HIGH SCHOOL GRADUATION REQUIREMENTS

POLICY STUDY

Iowa Department of Education

Graduation Requirements—Policy Study 94-2

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PREFACE

This study provides information to be used by the State Board members as they study the issues related to high school graduation requirements. It is a working document of information that has been identified for this initiative.

The attributes related to high school graduation requirements which are considered in this study are as follows:

- Carnegie Unit
- Testing
- Grade Point Average
- Demonstrated Mastery

For each of the above the history and current status is presented, along with the examination of the associated policy issues.

The special populations of at-risk students and students with disabilities are presented prior to closing statements.

INTRODUCTION

At the turn of the century, American high schools primarily educated young people who planned to go on to college. With few students attending college at the time, higher education institutions were truly elite. So were the secondary schools that prepared youth to attend them, and high school standards and curriculum were to a large extent controlled by higher education.

Then, from 1900 through the 1920s, the needs of the United States changed. A mass production revolution and a large influx of poorly educated immigrants pushed millions of barely literate people from farms to cities. The jobs available to the masses during this time were in assembly plants and factories, and the education needed to be successful in them was approximately an eighth-grade literacy level. Even this accomplishment was a formidable one for the education system considering the millions of immigrants who did not speak or write English.

Young people at this time were kept out of the labor market by unions, and many were placed in schools offering courses that would prepare them for skilled trades. This vocational school concept was based on the model of the mechanics institute popular at the time in Great Britain and vocational training in Germany (National Center on Education and the Economy [NCEE], 1994).

All of these factors had an influence on what the American high school was to become during the period just prior to World War II. Most states had raised the compulsory attendance age to 16. A young person attending high school could be placed on one of three separate tracks: one for the academically elite students who would go on to college, one for those who would receive training for a skilled trade, and one track which provided the minimum literacy needed for most office and factory jobs. In many states, African-Americans attended their own schools in a period of officially sanctioned segregation.

In the 1920s, less than 23 percent of the American student populace graduated from high school, and the term "dropout" had not been coined. Only students on the academic track graduated. Consequently, finishing high school and receiving a diploma was a mark of distinction. In the 1940s, about 50 percent of all students graduated, and by 1964, 69 percent. By 1985, over 70 percent finished high school, and about half of these graduates went on to some kind of postsecondary education.

Prior to World War II many theories about education and the goals of high school surfaced around the country. John Dewey was part of a progressive education movement that believed all fully functioning adults should have a high school education, not just an elite few. Dewey's vision was transformed by some of his own supporters from a broad and intellectually challenging curriculum for all to a child-centered movement of minimal intellectual substance. In the post-war years the Carnegie-funded study of the American high school, led by James Conant, introduced the concept of the comprehensive curriculum, with a general education for all students as well as elective alternatives for vocational and college-bound students. These concepts of what a high school should be continued to evolve after World War II until it has become the comprehensive educational institution with something for everyone that we are familiar with today (Madaus & Tan, 1993).

The American high school continued to become the gatekeeper of the notion that academic achievement was the result of inherited ability and only a small percentage of the student population was actually capable of successfully completing, or graduating from, a serious academic program (NCEE, 1994). Thus, the tracking system was born and reared with the American high school parenting that system. By the 1970s the majority of young people were graduating from general track programs, and the high school diploma, once a symbol of accomplishment only a few decades before, became not much more than a certificate of attendance.

The diploma is the conventional printed evidence that has historically certified the successful completion of high school in the United States. It

signifies that the student has met certain requirements set by the local school district, by the state or by both.

According to the U.S. Department of Education, all 50 states and the District of Columbia currently award diplomas to their high school graduates. All states award a "standard," or regular diploma; 17 states also offer differentiated diplomas for students who meet additional criteria. These diplomas identify the graduate by designations such as advanced, academic scholar, academic honors, commonwealth scholar, regent's scholar, college preparatory, academic achievement honors, honors general education, honors vocational education and advanced studies. Two additional states add a proficiency endorsement to the diploma if the student passes a state or local minimum competency test. One state, Maryland, awards a special education certificate to students who are unable to meet the high school graduation requirements but have completed a special education program. Florida requires a minimum grade point average of 1.5 for graduation. Of the states contiguous to Iowa, only Missouri awards differentiated diplomas: standard and college preparatory (U.S. Department of Education [USDE], 1993).

