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Assessment Literacy in a Standards-Based Education Setting[1]

Norman L. Webb

Milwaukee Public Schools (MPS), like other large urban districts, is facing increasing pressure to administer a greater number of assessments in the district and to have teachers validate improved student learning with assessments. This pressure comes from multiple levels, including the state, the district, and the schools. The Center for the Study of Systemic Reform in MPS, working with the district, has identified assessment literacy as one of the district's critical needs, along with the related needs of achieving accountability and data-based decision making. However, understanding what is most needed by the district in the area of assessment literacy has been an evolving process that has had to take into consideration the recent history of assessment in the district, current state and district mandates, and the changing teaching force.

Over the past 10 years, 1992–2002, the enrollment in MPS's nearly 200 district and alternative schools has remained steady at about 100,000 students. The proportion of African American students has increased from 57% to 61%. The proportion of Hispanic students has increased from 10% to 14%, whereas the enrollment of White students has steadily declined from 27% to 18%. Currently, over 80% of MPS elementary students are eligible for free and reduced-cost lunch. The mobility rate of students (i.e., the percentage of students who move from and to a school during the year) has declined from 25–30% to 20–25%. The district employs more than 12,000 staff members, including about 10,000 who work in schools.

Assessment Literacy

Assessment literacy is defined as the knowledge of how to assess what students know and can do, interpret the results from these assessments, and apply these results to improve student learning and program effectiveness. MPS staff who are literate in assessment will have clear knowledge of the MPS Learning Standards and district expectations for student learning at the different grades. They will be able to develop and select assessments to fit specific achievement goals and objectives. For Stiggins (1991), assessment literates ask two key questions about all assessments of student achievement:

> What does this assessment tell students about the achievement outcomes we value?
> What is likely to be the effect of this assessment on students? (p. 535)

There are two reasons why the concept of assessment literacy has received increased attention over the past decade. First, the advent of standards-based reform has made expectations for student learning more explicit and has increased the need for measures to determine whether students have met those expectations. Second, acceptance of different forms of assessments (e.g., norm-referenced and criterion-referenced) has increased. Both of these trends have increased the burden on teachers and principals to understand how student learning can be adequately assessed and what meaning should be given to the information produced.

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Information about assessment is not lacking (Chase, 1999; Ebel & Frisbie, 1991; Gronlund & Linn, 1990; Stiggins, 2001). Still, teachers and principals have received very little formal training in assessment and report that they are ill prepared to assess students (Quilter, 1999; Stiggins, 1988). New teachers enter MPS with very little background in assessing student learning. Each summer MPS conducts an academy that is mandatory for teachers new to the district—nearly 800, or 15% of the teachers in the district, each year. At this academy, new teachers are given some instruction on assessment and the district standards. But there still is a considerable amount of information that teachers do not have that would enable them to know more about their students' progress—for example, information about the different forms of assessments used in the district and their various purposes, and information about what teachers can and cannot gain from the assessments.

What teachers need to know about assessment depends on a number of factors, including the grade level and content areas they teach, the assessment systems used in the district, and district and state requirements. In 1990, the American Federation of Teachers, National Council on Measurement in Education, and National Education Association issued *Standards for Teacher Competence in Educational Assessment of Students* (AFT, NCME, & NEA, 1990).[2] The joint publication listed the following seven standards for what teachers should be skilled in doing:

1. Choosing assessment methods appropriate for instructional decisions;

2. Developing assessment methods appropriate for instructional decisions;

3. Administering, scoring, and interpreting the results of both externally produced and teacher-produced assessment methods;

4. Using assessment results when making decisions about individual students, teaching, curriculum, and school improvement;

5. Developing valid pupil grading procedures that use pupil assessments;

6. Communicating assessment results to students, parents, other lay audiences, and other educators; and

7. Recognizing unethical, illegal, and otherwise inappropriate assessment methods and uses of assessment information. (pp. 31–32)

These standards explicitly address the areas in which teachers should be well versed in order to assess student learning. Assessment standards for mathematics and science provide more focused recommendations for teacher competence in those content areas (National Council of Teachers of Mathematics, 1995; National Research Council, 1996). In 2000, the American Youth Policy Forum produced a glossary of testing terms for teachers and the general public. In a very basic way, this glossary introduces statistics essential to understanding testing concepts (e.g., *normal curve, statistical significance*), fundamental terms of testing (e.g., *norm-referenced, criterion-referenced*), and testing issues (e.g., *teaching to the test*) (Bracey, 2000). There is now more

[2] Currently, student evaluation standards (http://jc.wmich.edu/ansireview/) are being prepared that also will provide information on what teachers and others should consider when assessing students.

attention being given to knowing not only how to assess student learning, but also how to use assessment results and other data to more effectively teach students and improve schooling (Nichols & Singer, 2000).

There are a variety of means for assessing what students know and can do, including standardized norm-referenced tests (generally multiple-choice tests), performance assessments, portfolios, individually administered assessments, end-of-chapter tests, quizzes, and observations. Those who are literate in assessment practices will understand each assessment method's purposes, advantages and disadvantages, and value as a source of information about student learning of curriculum standards and other desirable learning outcomes. They will be able to distinguish between high-quality assessment instruments and instruments that lack validity and reliability and are biased. They also will know about appropriate accommodations for specific groups of students and about methods of obtaining valid assessment results from students with disabilities and English-as-a-second language (ESL) students.

