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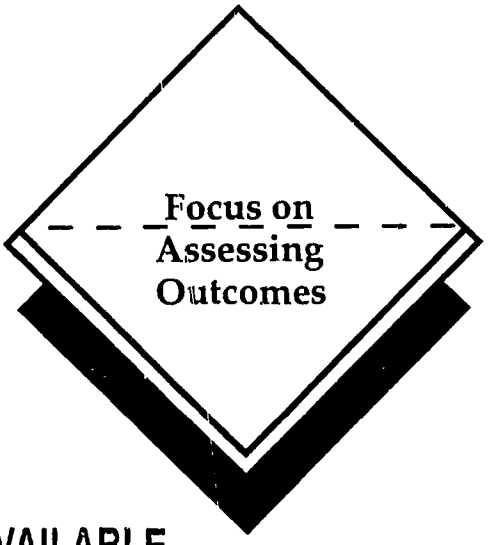
ABSTRACT

The goal of the district assessment program of the Des Moines (Iowa) school district is to provide information which improves teaching and increases learning. Students participate in a number of assessment activities, including norm-referenced, standardized tests, college entrance examinations, Advanced Placement Tests, the district's performance-based composition assessment, and criterion-referenced, objectives-based subject matter tests. On the average, however, students spend less than one percent of their time taking district assessments. District data sets are prepared and made available in manageable files. Test results, which are provided to stakeholders in various ways, indicate that Iowa students have done well on the Iowa Tests of Basic Skills and the Iowa Tests of Educational Development. Scores on the American College Test and the Scholastic Aptitude Test have been above national means. Evidence from the district's writing evaluation indicates that student achievement is improving, but results from the criterion-referenced objectives-based assessments are mixed. Issues to be resolved in the future are discussed. Nine figures and 17 text tables, with 26 tables in 7 appendixes, portray district characteristics and assessment results. (SLD)

ASSESSMENT PROGRAM RESULTS 1993-1994

Des Moines Independent Community School District
Department of Information Management
1800 Grand Avenue
Des Moines, Iowa 50309

OCTOBER, 1994



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Executive Summary

Program Overview

The goal of the district assessment program is to provide information to improve teaching and to increase learning. Toward that end, students participate in a number of assessment activities, including norm-referenced, standardized assessment (ITBS, ITED), college entrance examinations (ACT, SAT), Advanced Placement tests, the district's performance-based composition assessment, and criterion-referenced, objectives-based subject matter tests.

The operational budget for the assessment program, including salaries and estimated benefits, is approximately 0.12 percent of the district's operating budget. For every one hundred dollars that the district spends on operations, the assessment program receives 12 cents.

Testing staff have automated many processes for efficiency of operations. Although it takes approximately two years to develop each criterion-referenced test, much of the text and graphics is managed by the expertise in the department. Standardized test forms have bar-coded labels to save on classroom administrivia. Scannable answer documents for criterion-referenced tests are pre-printed and pre-bubbled at Mid-Iowa Computer Center (MICC).

Considering the amount of time devoted to district assessment activities, students on the average spend less than one percent of their time in school taking district assessments.

MICC facilitates creating district datasets by aggregating results from each school and creating a manageable file to be downloaded and analyzed using a microcomputer statistical software package.

Test results are provided to stakeholders in various documents. Test graphs and up-to-date reports were provided to building principals in August for the previous year, to assist in planning activities. Data are also provided to buildings in school information bases. In the spring of 1995, an interim assessment report, containing ITBS results, will be provided to the Board.

Assessment Results

ITBS/ITED

District students scored very well on the ITBS/ITED. On the ITBS, the district average for Grade 3 was the 63rd percentile, for Grade 4 was the 68th percentile, for Grade 6 was the 61st percentile, and for Grade 7 was the 64th percentile. Considering these results are based on a new form of the ITBS as well as new norms, student achievement would be expected to drop.

However, students achieved at a level that was comparable to previous years. The matrix sample of Grade 10 students taking the ITED should certainly produce an inflated score, since Central Academy students are overrepresented in the sample. When the Central Academy students were removed from the analysis, the average score for the remaining group of students was the 61st percentile.

ACT/SAT

In 1993-94, 779 students participated in the ACT assessment. The mean score was a 21.1 (out of 36). The national mean was 20.8 and the Iowa mean was 21.9.

In 1993-94, 124 students participated in the SAT assessment. For all students, the Verbal mean score was 488 out of 800, and the Math mean score was 547 out of 800. These scores are well above the national means of 423 and 479, respectively.

Advanced Placement Tests

In 1993, 61 (36%) of the 170 Iowa students recognized by The College Board as AP Scholars were served by the district. 21 (75%) of the Iowa students who received the highest level of this award were district students.

Composition Assessment

Using a numeric standard for the district's performance-based composition assessment, writing achievement is classified as Exemplary, Proficient, Competent, or Developing. The evidence for the past three years indicates that student achievement is improving, with more students achieving the "Competent" or higher standards.

Criterion-Referenced Assessment

Results of the district's criterion-referenced, objectives-based assessments are mixed. Students seem to be making progress toward achieving the mastery metric (70% standard) in reading and language arts areas. However, after initial successes in elementary school, student achievement in mathematics, science, and social science seems to decline. One factor might be that some of the tests were designed for content coverage instead of evaluating mastery of critical objectives. Other issues include frequency and timing of assessments.

Disaggregated data continue to show achievement gaps that, in many cases, are not closing. While females and males generally seem to be achieving at similar levels, substantial differences exist between students based on ethnicity and a socioeconomic indicator. Further investigation into the possible factors that are acting as barriers to achievement of these groups of students is recommended.

Future Plans

A number of issues that will be addressed in the future include:

- Increasing support of the assessment process at the school level with appropriate hardware and software systems,
- Increasing support for school staff to manage the assessment process at the school level,
- Developing a plan for disseminating assessment results to stakeholders, especially parents,
- Examining the manner in which information is provided to schools for planning purposes, in order to increase efficiency and effectiveness, and
- Reviewing the current assessment program, and developing recommendations for a more comprehensive assessment system, integrating standards and criteria for developing assessments as well as standards for student achievement, integrating current practices regarding test development and the adoption of instructional materials, technology, and software, and integrating the purposes and roles of various assessment methods

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DISTRICT MISSION STATEMENT:

The Des Moines Independent Community School District will provide a quality educational program to a diverse community of students where all are expected to learn.

Preface

District-wide objective assessment of student progress is an essential part of any educational endeavor. Information relevant to how individual students and groups of students are progressing provides schools a basis to determine how successful their practices have been or how such practices should be designed to obtain even better results in the future.

Assessment results are indicators of student achievement.

Assessment results reflect student achievement on identified outcomes, and serve as an indication that a school is indeed achieving its mission. While the Des Moines Independent Community School District recognizes that there are many avenues toward assessing student progress, standard measures of progress typically yield more useful information than nonstandard measures. These standard measures may be nationally standardized measures, district criterion-referenced or performance-based measures, or assessments used by individual teachers within their classrooms.

The value of any indicator system is based on the extent to which it captures the complexity of the teaching and learning process. Any single assessment cannot serve as *the* indicator of educational effectiveness. Results may be affected by content, format, or scoring protocols. A multiple method, multiple index approach is recommended to paint a more clear and colorful picture of student achievement, to provide decision-makers with more information to refine the teaching-for-learning process. The use of qualitative representations of student achievement may also serve to validate quantitative measures.

Inappropriate use or interpretation of information will misrepresent student and school success. Generalizations based on limited information may obscure the causes and/or cures of specific outcomes. Decisions based on incorrect information can lead to unanticipated negative consequences for students and the community. Too much emphasis on results will detract from the process of teaching for learning, and the needs of the individual student will likely be de-emphasized. For example, political pressures to excel may create a high stakes testing environment in which a desire for higher test scores will drive the teaching act; individuals may promote their own political agendas by using student outcome data to *prove* the failure of the existing system to achieve its educational mission.

Education is both a process and an outcome. The purposes for which assessment activities are conducted depend on the formative or summative nature of an evaluation. As long as stakeholders view education as a process *and* an outcome, assessment information can be used to make appropriate instructional decisions to enhance student learning and performance.

Assessment Program Results: 1992-1993, presented to the Board of Directors in October 1993 (Board Agenda item 93-230), provided information regarding student achievement on standardized, criterion-referenced, and performance-based assessments. The current document is the initial assessment report incorporating the district's program evaluation model (CIPP; Context, Input, Process, Product).

PROGRAM OVERVIEW

CONTEXT

The Goal: To provide information to improve teaching and increase learning.

The Des Moines Public Schools continue to focus organizational energy on the academic growth and development of its diverse urban student body. Purposes of the program are to: 1) assess student learning, 2) diagnose instructional need, and 3) provide information for program evaluation. Within the context of diversity, illustrated by wide variability in factors such as socioeconomic background, ethnicity, and student mobility rates, specific objectives have been developed to monitor and report the educational development of our students.

Specific objectives of the academic testing program are to:

1) allow the teacher to monitor student learning and make subsequent instructional decisions.

2) provide information to students, parents, and school personnel for making instructional decisions.

3) provide achievement data for conducting program evaluations.

4) provide achievement data as one component of student progress reporting.

5) provide necessary information to meet state and federal guidelines.

6) ensure that the academic programs of the Des Moines Public Schools compare favorably with those of other districts.

Assessment results are indicators of student achievement on knowledge and performance outcomes. Used in isolation, any form of assessment provides only partial information about a child's academic development or a school district's overall curriculum. By obtaining results from multiple methods of assessment, decision-makers have more information to refine the teaching-for-learning process.

To personalize instructional decisions, continuous monitoring of student progress provides information for planning activities that will address the needs of each learner. The evaluation of student achievement information at the classroom, building, or district level allows identification of strengths as well as academic areas in need of improvement. In order to maintain an appropriate breadth of focus of the curriculum, student achievement trends in districts with similar characteristics can be monitored.

Test scores are not intended to be used to prove the superiority of one student over another.

The Des Moines Public Schools, in its efforts to provide quality programming for its diverse student body, continually evaluates the process of teaching for learning. To identify areas for study and analysis, various methods of student outcome assessment are used. The purpose of this report is to provide information to the Board of Directors and to the public about the achievement of district students on the following:

- **Iowa Tests of Basic Skills (ITBS)**, a series of norm-referenced tests, given to students in third, fourth, sixth, and seventh grades. The tests are administered at midyear.

- **Iowa Tests of Educational Development (ITED)**, a series of norm-referenced tests, given to a sample of students in tenth grade. The tests are administered at midyear.

- The **American College Tests** and the **Scholastic Aptitude Test**, a series of norm-referenced tests, usually given to high school juniors and seniors for the purpose of determining probable success in higher education.

- **Advanced Placement Tests**, a series of criterion-referenced tests given to high school students seeking college credit prior to enrolling in college.

- **Performance Based Assessment**, a type of assessment in which the *test* is the learning activity itself. The district's performance assessment is a composition assessment, administered in the fall to students in third, fifth, eighth, and eleventh grades.

- **Criterion-Referenced Assessments**, a series of curriculum-aligned, objectives-based, criterion-referenced tests, given in grades two through twelve and covering most subject matter areas in the Des Moines curriculum.

Disaggregation of assessment information is an integral component of planning for district growth. Groups for disaggregating data include gender, ethnicity (minority or non-minority status), and a socioeconomic variable. Disaggregation of data serves as an equity indicator in attempting to determine whether all students are learning and to what degree.

Disaggregation of data provides a monitoring system for equity.

Recent Developments

Standards

Standards for student achievement provide a measure of accountability to district stakeholders regarding what our graduates know and are able to do. They provide business, industry and higher education with information regarding the readiness of our graduates to achieve success in future endeavors. Written statements of standards let our students know what is expected of them as they matriculate through the system. Implicit in these standards is the commitment of the district to provide the support necessary for each student to meet those expectations.

The mastery metric provides evidence of student achievement in various subjects.

Prior to the 1992-93 school year, objectives-based assessment results were reported as district average scores, to reflect how well an average student performed on a specific test (i.e., how well the average student mastered objectives or concepts in a subject). To more accurately reflect the district's mission regarding learning outcomes for all students, the Superintendent, in the 1992 *State of the Schools Report*, indicated the district would be establishing a standard of 70 percent as a baseline criterion to judge mastery of subject matter. This *mastery metric* (70 percent standard) was intended to provide evidence of the number of students achieving a success rate of 70 percent or better in the subject matter of a given curriculum area.

The data from the 1991-92 objectives-based assessment were used as the baselines against which future growth has been compared. Combined with the disaggregation of data, this allows the district to address three issues: 1) student achievement growth, 2) student achievement growth within disaggregated groups, and 3) the extent to which those disaggregated groups are achieving at the same rate across subjects. As of the 1992-93 school year, "objectives-based tests" were renamed "criterion-referenced tests", such that test scores are now compared to the 70 percent standard (criterion).

A 3-year plan to focus on critical objectives is underway.

Subject area supervisors began identifying critical objectives within their own areas of expertise in the fall of 1993. Utilizing input from district staff, and standards and benchmarks from national organizations (e.g., National Council of Teachers of Mathematics, American Academy for the Advancement of Science), subject area supervisors are beginning a three-year effort to identify critical objectives and to modify the instructional delivery process for achieving the objectives.

In the past, district objectives-based tests have evaluated coverage of the objectives in a curriculum, to make sure that all of the identified objectives were being taught (and learned). As the focus of the district criterion-referenced tests turns to evaluate student mastery of identified critical objectives, the assessment system must be re-aligned to reflect a proper evaluation of the identified learning priorities.

Technology

Technology has significantly improved the efficiency of the assessment process.

Microcomputers have dramatically increased productivity in the assessment area. Three years ago, it took two months to analyze the end-of-year criterion-referenced test data. Currently, the analysis time has been reduced to about two weeks. Mid-Iowa Computer Center (MICC) now provides test data in a more usable format, which is able to be downloaded and analyzed using a microcomputer statistics software program. This process has saved the district $600 for each Central Processing Unit (CPU) hour of MICC time. Personnel time for test data analyses and preparing data for building databases was cut in half, since the same analysis program can now generate the data for input into building databases.

Each elementary school currently has a 386SX IBM microcomputer, which reduces time spent on processing end-of-year criterion-referenced tests. In an attempt to enable the central office to better provide seamless support of minor technology problems that arise at the buildings, 10 members of the Department of Information Management and Department of Staff Development conducted a cross-training session to familiarize those in attendance with two test processing software programs (MicroScore and IMSplus) and basic hardware maintenance. This increased the number of departmental staff available to respond to problems from the buildings and central office.

Faster computers and application-specific software have increased the production of tests on the computer (both text and graphics). In addition, they have enabled modifications of tests in the development process to be achieved relatively easily. Copies produced on laser printers are camera-ready for duplication at printing facilities.

Policies, Standards, and Regulations

Policy Series 600, Code 640 states "In order to provide unbiased assessments of student academic growth, the Des Moines Independent Community School District will provide a district-wide testing program. Specialized testing will also be undertaken as part of unique, individual student instructional requirements and educational services." Administrative procedures related to this policy were revised January 19, 1993 (Codes 640 and 640.1).

INPUT

Program Resources

The operational budget for district assessment activities includes specific line items and parts of other accounts within the Department of Information Management budget.

The operational budget for the assessment program was approximately 0.12 percent of the district operating budget in FY1994.

The amounts allocated for FY1994 are listed in Table 1. Approximately 60% of the amount for consulting services is for Mid-Iowa Computer Center Charges; the remainder for test development costs. The amount for the assessment line item includes standardized testing costs, composition assessment costs, and additional supplies and materials for the assessment program.

Table 1
Assessment Program Allocations

	FY94 Budget
Consulting Services	$20,200.00
Printed Materials	9,300.00
Assessment	58,330.00
TOTAL	$87,830.00

Human Resources

The following positions in the Department of Information Management are filled by persons who perform duties related to the assessment program. The Program Evaluator: Evaluation, Surveys, and Planning allocates approximately 10% time to assist with the assessment program during heavy workload periods. The full-time equivalency (FTE) and FY1994 dollar cost for each of these positions is indicated. In FY1994, the total budgeted salary cost for these positions (including benefits) was $99,108.94 (see Table 2).

Table 2
Assessment Staff
Full-Time Equivalency (FTE) Positions

TITLE	FTE	FY94 Salary
Prog. Eval.: Testing & Research	1.0	49,581.00
Testing Support Specialist	1.0	22,435.00
Prog. Eval.: Eval., Surveys, & Planning	0.1	4,516.00
Fringe Benefits (29.5%)		22,576.94
TOTAL	2.1	$99,108.94

Inservice/Staff Development

Staff members attend the Des Moines Public Schools Professional Educators' Convention annually, and district staff development courses to gain new skills and applications.

