25 points for the project (15 points for the graph and 10 points for the letter).

Step Six: Set Criteria and Scoring Procedures

The final step in the planning process is to develop criteria to score student work. Alternative assessment literature often discusses the scoring guide or rubric. Herman, Achbacher & Winters (1992) suggest four elements for a rubric, including one or more traits or dimensions, a description of expected performance for each dimension, a rating scale, and standards for judging performance. **Figure 3-2** lists questions to consider in describing dimensions or criteria for judging student work.

Questions for Dimensions

What are the attributes of good writing, of good scientific thinking, of good collaborative good process, of effective oral presentation? More generally, by what qualities or features will I know whether the students have produced an excellent response to my assessment task?

How does completing this task relate to my goals for students? What will they do that shows me we are working toward or achieving some of these goals?

What do I expect to see if this task is done excellently, acceptably, poorly?

Do I have samples or models of student work, from my class or other sources, that exemplify some of the criteria I might use in judging this task?

What criteria for this or similar tasks exist in my state curriculum frameworks, my state assessment program, my district curriculum guides, my school assessment program?

What dimensions might I adapt from work done by national curriculum councils, by other teachers?

Source: Herman, Aschbacher & Winters (1992:58)

Figure 3-2: *Questions to consider when describing dimensions (criteria) for judging student work.*

The dimensions are linked to a rating scale. There are different types of scales that describe a level of performance using numbers (numerical), word descriptions or labels (qualitative), or a combination of both (numerical-qualitative). A numerical scale lists the criteria that correspond to a number; for example, 1 to 4 in a four-point scale from lowest to highest level of performance. Grades are a typical example of a qualitative scale.

Finally, the dimensions and rating scales are linked to standards, expected levels of performance. The standards can be criterion-referenced or norm-referenced in their approach (Herman, Aschbacher, Winters, 1992). The criterion-referenced approach gives clear descriptions of a range of performance levels from mastery to inadequate performance. A norm-referenced approach would assign grades or points by comparing the best work of a student in a class to examples of average student work.

In the Neighborhood Clean Up Project, the rubric mentioned in the plan was composed of dimensions or criteria (accuracy, completeness and neatness). No explicit scale listing the performance levels either numerically or qualitatively was provided. Instead, points were assigned for each dimension (ranging from 5-1). A numerical rating scale would have given descriptions for each performance level on the criterion of accuracy that described the range between accurate (5) and inaccurate (1). Spelling out the performance levels would have provided a criterion-referenced approach in a rubric using a numerical scale.

Summary The framework that was used in the Neighborhood Clean Up Project included many of the elements of the six-step process described above. There were differences in terminology in some cases. The six-step process, however, offers a set of tools to plan assessments that can be applied to other service-learning initiatives and can help to strengthen assessment of students for purposes of achievement or diagnosis and improvement discussed earlier. In the next section, we focus on aligning standards and classroom assessments, and we look at another service-learning project, Alcohol in the Community, included in our case study.

Section B: Developing a Standards-Driven Assessment Plan

In the previous section, we looked at a general approach to assessment planning. In this section, we introduce a standards-driven approach for assessment that focuses on diagnosing student strengths and weaknesses, and developing strategies for improvement by looking at student work. We will use the second service-learning project, Alcohol in the Community, to illustrate this process. **Figure 3-3** describes the Alcohol in the Community project. **Table 3-8** shows the associated learning activities.

Alcohol in the Community

Believing that understanding their community is an important first step to changing it, ninth-grade students at Banneker Senior High School conducted an assessment of the city. Students were assigned neighborhoods throughout the city. They then recorded the number of retail outlets serving and advertising alcohol. They also counted and described the various community resources — community and recreation centers, libraries, places of worship, medical facilities, etc.

Back at school, students tabulated and analyzed their findings, presenting the data in graphs. They also created a master graph, showing the disparity in distribution of resources and availability of alcohol. According to the original plan, students were going to advocate for zoning changes (limiting the availability of alcohol in some neighborhoods) and a more equal distribution of community resources. Unfortunately, this did not happen. Students, however, did reflect upon their findings. Many were surprised or outraged to find such disparity and speculated about the impact this has on the quality of life in the city.