To accurately interpret and report results from different assessments requires an understanding of what an assessment does and does not measure. It requires being able to interpret statistical and psychometric terms such as *means, standard deviations, normal curve equivalency* (*NCE*), *stanines, percentiles, variance, standard error, confidence intervals, grade equivalence,* and *rubrics*. Many of these terms apply to both large-scale and classroom-based assessments. For both types of assessments, those who are assessment literate will understand what body of knowledge a sample of items on an assessment instrument represents and what can and cannot be concluded from the assessment results. For example, they will understand the problems that arise when a set of items is frequently drawn from a limited item bank (namely, students will soon be taking the same items over again). They also will be able to make confident generalizations about student competence.

In a standards-based system, assessment literacy goes beyond knowing about test instruments and the interpretation of results to include knowing how assessment results can be used to determine students' progress in achieving the standards, to improve instruction, and to increase the effectiveness of programs devoted to helping students learn. Those who are literate in assessment will understand how assessments and their consequences create incentives and disincentives for students, teachers, principals, and staff to perform at their best. They will understand how assessments can be used to motivate and inform these critical stakeholders. They also will know what learning the standards require, how the standards are organized, how the performance objectives are linked, and how to set priorities for student learning. Finally, they will be able to create an assessment plan that can be used to select and develop assessments that will accurately (and without undue burden) inform students and teachers about students' progress toward achieving the specified standards.

A Short History of Assessment and Standards in MPS

Since 1990, the attention to assessment and standards in MPS has changed significantly. What has happened in Milwaukee mirrors what has taken place in other large urban school districts. Between 1990 and 2002, the district has undergone a change in leadership more than five times. Each change has brought on new initiatives. However, standards and assessments in MPS have evolved steadily over this period, driven in part by state mandates.

In 1991, MPS engaged in a major effort, involving over 1,000 people from the district and community, to develop K–12 Teaching and Learning Goals. The objective of the resulting 10 very broad goals is to offer all students an equitable, multicultural education, while teaching them to think deeply, critically, and creatively (Doyle, Huinker, & Pearson, 1995). This reform initiative was followed in 1993 by the vision of a school-to-work program, a form of standards-based education. The school-to-work initiative was based on the idea that what K–12 students are taught should be driven by what they will be doing after they leave school, including postsecondary education or employment. Over the course of its development, the school-to-work initiative had to battle the preconception that it constituted vocational education, rather than a program designed to prepare students for rigorous academic studies.

On February 28, 1996, the Milwaukee Board of School Directors adopted new graduation requirements, as well as a series of high-stakes middle school proficiency requirements. One feature of these new regulations was that Grade 8 students, beginning in the 1999–2000 school year, would be required to demonstrate their proficiency in communication, mathematical reasoning, scientific reasoning, and community research in order to be promoted to Grade 9. More information on the proficiencies is reported by Clune, Mason, Pohs, Thiel, and White (2002). The high school graduation requirements specified that students must (a) demonstrate mastery of mathematical proficiency equivalent to 3 years of study at or above Algebra I; (b) demonstrate mastery of written and spoken expression by writing, presenting, and defending a clearly reasoned, persuasively argued research paper; (c) demonstrate an understanding and use of technology resources in the research and presentation of the paper; (d) demonstrate a high level of proficiency in science, equivalent to 3 years of high school study including the physical, biological, and chemical sciences; (e) demonstrate an understanding of scientific inquiry and its application to real-life situations; and (f) through the study of government, economics, geography, and history, demonstrate the knowledge and skills necessary to make informed and reasoned decisions as responsible citizens of a culturally diverse, democratic society in an interdependent world.

As part of the school-to-work initiative, curriculum specialists in the content areas led the development of grade-level expectations in 1994. Committees of teachers were formed under the supervision of a curriculum specialist to identify what objectives students should achieve at each grade level. This work on grade-level expectations served as the basis for the development of academic standards. In November 1998, the Board of School Directors adopted the K–12 Academic Standards and Grade-Level Expectations for the content areas of English language arts, mathematics, science, and social studies. One year earlier, in October 1997, the state had mandated that all districts adopt academic standards in these four content areas, to be developed by the state or the district. MPS curriculum specialists and teachers were well informed about the state's efforts to develop curriculum standards and made special efforts to ensure agreement between the district and state standards.

The evolution of the MPS Science Curriculum Framework illustrates how standards developed from efforts expended over a number of years. In 1993, a science committee was formed that included about 60 K–8 teachers, 26 high school teachers, and others. Prior to this, the Milwaukee Science Materials Center, established in the late 1980s, had provided science kits to elementary teachers for each activity in the grade-level textbooks, a support teacher who was on call to work with teachers in their classrooms, and a supervisor who provided in-services by

grade level. In 1992–93, the science specialist coordinated an evaluation of the district's science program prior to the adoption in 1993–94 of a K–5 textbook. The Addison-Wesley series was adopted, in part, because it provided an inquiry-based approach to teaching science. These developments took place before the publication of national science education standards that emphasized inquiry as the central strategy for teaching science (National Research Council, 1996). At the time, professional development programs emphasized these teaching strategies as deemed appropriate. However, the dominant approach used by MPS elementary teachers was not inquiry-based but activity-based, requiring students to carry out a specific sequence of steps. Through in-services, teachers learned to use one or two general inquiry science kits, but teachers failed to become effective users of the kits because they did not organize their teaching around big ideas that could be developed through use of a range of kits. The science curriculum specialist interviewed teachers, observed classrooms, and administered surveys to better understand how elementary teachers were teaching science, to determine how their teaching supported students actively engaged in learning science, and to identify teachers' professional development needs.