Staff members maintain professional memberships in state and national organizations. Attendance at meetings is not only beneficial for receiving training and information on state of the art methods, but also has afforded staff members an opportunity to make presentations and provide information about activities occurring within the district.

Materials in use by the testing program

- Computer Software:
  Database: FileMaker Pro, Microsoft Works
  Spreadsheet: Microsoft Excel, Works, Wingz
  Graphics: SuperPaint, Hypercard, MacDraw, ClickArt, Illustrator, Freehand, Wingz
  Word Processing: Microsoft Works, Word
  Presentations (slides): Persuasion
  Statistics/Data Analysis: SPSSX (microcomputer version)
  Testing/Assessment: MicroScore (district testing program); Instructional Management System (IMSplus) - monitoring individual student progress in the classroom (site-based).

- Criterion-referenced and standardized testing materials
  Test Booklets
  Assessment manuals/guides
  Scannable answer documents
  Scoring keys/templates

Equipment in use by the testing program

- Computers/workstations (Macintosh and DOS)
- CD-Rom drives
- Modems/Network connections
- Laser printers
- Scanner and printer for test scoring
- Copy machine
- VCR

Community Resources

Community resources are used during composition test scoring. Included are parents, retired teachers, and teachers on released time. Approximately 40 readers are paid at a rate ranging from $7.25 to $10.25 per hour depending on their level of responsibility.

Space Allocations

The Department of Information Management maintains a test storage and packing facility at the district Transportation and Food Service building consisting of one large and two smaller upstairs rooms. This is also where composition scoring is conducted. Within the department office is a workroom containing bins for sorting test documents.

PROCESS

Work Flow Information

Criterion-referenced test development involves teachers, supervisors, and testing staff.

The process of developing a criterion-referenced test from conception to first administration contains 24 steps and covers about a two-year period. The process includes activities by subject area supervisors, teachers, and testing personnel. Normally, the entire first year is spent identifying critical objectives, deciding which objectives are measurable using a multiple-choice, paper-and-pencil format, and writing items to pilot test. Data analyses and production of a final form of the test are completed in the second year. Criterion-referenced tests are used as part of student evaluation and grading at the middle and high school levels and as curriculum evaluation instruments for grades two through twelve. The district's criterion-referenced tests primarily provide summative information (at the end of a course or school year).

The computerized Instructional Management System (IMSplus) facilitates the management of personalized classroom instruction to address the needs of each learner. Currently used for continuous progress monitoring in elementary buildings for reading and mathematics, some buildings are using the system for other subjects. This system allows teachers to score tests and produce printed reports of student progress immediately and on-site. Since this system is a instructional needs-driven system (regarding which tests are given, when, and to whom, depending on the needs within each classroom), the data are not conducive to aggregating for district profiles.

Accuracy of the data depends on input of student information at the school site.

For district standardized tests, criterion-referenced tests and the district composition assessment, procedures are generally the same: test order forms are sent to buildings, requests are returned, tests are provided to and administered in the buildings, tests are collected, data are processed, and reports are generated. Whenever possible, answer documents are pre-printed with student names and identification numbers are pre-bubbled at MICC, to avoid errors in identifying students.

For standardized tests (ITBS), the Department of Information Management works closely with MICC and the Iowa Testing Programs at The University of Iowa to automate as much of the document preparation for testing as possible. For the ITBS, student answer documents contain a bar code label, with which student demographic information on a data tape is identifiable.

This eliminates the need for students or teachers to spend time entering data on the documents before the testing begins, and facilitates disaggregation of data and other analyses once the data tape is returned to the district for analysis. The ITED for Grade 10 is processed in-house in the Department of Information Management, with all analyses and reporting carried out locally, minimizing costs.

End-of-course criterion-referenced tests are designed to assess student achievement on the critical objectives of a given subject area, as identified by the subject-area curriculum committees. After tests are administered, they are processed at each building, and results are immediately available to teachers. Data from all buildings are electronically transferred to MICC and combined with data from the same test for all other buildings to create district-level reports. Individual student test data are then transferred to the district test data base at MICC, making scores accessible on-line from each building. Building staff may only access scores of students assigned to their building.

Since the district composition assessment is performance-based, it requires a more non-traditional method of processing. Each paper that is written by a student is scored by two readers who have been trained in the rating system used by each grade level. Discrepancies are resolved by a third reading. The scoring process takes approximately four weeks of half days.

Students spend less than one percent of their time in school taking district tests.

Table 3 shows the amount of time devoted to student assessment using the district's standardized, criterion-referenced, and composition assessments. While it is acknowledged that some groups are not tested and others are assessed more than the average, the total time spent by any single student on these three assessments is less than one percent of the time students spend in school.

Table 3
Time Students Spend Taking District Assessments

	1991-92	1992-93	1993-94
Criterion referenced Tests			
Number of tests administered	66	61	66
Time required	1 Hour/test	1 Hour/test	1 Hour/test
Calculation based on: 180 day school year, 6 hour school day, and an enrollment of:	30,886 students	31,524 students	31,405 students
Number of Student hours required	74,032	70,373	79,693
Percent of School year	.0022	.0021	.0023
Standardized Tests			
ITBS			
Grades	3, 4, 6, 7	3, 4, 6, 7	3, 4, 6, 7
Time required	5 hours/ student	5 hours/ student	5 hours/ student
Number of Students	8,426	8,414	7,348
Number of Student hours required	42,130	42,070	36,740
Percent of School year (for those students assessed)	.0046	.0046	.0046
ITED			
Grade	10 (matrix sample)	10 (matrix sample)	10 (matrix sample)
Time required	1 hour/ student	1 hour/ student	5 hours/ student
Number of Students	1,306	1,205	377
Number of Student hours required	1,306	1,205	1,885
Percent of School year (for those students assessed)	.0009	.0009	.0046
Composition Assessment			
Grades	3, 5, 8, 11	3, 5, 8, 11	3, 5, 8, 11
Time Required	2 hours/ student	2 hours/ student	2 hours/ student
Number of Students	8,998	8,884	7,814
Number of Student hours required	17,996	17,768	15,628
Percent of School year (for those students assessed)	.0019	.0019	.0019

District Goals/Objectives

Goal 7 of the 1993-94 District Improvement Plan was to "Improve the quality of district student assessment information."

Goal 8 of the 1994-95 District Improvement Plan states that "By the beginning of school year 1999-2000, 80% of elementary, middle and high school students will achieve at least 70% mastery on district criterion-referenced assessments."

PRODUCT

The district's testing staff works with the subject area supervisors to develop quality assessment instruments. During the 1993-1994 school year, one home economics, one English, two foreign language, two mathematics, one social science and one language arts test were administered as new tests.

Various procedural and informational documents were produced by the district's testing program. Procedural documents include annual updates of the district's test processing (scanning) manual and the composition test scoring manual. Informational documents include various assessment reports that are produced and distributed throughout the school year.

Assessment information is provided to stakeholders in various documents.

Information regarding district tests administered during 1993-94 were provided to building principals in August 1994, so they would have current results to use in planning for the 1994-95 school year. This information included test graphs of district level scores, computer generated reports of student and building level scores, building and district level tables of disaggregated test scores, and the 1994-95 assessment calendar. Appropriate subject-area supervisors received duplicates of all reports.

In 1993, after midyear standardized test results were returned from the Iowa Testing Programs, summary tables were distributed to building principals, and an interim assessment report was provided to the Board of Directors for information (item 93-138). Because the 1993-94 ITBS was the first year of renorming, no information was available for evaluating trend data. 1993-94 results are included in this document, and an interim report will be prepared for the Board of Directors when results become available from the 1994-95 ITBS assessment.

An assessment report, containing assessment results from the 1992-93 school year, was presented to the Board in the fall of 1993 (AGENDA Item 93-230).

Assessment information specific to each school is provided in the school information bases, which are distributed annually to each school. Additional miscellaneous reports regarding student assessment information are provided to subject-area supervisors and to schools, based on specific needs and requests.

An earlier district goal focused on the examination and promotion of alternative forms of student assessment. 1,000 district teachers selected at random from all levels were surveyed during the Spring of 1993 in order to monitor alternative assessment activities already being conducted at the classroom level. Teachers were asked to indicate the types of skills that they were integrating into their classroom activities, the types of activities that students were asked to perform, and the types of products they used to evaluate the identified skills and activities.

Use of integrated skills requires new methods of assessing students.

Responses were received from 234 teachers (134 elementary, 41 middle, 59 high). Based on the low return rate (23.4%), the interpretation of the results is limited to the responding sample. Information provided by the respondents indicates the use of many different activities and methods of classroom assessment. In general, teachers who integrated many skills into their instruction asked their students to do more varied activities, and assessed their students using a greater variety of assessment methods.

1993-94 ASSESSMENT RESULTS

STANDARDIZED TESTING

Utility of Standardized Assessment Information

Norm-referenced, standardized tests provide general information about student achievement.

The primary use of norm-referenced, or standardized assessment (ITBS, ITED) is to provide general information regarding how our district as a whole compares with other urban districts with similar characteristics across the state and nation. The Des Moines Public Schools use national school norms as the standard of comparison for ITBS and ITED, since the district's urban demographic characteristics are more reflective of a national standard than a composite state standard.

With our current mobile society, it is important that a district not be so focused on its own curriculum objectives that it loses sight of what is being taught in other districts across the country. Standardized assessment helps to prevent this tunnel vision from developing by selecting items that test a broad range of objectives from each subject area. These standardized tests are not intended to perfectly match any district's curriculum. However, keeping in mind that the ITBS is an assessment of *basic* skills, it is a fair measure of student achievement in most areas.

With regard to individual scores, a student scoring at the 50th percentile is on grade level, and should be able to enter most schools across the nation and begin achieving success.

The ITBS and ITED are timed tests. This means that a specific amount of time is given to complete the items in a given section. As such, timed tests may penalize students who take their time and answer only a small number of items correctly. For this reason, the ITBS may not be a perfect match for evaluating the performance of students in schools where the philosophy is to teach students to take one's time and do a good job.

The Iowa Tests of Basic Skills (ITBS)

The Iowa Tests of Basic Skills is a norm-referenced, standardized test battery developed by the Iowa Testing Programs in Iowa City, Iowa. It is administered at midyear to district students in Grades 3, 4, 6, and 7. Scores are reported in percentiles, grade equivalents, and normal curve equivalents. Individual building results can be found in Appendices B and C.

New forms of the ITBS will be used to establish a new baseline for future growth comparisons.

The 1994 school year was the first assessment using a revised form of the ITBS. The entire battery includes tests in the areas of reading comprehension, language, mathematics, social science, science, and sources of information (maps and diagrams; reference materials). This revision includes social science and science as part of the complete battery. In earlier forms, they were supplemental tests and were not administered due to poor content matching with the district curriculum objectives.

For the 1994 administration, district students took the reading, language, and mathematics subtests. These subtests comprise the Core Total score. Similar to the old composite score, the Core Total does not include Social Studies, Science, or Sources of Information. Subject area supervisors who reviewed the Science and Social Studies sections of the new ITBS felt that the material continued to have a poor content match with the district's curriculum. The ITBS Science subtest was judged to be too content laden, which was at variance from the process-oriented district curriculum. The Sources of Information subtests, not administered in 1994, have been reviewed and judged to be appropriate and will be administered in 1995.

The ITBS tests are designed so that each successive level of the test contains items from the upper half (approximately) of the previous level material. Considering the basic design of the ITBS (or any norm-referenced test), students performing at the 50th percentile are at the expected test and grade level average. For example, fourth grade students scoring at the 50th percentile in February also have a grade equivalent of approximately 4.5.

A student scoring at the 50th percentile is on grade level.

On tests administered at the same time of year on subsequent years, a student scoring at the 50th percentile in both years has experienced a year's growth. A student scoring at the 50th percentile in 6th grade and at the 60th percentile in 7th grade might be said to have experienced accelerated achievement growth, over and above that which might be normally expected during that period of time.

Effects Of Norming On District Test Results

Publishers of norm-referenced, standardized tests revise their tests every five to seven years to remain current with changes in curriculum. When the test is revised, scores are adjusted (renormed) on a sample of students to account for the increasing knowledge and skills of students across the country. This way, "normal curve" interpretations regarding student test scores can be maintained. The 1994 ITBS results are based on new norms, developed from a norming study conducted in 1992.

A norm-referenced test is designed so that the scores of all the students taking the test will be distributed approximately normally. This means that 50% of the students (or schools) will be above the mean of the distribution and 50% of the students (or schools) will be below the mean of the distribution. Figure 1 shows the distribution that is established for the scores on this type of test, with 50% of the scores falling on either side of the midpoint. The shape of the normal distribution is predefined with approximately 68% of the students falling in the center of the distribution within plus or minus one standard deviation from the mean.

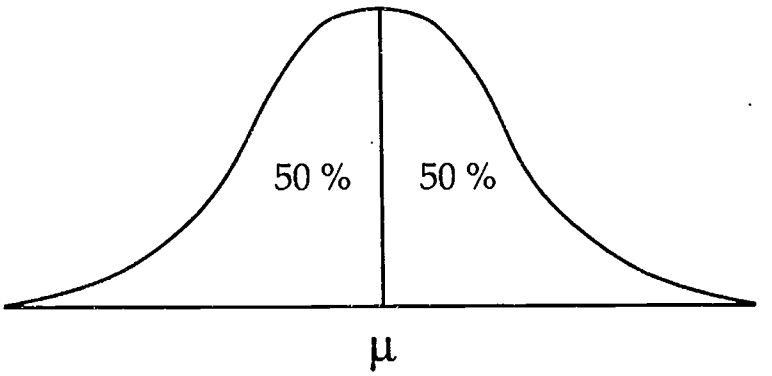


Figure 1. The Normal Distribution.

There are two conditions that can cause a change in the shape of the distribution. First, an overall decline in the skills of students can result in a lower mean. Second, an overall increase in student performance can result in a higher mean. As an example, Figure 2 shows the shape of a skewed distribution resulting from an overall improvement of scores on a norm-referenced test before renorming.

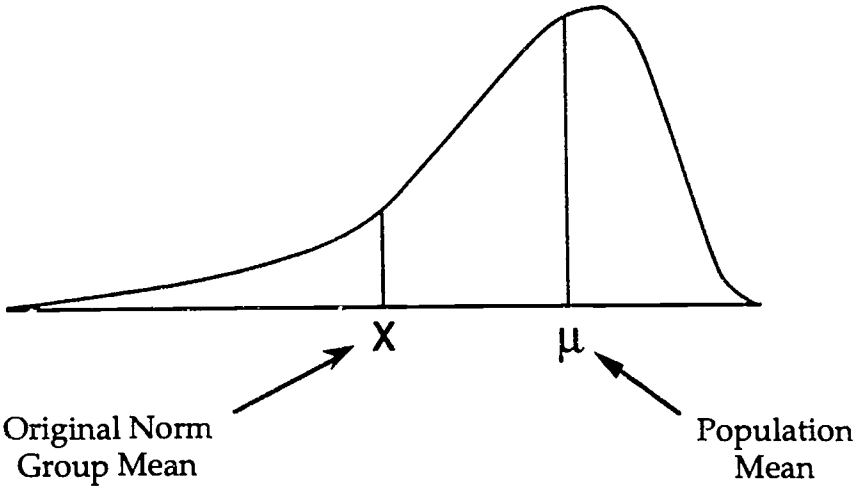


Figure 2. The Skewed Distribution.

The renorming process resets the normal curve.

In this distribution, most of the scores have moved above the original population mean. This phenomenon results in a score distribution that is not normal and violates all of the basic assumptions of the normal distribution. When this occurs, it is no longer possible to judge the placement of students within the norm group. An 80th percentile is no longer an 80th percentile in reality. It, in fact, is more likely to be at the 70th or 60th percentile. It is at this point that the test must be renormed to maintain its integrity. The renorming process essentially resets the mean of the distribution to reflect the normal curve illustrated in Figure 1.

The school that is probably the most influenced by these radical changes in norms is the one that is maintaining a constant level of achievement, with very small changes from year to year. When the overall performance of the norming group declines, the group that is remaining constant will show dramatic increases in percentile rank. On the other hand, if the norming group shows improvement, the scores of the school that is remaining constant will misrepresent the progress of the school, such that scores will appear to decline.