Figure 3-3: *Description of the "Alcohol in the Community" project.*

Table 3-8: Activities Planned for Alcohol in the Community

Alcohol in the Community Planned Activities		
Description of Activities	**In Classroom**	**Out of Classroom**
Introduce Alcohol Project.	x	
Speaker addresses issues of alcoholism affecting individuals and communities.	x	
Research and collect data in various communities.		x
Do mathematical data analysis and comparison of number of liquor stores in different communities and create graphs.	x	
Discuss findings and determine possible steps that the students might take to help with problems of alcohol and alcoholism	x	
Work on final projects, including letters to policy makers, educational brochures, posters, videos.	x	x
Reflect on work and attitudes about project and make a plan for project improvement or continuation.	x	

We believe a standards-driven assessment plan should be a road map that details for students what they are expected to know and do (i.e., standards). It should also serve as a tool for teachers to plan the type of instruction students will need to achieve those standards. Assessment results can be used to inform students of their strengths and weaknesses and to help teachers modify instruction where appropriate and necessary. Linking assessment to instruction benefits both teachers and students, by providing timely information that can be used to improve teaching and learning in the context of a service-learning project.

An important characteristic of a standards-driven approach is to align assessment with standards and instruction. Mitchell (1996) offers a practical approach for assessing student work on an ongoing basis in a standards-driven system. Under this model, classroom instruction is

closely linked to both content standards (what students should know and be able to do) and levels of performance. The process uses a team approach to assess student work, in which teachers work across disciplines to improve teaching and learning. Mitchell (1996:29) explains one of several reasons for considering this approach:

> The process of looking at student work depends on standards against which the work is measured. It involves intense discussion comparing the work and the standards...
>
> *Looking at student work is an amazingly economical way to promote understanding of what is being taught and learned*. It could be used for acquainting school board members or a group of parents or community representatives with student work and the information that work provides about the health of the educational process in the school.

The process developed by Mitchell focuses on looking at student work. **Figure 3-4** summarizes the process.

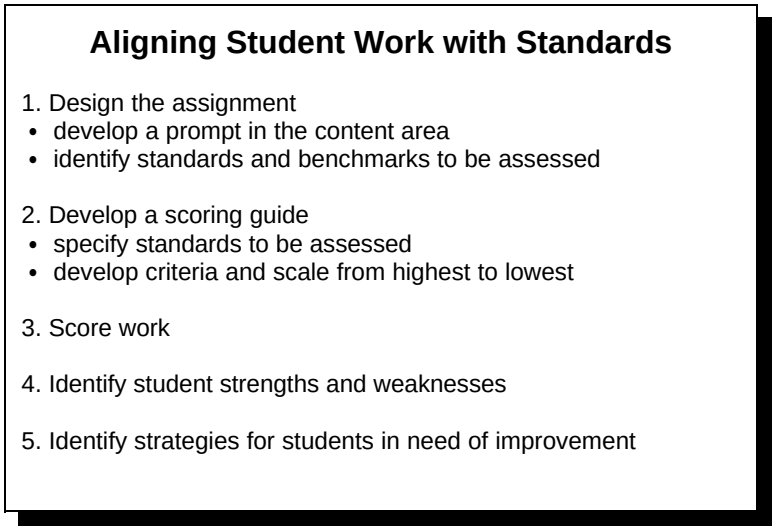

Figure 3-4: *Summary of steps to align student work with standards.*

In this process, the purpose of assessment is to inform instruction by looking at the strengths and weakness of students. In order to apply this process well, teachers must know the district's content standards and benchmarks, as well as have experience designing tasks and developing scoring guides or adapting them to their specific classroom needs.

Designing the Assignment According to Mitchell, there are two elements to consider in the design of an assignment. First a prompt (i.e. question or description of a problem to be solved) must be developed in the content area to be assessed. Second, the benchmarks and standards to be assessed must be identified. To illustrate, we use the Alcohol in the Community project. **Table 3-8** shows a summary of the project's activities and examples of planned assignments.

The design and goals of the Alcohol in the Community project were similar to those of the Neighborhood Clean-Up discussed previously. Alcohol in the Community identified the following goals:

1. Understand the effects of alcoholism on the individual and the community;
2. Relate math to a community issue; and
3. Present and compare statistical information using graphs and ratios.

In developing the plan for the entire project, the classroom teacher used the eighth grade benchmarks for the District of Columbia Public Schools which were in draft form in 1997. These are presented in **Figure 3-5**.

District of Columbia Public Schools
Mathematics Benchmarks (Draft, 1997)

Algebraic Concepts and Operations, Patterns, Relationships and Functions

Each student uses models, equations, and graphs to solve problems and to describe and analyze relationships among variables

End of grade 8

Each student:

- describes, represents, and extends number patterns with tables, graphs, and rules
- analyzes functions to explain how a change in one quantity results in a change in another quantity
- demonstrates an understanding of the concept of variable as used in expressions and equations
- develops equations and inequalities to represent problem situations
- solves linear equations using concrete, informal, and formal methods

Figure 3-5: *Mathematics benchmarks that apply to the Alcohol in the Community project.*

Initially, students were assigned to research and collect information in neighborhoods in the three quadrants of the city. Students were given a data collection tool to record their findings (**Figure 3-6**).