The science committee prepared grade-level expectations and then aligned the science kits with the expectations for each grade, K–5. Together, the grade-level expectations and science kits—balanced among life, physical, and earth sciences—represented the core content knowledge for students. In 1996–97, the National Science Foundation provided the district with funds to create the Milwaukee Urban Systemic Initiative (MUSI). The goals of this initiative—improvement in science and mathematics achievement—were compatible with the ongoing MPS work in science at the time. The board's adoption of proficiency requirements for Grade 8 students in 1996 and the implementation of performance assessments increased the attention that more resistant teachers gave to implementing the science grade-level expectations and kits. The MPS science committee prepared curriculum modules aligned with the Grade 8 science proficiencies. These modules were piloted for the first time in the summer of 1998 and fully implemented during the 1998–99 school year. Middle schools were grouped into seven clusters of 10 schools each. Science teachers from all of the middle schools were to meet once a month with teachers from the other schools in their clusters. At these meetings, teachers were expected to discuss the implementation of the prepared modules. These discussions were facilitated by three trained teacher-facilitators for each cluster, one for each grade, 6, 7, and 8. The mathematics teachers engaged in a similar process, with monthly meetings of school clusters. The cluster design was employed to reach all middle school science and mathematics teachers in the district. The facilitators and mathematics and science resource teachers (MSRT—funded through MUSI) provided a communication channel between teachers and the mathematics and science curriculum specialists. But NSF funding for these resource teachers' positions ended along with funding for MUSI in 2000.

For the high school science programs, the department chair was the conduit of information for the science specialist. During this time, the high school science curriculum changed by introducing a Grade 9 integrated science course that exposed students to life, physical, and earth sciences. The science team continued to struggle with ongoing issues in the MPS high school science program, including establishing the balance between presenting science as a fixed body of knowledge—where students do prescribed activities to reveal specific results—and presenting science as a means for understanding the world—where students design their own experiments to better understand the process of science.

The MPS Assessment System

After the Milwaukee Board of School Directors' adoption of new, higher graduation requirements on February 28, 1996, MPS developed an assessment system for the district that incorporated multiple measures of student learning. In addition to requiring students in the high school graduation class of 2004 to pass assessments in writing and mathematics, the district established middle school proficiency requirements that this same cohort of students was required to pass for promotion to Grade 9. These proficiencies, effective for the first time with Grade 8 students in the 1999–2000 school year, required students to demonstrate an acceptable level of accomplishment in communication, mathematics, science, and research. MPS, along with other districts in the state, has complied with state legislation requiring districts to develop requirements for high school graduation, including a high school graduation test. However, the Wisconsin governor recently put on hold expenditures for the development of a high school graduation test, making it questionable whether the test will ever be implemented.

The current district assessment program has consisted of state-mandated tests, proficiency assessments, performance assessments, and portfolios. Wisconsin requires students in Grades 4, 8, and 10 to take the Wisconsin Knowledge and Concept Examinations (WKCE), which are part of the Wisconsin Student Assessment System (WSAS). Grade 3 students are required to take the Wisconsin Reading Comprehension Test (WRCT). In addition to these state-mandated assessments, an MPS mathematics proficiency assessment and a writing proficiency assessment are administered to students in Grades 11 and 12 as a high school graduation requirement. Students who do not pass the proficiency assessments in writing and mathematics may meet the district graduation requirement by completing portfolio assessments in these two content areas. Up until the 2001–2002 school year, MPS performance assessments were given in writing, science, fine arts, and oral communications.[3] These performance assessments have now been incorporated into new school-administered classroom assessments based on standards. These assessments are described in more detail below.

State-Mandated Testing

Since the 1993–94 school year, the Milwaukee Public Schools, and all other school districts in the state, have been required to administer the Wisconsin State Assessment System's Knowledge and Concepts Examinations at Grades 4, 8, and 10.[4] These tests measure achievement in reading, language arts, mathematics, social studies, science, and writing. All students in Grades 4, 8, and 10, except those exempt under guidelines for children with disabilities and children with limited English proficiency, are required to take these tests, which

[3] In the spring, students in Grades 4 and 5 were required to write an essay in response to a specific prompt. Science performance assessments were administered to students in Grades 5, 9, and 10–12. Each high school had a plan that assessed about one third of the students in that grade range each year. Each school was required to administer either a fine arts assessment or an oral communication assessment. High schools and middle schools determined when the fine arts or oral assessments were administered. Elementary schools were to administer these assessments to students in Grade 4 or 5.