Tables 4 and 5 show the ITBS score changes that occurred for Grade 3 students in 1993 tested in Grade 4 in February of 1994, and for Grade 6 students in 1993 tested in Grade 7 in February of 1994. In order to provide some linkage with previous years, the Iowa Testing Programs provided estimates of the February 1994 scores based on the old norms (1985). Although there are some problems with the direct interpretation of these results, they indicate that some changes in educational programming are contributing to changes in student achievement scores. Consideration must be given to ways that these results can be used to guide instructional planning to meet the district's identified instructional objectives.

Table 4. ITBS Score Comparisons:
Grade 3 (1993) to Grade 4 (1994) Percentile Ranks

School	DISTRICT ELEMENTARY SCHOOLS				
Scores and Norming Year	Grade 3 1993 Scores 1985 Norms	Grade 4 1994 Scores 1985 Norms	Grade 4 1994 Scores 1992 Norms	Change (Old Norms)	Change (New Norms)
Vocabulary	58	62	52	+ 4	- 6
Reading	48	72	66	+ 24	+ 18
Spelling	56	60	60	+ 4	+ 4
Capitalization	79	84	79	+ 5	0
Punctuation	81	91	76	+ 10	- 5
Usage	76	76	69	0	- 7
Language Total	75	82	73	+ 7	- 2
Math Concepts	70	86	72	+ 16	+ 2
Math Problems	65	82	70	+ 17	+ 5

Significant improvement in Reading achievement.

Using the old (1985) norms, fourth grade students in 1994 improved their third grade performances on eight of the nine subtests administered, and equaled performance on one. Using the new (1992) norms, fourth grade students improved their third grade performances on four of the subtests, declined on four subtests, and equaled performance on one subtest. Further examination of the fourth grade scores using the current (1992) norms indicates that district students continue to perform above the national average (50th percentile).

Table 5. ITBS Score Comparisons:
Grade 6 (1993) to Grade 7 (1994) Percentile Ranks

School	DISTRICT MIDDLE SCHOOLS				
Scores and Norming Year	Grade 6 1993 Scores 1985 Norms	Grade 7 1994 Scores 1985 Norms	Grade 7 1994 Scores 1992 Norms	Change (Old Norms)	Change (New Norms)
Vocabulary	53	62	52	+ 9	- 1
Reading	56	74	60	+ 18	+ 4
Spelling	51	51	53	0	+ 2
Capitalization	64	74	67	+ 10	+ 3
Punctuation	47	84	63	+ 37	+ 16
Usage	57	67	56	+ 10	- 1
Language Total	55	73	61	+ 18	+ 6
Math Concepts	84	76	65	- 8	- 19
Math Problems	70	74	68	+ 4	- 2

Improvement in Language; significant decrease in Math Concepts

Using the old (1985) norms, seventh grade students in 1994 improved their sixth grade performances on seven of the nine subtests administered, declined on one subtest, and equaled performance on one. Using the new (1992) norms, seventh grade students improved their sixth grade performances on five of the subtests and declined on four subtests. Further examination of the seventh grade scores using the current (1992) norms indicates that district students continue to perform above the national average (50th percentile).

Elementary School ITBS

Grade 3. Given a third grade student mobility rate ranging from 1 percent to 43 percent in the district's elementary schools and a socioeconomic variable ranging in one school where 10 percent of the students received free or reduced meals to 100 percent in another, students recorded above average achievement. For this group of students, the district's national Core Total score on the ITBS was the 63rd percentile.

Of the district's 39 elementary centers, 24 (63%) scored at or above the 50th percentile. Seven of these elementary centers scored at or above the 80th percentile, and fifteen others equaled or surpassed the 60th percentile point. Fourteen (37%) of the elementary centers scored below the 50th percentile, with eight sites scoring below the 40th percentile. The Core Total score for one school was not available.

Both the percentage of students receiving free or reduced price meals and a building's mobility rate were negatively related to building scores. As either of these indices increased, scores tended to decrease. Correlations were -.45 and -.81, respectively.

Grade 4. Given a fourth grade student mobility rate ranging from 2 percent to 33 percent in the district's elementary schools and a socioeconomic variable ranging in one school where 3 percent of the students received free or reduced meals to 95 percent in another, students recorded above average achievement. For this group of students, the district's national Core Total score on the ITBS was the 68th percentile.

Of the district's 39 elementary centers, 27 (69%) scored above the 50th percentile. Ten of these elementary centers scored at or above the 80th percentile, and eleven others surpassed the 60th percentile point. Twelve (37%) of the elementary centers scored below the 50th percentile, with four sites scoring below the 40th percentile.

Both the percentage of students receiving free or reduced price meals and a building's mobility rate were negatively related to building scores. As either of these indices increased, scores tended to decrease. Correlations were -.29 and -.73, respectively.

Middle School ITBS

Grade 6. Given a sixth grade student mobility rate ranging from 8 percent to 17 percent in the district's middle schools and a socioeconomic variable ranging in one school where 24 percent of the students received free or reduced meals to 63 percent in another, students recorded above average achievement. For this group of students, the district's national Core Total score on the ITBS was the 61st percentile.

Of the district's 10 middle schools, 7 (70%) scored at or above the 50th percentile. One school achieved the 80th percentile, and four others surpassed the 60th percentile point. Three (30%) of the middle schools scored below the 50th percentile, with one site scoring below the 40th percentile.

Both the percentage of students receiving free or reduced price meals and a building's mobility rate were negatively related to building scores. As either of these indices increased, scores tended to decrease. Correlations were -.75 and -.81, respectively.

Grade 7. Given a seventh grade student mobility rate ranging from 7 percent to 22 percent in the district's middle schools and a socioeconomic variable ranging in one school where 24 percent of the students received free or reduced meals to 62 percent in another, students recorded above average achievement. For this group of students, the district's national Core Total score on the ITBS was the 64th percentile.

Of the district's 10 middle schools, 7 (70%) scored at or above the 50th percentile. One school scored above the 80th percentile, and five others surpassed the 60th percentile point. Three (30%) of the middle schools scored below the 50th percentile, with one site scoring below the 40th percentile.

Both the percentage of students receiving free or reduced price meals and a building's mobility rate were negatively related to building scores. As either of these indices increased, scores tended to decrease. Correlations were -.78 and -.87, respectively.

Disaggregated ITBS Scores

Disaggregated ITBS data (Table 6) compares minority and non-minority Core Total scores by using median percentile scores. The median score for minority students at each grade is more than 20 percentile points lower than the median score for nonminority students. These results will be used as baselines to evaluate the growth of these groups of students in the future. Of primary importance is to examine if the achievement *gap* between minority and non-minority students is closing and not widening.

Table 6. Disaggregated 1994 ITBS Scores for Minority and Non-Minority Students Using Median Percentile Scores

Grade Level	Minority	Difference	Non-Minority
Grade 3	34	(28)	62
Grade 4	42	(21)	63
Grade 6	36	(23)	59
Grade 7	40	(21)	61

Another way to evaluate disaggregated assessment information is to examine the percent of students in a particular grade scoring at or above a specified standard. With the ITBS, differences between disaggregated groups regarding the number or percent of students scoring at or above grade level can be examined. Table 7 shows the percent of students scoring on grade level (50th percentile) or higher on the February 1994 administration of the ITBS (Core Total). Overall, more than half of the students scored at or above grade level on the ITBS. Gender differences in achievement are minimal. There are substantial differences between non-minority and minority students, and between students receiving subsidized meals and those not receiving subsidized meals.

Table 7. February 1994 ITBS: Percent of Students Scoring On Grade Level (50th Percentile) or Higher

Grade	All Students	Males	Females	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Grade 3	55.4	52.4	58.5	61.2	34.1	38.0	67.8
Grade 4	57.7	56.8	58.7	62.1	40.1	42.3	67.8
Grade 6	55.0	52.0	57.8	59.9	36.3	39.3	63.6
Grade 7	57.4	55.2	59.9	61.7	37.7	38.1	66.5

The Iowa Tests of Educational Development (ITED)

The Iowa Tests of Educational Development is a norm-referenced, standardized test battery developed by the Iowa Testing Programs in Iowa City, Iowa. It is administered at midyear to a sample of district students in Grade 10. Scores are reported in percentiles.

The 1994 school year was the first assessment using a revised form of the ITED. The entire battery includes tests in the areas of vocabulary, content area reading, correctness and appropriateness of expression, quantitative thinking, interpretation of literary materials, analysis of social studies materials, analysis of science materials, and use of sources of information. Scores of 377 district 10th grade students who took the ITED are shown in Table 8.

Table 8. ITED Mean Percentile Scores by Subtest

Subtest	Average Percentile Score
Vocabulary	77
Content area Reading	78
Reading Total	75
Expression	75
Quantitative Thinking	85
Core Total	80
Literary Materials	71
Social Studies	82
Science	82
Sources of Information	81
Composite	84

It should be noted that these scores include students from the gifted and talented program attending Central Academy. As such, these figures overrepresent student achievement. In contrast, when the Central Academy students were deleted from the analysis, the remaining students scored in the 61st percentile. Although this number underrepresents student achievement, it is still considerably above the national average.

Table 9 shows the percent of students scoring on grade level (50th percentile) or higher on the February 1994 administration of the ITED for each subtest. Overall, well above half of the students scored at or above grade level on the ITBS. Gender differences in achievement are small. There are substantial differences between non-minority and minority students, and between students receiving subsidized meals and those not receiving subsidized meals.

These data should be interpreted with caution. To the extent that minority representation in the Central Academy programs does not reflect the district's minority student population, the gap between minority and non-minority students may be inflated. This also applies to the gap between students based on participation in subsidized meal programs.

Table 9. February 1994 ITED: Percent of Grade 10 Students Scoring On Grade Level (50th Percentile) or Higher

Strand	All Students	Males	Females	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Vocabulary	66.5	71.3	61.9	71.3	45.7	46.3	71.0
Content area Reading	65.4	63.2	67.5	70.6	42.9	48.5	69.5
Reading Total	65.9	68.5	63.5	71.7	41.4	44.8	70.6
Expression	68.0	66.5	69.5	73.1	46.5	47.0	72.5
Quantitative Thinking	74.9	79.9	70.0	80.9	49.3	56.7	78.8
Core Total	69.6	72.1	67.2	76.0	42.0	51.5	73.6
Literary Materials	67.8	69.3	66.3	72.5	47.1	50.0	71.7
Social Studies	71.2	72.9	69.5	77.3	44.9	53.7	75.1
Science	73.6	75.0	72.3	78.7	51.4	58.8	76.9
Sources of Information	72.3	72.3	72.2	77.3	50.7	49.2	77.3
Composite	73.5	75.0	72.1	79.8	47.0	51.6	78.3

Voluntary Saturday ITED

In order to provide an opportunity for students who wished to take the entire ITED battery, a special session is held on a Saturday during the year. On November 9, 1991, fourteen students took the ITED at Lincoln High School. Interested students included five from the 9th grade, four from the 10th grade, and five from the 11th grade. Twelve of the fourteen students scored above the 50th percentile, ten of whom scored above the 80th percentile. On February 13, 1993, at 1800 Grand, five students took the ITED. Three of the five students scored above the 80th percentile. On February 12, 1994, at 1800 Grand, three students took the ITED. Two of the three students scored above the 60th percentile.

AMERICAN COLLEGE TESTS (ACT)

The district's college-bound students maintained comparable scores in their mean performance on the ACT. Seven hundred seventy-nine students (55%) of the Class of 1994 took the ACT. The mean score for this group was 21.1 (out of 36), compared to 20.8 in 1993 and 21.1 in 1992. The national mean for this class was 20.8 and the Iowa mean was 21.9. Table 10 shows disaggregated ACT scores.

SCHOLASTIC APTITUDE TEST (SAT)

Typically, only those Des Moines students who are seeking entry into the most prestigious universities and colleges in the country take the SAT. The district's college-bound students continued to score well above the national average in their mean performance on the SAT. In 1991-92, the SAT was taken by 128 students. In 1992-93, the SAT was taken by 145 students.

In 1993-94, the SAT was taken by 124 students. For all students, the SAT-Verbal mean score was 488 out of 800, and the SAT-Math mean score was 547 out of 800. The Verbal mean score for males was 500 and for females was 474; the Math mean score for males was 581 and for females was 508. Table 11 compares Des Moines students' scores with national averages.

Table 10. ACT Composite Score Comparisons (Means)
Disaggregated by Ethnic Group

	All Students			African American			American Indian			White			Hispanic			Asian		
Year	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994
Number of Students	769	815	779	69	59	71	4	3	2	592	629	569	16	10	16	52	60	59
Des Moines	21.1	20.8	21.1	17.6	17.2	19.1	20.3	21.0	17.5	21.8	21.5	21.8	19.6	19.0	18.8	19.3	17.1	18.1
Iowa	21.6	21.8	21.9	17.9	18.4	19.1	19.2	19.1	19.1	21.8	21.9	22.0	20.2	20.1	20.3	21.1	21.3	21.1
National	20.6	20.7	20.8	17.0	17.1	17.0	18.1	18.4	18.5	21.3	21.4	21.4	18.7	18.8	18.7	21.6	21.7	21.7

Table 11. SAT Composite Score Comparisons (Means)
Disaggregated by Gender

	Des Moines			National		
Year	1992 (n=128)	1993 (n=145)	1994 (n=124)	1992	1993	1994
SAT-Verbal						
All students	480	503	488	423	424	423
Males	489	518	500	428	428	425
Females	472	486	474	419	420	421
SAT-Math						
All students	555	577	547	476	478	479
Males	587	613	581	499	502	501
Females	526	537	508	456	457	460

ADVANCED PLACEMENT TESTS

Advanced Placement (AP) tests are criterion-referenced tests given to high school students for college credit. The College Board recommends that a score of three or higher (out of five) be achieved in order to receive college credit for a specific course.

75% of the AP Scholars with Distinction, the highest level, are from Des Moines.

In 1993, 61 students representing all district high schools and one shared student (28E) from the Urbandale Community School District were recognized by The College Board as Advanced Placement Scholars. This number represents 36% of the 170 Iowa students recognized. Twenty-one of 28 Iowa students receiving the highest level of this award were district students, and 29 of 38 underclass winners were district students (1994 results are not yet available). For the fourth consecutive year, two district students were recognized by The College Board as the Top Male and Top Female AP Scholar in the State of Iowa.

- **A.P. Scholars,** with a minimum of three AP courses with test scores of 3 or higher, included 21 underclass students and ten graduated seniors. This represents 30% of the Iowa winners.

- **A.P. Scholars with Honor**, with a minimum of four AP courses with test scores of 3 or higher and a 3.25 average, included six underclass students and four graduated seniors. This represents 40% of the Iowa winners.

- **A.P. Scholars with Distinction**, with a minimum of five AP courses with test scores of 3 or higher and an average of 3.50, included two underclass students and 19 graduated seniors. This represents 75% of the Iowa winners.

During 1992-93, 182 students took 389 examinations (representing 13.9% of the Iowa total). This is a dramatic increase in the number of AP examinations taken by district students since 1989, when only 69 examinations were taken.

Of the gifted and talented students attending Central Academy during 1992-93, 172 students took 364 examinations, with 84% of the examinations receiving a score of three or higher. Table 12 is a list of examinations taken by students enrolled in Des Moines' high schools. The 1994 totals are for students attending Central Academy only (provided by Gifted & Talented Program).

Table 12. Advanced Placement Examinations Taken by District Students

	Number of Exams		
Year	1992*	1993*	1994**
English Literature & Composition	48	67	45
English Language & Composition	38	43	55
U. S. History	24	30	43
European History	25	33	33
U. S. Government & Politics	16	17	16
Comparative Government & Politics	16	22	16
Economics	53	48	31
Calculus (AB)	26	36	27
Calculus (BC)	15	11	17
Biology	26	33	37
Chemistry	13	38	31
Physics	23	8	12
Computer Science	2	0	0
Psychology	0	3	1

* Includes students in home high schools and Central Academy
** Central Academy students only

PERFORMANCE-BASED ASSESSMENT

Performance-based assessments provide information regarding what a student can *do*, given a specific task. The district's performance-based assessment is a composition assessment. Students in Grades 3, 5, 8, and 11 select one of three topics and then compose an essay on the selected topic. Essays are read by trained readers and scored holistically and on a number of dimensions that have been determined to be important components of writing skill. Since the assessment is aligned with the district's objectives for language arts, the student compositions are evaluated against established standards for each objective area. As such, the composition assessment might be viewed as objectives-based.

However, scores on this assessment might be considered to be more normative, such that a purely average paper (on a percent scale) should receive a raw score equivalent to a 50%, similar to a 50th percentile ranking on a standardized assessment. Since the process of judging and scoring compositions is fine-tuned (or re-calibrated) each year through ongoing training of readers, scores from year to year are not expected to significantly change. Table 13 shows the fall composite score mean percentages for all grades.