Community Inventory

Name: _____

Neighborhood Surveyed: _____

Date and Time of Survey: _____

Count and record each of the following observed in the survey area:

ALCOHOL AND TOBACCO INFLUENCES: TALLY _____ TOTAL _____

Alcohol Outlets:
Bars

_____

Liquor Stores

_____

Convenience Stores (that sell alcohol)

_____

Stores with more than 50% advertising
for alcohol and tobacco

_____

Billboards or other public advertisements
for alcohol products

_____

COMMUNITY RESOURCES: TALLY _____ TOTAL _____

Stores, playgrounds and sports fields

_____

Public trash cans

_____

Health care facilities

_____

Churches

_____

Figure 3-6: *Community Inventory data collection tool students used to study prevalence of alcohol in the community.*

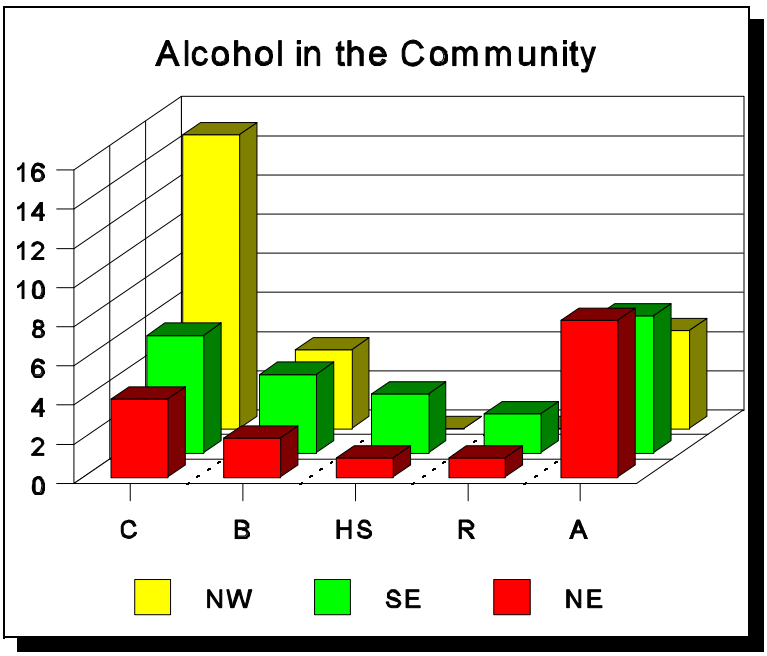

Figure 3-7: *Combined results of three individual bar graphs created by students from their collected data.*

Students were asked to do a mathematical data analysis and comparison of the number of liquor stores in different communities and to create graphs. For ease of reading, we reproduced student findings in a new format that summarizes the three individual bar graphs the students created. These are presented in **Figure 3-7** and describe (C=Churches, B=Bars, HS=Human Services, R=Recreation services and A=Advertisements) in the three quadrants of the city surveyed by the students.

Students were also asked to respond to three prompts to help them reflect on their work and attitudes about project and make a plan for project improvement or continuation. **Figure 3-8** shows a sample of student responses to the Project Questions.

Sample Student Responses to Project Questions

What do you think was the purpose of this project?
I think the purpose of this project was to get more involved with my neighborhood in a mathematical way by using problems or dilemmas our neighborhoods are faced with.

Would you do this if it weren't required of you?
Now that I have experienced this project, yes, I would do it again because I have really started to care about my surrounding neighborhood.

What did your sheets/stats tell you?
My statistics that I recorded showed me that there are a lot of contributors of drugs and alcohol in my neighborhood.

Figure 3-8: *Sample responses to reflection prompts.*

Figures 3-6 through **3-8** illustrate the types of assignments featured in the Alcohol in the Community project. Students were also asked to write a letter to policymakers, as they did for the Neighborhood Clean Up Project. Samples of these letters were unavailable for inclusion in the case study.

In developing sound assessments, care should be given to developing challenging assignments or performance tasks. Mitchell (1997) offers suggestions for creating assignments and has outlined some key features. These are summarized in **Figure 3-9**.