[4] TerraNova, developed by CTB/McGraw Hill, has been used since 1996–97.

have been administered during the spring semester of each academic year.[5] Beginning in November 2002, the WKCE is to be given in the fall.

Student scores for the WKCE are reported by four proficiency categories:

- *Advanced:* Distinguished in the content area. Academic achievement is beyond mastery. Test score provides evidence of in-depth understanding in the academic content area.

- *Proficient:* Competent in the content area. Academic achievement includes mastery of the important knowledge and skills. Test score shows evidence of skills necessary for progress in the academic content area tested.

- *Basic:* Somewhat competent in the content area. Academic achievement includes mastery of most of the important knowledge and skills. Test score shows evidence of at least one major flaw in understanding the academic content area tested.

- *Minimal performance:* Limited in the content area. Test score shows evidence of major misconceptions or gaps in knowledge and skills basic to progress in the academic content area tested.

Wisconsin also requires MPS and other state districts to administer the Wisconsin Reading Comprehension Test (Office of Educational Accountability, Wisconsin Department of Public Instruction) to all Grade 3 students. This state-mandated standardized achievement test is used to determine the level of reading proficiency of third-grade students. The state requires districts to provide remedial service to pupils who do not score above the performance standard on the WRCT.[6]

MPS Performance Assessments

Responsibility for performance assessment is being transferred to the jurisdiction of the schools in the system. Since the Milwaukee Board of School Directors passed the MPS Balanced Assessment System in October 2000, schools have the greatest responsibility for administering,

[5] Roughly 75% of each test contains multiple-choice items, and 25%, constructed-response, or short-answer, items. Each student also completes an on-demand written essay after reading a short passage about the assigned topic. The multiple-choice items are machine-scored. Trained scorers hired by the testing company score the short-answer items. Each item is rated by one professional reader and is assigned a specific performance level. Responses on the short-answer items are scored using a 2-point scale (0–1) up to a 5-point scale (0–4). The written essays are scored holistically. Two professional readers independently rate each essay and assign a rating using a 6-point scale (1–6). The ratings of the two readers are averaged to produce a single score. If the readers' ratings differ by more than one point, a third reader assigns an independent rating. The reported holistic score is then the average of the two closest scores. The total WSAS test time for all five content area tests is approximately 6 hours.

[6] The WRCT is administered in three sessions, each session lasting approximately 1 hour, and consists of three reading passages, two narrative stories of about 1,200 words each, and one expository report of about 700 words. In addition to 60 comprehension questions, students are asked a number of questions that measure reading strategies and prior knowledge. There are a total of 100 questions on the test, though only scores on the 60 comprehension questions are used to establish a performance standard. Results from the remaining 40 questions are used locally to interpret comprehension scores. All answers to questions are in a multiple-choice format. However, the 1998–99 test will include one question that requires a short written answer.

scoring, and setting proficiency levels on performance assessment activities. MPS is making the transition from over 5 years of aggressively using district-developed and -scored performance assessments. Students in Grade 8 in 2001–2002 will be the last group to be required to demonstrate proficiency in the four areas of communications, mathematics, science, and research. This group of students will be the third group of students who had to meet these district requirements.

The mathematics and writing proficiency tests that have been required for high school graduation will no longer be a requirement after the 2001–2002 school year. For both writing and mathematics, students have had three ways to satisfy the graduation requirement: (a) achieve a proficient score on the performance assessment, (b) achieve a proficient score on the respective subtest of the WKCE (state test), or (c) demonstrate comparable knowledge and skills in a school-based portfolio. Students were given these tests in Grade 11, or in Grade 12 for those who did not demonstrate proficiency in Grade 11. These performance assessment instruments, scored centrally by district teachers, were developed by committees of district teachers. In mathematics, the assessment included from two to four open-ended items. For example, in November 2000, the four items included:

1. *The New Container.* Students are shown a rectangular prism-shaped container with its dimensions and are given the amount of fluid in ounces it contains. Students are to determine the number of cubic inches per fluid ounce. Then students are to compute the height of a new cylinder container, given diameter and volume, and compute the cost per fluid ounce, given the cost of the original container. (Note: Students are given a sheet with needed formulas, measurement conversions, and other related facts.)

2. *Jana's Garden.* Students are to determine the scale for a diagram of a garden and draw a rectangular garden with an area of 64 square meters and length of 10 meters. Then the students are to show placement of fence posts no more than 1.5 meters apart and determine the total cost of the fence, on the basis of a price list provided.

3. *New Home.* Students are to create a scale graph and draw a straight line of fit, given a table of area and price for seven houses. Then students are to write the equation for the fit line; use this equation to estimate the area, given the price of a house; predict the price, given the area; and compute the price increase for every increase in area of 100 square feet.

4. *Renting a Copy Machine.* Students are to identify the company represented by a line, given (a) a graph with three linear lines representing the rental costs per number of copies of three companies and (b) a table with each company's fee structure. Then students are to write an equation for each of the three lines. Next, students are to find the exact coordinates of a point of intersection of two lines, given the other two points of intersection of the systems of three lines. Finally, students are asked to identify when one company charges less than the other two companies.

These mathematics assessments were scored using the following 5-point generic rubric:

4 An effective strategy is used. The response is organized. Documentation/justification is clear. Accurate use of mathematics is evident. A correct solution is presented.