Table 13. District Composition Assessment
Composite Score Mean Percentages

Grade	1989	1990	1991	1992	1993
3	60.7	61.9	62.3	60.3	64.9
5	69.6	69.1	68.9	67.3	66.8
8	64.5	64.2	65.1	66.2	66.8
11	68.3	68.8	69.0	70.4	70.7

District experts in the area of writing proficiency (teachers and the Elementary and Secondary Language Arts supervisors) agree that students are writing with greater proficiency. However, the current scoring system does not provide a way to compare student performance to a proficiency standard.

One objective in the 1993-94 District Improvement Plan focused on establishing performance standards for the district composition assessment. The first step in the process of developing standards for the district composition assessment was to identify a numerical basis on which to judge student writing.

While the 70% mastery metric used for the criterion-referenced, objectives-based tests is reasonable as a rough estimate, it is inappropriate to use in establishing levels of performance within the upper thirty percentage points, since the distributions of scores for these two types of tests differ. Therefore, the composition scoring protocol was used as the numerical basis for standard-setting.

Based on a Holistic score maximum of 10 points and a score of 8 points for each dimension, Table 14 lists the tentative standard and designation for each grade.

Table 14. Composition Competency Standards

Standard	Holistic	Dimensional Mean
Exemplary	9 or 10	7 or 8
Proficient	7 or 8	6 or greater
Competent	6	5 or greater
Developing	5 or less	less than 5

Initially, the Competent standard was set at 7 for Holistic score, with the Proficient standard set at 8 for Holistic score. These were determined to be not reflective of actual student achievement, based on the judgment of teachers and language arts supervisors. Considering the statistical characteristics of the possible scores on the composition assessment, the criteria listed above reflect a more appropriate representation of student writing proficiency. The minimum total points and percentages required to be classified in a specific category is listed in Table 15.

Table 15. Criteria for Achieving Composition Standards

Standard	Grade 3 (90 points)	Grade 5 (98 points)	Grade 8 (138 points)	Grade 11 (138 points)
Exemplary	79 (88 %)	86 (88 %)	121 (88 %)	121 (88 %)
Proficient	67 (74 %)	73 (74 %)	103(75 %)	103 (75 %)
Competent	56 (62 %)	61 (62 %)	86 (62 %)	86 (62 %)
Developing	below 56	below 61	below 86	below 86

As such, the 70% mastery metric established for criterion-referenced tests is between the "competent" and "proficient" standards for all grades. Results of the district composition assessment for 1993-94 were analyzed using this numerical standard. In addition, results of the district assessment from the past two years were re-analyzed in an attempt to identify trends in student achievement based on this numerical standard.

Disaggregated results of the 1993-94 composition assessment, along with results of the 1991-92 and 1992-93 assessments, are shown in Table 16.

In general, the percentage of students achieving the "Competent" standard or higher increases over time. A greater percentage of females than males achieved the standard. A greater percentage of nonminorities than minority students, and a greater percentage of students not participating in the subsidized meal program than participants in the subsidized meal program achieved the standard.

Table 16. District Composition Assessment:
Percent of Students Achieving the "Competent" Standard or Higher

Grade & Year	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Grade 3 1991-92	36.5*	42.8	30.6	38.8	26.8	25.3	44.2
	2336**	1125	1211	1899	437	945	1388
Grade 3 1992-93	30.9	36.8	25.1	33.8	19.2	19.6	39.6
	2305	1150	1155	1847	458	997	1308
Grade 3 1993-94	47.1	57.6	37.1	51.0	32.4	33.8	57.0
	2295	1116	1179	1808	487	980	1315
Grade 5 1991-92	34.9	39.2	30.5	37.1	25.1	22.4	42.3
	2147	1078	1069	1756	391	802	1344
Grade 5 1992-93	37.3	44.3	30.3	41.0	22.9	23.3	46.6
	2199	1107	1092	1754	445	874	1325
Grade 5 1993-94	34.9	41.4	28.6	39.5	16.0	18.3	46.6
	2143	1059	1084	1724	419	886	1257
Grade 8 1991-92	35.7	40.2	31.1	37.9	24.7	22.9	40.7
	1868	935	933	1548	320	528	1339
Grade 8 1992-93	40.1	46.5	33.2	42.9	27.1	25.7	45.9
	1830	939	891	1505	325	526	1304
Grade 8 1993-94	44.4	51.6	36.6	47.6	31.8	27.6	51.9
	1935	1004	931	1542	393	601	1334
Grade 11 1991-92	52.1	56.5	47.7	54.9	38.4	39.6	53.9
	1434	715	719	1192	242	182	1252
Grade 11 1992-93	57.4	64.5	50.5	60.4	44.2	42.5	60.1
	1438	704	734	1173	265	226	1212
Grade 11 1993-94	62.8	67.7	57.4	66.2	48.0	51.1	64.8
	1461	764	697	1186	275	221	1240

* Percent of students achieving the competency standard or higher

** Number of students in the assessment group

Classification Standards Comparison

Composite scores from the original raw data were analyzed to determine the number and percent of students being classified into one of the four groups according the criteria for the standards. Table 17 shows the trends in numbers of students and percent of students achieving the various classifications over the past three years. Although the percentages in the Proficient or Exemplary categories are not large, they are increasing over time. While it seems difficult to surpass these higher standards (this ceiling effect is largely a function of the manner in which the assessments are scored), it is noteworthy that in general, the percentage of students in the Developing category continues to decrease over time.

Table 17. District Composition Assessment:
Percent of Students Achieving
Various Competence Levels

LEVEL	N 3	% 3	N 5	% 5	N 8	% 8	N 11	% 11
Exemplary 1991-92	7	0.3	17	0.8	20	1.0	42	2.9
Exemplary 1992-93	5	0.2	25	1.1	25	1.3	54	3.6
Exemplary 1993-94	1	.04	20	0.9	18	0.9	64	4.2
Proficient 1991-92	181	7.6	192	8.8	195	10.2	312	21.2
Proficient 1992-93	147	6.2	240	10.7	207	11.1	327	21.9
Proficient 1993-94	296	12.5	175	7.9	263	13.2	350	23.1
Competent 1991-92	674	28.4	546	25.1	457	24.0	408	27.8
Competent 1992-93	574	24.4	569	25.4	515	27.7	473	31.7
Competent 1993-94	811	34.3	568	25.7	599	30.1	522	34.5
Developing 1991-92	1508	63.6	1421	65.3	1233	64.7	707	48.1
Developing 1992-93	1627	69.1	1409	62.8	1111	59.8	637	42.7
Developing 1993-94	1258	53.2	1445	65.4	1112	55.8	576	38.1

CRITERION-REFERENCED ASSESSMENTS

The district's criterion-referenced tests are curriculum-aligned assessments.

The criterion-referenced assessment program covers a wide array of subject matter across curriculum areas and grade levels. The primary intent of these instruments is to determine the extent to which the curriculum being taught is learned. District criterion-referenced tests are not timed, thereby allowing students reasonable time to complete all items. Each test contains a specified number of strands (groups of items measuring the same concept), and is designed to evaluate student mastery of the objectives of a given subject matter. They are also designed to diagnose student learning or identify deficiencies in a student's reasoning process. Because the objectives-based tests are aligned with the adopted district curriculum, scores are more reflective of a student's achievements in a specific curricular area. Therefore, the district's criterion-referenced tests provide a more accurate picture of what is taught and learned than norm-referenced, standardized tests.

The primary purposes of the criterion-referenced assessment program are to evaluate the curriculum and to assist in instructional planning. At the elementary school level, data from these assessments are also used to: 1) supplement the student achievement data gathered through the use of the computerized Instructional Management System (IMSplus) and through individual teacher assessments, and 2) monitor student achievement in curriculum areas not utilizing the instructional management system. At the middle and high school level, data are also used for individual student evaluation (as a part of assigning course grades to students).

Cohort data monitor growth; Historical data reflect instructional pacing and program improvement.

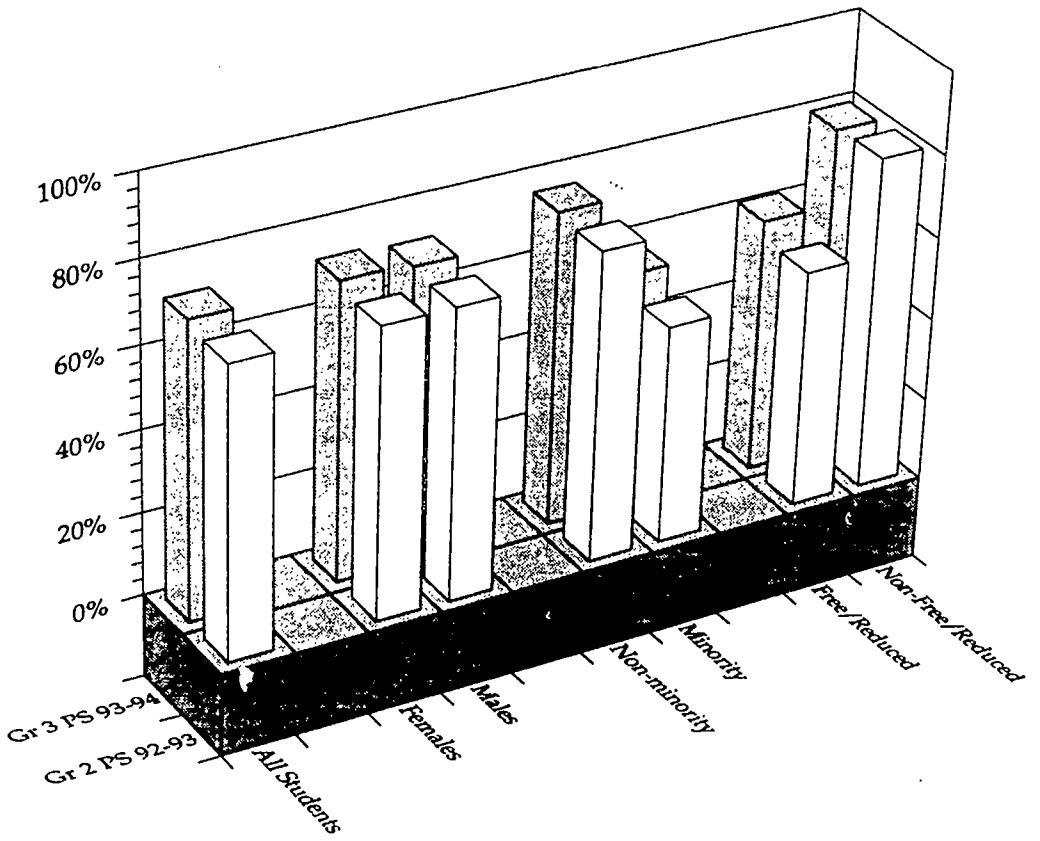
The disaggregated mastery data can be evaluated in two ways. First, data can be analyzed to see how similar groups of students perform on a test of the same curriculum area in subsequent years (i.e., evaluating cohort data). For example, results of student assessment in Grade 3 mathematics in one year can be generally compared to results of student assessment in Grade 4 mathematics the next year, and Grade 5 mathematics the next year. Second, data on a particular test can be evaluated over a period of time, to examine if gaps (detected by disaggregation) on one administration of a test tend to close with future administrations of the same test. For example, results of student assessment on a Grade 10 English test can be compared and evaluated for achievement trends for students over a three year period.

The results of this type of analysis (i.e., evaluating historical data) should be interpreted with caution, since the groups of students taking the same test each year are different.

Cohort analysis is used to examine the growth of similar groups of students over time. Figures 3 through 7 are examples of the results of cohort growth analyses for selected subject areas. The data are analyzed for all students assessed and are disaggregated by gender, ethnicity, and a socioeconomic indicator. The table accompanying each figure shows the percent of students in a particular group scoring at or above the 70% standard, as well as the number of students assessed in each group.

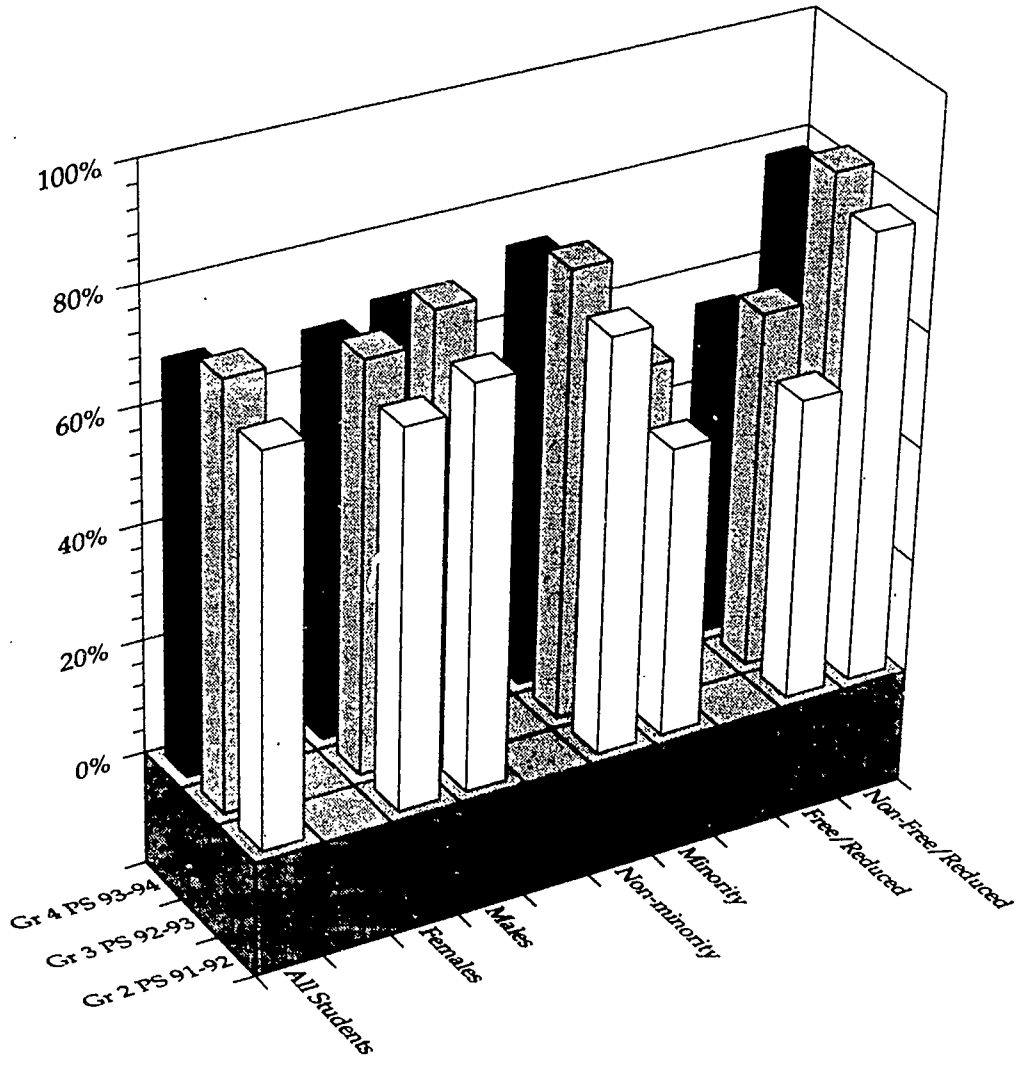
Cohort data are most available at the elementary level, since groups of students tend to matriculate through the grades together. This type of data is less representative of all students at the middle school level (i.e., Grade 8, when students begin to specialize in certain areas such as mathematics), and is not available at the high school level, since there is little continuity among discrete courses. Because of this, the examination of historical data for long-term trends in student achievement can provide information for program evaluation. Appendix D contains the results of the historical data analyses for all criterion-referenced, objectives-based tests administered during 1993-94. Appendix F contains the results for all pilot tests administered during 1993-94.