Characteristics of Good Tasks for Standards-Based Learning

- Focuses on applying an important concept and essential skills
- Aligns with at least one standard
- Has a real-life application
- Demands high-level thinking skills (analysis, synthesis, evaluation)
- Culminates in a product that can be scored (e.g, written report, essay, letter, graph, chart, table; speech or multi-media presentation; instruction for a specific audience; a three-dimensional model).
- Allows for multiple kinds of communication
- Requires more than a simple right/wrong answer

Figure 3-9: *Summary of characteristics for standards-based learning tasks.*

Reviewing the assignments planned for Alcohol in the Community, we note that several of these characteristics were included in the tasks. All three assignments for which we have examples of student work applied an important concept or essential skill; one was aligned to a standard; all three had a real-life application; two focused on high-level thinking skills; each culminated in a product that could be scored; and one required more than a simple right/wrong answer. Although each task did not allow for multiple kinds of communication, together the tasks did allow students to impart information differently.

Figure 3-10 shows an example assignment adapting information from the project to illustrate how one of the assignments could have been described using Mitchell's approach.

Sample Alcohol in the Community Assignment

The following Eighth Grade Benchmarks describe skills you have been taught and are expected to know:

1) describe, represent, and extend number patterns with tables, graphs, and rules

2) solve linear equations using concrete, informal, and formal methods

Prompt:
Calculate how many liquor stores and liquor ads were in your assigned neighborhood and compare that number to the number of community resources you found. Summarize your findings in writing and also by using a bar graph. Your performance will be rated with a scoring guide that details criteria for quality work.

Figure 3-10: *Sample assignment aligned with standards.*

Developing a Scoring Guide Mitchell (1996) offers some straightforward guidelines for creating a four-point scoring guide. She suggests that when an assignment or assessment task is developed, it should include no more than two standards and benchmarks (i.e., performance descriptions that indicates achievement of a standard) and the scoring guide should include the knowledge and skills reflected in those standards along with a scale. The scoring guide should show what different performances look like. Understanding what good or not very good work looks like comes from looking at student work systematically and defining levels of quality that both teachers and students agree on and understand. **Figure 3-13** summarizes guidelines for developing a scoring guide with a numerical scoring scale using a criterion-referenced approach.

Guidelines for Making a Scoring Guide

Use the language of the standards to develop the statements of the scoring guide.

Begin with four (4) the highest score. Write down the features of an excellent response to the assignment.

Then go to three (3) the next-highest score and follow the same procedure. Describe the features of a response that is pretty good but not brilliant.

Next go to two (2) the next-to-the-lowest score and follow the same procedure. Write the features of an answer that hasn't got it, that needs additional teaching.

Finally, one (1) is the lowest score. Decide on the features of an answer that hasn't a clue.

Adapted from Mitchell (1996:34-35)

Figure 3-11: *Guidelines for creating a rubric or scoring guide.*

According to Mitchell (1996), it is important to make a clear distinction between the pairs of higher and lower scores if a four-point scale is used. For example, scores of 4 and 3 indicate an acceptable understanding of the assignment. A score of 3 demonstrates a good understanding showing minor errors while 4 is an excellent response with no errors. Scores of 2 and 1 would be used if there is little or no understanding of the assignment. A score of 2, for example, means the concept or skill needs more instruction while a score of 1 shows that the concept will have to be introduced all over again.

Alcohol in the Community used the same method for evaluating the graph that was used in the Neighborhood Clean Up Project. As explained earlier, although the term rubric was used, the assessment did not specify criteria for performance levels or a rating scale. Although students were required to use the community inventory tool to gather data, as well as to respond to project questions, these tasks were not assessed. **Table 3-9** gives an example of a scoring guide that incorporates the benchmarks in criteria for expected student performance and a four-point rating scale that adapts the guidelines suggested by Mitchell for the Alcohol in the Community graph.

Table 3-9: Sample Scoring Guide Incorporating Benchmarks for Criteria

Sample Scoring Guide for Graph Exercise	
4	computations are correct accurately displays the required information in a graph work is clear and understandable
3	computations are correct except for minor errors accurately displays most of the required information in a graph work is neatly organized
2	some computations have major errors displays some of the required information in a graph work is difficult to read
1	computations are incorrect displays unrelated information in a graph work is not presentable

Scoring Work The next step in the process is to score actual student work, which in this case would include a bar graph. Based on their performance on the criteria, students will receive a numerical rating. Scores of 2 or lower indicate that students have not met the standard and will require additional help. This is a time for the teacher to reflect on the instruction they provided these students and to consider ways to alter their instruction. These students can later be re-assessed.

Identifying Student Strengths and Weaknesses

Assessing students to identify their strengths and weaknesses is a useful way to see where students are in meeting standards. If classroom assignments and scoring guides are linked to those standards, teachers have ongoing information about how well students are progressing

toward those goals. The systematic collection of this evidence provides additional measures of student performance.