3 An appropriate strategy is used. The response is somewhat organized. Documentation/justification is evident. Appropriate mathematics is applied with only minor flaws. A basically correct solution is presented.

2 A strategy is poorly carried out. The response is poorly organized. Documentation/ justification is incomplete/unclear. Some of the mathematics used is inappropriate or flawed. A partial or incorrect solution is presented.

1 A strategy is started. The response is not organized. Documentation/justification is inadequate. The mathematics presented has major flaws. A minimal solution is presented.

0 Documentation/justification is not shown. No use of appropriate mathematics is shown. Response is illegible.

Scores of 3 or 4 were considered proficient.

The writing proficiency test that students took in Grades 11 and 12 and that was required for graduation up to 2002 consisted of two sections. On one section, students were required, for example, to write a letter applying for employment. On the second section, students were required to write an essay to a specific prompt in a specific genre.

High School Graduation Requirements for 2001 and Beyond

1997 Wisconsin Act 27 mandated that "each school board operating high school grades shall adopt a high school graduation examination that is designed to measure whether pupils meet the pupil academic standards adopted by the school board . . . beginning in the 2000–01 school year" (1997 Wis. Act 27, ' ' 2807, 2809). Subsequent legislation pushed back the date of implementation to the 2004–05 school year (2001 Wis. Act 109, ' ' 282, 284). Wisconsin law currently mandates that, beginning on September 1, 2005, a school board may not grant a high school diploma to any student who has not passed the high school graduation test (Wis. Stat. ' 118.33(1)(f)3.). If a student fails the test, the Department of Public Instruction has stated that the student must be provided with at least three opportunities to retake the test. It is state-mandated policy that a school district may not use the state graduation test unless its board has adopted the 1998 state standards (Wis. Stat. ' 118.30(1g)(b)); therefore, because MPS has its own standards, the district is required to develop its own graduation test or secure a test from an outside vendor.

Prior to the state's adoption of the high school graduation test requirement, the Milwaukee Board of School Directors, at its February 28, 1996, meeting, adopted requirements for the graduating class of 2004. Those students will be required to demonstrate mastery in the following areas before graduation:

- *Mathematical reasoning.* Students will demonstrate mastery of mathematical proficiency equivalent to 3 years of study beyond Algebra I. Students will be expected to show proficiency in first-year algebra by the end of eighth grade.

- *Scientific reasoning.* Students will demonstrate a high level of proficiency in science, equivalent to 3 years of high school study, to include the physical, biological, and chemical

sciences. Students will demonstrate an understanding of scientific inquiry and application to real-life situations.

- *Communication.* Students will demonstrate mastery of written and spoken expression by writing, presenting, and defending a clearly reasoned, persuasively argued research paper.

- *Community membership.* Through participation in a group project that benefits the community, students will demonstrate the capacity to analyze a social issue from multiple points of view and to interact as a constructive member of a team.

Exceptional Educational Needs

MPS has strived to have all students tested. Its annual accountability reports now note for each school what percentage of the enrolled students were tested. The middle school proficiency requirements and the high school graduation requirements applied to all MPS students. Special accommodations are allowed to enable students with disabilities to take tests. However, at the present time, there remains a gap between the goal of having students with disabilities fully participate in the regular curriculum and their actual participation in assessments. Some of the barriers that prevent full participation include (a) the historical paradigms of individualized education (in which special educators generally created entirely separate curricular goals and objectives, and often entirely separate teaching materials, for students with disabilities), (b) a lack of knowledge among special educators regarding general education curricula and assessments, and (c) some significant institutional barriers to the inclusion of students with disabilities in regular classrooms.

Balanced Assessment System

In part as a response to state graduation requirements, the MPS Board of School Directors adopted a Balanced Assessment System in October 2000. Wisconsin requires school districts to develop criteria for promotion in Grades 4 and 8 and for graduation in Grade 12. The criteria are to include state assessments, teacher recommendations, and student growth in achievement. However, further elaboration of these criteria is left to the districts.

Over a period of 2 years, the MPS Division of Research and Assessment, with the input of staff from our Center for the Study of Systemic Reform in MPS and others, developed specifications of the three criteria for graduation to meet the state requirement:

- *Criterion 1:* Meet the standards in each of the subject areas of English/language arts, mathematics, science, and social studies on the Wisconsin high school graduation test.

- *Criterion 2:* Achieve a grade point average of 2.0 or above during the junior and senior years in English/language arts, mathematics, science, and social studies.

- *Criterion 3:* Achieve a yet-to-be-specified change in scores on the MPS longitudinal assessment system (TerraNova and WKCE scores) in the subject areas of English/language arts and mathematics.

If the students satisfy Criterion 1 in each of the four subject areas, they do not have to satisfy either of the other two criteria. If students do not satisfy Criterion 1, they must satisfy one of the other two criteria to be eligible to graduate.

Requirements for promotion in Milwaukee from Grades 4 and 8 have a similar structure. Students have to satisfy one of three criteria:

- *Criterion 1:* Achieve a proficient level in each subject area (reading, writing, English/language arts, mathematics, science, and social studies) in one of two semesters.