Figure 3. Elementary Math Problem Solving:
Cohort of Grade 3 Students in 1993-94



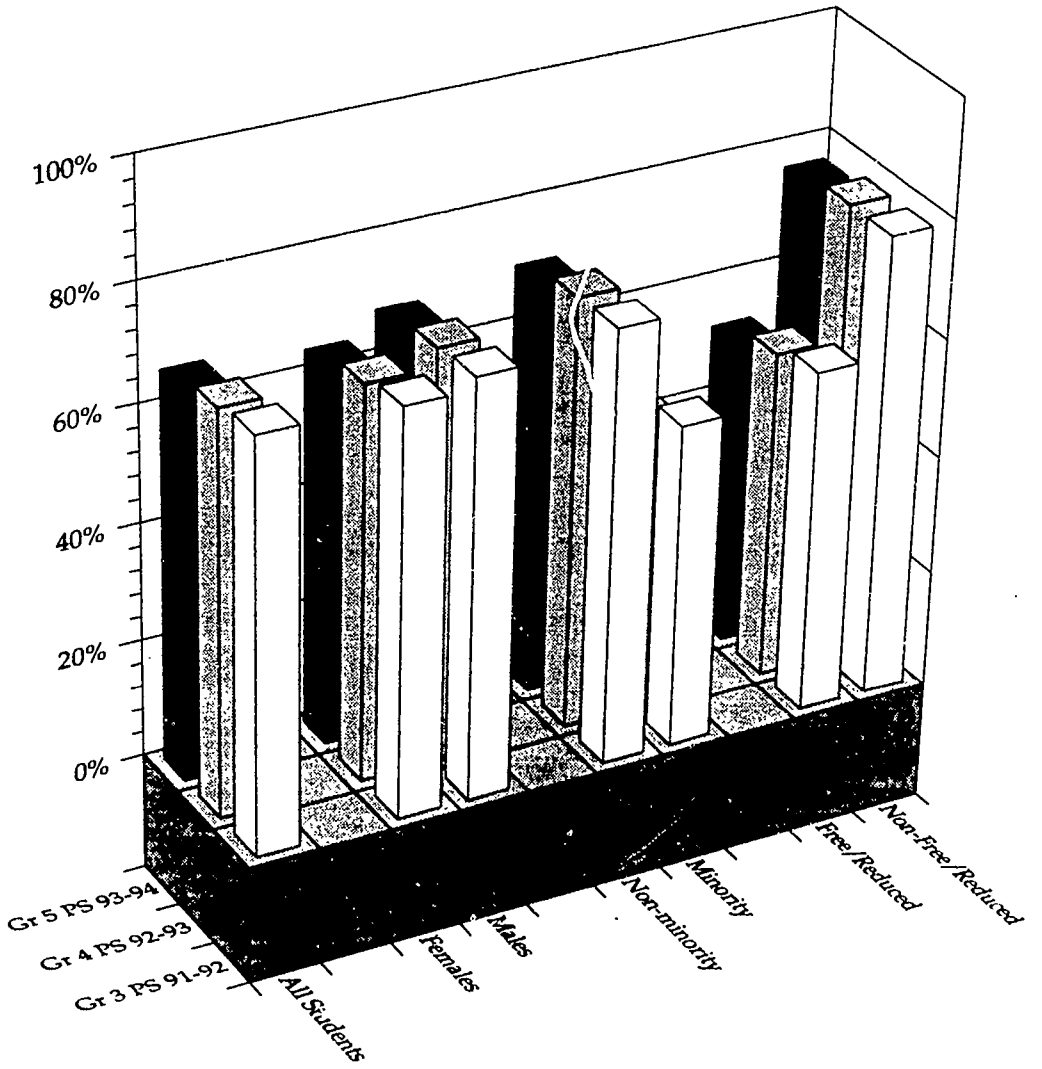
Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 2 Problem Solving	70.3	70.3	70.4	75.0	52.7	57.4	80.8
1992-1993	2513	1217	1296	1989	524	1130	1383
Math 3 Problem Solving	71.8	72.3	71.4	76.0	56.9	61.6	79.9
1993-1994	2362	1143	1219	1844	518	1041	1321

Figure 4. Elementary Math Problem Solving:
Cohort of Grade 4 Students in 1993-94



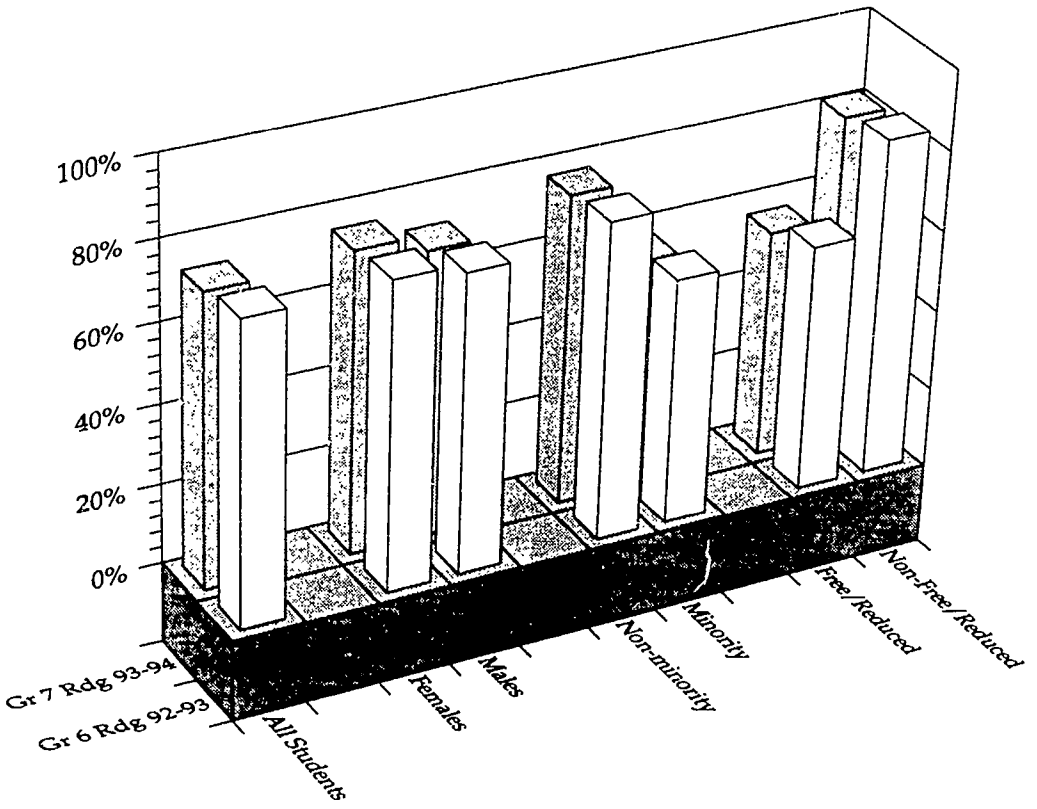
Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 2 Problem Solving 1991-1992	67.8 2377	65.6 1179	69.9 1198	71.8 1941	50 436	52.4 954	78.1 1422
Math 3 Problem Solving 1992-1993	73.7 2316	71.1 1147	76.4 1169	77.6 1856	58.0 460	61.7 1005	83.0 1311
Math 4 Problem Solving 1993-1994	68.3 2180	67.2 1093	69.4 1087	73.1 1742	49.3 438	54.9 902	77.8 1278

Figure 5. Elementary Math Problem Solving:
Cohort of Grade 5 Students in 1993-94



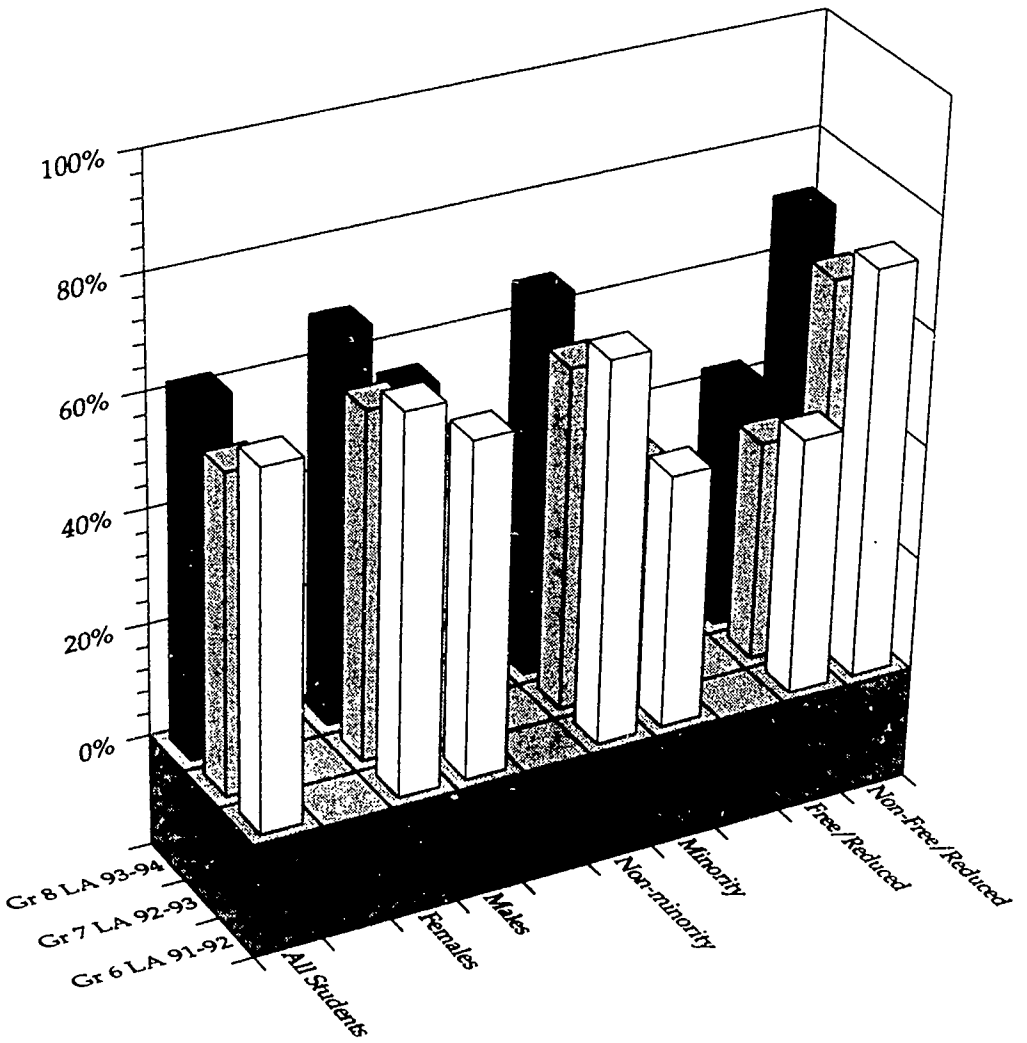
Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 3 Problem Solving 1991-1992	70.1 2358	69.1 1136	71.1 1222	73.7 1918	54.8 440	58.2 952	78.3 1404
Math 4 Problem Solving 1992-1993	68.7 2243	67.1 1077	70.2 1166	73.3 1812	49.2 431	55.7 949	78.2 1294
Math 5 Problem Solving 1993-1994	65.9 2169	63.8 1065	67.8 1104	69.9 1729	50.2 440	51.8 922	76.3 1247

Figure 6. Middle School Reading:
Cohort of Grade 7 Students in 1993-94



Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Wind by the Sea Level 12	75.6	76.7	74.5	78.9	61.0	61.2	84.0
1992-1993	1952	983	969	1590	362	720	1232
Star Walk Level 13	73.2	75.2	71.2	77.0	56.9	56.4	81.7
1993-1994	1864	930	934	1507	357	626	1238

Figure 7. Middle School Language Arts:
Cohort of Grade 8 Students in 1993-94



Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Language Arts Grade 6	62.8	66.4	58.8	66.9	44.3	45.0	71.9
1991-1992	2025	1061	964	1657	368	685	1340
Language Arts Grade 7	56.1	60.9	51.0	59.9	39.9	38.5	64.7
1992-1993	1941	1004	937	1570	371	636	1305
Language Arts Grade 8	62.1	68.1	55.5	66.1	46.5	42.8	70.7
1993-1994	1908	997	911	1519	389	587	1321

Special Illustration: Elementary Reading Cohort Growth

The Silver-Burdett-Ginn developmental reading curriculum adopted by the district consists of three levels of basal texts at Grade 1, two levels at Grades 2 and 3, and one level each for Grades 4 through 8. Because students in each grade tend to progress at very different rates, they may be reading at a developmental level that is below their actual grade level text. Because of the potential inclusion of upper grade students in *off-level* reading groups, the analysis of both historical and cohort data becomes more difficult.

In order to appropriately evaluate student growth, two issues must be addressed. First, the number of students who are reading (and assessed) at the appropriate end-of-level text for their grade must be examined. Second, the percent of students mastering the end-of-level assessment for their grade must be examined.

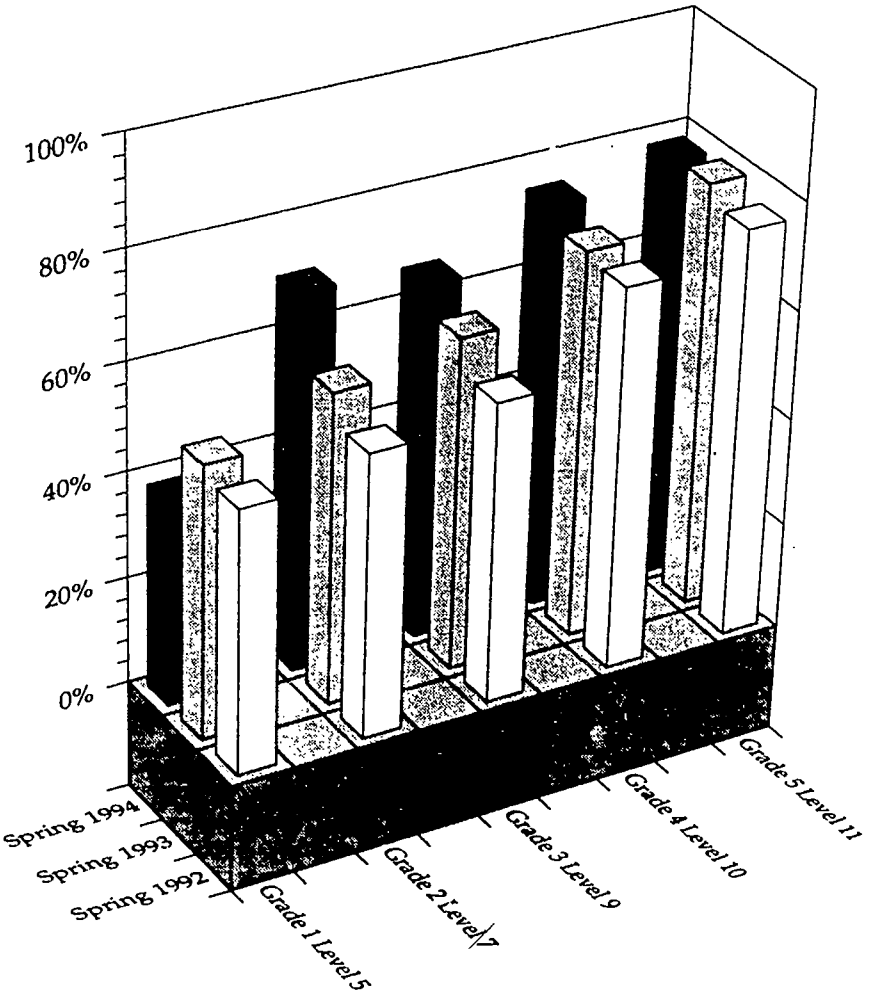
Figure 8 shows the number and percent of students at each elementary grade assessed with the appropriate end-of-level test for that grade. Examining cohorts of students (i.e., Comparing Grade 1 in 1992 with Grade 2 in 1993, etc.), the percent of students taking the appropriate end-of-level test increased for all cohorts (Grade 1 to 2, Grade 2 to 3, Grade 3 to 4, Grade 4 to 5). In general, more students are reading (and completing, since they are being assessed) at their appropriate end-of-level text in 1994 than in previous years.

Figure 9 shows the percent of students at each elementary grade that achieved the 70% mastery standard on the appropriate end-of-level test for that grade. Examining cohorts of students (i.e., Comparing Grade 1 in 1992 with Grade 2 in 1993, etc.), the percent of students demonstrating mastery of the appropriate end-of-level test increased for all cohorts (Grade 1 to 2, Grade 2 to 3, Grade 3 to 4, Grade 4 to 5).

The arrows in Figure 9 represent *cohort* growth. Evidence for effectiveness of the developmental reading program at the elementary level is reflected in: 1) the increasing percent of students completing the appropriate end-of-level text, and 2) the increasing percent of students mastering the appropriate end-of-level test.

Success is evident by more students achieving at higher levels.