Identifying Strategies for Student Improvement

Authentic assessments should be used to inform instruction. What sorts of strategies are needed to improve student work? Here are some suggested strategies (drawing from the Alcohol in the Community example):

- Students can improve public speaking by giving presentations to neighborhood advisory commissions regarding the availability of alcohol and distribution of community resources and how they affect the quality of life in the community.

- Students can improve their research skills by investigating the number of alcohol-related crimes and accidents in their neighborhood.

- Students can apply the scientific method to investigate whether or not a community with a larger number of outlets has a higher incidence of alcohol crimes and related accidents.

- Students can investigate which agencies are responsible for zoning and liquor licenses, and the requirements for issuing licenses, as well as the process for including community in the development of these policies.

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Service-learning is an important strategy that can lead to greater student engagement, honing of academic skills, and deeper understanding of community issues.

Summary Aligning student work with standards is an important part of the planning process. Key to this process is designing good assignments that reflect the standards that we want students to achieve. The scoring guide also plays an important role because it describes specifically what we want students to be able to do and assigns performance levels that tell us what each level means through the use of a rating scale. Together they provide helpful tools for both teachers and students to identify and address strengths and weaknesses. Other tools can be adapted to assess student learning through service. Some of these are discussed in our conclusion and are presented elsewhere in this guide.

Part III: Conclusion

The Neighborhood Clean-Up and Alcohol in the Community projects provided an excellent opportunity for students to apply their mathematics skills to an authentic community problem. There were a number of opportunities to assess student work. In this chapter, we wanted to provide a road map for planning assessments. We borrowed heavily from

Herman, Aschbacher and Winters, 1992 and Mitchell (1996) for tools to help in the planning process and in the design of alternative assessments, and we applied these to the service-learning initiatives in our case study. The tools are generic in nature and can be adapted easily to assess students who are involved in service-learning as an educational strategy.

After reflection on this process, the Study Group generated a number of recommendations for extending and enhancing the projects in the case study:

1. Include students in the project selection and planning process.

2. Invite the community to be active members of the service initiative. Activities such as identifying community resources could include a member of an existing organization such as the PTA, the local restructuring team, or a business advisory council.

3. Include the Clean Up as part of a larger, ongoing community project or campaign to improve city services.

4. Seek opportunities for cross-disciplinary planning wherever possible, linking them to other curricular areas such as Civics, State and Local Government, English, and Business Skills. The data generated by these projects raise a wide variety of issues that could be analyzed using the tools of these disciplines.

5. Use the assessment planning model at the beginning of a unit to help guide selection of activities and design of assessment strategies.

Other opportunities for assessing students could also be put to use. For example:

1. *Teacher observation* could be used to determine how well students master the skills needed for the project.

2. A *rubric* is an excellent way to evaluate student products. Delineating criteria for numerical scales can help clarify expectations for students.

3. Students could use a *checklist* to self-assess their progress in planning the clean up.

4. A *Journal* or *Learning Log* could be used as a self-assessment tool. Journals also provide a way for students to reflect upon their learning and develop metacognitive skills.

5. Students could produce a variety of evidence that demonstrates their knowledge and skills. In addition to graphs, students might explain in writing why they chose a particular type of graph. Students might also discuss problems they confronted in their work on this project and how they addressed these. Gathering a

wider variety of evidence allows for a more valid and reliable picture of student learning.

In summary, these and other tools and strategies could be used to assess how well students have mastered content standards and skills and to inform classroom instruction. Using the planning model described, educators can integrate standards, classroom practice, and assessment strategies, and take advantage of the wide array of instructional opportunities service-learning offers.

We believe that many educators are in a position similar to this teacher — trying to use an instructional strategy (service-learning) to help students succeed (meet academic standards) and then using assessment to show their progress and achievement. We believe that each time a teacher explores these new practices, he or she improves. Teachers can also learn from the experiences of their peers, as we hope you have learned from our exploration of assessment in this chapter.

References

District of Columbia Public Schools. April, 1999. *Standards for Teaching and Learning* (Draft). Washington, DC: Author.

District of Columbia Public Schools. November, 1997. DCPS Service Learning Workshop for Liaisons, Teachers, Vistas. Washington, DC: Author.

Herman, J., R. Aschbacher & L. Winters. 1992. A *practical guide to alternative assessment*. Alexandria, VA: Association for Supervision and Curriculum Development.

Mitchell R. 1996. *Front-end alignment: A manual for developing standards*. Washington, DC: The Education Trust.