- *Criterion 2:* Achieve a basic or better score on the WKCE in each subject area (reading, writing, English/language arts, mathematics, science, and social studies).

- *Criterion 3:* Achieve adequate growth in achievement as measured and defined by the MPS longitudinal assessment system (TerraNova) in reading, English/language arts, and mathematics.

Students who satisfy one of the three criteria in each of the content areas will be promoted from Grades 4 and 8. A Grade 8 student will become a *transition student* if the student does not satisfy Criterion 1 or 2 in the required six content areas but does satisfy Criterion 3 in reading, English/language arts, and mathematics. A student who does not satisfy Criteria 1 and 2 in the six content areas or Criterion 3 in reading, English/language arts, and mathematics will be retained. Grade 4 students who do not satisfy Criterion 1 in all six content areas will have to satisfy Criterion 2. A student who does not satisfy either Criterion 1 or 2 in any of the six content areas will have to satisfy Criterion 3. A school-based team will use district guidelines to recommend either promotion or retention.

The Balanced Assessment System that is now in place has evolved over a number of years and incorporates multiple measures of student performance (Figure 1). The state assessment (WKCE), given in Grades 4, 8, and 10, provides both norm-referenced and criterion-referenced data using an external measure. The newly instituted longitudinal assessments (TerraNova) provide the same data for the off years through Grade 9. Results from both of these assessments will be used to make promotion and graduation decisions. With both the WKCE and the TerraNova tests producing test results on the same scale, the district will have the capacity to monitor annual growth in scores at both the district and the school level. The majority of items on these assessments are multiple-choice, with some open-ended items inserted. These assessments have high reliability and are adequate for looking at growth over years. The state is in the process of conducting a study of the alignment between the WKCE and the state standards, which are very similar to the MPS standards. A preliminary alignment study we conducted (Clune & Webb, 1998; Webb & Pohs, 2000) showed that the alignment between the MPS standards and the WKCE was good, with the exception of science.

However, with all of the reforms across content areas that are intended to engage students more deeply in rich learning activities that will improve their communication, reasoning, and analytic skills, the full range of learning expectations are not measured on the norm-referenced standardized tests. The assessment history in MPS over the last decade, with its strong emphasis on performance assessment, is testimony to the belief that alternative assessments are needed

Figure 1. The MPS Balanced Assessment System.

Elementary schools	Middle schools	High schools
WI Reading Comprehension Test (WRCT): (+Spanish Form) (Gr 3*) (Spring)		
WI Knowledge & Concept Exam (WKCE): (Gr 4) Rdg/ELA,* Writing, Mathematics,* Science, Social Studies (+Supera) (Spring)	**WI Knowledge & Concept Exam** (WKCE): (Gr 8) Rdg/ELA,* Writing, Mathematics,* Science, Social Studies (+Supera) (Spring)	**WI Knowledge & Concept Exam** (WKCE): (Gr 10) ELA,* Writing, Mathematics,* Science, Social Studies (+Supera) (Spring)
MPS Writing Assessments: (Grs 3, 5*) (Spring)	**MPS Writing Assessments:** (Grs 6, 7*) (Spring)	**MPS Writing Proficiency:** (Grs 11, if not 12*) (Spring)
TerraNova/Supera: (Gr 3) Mathematics **TerraNova/Supera:** (Gr 5) Rdg/ELA, Mathematics (Spring)	**TerraNova/Supera:** (Grs 6, 7) Rdg/ELA, Mathematics, Science, Social Studies (Spring)	**TerraNova/Supera:** (Gr 9) Rdg/ELA, Mathematics, **TerraNova**: (Grs 11–12) Mathematics (Spring)
Classroom-Based Assessments:[1] Reading, Writing, Mathematics (On-the-Mark) (Grs K5–2) Rdg/ELA, Mathematics, Science, Social Studies (Grs 3–5), Writing (Gr 4) (Sem 1 & 2)	**Classroom-Based Assessments:**[1] Reading, Language Arts, Mathematics, Science, Social Studies (Gr 6–8) Writing (Gr 8) (Sem 1 & 2)	**Classroom-Based Assessments**:[1] English/Language Arts, Mathematics, Science, Social Studies (Gr 9–12) (Sem 1 & 2)
	Middle School Proficiencies: (over Gr 6–8) Communications, Mathematics, Science, and Research (2001–2002 Final Year)	

* Tier 1 system measures used in the accountability plan.

[1] Classroom-based assessments are being phased in. In the 2001–2002 school years, teachers in Grades 2 and 3 and Grades 6 and 7 should be administering the assessments each semester of the school year.

with stronger validity vis-B-vis desired classroom practices (Clune et al., 2002). During the decade, a high percentage of MPS teachers engaged in developing, administering, and scoring performance assessments in writing, science, and mathematics. But the district's costs for funding performance assessments became too great. This, along with the increasing difficulty in getting teachers to score the assessments, has forced the district to seek other means for ensuring

assessments that are validated by the approaches to learning advanced in the reform documents (e.g. National Council of Teachers of Mathematics, 1989, 2000; National Research Council, 1996). The solution MPS has developed is to incorporate classroom-based assessments into its Balanced Assessment System. These assessments are to be given and scored by teachers in their classrooms in all of the grades, K5 through Grade 12. The district's Curriculum and Instruction Division is responsible for developing a set of assessments that K5–8 teachers can choose from. These assessments are distributed to teachers on CDs and include both tasks and scoring rubrics. For each semester, teachers are to rate student performance as proficient or not. Each content area does this differently. The writing assessments have been attributed to improving students' writing abilities and will continue as in previous years.