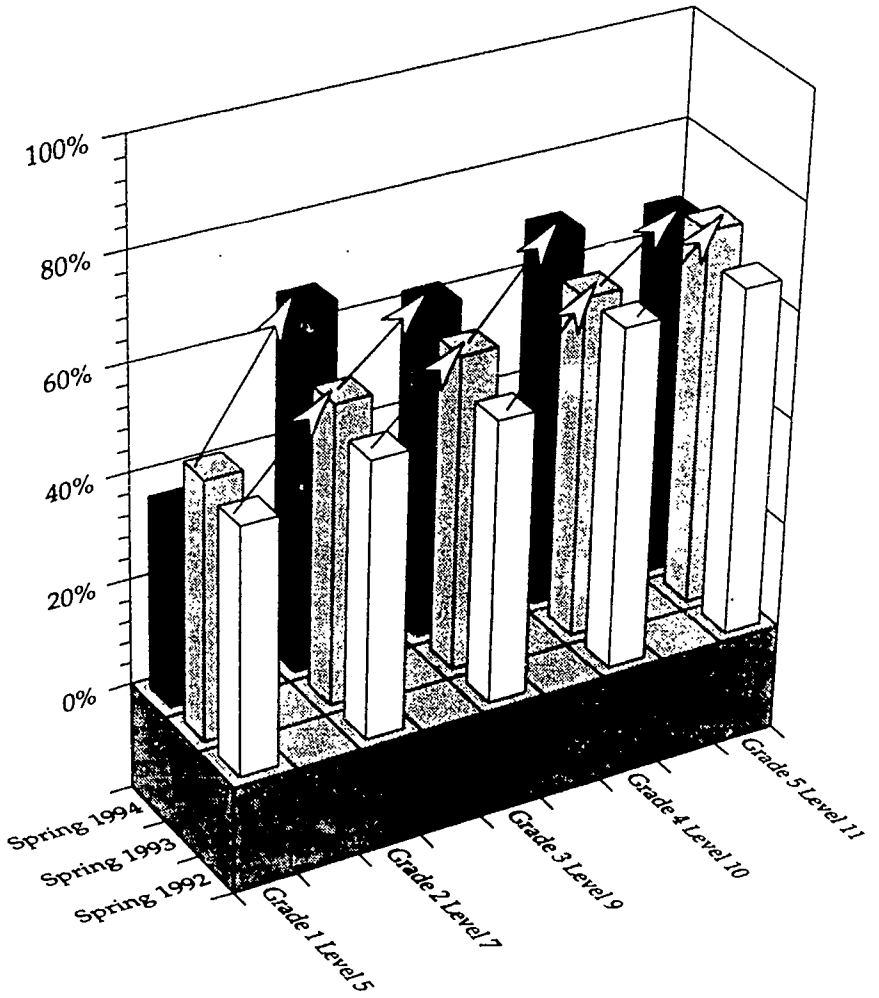
Figure 8. Elementary Reading: Students Assessed On Grade Level: Grade 1 to Grade 5.



Year	Grade 1 Level 5	Grade 2 Level 7	Grade 3 Level 9	Grade 4 Level 10	Grade 5 Level 11	
Spring 1992	1038	1269	1306	1445	1496	Num. Students
	49%	53%	56%	71%	76%	Pct. of Students
Spring 1993	1144	1354	1335	1541	1617	Num. Students
	51%	58%	62%	72%	79%	Pct. of Students
Spring 1994	976	1415	1337	1505	1539	Num. Students
	38%*	70%	66%	75%	78%	Pct. of Students

* Estimate based on official student enrollment for Grade 1.

Figure 9. Elementary Reading: Student Mastery
On Grade Level: Grade 1 to Grade 5.



Year	Grade 1 Level 5	Grade 2 Level 7	Grade 3 Level 9	Grade 4 Level 10	Grade 5 Level 11	
Spring 1992	1038	1269	1306	1445	1496	Num. Assessed
	46.2	51.8	52.8	63.7	65.3	Pct. Mastery
Spring 1993	1144	1354	1335	1541	1617	Num. Assessed
	49.4	57.8	60.6	65.1	70.7	Pct. Mastery
Spring 1994	976	1415	1337	1505	1539	Num. Assessed
	36.1*	67.5	62.0	69.6	67.1	Pct. Mastery

* Estimate based on official student enrollment for Grade 1.

SUMMARY AND CONCLUSIONS

The aggregate of information from the multiple methods of assessment in the various curricular areas, along with standardized assessment information, indicates that district students are indeed achieving. In an urban center, where schools are indeed a microcosm of society, the complexities of life make learning an ongoing challenge. In situations where student mobility rates and socioeconomic indicators create a less than satisfactory learning environment, the district has implemented programs to provide some stability so that students might have an opportunity to achieve at higher levels.

Students continue to score high on standardized tests.

Standardized test results during a renorming year would have been expected to drop. However, at the Core Total level, which is similar to the former Composite score, district students scored well above the national average. This is an indication that students are experiencing accelerated learning. Possible explanations might be that 1) the revision of the ITBS created a better match of content and process objectives found within our own curriculum, or 2) by focusing on more complex reasoning tasks, our curriculum is preparing students to handle "external" assessments. Considering that the revision of the ITBS was intended to be a more challenging *basic skills* assessment, district students achieved very well. Even the sample of tenth grade students not attending Central Academy achieved an average percentile rank of 61 on the ITED, well above the national average.

Indeed, the evidence of success by district students' performances on Advanced Placement examinations, along with the higher level honors received, is an indication that district programming is able to challenge students to achieve at a high level of educational excellence in Iowa and the nation.

Performance on college entrance examinations (ACT and SAT) maintained a level above the national average. While the Des Moines average on the ACT was below the Iowa average, disaggregated data show that African-American students in the district were the only group to achieve a level equal to that of their ethnic counterparts across the state.

Students are demonstrating their ability to develop written products. The trends in the data are not totally unexpected. At earlier ages, students have not yet had many opportunities to practice writing, or to manage one's thought processes. As students matriculate through the system, they are learning and demonstrating the skills of written description, narration, and persuasive communication. Over time, more students are achieving the competency standards.

Results of the criterion-referenced, objectives-based tests were mixed. Students are demonstrating their ability to read and understand, but the percentage of students achieving the mastery metric in mathematics declines over time. As students move through the middle and high school language arts curriculum, they demonstrate higher levels of proficiency, yet some areas of science and social science remain consistently low.

Focus of criterion-referenced tests is changing from content coverage to critical objectives.

Certainly, the inconsistency in student achievement across the various assessment methods is cause for concern. Some logical explanations to this dilemma need to be considered. Most of the criterion-referenced instruments in use were developed before the establishment of the mastery metric of 70%. As such, their focus would be on content coverage more than on identified learning priorities, or those objectives deemed most critical to a student's continued learning. Indeed, the activity cycle to refocus curriculum (and assessment) development on identified critical objectives has just begun. As subject-area supervisors and curriculum committees identify critical objectives, using standards from the respective national associations as a guide, assessments can be redesigned to evaluate student achievement.

The frequency of test administration may need to be modified. With the development of each new test, district staff are examining the possibilities of more frequent assessment of students. Not only would this relieve the burden on teachers and students of a comprehensive examination at the end of a course, but it would also allow students to respond to more items that cover a limited subset of objectives, providing a better opportunity to demonstrate subject matter mastery. In addition, it would provide immediate feedback for teachers and students, so that additional learning activities can be provided to remediate deficiencies.

Elementary Science and High School Biology are using Modular Testing.

In addition to traditional semester testing, the district is already providing more frequent testing. Science 3, 4, and 5 each contain three independent instructional modules that teachers administer at the conclusion of instruction. This "modular testing" system provides maximum freedom for each teacher to plan instruction when it is most appropriate for students to learn. The Biology curriculum consists of eight independent modules for which the tests will be piloted during the 1994-95 school year.

Another issue related to logistics of test administration is that the timing of assessment may not be conducive to student motivation to achieve. Giving a final examination to seniors who have already been awarded college scholarships will not yield very reliable results. For example, students who enroll in Physics must be among the district's best students, yet only a small proportion (less than 20%) achieve the criterion. Other methods for motivating students to do their best on these tests may need to be investigated.

Criterion-referenced assessment is only a part of the assessment of students that occurs in the district's classrooms each day throughout the year. Improving the existing assessment system, continues to be examined. As the district's tests become refocused on identified critical objectives, results used for school improvement activities will become more meaningful for school staffs.

One issue related to all of the assessment methods, but most apparent with the criterion-referenced tests, is the achievement gap between disaggregated groups. While gender differences, for the most part, are only slight, the differences based on ethnicity are significant, as are the differences between groups based on a socioeconomic indicator.

Of the 68 tests administered (including pilot tests), a greater percentage of minorities than nonminorities achieved the 70% standard on only five of the tests. Of the 68 tests, a greater percentage of students receiving subsidized meals than students not receiving subsidized meals achieved the 70% standard on only three tests. Focusing on student achievement gaps at the individual school level might resolve some issues at a specific site. However, the effect from a district perspective, without a focused effort, will certainly be diffused.

The issue of achievement gaps is readily (and inappropriately) associated with minority status. The disaggregation of data seem to indicate that the gaps based on ethnicity might be an artifact of results based on socioeconomic status. At the elementary level, the number of students receiving free or reduced price meals is roughly twice the number of minority students. At the middle school level, this figure is only approximately fifty percent greater than the number of minority students.

Some of the issues mentioned here have been addressed, and others continue to be addressed on a daily basis. The complex nature of teaching-for-learning requires appropriate information for instructional planning and decision-making. While it seems that most of the students in the Des Moines Public Schools are indeed achieving, it is apparent that some are not. Through cooperative efforts, the school district and the community will continue to provide opportunities for all students to achieve.

FUTURE PLANNING

A number of issues related to the assessment program have been identified. Most of these are activities that are already underway and of an ongoing nature, whereas some will need to be addressed.

School-Based Technology

Eleven new scanners have been purchased for district installation.

It is critical that schools have equipment that functions when needed. Computers used at high schools are connected to newer scanners, but the computer systems have limited storage capacity and run at a much slower speed, making them unable to take full advantage of the faster scanners. Elementary school test scanners need to be replaced. Middle schools need new scanners and computers. Estimated costs for new computers at middle and high schools are approximately $60,000. The estimated cost for new scanners at elementary and middle schools is approximately $210,000. These costs are included in the district technology plan.

Support for School Staff

The efficiency with which assessment information is collected at the building level is decreasing. At the elementary level, with the loss of funding for testing specialists provided in the past by Phase III funds, it is becoming increasingly difficult to ensure the viability of the assessment data. While building technology specialists have been funded from the technology plan as supplemental positions, no funded position currently exists to assume the duties of managing the assessment process at the building level. This issue will be addressed in the future.

Comprehensive Assessment System

There is a need to review the current assessment system and to consider alternatives based on current district initiatives. A more comprehensive district-wide assessment system to support teaching and learning needs to be planned to focus on student achievement standards on district criterion-referenced tests, possible expansion of performance-based assessment, and a possible reduction in standardized testing.

The plan should include:

- reviewing current test development and administration procedures,
- revisiting the purposes for and roles of instructional management assessment, performance-based assessment, norm-referenced, standardized assessment, and criterion-referenced assessment.
- developing guidelines, standards and criteria for classroom-based performance assessments,
- integrating the three-year cycle to refocus criterion-referenced tests,
- integrating the current instructional materials adoption cycle, and possible assessment alternatives utilizing instructional or custom-designed software, and
- reviewing implementation of the technology plan, and the manner in which administrative and school-based subsystems should should support the comprehensive assessment system.

For example, student assessment could be conducted using electronic keypads to enter answer choices, test item-banks for teacher-made tests could be available on-line or through a request system, and samples of student performances on certain tasks could be stored electronically (e.g., audio, video, scanned images). Examination of software and hardware systems, and planning for implementation of major initiatives will have a budget impact of approximately $4,000, and will be budgeted for Fiscal Year 1996.

Dissemination of Assessment Information

While much has been done to provide district personnel with assessment results, it is also necessary to improve the process of informing district stakeholders about the achievement of our students. As such, a plan to disseminate assessment information to parents is being developed, and will accompany the district's report to the Iowa Department of Education regarding reporting of results to the public.

Responding to Building Requests for Information

As school improvement teams undertake the process of school improvement, it is imperative that accurate and timely information be provided, so that purposeful, informed decisions can be made. It has been discovered that some school improvement teams want to *go beyond* the current information, and the manner in which assessment data are currently provided is not sufficient to answer the questions that are being asked. Thus, requests are made to provide more sophisticated "custom" analyses of data. While the time required to fulfill school requests is currently minimal, department staff will continue to investigate alternative methods of providing customized information to schools, in order to improve the efficiency and effectiveness with which information is distributed to schools.

DEFINITIONS

Criterion-Referenced Test - a test that has been assigned a criterion score or percent that is in the definition of mastery or success. If a standard of achievement is not specified, these are often referred to as objectives-based tests.

Grade Equivalent - the grade level for which a score is the real or estimated average. For example, 4.2 represents the fourth year, second month.

Iowa Tests of Basic Skills (ITBS) - a norm-referenced test published by the Iowa Testing Programs in Iowa City, Iowa. It is administered in Grades 3, 4, 6, and 7 in the Des Moines Public Schools. ITBS scores are reported in percentiles, grade equivalents, and normal curve equivalents.

Iowa Tests of Educational Development (ITED) - a norm-referenced test published by the Iowa Testing Programs in Iowa City, Iowa. It is administered in Grade 10 in the Des Moines Public Schools. ITED scores are reported in percentiles.

Mastery Metric - a pre-specified standard that students must achieve in order to demonstrate competence of the subject matter. This mastery standard does not compare students with each other, but with an external standard defined by the objectives of a course and the requirements for demonstrating competence. Thus, all students have an opportunity to demonstrate mastery of subject matter.

Normal Curve Equivalent - an interval scale equivalent of the bell-shaped curve. The conversion process to arrive at an NCE distribution transforms the shape of the bell-shaped curve into a rectangular shape, such that the scores are distributed equally across each point in the distribution.

Norm-Referenced Test - a test that interprets individual performance by comparing a student's score to a previously established norm group, not to a performance criterion. The test is designed for one-half of the students to be above the 50th percentile and one-half below.

Objectives-Based Test - a test designed to measure one or more instructional objectives, usually the critical skills being taught by an educational program.

Percent - the proportion of a total. In testing, it is the number of questions answered correctly divided by the total number of items on the test.

Percentile - a point in the distribution below which a certain percent of the scores fall. For example, the 80th percentile is the point below which 80 percent of the scores lie. The shape of the distribution of percentiles is a bell-shaped curve.

Performance-based Assessment - an assessment in which the task is the skill that students are asked to perform, such as the demonstration of writing proficiency.

Significance - an association between two variables or among a group of variables is said to be statistically significant when [quantitatively] the association fulfills specific predetermined criteria. Statistical significance is largely a function of sample size, and must be weighed against a "meaningfulness" criterion. In addition to or in the absence of statistical significance, results judged as having educational or practical meaning may play an important role in the evaluation of outcomes, and in some cases, may be more valid than statistical significance.

Note on Mobility Rate and Free/Reduced price meals:
Data on student mobility and qualification for free or reduced price meals (used for analysis of ITBS data) were taken from the student data files at Mid-Iowa Computer Center as of Friday, February 4, 1993 (the Friday before testing began). Since this information is available for each student, these indices were computed for each grade level within each building.

Mobility rate for each grade within each building was determined by the following formula:

$$\frac{\text{(Number of entries + Number of exits)}}{\text{Average daily membership}} \times 100$$

Average daily membership was computed by taking the official student enrollment "as of" the official count date (the third Friday in September), adding all of the entries after the official count date, and subtracting all of the exits after the official count date. Number of entries and exits were counted after the official count date.

Percent of students on free or reduced price meals was determined by combining the number of students on free and on reduced, and dividing by the average daily membership for that grade.

The data for students receiving free or reduced price meals for the criterion-referenced tests were taken from student data files at MICC on the date that the files were created (during June, 1994).

Appendix B

Table B1. 1993-1994 ITBS SUMMARY SHEET ELEMENTARY SCHOOL

SCHOOL	Grade 3 Core Total	Grade 3 % Mobility	Grade 3 % Fr/Red	Grade 4 Core Total	Grade 4 % Mobility	Grade 4 % Fr/Red
Adams	67	11.76	37.25	49	11.59	30.43
Brooks	16	22.81	71.93	42	21.28	63.83
Cattell	68	19.12	51.47	57	20.00	40.00
Douglas	64	10.96	36.99	74	11.39	36.71
Edmunds	28	9.72	59.72	30	6.25	68.75
Findley	70	15.87	73.02	83	17.31	78.85
Garton	40	31.25	66.67	51	13.21	39.62
Granger	76	6.06	46.97	71	11.86	25.42
Greenwood	97	9.76	18.29	96	3.22	19.18
Hanawalt	97	8.62	12.07	97	9.26	14.81
Hillis	74	9.33	32.00	84	16.39	31.15
Howe	38	8.06	40.32	74	14.29	55.10
Hubbell	84	12.70	20.63	83	1.64	21.31
Jackson	64	9.86	43.66	77	9.23	36.92
Jefferson	93	1.27	10.13	97	4.11	2.74
Longfellow	14	30.61	91.84	31	32.50	95.00
Lovejoy	66	22.64	49.06	55	20.37	53.70
Lucas	18	14.04	84.21	20	5.88	88.24
Madison	46	13.95	44.19	71	14.29	53.57
Mann	*	16.67	50.00	57	18.87	56.60
Mc Kee	42	6.35	46.03	43	9.09	45.45
Mc Kinley	12	12.24	75.51	24	6.82	70.45
Mitchell	52	10.00	37.50	63	10.91	41.82
Monroe	95	17.89	35.79	86	12.37	38.14
Moore	85	17.33	37.33	85	8.96	37.31
Moulton	15	43.10	100.00	44	27.94	83.82
Oak Park	48	10.00	52.86	49	11.54	51.92
Park Avenue	63	14.15	48.11	51	22.58	43.01
Perkins	66	11.21	53.45	74	18.09	46.81
Phillips	68	11.11	31.48	49	11.90	28.57
Pleasant Hill	83	11.36	15.91	82	1.92	17.31
Stowe	52	10.77	70.77	59	10.61	54.55
Studebaker	68	19.75	24.69	71	9.72	18.06
Wallace	25	18.18	67.27	43	7.32	63.41
Watrous	44	21.28	34.04	70	25.58	39.53
Willard	42	14.29	54.29	40	16.00	64.00
Windsor	77	15.28	29.17	91	5.41	25.68
Woodlawn	63	6.45	23.66	76	8.57	38.57
Wright	60	13.73	35.29	66	7.27	25.45
DISTRICT	63	14.08	45.31	68	12.73	43.30

*Core Total Score not available

Appendix C

Table C1. 1993-1994 ITBS SUMMARY SHEET MIDDLE SCHOOL

SCHOOL	Grade 6 Core Total	Grade 6 % Mobility	Grade 6 % Fr/Red	Grade 7 Core Total	Grade 7 % Mobility	Grade 7 % Fr/Red
Brody	68	9.02	24.18	70	13.93	26.23
Callanan	80	8.96	35.48	77	11.50	31.42
Goodrell	50	10.96	42.11	47	14.55	37.09
Harding	36	15.90	59.72	40	19.72	61.59
Hiatt	46	16.84	62.76	37	21.64	54.39
Hoyt	40	18.48	46.92	53	15.98	40.57
McCombs	54	11.64	38.62	62	15.96	27.66
Meredith	61	8.17	30.74	73	12.05	24.10
Merrill	77	9.95	32.46	81	6.97	30.85
Weeks	70	11.06	40.71	74	14.81	40.33
DISTRICT	61	11.98	41.28	64	14.73	37.74

Appendix D

District Criterion-Referenced, Objectives-Based Tests: Historical Disaggregated Data

The tables in this appendix (and in Appendix F) show:

1) The percent of students in a category that scored at or above the district criterion of 70% on the end-of-course test, and
2) The total number of students in a category that took the test.

Example: Elementary Mathematics: Math 2 Total:

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 2 Total	83.8	83.5	84.2	87.1	69.5	73.4	90.9
1991-1992	2377	1179	1198	1941	436	954	1422

83.8% of all 2nd grade students tested achieved a 70% or better on this test (sum of the Core items and the Problem Solving items)
83.5% of the 2nd grade females achieved a 70% or better on this test.
84.2% of the 2nd grade males achieved a 70% or better on this test.
87.1% of the 2nd grade non-minority students achieved a 70% or better on this test.
69.5% of the 2nd grade minority students achieved a 70% or better on this test
73.4% of the 2nd grade students receiving free or reduced price meals achieved a 70% or better on this test.
90.9% of the 2nd grade students not receiving free or reduced price meals achieved a 70% or better on this test.

The following tests were given at the end of each semester:
All Home Economics tests
World History (S1 and S2; different tests)
Economics (S1 and S2; different forms)
English 10 (S1 and S2; results were combined for annual analysis, since this test is the same test given at the end of each semester.)

All reading tests for elementary students were given at the time that a student completed a particular book in the series. Results represent a each student's final end-of-book test for the year (unduplicated count). All reading tests for middle school were administered at the end of the school year. If students progress at an appropriate pace, they should be able to complete Level 5 during Grade 1, Levels 6 and 7 during Grade 2, Levels 8 and 9 during Grade 3, and Levels 10 through fourteen in Grades 4 through 8 (one level each year).

The remaining tests were administered at the end of the school year:
Middle School & High School Science
All Mathematics (elementary) tests consist of two parts: a section on Core Concepts and Computation, and a section on Problem Solving. The Math Total score is computed by adding the scores of both sections.
Middle School Reading
Middle School Social Science (Grade 6 & 8)
All Language Arts (except Grade 10)
All French & Spanish

Appendix D

Table D1. Reading: Elementary

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
A New Day Level 5 1991-1992	89.7 1537	89.9 805	89.3 732	90.1 298	87.4 239	84.8 545	92.3 991
A New Day Level 5 1992-1993	91.9 1492	93.2 737	90.6 755	93.1 1231	86.2 261	87.2 579	94.9 913
A New Day Level 5 1993-1994	90.0 1295	90.5 681	89.6 614	90.2 1068	89.4 227	82.3 469	94.4 826
Garden Gates Level 6 1991-1992	76.5 620	78.8 288	74.4 332	76.2 463	77.1 157	68.9 286	82.9 334
Garden Gates Level 6 1992-1993	78.7 577	78.1 270	79.2 307	80.2 419	74.7 158	76.4 343	82.1 234
Garden Gates Level 6 1993-1994	77.1 528	71.8 227	81.1 301	81.0 399	65.1 129	74.5 290	80.3 238
Going Places Level 7 1991-1992	93.4 1634	94.2 829	92.5 805	94.7 1350	87.3 284	89.1 599	95.8 1033
Going Places Level 7 1992-1993	95.3 1651	95.5 866	95.2 785	96.2 1378	91.2 273	93.2 628	96.7 1023
Going Places Level 7 1993-1994	95.3 1740	96.1 890	94.6 850	96.3 1423	90.9 317	92.2 689	97.4 1051
Castles of Sand Level 8 1991-1992	75.1 714	77.7 327	72.9 387	78.3 535	65.4 179	70.8 332	78.7 381
Castles of Sand Level 8 1992-1993	73.4 504	75.2 218	72.0 286	72.6 379	76.0 125	71.5 277	75.8 227
Castles of Sand Level 8 1993-1994	71.4 405	76.6 171	67.5 234	73.9 295	64.5 110	68.2 239	75.9 166

Table D1. Reading: Elementary (continued)

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
On the Horizon Level 9	90.3	91.2	89.4	91.7	83.4	85.3	93.2
1991-1992	1761	885	876	1466	295	631	1127
On the Horizon Level 9	89.9	91.6	88.2	91.4	82.7	84.2	93.2
1992-1993	1745	867	878	1438	307	652	1093
On the Horizon Level 9	88.8	90.4	87.0	90.7	79.6	83.2	92.2
1993-1994	1701	883	818	1402	299	641	1060
Silver Secrets Level 10	84	84.5	83.6	85.1	78.8	75.4	88.9
1991-1992	1765	894	871	1468	297	629	1131
Silver Secrets Level 10	84.1	85.2	83.1	87.0	71.8	73.8	90.5
1992-1993	1853	918	935	1502	351	706	1147
Silver Secrets Level 10	87.2	88.0	86.4	88.9	79.8	80.3	91.5
1993-1994	1822	920	902	1475	347	701	1121
Dream Chasers Level 11	85.5	87.3	83.5	87.4	75.1	79	88.6
1991-1992	1507	774	733	1274	233	482	1023
Dream Chasers Level 11	88.7	90.5	86.7	90.6	79.5	83.2	91.7
1992-1993	1618	853	765	1340	278	570	1048
Dream Chasers Level 11	86.4	86.0	86.9	88.7	74.7	79.0	90.4
1993-1994	1547	794	753	1294	253	544	1003

Appendix D

Table D2. Reading: Middle School

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Wind by the Sea Level 12	66.1	70.1	61.7	71.5	43.3	48.4	74.3
1991-1992	1642	850	792	1328	314	519	1123
Wind by the Sea Level 12	75.6	76.7	74.5	78.9	61.0	61.2	84.0
1992-1993	1952	983	969	1590	362	720	1232
Wind by the Sea Level 12	75.6	79.5	71.4	79.0	61.5	63.0	83.0
1993-1994	1964	1014	950	1574	390	732	1232
Star Walk Level 13	59.3	63.4	55.2	63.2	41.2	40.5	66.7
1991-1992	1435	718	717	1180	255	407	1028
Star Walk Level 13	74.4	77.7	70.9	77.3	62.7	59.2	82.1
1992-1993	2029	1051	978	1630	399	679	1350
Star Walk Level 13	73.2	75.2	71.2	77.0	56.9	56.4	81.7
1993-1994	1864	930	934	1507	357	626	1238
Worlds Beyond Level 14	50.7	56.5	45.2	52.8	43.3	40.3	54.9
1991-1992	647	317	330	506	141	186	461
Worlds Beyond Level 14	52.0	57.9	45.3	54.8	40.3	37.4	59.2
1992-1993	1006	534	472	810	196	334	672
Worlds Beyond Level 14	51.0	56.0	45.7	54.4	39.5	38.2	59.6
1993-1994	531	277	254	412	119	212	319

Appendix D

Table D3. Mathematics: Elementary

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 2 Total 1991-1992	83.8	83.5	84.2	87.1	69.5	73.4	90.9
	2377	1179	1198	1941	436	954	1422
Math 2 Total 1992-1993	85.2	85.0	85.3	88.9	70.8	76.6	92.1
	2513	1217	1296	1989	524	1130	1383
Math 2 Total 1993-1994	84.1	82.8	85.2	87.2	71.1	74.2	91.7
	2464	1199	1265	1976	488	1083	1381
Math 2 Core 1991-1992	91.2	90.9	91.5	92.7	84.6	84.7	95.6
	2377	1179	1198	1941	436	954	1422
Math 2 Core 1992-1993	91.6	91.8	91.4	93.2	85.5	86.5	95.8
	2514	1218	1296	1990	524	1131	1383
Math 2 Core 1993-1994	89.4	89.0	89.8	91.3	81.8	83.6	94.0
	2464	1199	1265	1976	488	1083	1381
Math 2 Problem Solving 1991-1992	67.8	65.6	69.9	71.8	50	52.4	78.1
	2377	1179	1198	1941	436	954	1422
Math 2 Problem Solving 1992-1993	70.3	70.3	70.4	75.0	52.7	57.4	80.8
	2513	1217	1296	1989	524	1130	1383
Math 2 Problem Solving 1993-1994	69.9	68.1	71.5	73.5	55.1	58.6	78.7
	2465	1200	1265	1977	488	1083	1382
Math 3 Total 1991-1992	74.9	75.4	74.5	78	61.7	62.6	83.3
	2360	1138	1222	1919	441	953	1405
Math 3 Total 1992-1993	78.5	78.6	78.3	81.4	66.5	68.1	86.4
	2316	1147	1169	1856	460	1005	1311
Math 3 Total 1993-1994	76.2	78.0	74.6	80.4	61.4	66.3	84.0
	2362	1143	1219	1844	518	1041	1321

Table D3. Mathematics: Elementary (continued)

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 3 Core 1991-1992	75.3	75.7	74.9	77.4	66.1	64.2	83
	2381	1152	1229	1932	449	971	1408
Math 3 Core 1992-1993	77.3	78.4	76.1	80.0	66.2	66.1	85.9
	2326	1149	1177	1864	462	1011	1315
Math 3 Core 1993-1994	75.1	76.8	73.5	78.5	62.9	64.8	83.2
	2363	1143	1220	1845	518	1041	1322
Math 3 Problem Solving 1991-1992	70.1	69.1	71.1	73.7	54.8	58.2	78.3
	2358	1136	1222	1918	440	952	1404
Math 3 Problem Solving 1992-1993	73.7	71.1	76.4	77.6	58.0	61.7	83.0
	2316	1147	1169	1856	460	1005	1311
Math 3 Problem Solving 1993-1994	71.8	72.3	71.4	76.0	56.9	61.6	79.9
	2362	1143	1219	1844	518	1041	1321
Math 4 Total 1991-1992	59.6	59.6	59.6	64.2	40.6	45	68.2
	2223	1093	1130	1789	434	826	1396
Math 4 Total 1992-1993	63.3	62.1	64.4	68.0	43.4	48.6	74.0
	2241	1076	1165	1810	431	947	1294
Math 4 Total 1993-1994	62.4	61.0	63.8	66.4	46.6	47.5	73.0
	2180	1093	1087	1742	438	902	1278
Math 4 Core 1991-1992	52	52.2	51.7	55.8	35.9	37.4	60.5
	2223	1093	1130	1789	434	826	1396
Math 4 Core 1992-1993	57.2	56.9	57.4	61.1	40.7	44.5	66.4
	2295	1105	1190	1850	445	970	1325
Math 4 Core 1993-1994	55.8	55.5	56.1	59.6	40.9	41.6	65.8
	2183	1095	1088	1743	440	904	1279

Table D3. Mathematics: Elementary (continued)

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 4 Problem Solving 1991-1992	66.6 2223	66.6 1093	66.6 1130	71.2 1789	47.9 434	54.6 826	73.7 1396
Math 4 Problem Solving 1992-1993	68.7 2243	67.1 1077	70.2 1166	73.3 1812	49.2 431	55.7 949	78.2 1294
Math 4 Problem Solving 1993-1994	68.3 2180	67.2 1093	69.4 1087	73.1 1742	49.3 438	54.9 902	77.8 1278
Math 5 Total 1991-1992	55 2126	53.5 1070	56.6 1056	59 1734	37.5 392	39 803	64.8 1323
Math 5 Total 1992-1993	62.0 2196	62.0 1102	62.0 1094	66.6 1744	44.0 452	48.2 875	71.1 1321
Math 5 Total 1993-1994	55.7 2169	54.6 1065	56.9 1104	58.9 1729	43.4 440	41.8 922	66.1 1247
Math 5 Core 1991-1992	50.8 2128	49.7 1071	51.9 1057	54.1 1735	36.4 393	36.1 804	59.7 1324
Math 5 Core 1992-1993	57.6 2198	56.7 1103	58.6 1095	61.4 1746	43.1 452	44.1 877	66.6 1321
Math 5 Core 1993-1994	50.5 2170	50.7 1065	50.3 1105	53.0 1730	40.7 440	38.9 922	59.1 1248
Math 5 Problem Solving 1991-1992	65.2 2171	62.8 1090	67.5 1081	70 1764	44.5 407	49.7 819	74.6 1352
Math 5 Problem Solving 1992-1993	70.9 2196	71.5 1102	70.2 1094	76.1 1744	50.7 452	59.2 875	78.6 1321
Math 5 Problem Solving 1993-1994	65.9 2169	63.8 1065	67.8 1104	69.9 1729	50.2 440	51.8 922	75.3 1247

Table D4. Mathematics: Middle School

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Pre-Algebra 1993-1994	54.4	53.3	55.6	56.5	42.5	41.7	57.7
	706	368	338	600	106	144	562

Table D5. Mathematics: High School

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Introductory Mathematics 1993-1994	17.6	15.2	19.4	22.6	7.6	10.4	22.0
	431	184	247	287	144	163	268
Introductory Algebra 1991-1992	37	34.3	39.9	36.8	37.6	39.9	36.2
	611	315	296	478	133	138	473
Introductory Algebra 1992-1993	37.6	37.1	38.0	39.4	31.1	34.1	39.2
	548	272	276	429	119	170	378
Introductory Algebra 1993-1994	42.9	38.4	47.8	42.3	47.1	45.2	42.2
	140	73	67	123	17	31	109
Geometry 1991-1992	57.6	55.3	59.9	58.9	50	51.9	58.3
	929	468	461	789	140	106	823
Geometry 1992-1993	54.9	52.8	57.0	57.1	44.8	45.7	56.4
	854	426	428	700	154	116	738
Geometry 1993-1994	55.8	54.3	57.3	57.5	48.7	52.2	56.4
	970	497	473	779	191	138	832
Algebra II 1991-1992	36.9	37.9	36	40.5	22	23.9	38.3
	474	224	250	383	91	46	428
Algebra II 1992-1993	33.2	31.0	35.5	32.6	36.1	41.6	32.0
	736	378	358	614	122	89	647
Algebra II 1993-1994	30.6	25.5	36.3	32.0	25.2	37.7	29.7
	542	286	256	435	107	61	481