Assessment Literacy Needs and Actions

Identification of Assessment Literacy Needs

With the Balanced Assessment System, teachers at all grade levels within MPS are responsible for assessing student knowledge using district-required assessments, in addition to their normal classroom assessments. Students will be taking both norm-referenced and criterion-referenced assessments. Teachers who teach more than one content area will have to use a different scoring rubric or scheme for each content area. Teachers who have been with the district for 10 or more years and the middle school teachers will have experience in using rubrics and administering performance assessments. However, since the district acquires about 800 to 900 new teachers each year, about 15% of its teaching force has little or no knowledge and experience with the assessment system. The middle school principals have had experience in managing multiple-measures assessment, but the experience of principals at other schools varies.

Resources and conditions have not been available for doing an extensive study of assessment literacy in MPS. The Center for the Study of Systemic Reform in MPS depends on district staff for their input into what knowledge teachers need. Staff members from the MPS Division of Research and Assessment have been visiting every elementary school to inform the principals and teachers about the Balanced Assessment System and have been able to give us some sense of the level of teachers' understanding of assessments from these discussions and the questions that are asked. The district has also conducted data seminars to enable school personnel to interpret the reports of the WKCE results they receive from the state through the district. The difficulty school staffs have had in interpreting these data has provided other evidence of the teachers' need to understand assessment reports more fully. In a study to investigate schools' use of software to better access and use data, we found that schools had greater access to behavior data than to performance data (Webb et al., 2001). Of the six schools we worked with, two made some progress toward having teachers use performance data to make judgments about students, but the other four had greater difficulty in acquiring, analyzing, and formatting data for use by teachers and others.

In a meeting with five curriculum specialists from the different content areas, we asked about the state of assessment in the district and the teachers' needs in the area of assessment literacy. One observation that the curriculum specialists made was that teachers were only now becoming knowledgeable about the district curriculum standards and some remained unaware of the standards. The curriculum specialists thought that a high percentage of middle school

teachers were using classroom-based assessments and applying them to standards because these teachers had been trained in implementing the middle school proficiency requirements. They thought that the teachers in K–8 schools had missed out on such training and consequently had less knowledge of both standards and assessments. The curriculum specialists noted that staff members in elementary schools had not received training in using assessments and relating these to the MPS standards and were less likely to implement the classroom-based assessments. Because training has not been mandatory, only about 10% of the elementary teachers have received training. Of all MPS teachers, the curriculum specialists estimated that only about 30% were effectively working with the standards and classroom-based assessments. When asked about the greatest needs of teachers in the area of assessment literacy, the curriculum specialists listed a number:

- Ability to write classroom assessments based on standards;
- Ability to use assessments to inform instruction;
- Understanding that assessment is not just testing;
- Ability to use different assessment methods and strategies;
- Ability to align curriculum with standards;
- Awareness of teaching standards;
- Ability to score student work;
- Improved reliability and consistency among teachers in scoring; and
- Ability to evaluate grade-level work.

First Steps in a Program to Advance Assessment Literacy

There is much that teachers need to know about how to translate standards into learning targets for students and how to use assessment data effectively to judge students' attainment of these targets. MPS is faced with the issue of where to begin in achieving assessment literacy. This issue has to be addressed by the Division of Research and Assessment, along with its many other responsibilities, including operating the assessment system and working with schools to more effectively incorporate assessment data into the school improvement planning process. As a first step, the Division of Research and Assessment has decided to offer a 2-hour workshop that will clarify the basics of the different forms and kinds of assessments that exist in the Balanced Assessment System. This first step is based on an understanding that teachers and other district staff do not have a large amount of time that they can devote to learning more about assessment. It also takes into consideration the large percentage of teachers and principals who could benefit from understanding more about what different forms of tests can and cannot do—in part, to dispel misinformation that has proliferated within the district. Teachers and principals are still in the process of learning about the Balanced Assessment System; they need to cultivate greater

acceptance of the new assessment system, which requires a very basic understanding of assessment techniques.

The Center for the Study of Systemic Reform in MPS has developed a general design for a workshop that meets the above specifications and district needs. The main goal of the workshop is to encourage teachers and others to become more familiar with the basic types of assessments, the appropriate use of these assessments, and the ways in which assessment results can inform teachers and others about student progress in attaining the MPS standards. The 2-hour workshop will cover the following five topics, offering supporting activities for each:

1. *Assessments types.* Teachers will be given activities to help them distinguish between norm-referenced and criterion-referenced assessments—how the construction of each assessment differs and how results can be interpreted.

2. *Uses for different assessments.* Four general uses of assessment results will be identified: sorting students, certifying students, diagnosing students' needs, and evaluating instruction. Teachers will be asked to identify which of the four uses of assessments are most appropriate for each type of assessment (norm-referenced and criterion-referenced).