Table D6. Language Arts: Middle School

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Language Arts Grade 6 1991-1992	62.8 2025	66.4 1061	58.8 964	66.9 1657	44.3 368	45.0 685	71.9 1340
Language Arts Grade 6 1992-1993	66.9 2006	69.2 1016	64.6 990	69.7 1662	53.8 344	51.1 724	75.9 1282
Language Arts Grade 6 1993-1994	65.1 1935	69.8 1000	60.1 935	69.2 1554	48.3 381	50.6 709	73.5 1226
Language Arts Grade 7 1991-1992	54.9 1825	62.7 932	46.8 893	57.8 1508	41.3 317	37.2 540	62.3 1285
Language Arts Grade 7 1992-1993	56.1 1941	60.9 1004	51.0 937	59.9 1570	39.9 371	38.5 636	64.7 1305
Language Arts Grade 7 1993-1994	58.3 1881	63.0 940	53.6 941	62.1 1529	41.8 352	38.8 632	68.1 1249
Language Arts Grade 8 1991-1992	56.4 1846	63.1 915	49.8 931	59.0 1529	43.8 317	41.7 516	62.1 1330
Language Arts Grade 8 1992-1993	59.1 1815	64.6 922	53.3 893	61.6 1499	47.2 316	41.5 525	66.2 1290
Language Arts Grade 8 1993-1994	62.1 1908	68.1 997	55.5 911	66.1 1519	46.5 389	42.8 587	70.7 1321

Table D7. English: High School

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
English 9 1993-1994	72.0	76.3	67.5	76.9	53.4	56.3	77.1
	1705	870	835	1349	356	414	1291
English 10 1991-1992	65.4	68.3	62.6	67.7	54.9	56.4	67.2
	1516	738	778	1243	273	259	1257
English 10 1992-1993	68.7	72.8	64.4	70.5	59.8	59.9	70.6
	1350	688	662	1121	229	247	1103
English 10 1993-1994	68.4	73.3	63.4	71.4	56.2	54.6	71.5
	1526	775	751	1229	297	280	1246

Table D8. Foreign Language: Middle School

Test Name	All Students	Females	Males	Non-Minority Students	Minority Students	Free & Reduced	Non Free & Reduced
MS French 1993-1994	46.4	53.3	36.1	45.6	50.0	36.0	48.4
	153	92	61	125	28	25	128
MS Spanish 1993-1994	46.5	54.1	37.0	47.1	44.3	45.2	47.0
	372	207	165	293	79	93	279

Table D9. Foreign Language: High School

Test Name	All Students	Females	Males	Non-Minority Students	Minority Students	Free & Reduced	Non Free & Reduced
HS French 1993-1994	61.8	68.2	51.5	63.4	54.8	39.4	67.1
	173	107	66	142	31	33	140
HS Spanish 1993-1994	49.2	52.9	44.3	51.6	38.2	41.4	51.0
	612	350	262	502	110	116	496

Table D10. Science: Middle School

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Science 6 1992-1993	29.1	25.3	32.7	32.6	13.3	16.5	36.2
	1964	961	1003	1603	361	714	1250
Science 6 1993-1994	29.6	28.9	30.3	33.7	16.1	15.5	37.7
	1552	800	752	1191	361	569	983
Science 7 1992-1993	41.4	38.2	44.8	44.4	29.2	25.3	49.0
	1905	995	910	1522	383	616	1289
Science 7 1993-1994	43.4	39.6	47.1	48.1	25.9	24.4	53.1
	1670	835	835	1311	359	566	1104
Science 8 1991-1992	33.5	29.7	37.4	36.5	20.4	19	39.6
	1718	865	853	1404	314	506	1212
Science 8 1992-1993	35.1	31.3	39.0	38.0	21.8	19.5	41.4
	1665	855	810	1367	298	481	1184
Science 8 1993-1994	38.1	34.7	41.8	42.3	23.1	25.9	43.8
	1555	807	748	1217	338	494	1061
Central Acad. Earth Science 1993-1994	23.7	16.4	32.3	24.8	16.7	12.5	24.4
	135	73	62	117	18	8	127

Table D11. Science: High School

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Earth Science 1991-1992	11.9 1048	7.4 527	16.5 521	13.3 860	5.9 188	6.9 216	13.2 832
Earth Science 1992-1993	10.9 1096	6.8 555	15.0 541	12.3 878	5.0 218	7.7 233	11.7 863
Earth Science 1993-1994	18.9 1168	14.9 605	23.3 563	19.4 918	17.2 250	15.0 267	20.1 901
Biology 1991-1992	29.1 1134	26.5 589	31.9 545	32.1 922	16 212	17.7 141	30.7 993
Biology 1992-1993	26.4 1105	23.7 596	29.7 509	29.8 890	12.6 215	17.8 191	28.2 914
Biology 1993-1994	25.5 1239	24.8 658	26.3 581	28.9 1022	9.7 217	15.7 178	27.1 1061
Chemistry 1991-1992	17.8 640	15.1 338	20.9 302	19.3 534	10.4 106	13.8 58	18.2 582
Chemistry 1992-1993	26.0 628	19.5 302	31.9 326	28.4 517	14.4 111	11.1 63	27.6 565
Chemistry 1993-1994	24.0 583	19.6 286	28.3 297	26.1 464	16.0 119	15.9 63	25.0 520

Table D12. Social Science: Middle School

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
World Geog./ West. Hem. Gr. 6 1991-1992	36 1894	33.8 1002	38.3 892	38.7 1535	24.2 359	19.6 634	44.2 1260
World Geog./ West. Hem. Gr. 6 1992-1993	40.3 1889	39.3 943	41.2 946	43.7 1557	24.4 332	23.8 672	49.4 1217
World Geog./ West. Hem. Gr. 6 1993-1994	41.7 1682	41.8 870	41.5 812	44.4 1347	30.7 335	26.9 606	50.0 1076
American Civics Grade 8 1991-1992	28.1 1752	28.8 864	27.5 888	30 1435	19.9 317	16.3 497	32.8 1255
American Civics Grade 8 1992-1993	28.4 1697	28.2 873	28.6 824	30.8 1391	17.6 306	15.0 501	34.0 1196
American Civics Grade 8 1993-1994	30.2 1700	31.9 888	28.3 812	33.1 1363	18.4 337	16.9 539	36.3 1161
Central Acad. Government 1993-1994	89.4 66	82.4 34	96.9 32	90.9 55	81.8 11	71.4 7	91.5 59

Table D13. Social Science: High School

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Government 1993-1994	63.7 535	61.7 256	65.6 279	66.7 426	52.3 109	46.8 79	66.7 456
Economics Form A 1992-1993	48.0 342	46.3 164	49.4 178	50.7 302	27.5 40	27.8 18	49.1 324
Economics Form A 1993-1994	46.6 337	37.7 162	54.9 175	48.5 293	34.1 44	31.3 16	47.4 321
Economics Form B 1992-1993	30.4 404	24.9 205	36.2 199	32.5 357	14.9 47	25.0 36	31.0 368
Economics Form B 1993-1994	26.9 412	21.9 210	32.2 202	28.7 338	18.9 74	19.5 41	27.8 371

Table D14. High School Family & Consumer Sciences

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Food & Nutrition 1991-1992	24.1 328	24.1 212	24.1 116	25.1 247	21 81	19.4 108	26.4 220
Food & Nutrition 1992-1993	14.4 327	18.4 207	7.5 120	16.9 243	7.1 84	8.6 105	17.1 222
Food & Nutrition 1993-1994	18.5 411	21.9 256	12.9 155	21.1 313	10.2 98	12.0 125	21.3 286
Child Development 1992-1993	63.2 495	64.9 439	50.0 56	67.9 377	48.3 118	52.5 141	67.5 354
Child Development 1993-1994	60.7 392	63.5 362	26.7 30	66.3 320	36.1 72	43.4 113	67.7 279
Textiles & Clothing 1991-1992	24.4 90	22.7 88	100 2	31 58	12.5 32	12.5 32	31 58
Textiles & Clothing 1992-1993	21.6 88	22.1 86	0.0 2	29.1 55	9.1 33	9.4 32	28.6 56
Textiles & Clothing 1993-1994	26.4 72	27.5 69	0.0 3	32.7 52	10.0 20	11.5 26	34.8 46
Personal Development 1993-1994	53.0 202	57.9 145	40.4 57	56.2 137	46.2 65	47.1 68	56.0 134
Parenting 1992-1993	61.8 102	65.2 92	30.0 10	63.1 84	55.6 18	52.6 19	100.0 53
Parenting 1993-1994	57.5 134	60.7 117	35.3 17	60.6 109	44.0 25	41.4 29	61.9 105

Appendix E

Table E1. Descriptive Statistics for Elementary School Criterion Referenced Tests*

Test	Mean (Percent Correct)	Standard Deviation	Number of Students	Reliability	Standard Error of Measurement
Language Arts 4	71.38	17.82	2176	0.757	8.79
Math 2 Total	83.62	13.58	2464	0.853	5.22
Math 2 Core	86.55	15.43	2464	0.729	8.04
Math 2 Problem Solving	76.66	19.98	2465	0.644	11.91
Math 3 Total	78.78	16.15	2362	0.903	5.04
Math 3 Core	78.09	19.88	2363	0.851	7.68
Math 3 Problem Solving	76.65	18.11	2362	0.576	11.80
Math 4 Total	72.66	17.76	2180	0.905	5.49
Math 4 Core	70.50	18.68	2183	0.838	7.52
Math 4 Problem Solving	75.08	21.43	2180	0.699	11.75
Math 5 Total	70.46	18.50	2169	0.920	5.23
Math 5 Core	67.71	20.32	2170	0.848	7.92
Math 5 Problem Solving	73.85	21.49	2169	0.743	10.90
RDG L5 A New Day	87.85	14.19	1295	0.863	5.26
RDG L6 Garden Gates	78.49	16.95	528	0.902	5.31
RDG L7 Going Places	89.59	11.30	1740	0.865	4.16
RDG L8 Castles of Sand	76.24	13.75	405	0.878	4.81
RDG L9 On the Horizon	84.84	13.28	1701	0.868	4.82
RDG L10 Silver Secrets	83.48	13.38	1822	0.909	4.04
RDG L11 Dream Chasers	83.75	12.84	1547	0.906	3.93

*Does not include tests piloted during 1993-94

Table E2. Descriptive Statistics for Middle School Criterion Referenced Tests*

Test	Mean (Percent Correct)	Standard Deviation	Number of Students	Reliability	Standard Error of Measurement
MS French	68.46	15.08	153	0.773	7.18
MS Spanish	65.30	19.83	372	0.866	7.27
Language Arts 6	74.30	19.05	1935	0.871	6.84
Language Arts 7	70.30	19.20	1881	0.869	6.94
Language Arts 8	71.36	17.28	1908	0.834	7.04
Pre-Algebra	70.49	14.77	706	0.872	5.28
RDG L12 Wind By The Sea	79.11	17.91	1964	0.926	4.87
RDG L13 Star Walk	77.70	18.01	1864	0.915	5.25
RDG L14 Worlds Beyond	66.46	18.72	531	0.896	6.03
Science 6	60.02	17.01	1552	0.774	8.08
Science 7	64.08	20.89	1670	0.869	7.56
Science 8	63.19	16.00	1555	0.801	7.15
CA Earth Science	64.13	9.76	135	0.841	3.90
World Geog./West. Hemis. Grade 6	65.35	16.88	1682	0.794	7.66
American Civics Grade 8	60.11	16.28	1700	0.848	6.36
CA Government	81.32	8.25	66	0.803	3.66

*Does not include tests piloted during 1993-94

Table E3. Descriptive Statistics for High School Criterion Referenced Tests*

Test	Mean (Percent Correct)	Standard Deviation	Number of Students	Reliability	Standard Error of Measurement
HS French	72.25	19.07	173	0.886	6.45
HS Spanish	67.23	18.32	612	0.809	8.01
English 9	76.69	15.91	1705	0.834	6.49
English 10	74.08	15.40	1526	0.787	7.11
Food, Nutrition, & Health	57.16	13.56	411	0.869	4.91
Child Development	70.57	13.40	392	0.876	4.72
Textiles & Clothing	60.21	15.26	72	0.808	6.70
Parenting	68.70	14.72	134	0.919	4.18
Personal Development & Health	69.97	12.51	202	0.851	4.84
Introductory Algebra	66.09	14.53	140	0.802	6.46
Introductory Math	55.42	14.36	431	0.879	4.99
Geometry	70.78	14.98	970	0.871	5.38
Algebra II	61.33	15.28	542	0.867	5.57
Earth Science	54.43	15.20	1168	0.841	6.07
Biology	60.29	14.86	1239	0.859	5.59
Chemistry	58.33	14.50	583	0.872	5.19
Economics Form A	67.58	16.19	337	0.780	7.59
Economics Form B	60.09	15.72	412	0.720	8.32
Government	72.94	14.18	535	0.803	6.29

*Does not include tests piloted during 1993-94

Table F1. Elementary Language Arts Grade 4 Pilot Test Results

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Language Arts Grade 4 1993-1994	57.4 2176	62.6 1086	52.1 1090	60.4 1736	45.2 440	45.1 906	66.1 1270

Table F1. Elementary Science Grades 3, 4, & 5 Module Pilot Test Results

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Science 3 Structures of Life 1993-1994	81.5 470	79.3 242	83.8 228	85.6 390	61.3 80	75.3 170	85.0 300
Science 3 Measurement 1993-1994	57.3 454	54.8 221	59.7 233	59.0 349	51.4 105	54.0 237	60.8 217
Science 3 Earth Materials 1993-1994	64.9 679	64.6 328	65.2 351	72.1 495	45.7 184	53.5 297	73.8 382
Science 4 Pillbug & Pond Life 1993-1994	72.0 307	72.3 148	71.7 159	74.2 252	61.8 55	60.7 122	79.5 185
Science 4 Water 1993-1994	77.4 720	73.4 384	81.8 336	79.2 605	67.8 115	69.6 283	82.4 437
Science 4 Electricity 1993-1994	59.2 661	55.2 328	63.1 333	61.0 525	52.2 136	51.5 295	65.3 366
Science 5 Landforms 1993-1994	63.0 570	62.2 288	63.8 282	65.5 473	50.5 97	51.4 257	72.5 313
Science 5 Powders & Crystals 1993-1994	79.3 715	81.7 355	76.9 360	81.5 600	67.8 115	72.9 258	82.9 457
Science 5 Levers & Pulleys 1993-1994	57.0 669	52.6 342	61.5 327	59.4 529	47.9 140	45.0 271	65.1 398

Note: All elementary science modules were piloted in 1993-94, and are being finalized for 1994-95.

Table F3. Middle School Algebra I Pilot Test Results

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Middle School Algebra I PILOT 1993-1994	62.6 388	63.9 191	61.4 197	62.4 351	64.9 37	41.0 39	65.0 349

Table F4. High School Algebra I Pilot Test Results

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
High School Algebra I PILOT 1993-1994	37.3 910	39.1 511	34.8 399	39.0 739	29.8 171	30.9 194	39.0 716

Table F5. High School Physics Pilot Test Results

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Physics PILOT 1993-1994	19.2 381	17.6 176	20.5 205	19.0 331	20.0 50	38.1 21	18.1 360

Table F6. High School American History (Semester 2) Pilot Test Results

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Am. Hist. S2 PILOT 1993-1994	50.5 862	46.7 437	54.4 425	53.1 674	41.0 188	40.6 155	52.6 707

Appendix G

1994-95 Test Development Plans

Development of criterion-referenced tests will continue throughout 1994-95 for the following tests:

Textiles & Clothing: Pilot Spring 1995.
Vocational Education (academic test): Pilot Sem. 1; Finalize for Spring 1995.

Language Arts Grade 4: Finalize for Spring 1995.

Science 3, 4, 5: Finalize Modules for use during 1994-95 school year.
Biology: 8 Modules: Pilot during 1994-1995; process during summer 1995.
Chemistry: Pilot Spring 1995.
Physics: Finalize for Semester 1 and Semester 2.

Social Science 3, 4, 5: Pilot Semester 1; Finalize for Spring 1995.
World History Semester 1: Pilot Semester 1.
American History Semester 1: Pilot Semester 1.
World History Semester 2: Pilot Spring 1995.
American History Semester 2: Finalize for Spring 1995.

Math 6, 7, 8: Pilot Spring 1995.
Geometry: Pilot Spring 1995.
Algebra II: Pilot Spring 1995.
Algebra I (Middle School & High School): Finalize for Spring 1995.