3. *Types of assessment items.* Four general item types will be identified: multiple-choice, open-response, open-ended, and performance assessment. Teachers will be given examples of student responses to each, along with a related standard, and asked to explain what they can determine about a student's mastery of the standard, based on the item responses.

4. *Types of scoring schemes.* Two scoring schemes will be described: right/wrong and use of a rubric. Teachers will be given different standards and objectives and asked to identify which scoring scheme, or combination of schemes, would be most appropriate to determine whether students have met the intent of the standard and objective.

5. *Measurement of students' attainment of standards.* Teachers will be given a standard and a set of items and asked to indicate whether the students' responses to these items are sufficient to determine that students have mastered the standard.

This workshop is designed as a starting point for advancing assessment literacy in MPS. It will introduce teachers to assessment terminology, while giving them and other district staff an opportunity to look more deeply at different types of assessment items and the MPS standards. However, two key issues remain. First, because of the district's recent history in developing proficiencies and performance assessments, there will be teachers in the district for whom this workshop is too basic. These teachers will need more guidance on how to structure classroom assessments, aggregate information from multiple assessments, and monitor student progress in achieving the specified standards. These needs will have to be addressed later, as work on assessment literacy expands. The second issue is how to expand access to this basic assessment literacy workshop. Elementary teachers are in greatest need of assessment literacy training. Work still needs to be done to develop a strategy for reaching all of the teachers who can benefit from such training. One plan is to train the learning coordinator at each school who, in turn, can work with the teachers to increase their understanding of assessment.

Conclusions and Reflections

There is no question about the need to attend to assessment literacy in Milwaukee Public Schools. As the history of standards and assessment development in the district over the last decade illustrates, assessment knowledge needs to be continually updated as the state and the district impose new mandates. Three years ago, performance assessment was mainly centralized and the responsibility of the district. Now, schools are responsible for administering, scoring, and interpreting performance assessments (classroom-based assessments). Each school has responsibility for determining what constitutes proficiency and what is needed to satisfy one of the three criteria for promotion and graduation. Schools can decide whether teachers will score student work as part of their normal workload, or in scoring sessions at the end of the school day or on weekends, for which teachers would receive supplementary pay.

Decentralizing performance assessment raises a number of challenges for the district. First, the district must ensure that teachers apply rubrics in comparable ways so there is consistency among the schools and among teachers within schools regarding what is required of students to meet the standards. Second, the district must continue working to ensure that teachers are familiar with the different forms of assessments and have a workable understanding of how the assessments can be reliably applied and how to use information from the assessments to better guide student learning. Teachers will have norm-referenced scores and proficiency scores provided by the state WKCE and the district TerraNova for Grades 3 through 9. Results from these tests will provide some feedback on the progress of schools as measured by these external assessments and the classroom-based assessments. But these multiple assessments will also require a greater district investment in teachers' assessment literacy.

Our embedded research in Milwaukee is designed both to gain understanding about the workings of a large urban district and to apply our expertise to help the district as needed. In the areas of assessment and standards, this association has been very fruitful in monitoring changes in the district over time and in noting district progress. The work on standards in the district has transcended the numerous leadership changes and their impact on the development, adoption, and implementation of standards. Now schools are paying greater attention to the MPS standards, but they still confront issues regarding their capacity to measure students' progress towards the attainment of these standards. Over the period studied, the district has always employed multiple forms of assessment. Curriculum specialists, teachers, and district administrators have advanced the use of performance assessments for at least a decade. As a result, the district has a number of teachers who are very experienced in using both performance assessments and assessments that tap the higher order thinking and reasoning advanced in national reform documents. However, because of turnover in the teaching force and state and district expansion of assessments to nearly all grades, many more teachers need to acquire greater understanding of assessment. And all need to become more knowledgeable about applying assessments in a standards-based system.

Performance assessment has strong advocates in MPS—a major reason this form of assessment has survived. Some view performance assessment as being more equitable than other forms of assessment because it allows students a greater opportunity to show what they know and more valid because it requires students to develop skills that are in greater alignment with inquiry, writing, and thinking. However, the cost of implementing performance assessments, the

need to have reliable measures of school performance, and the advantages of measuring growth over time have caused the district to increase the use of standardized norm-referenced assessments.

Our work in the area of assessment literacy is relatively recent. What we have learned so far from those in MPS who have responsibility for overseeing assessment is that the need is great. We have learned that a large proportion of teachers and principals in the district have very little knowledge of assessment. A major challenge that we continue to face is how to reach all of those in the district who need training in assessment literacy. This challenge requires time and resources, both of which are in short supply in the district. We are continuing to resolve such issues as they arise and will learn more when the first assessment literacy workshops are given in spring 2002. At this time, we have not reached firm conclusions about how assessment knowledge can be advanced throughout the district. We have seen the strong impact the middle school proficiency requirements have had on staff in the middle schools. This impact has developed in part through the collaborative work of staff within schools and among the middle schools. However, repeating and expanding what was done with fewer than 30 middle schools in 150 elementary schools will require more systemic solutions. By continuing to assist district staff, draw upon what others have done elsewhere, and build on the assessment history within the MPS district, we are confident that significant progress will be made in the long term.

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