In Iowa, as in 47 other states, graduation requirements are based on successful completion of Carnegie units (USDE, 1993). As the school reform movement progresses, however, increased attention is being given to alternative methods of assessing student learning and quantifying academic progress.

CARNEGIE UNIT

HISTORY AND CURRENT STATUS

The Carnegie unit is the method used by most high schools in Iowa and the rest of the United States to determine if a student has met the locally established graduation requirements. The Carnegie unit quantifies a student's secondary school experience in terms of class time devoted to a subject, not level of understanding of the content being studied (Adelman, 1984). According to *A Dictionary of Education* the Carnegie unit is used in the United States and Canada.

Initially the purpose of secondary schools in the United States was to prepare students for college. Prior to the Civil War older colleges and universities had established entrance requirements in terms of specific subjects which should be studied at the secondary level such as arithmetic, geometry, English grammar and ancient history. These requirements did not speak to standards of performance (Adelman, 1984).

The concept of a "unit" was first introduced by the Committee on College Entrance Requirements established by the National Education Association in the 1890s. This committee advocated that all colleges create admission standards by requiring a certain number of "units" of instructional time. Following this recommendation, the Carnegie Foundation for the Advancement of Teaching mandated to colleges wanting to be eligible for participation in its pension fund for college professors the establishment of an entrance requirement of fourteen "units" for freshman year admission (Lageman, 1983; Deighton, 1971). This requirement marked the origin of the so-called "Carnegie unit." With the acceptance of the Carnegie unit, uniformity of expectations for college admission had begun.

Even with the advent of the unit and its association with the Foundation's name, its use was questioned. As early as 1910, the first president of the Foundation argued that uniform testing would be the best way to pass students on from high school to college because he believed testing was a

potentially more effective way to foster the kind of college-high school relationship desired by the Foundation (Lageman, 1983).

Questioning the use of the Carnegie unit by the Foundation reoccurred in the late 1920s and 1930s. Because of this it sponsored the Pennsylvania Study, which ran from 1928 to 1938. This study was designed to use norm-referenced multiple-choice, and true-false tests to measure the knowledge of high school and college students throughout the state (Lageman, 1983).

Also in the 1930s financial support was initially provided to the Progressive Education Association's (PEA) Eight Year Study by the Foundation because it wanted to show that the Carnegie unit should be replaced by testing as the criterion used for admission to college programs. However, the PEA was more interested in evaluation and assessment as it related to pedagogical reform. Hence the financial support was withdrawn because the direction and intent of the study would not be similar to that of the Pennsylvania Study (Lageman, 1983).

During the most recent educational reform movement starting in the 1980s, various educators and researchers were evaluating the use of the Carnegie unit with respect to the fulfillment of graduation requirements for a high school diploma, the content at the secondary level -- what and how it should be taught in light of the differing needs of the individual students -- and the need to cause reform to occur simultaneously at both the secondary and postsecondary levels.

A more recent Canadian study regarding the use of the Carnegie unit was Project ABC (Advancement Based on Competency), a five-year study done cooperatively by the Alberta Ministry of Education and the Calgary Board of Education from 1982-87. The Calgary Board wanted to address the needs of dysfunctional students who were unable to handle the regular program, were significantly underachieving, or who were gifted and talented and needed changes beyond the regular program. The study explored alternatives to the Carnegie unit, using three models and involving three high schools in Calgary. Results suggest that the criterion of time can be removed and replaced by the criterion of demonstrated competency and that competency is

an appropriate basis for advancement at both the unit and course levels. The findings of the Eight Year Study and this one suggest that personalized instruction and continuous progress are viable educational alternatives and should no longer be considered experimental (Barrington, 1987).

In a 1984 article, Clifford Adelman, senior associate at the National Institute of Education, said that changes in standards of content or what is taught and learned behind all those course titles, will make even more difference on the secondary level than increasing the number of units required for high school graduation. The October 1988 report, *Rethinking Curriculum: A Call for Fundamental Reform*, from the National Association of State Boards of Education's Curriculum Study Group, says that states should establish graduation requirements that stress student performance and performance-based assessment procedures, rather than time spent or credits accrued in the form of Carnegie units. In a 1993 talk Ernest L. Boyer advocated that the focus be place on the first and third national education goals, the third being assessment of students in basic subjects. He "urgently hopes that we can move beyond the old Carnegie units and create, for the twenty-first century, a more coherent, more integrative course of study."

According to the *Digest of Education Statistics 1993* (Appendix A), 17 states have differentiated diplomas. In these 17 states a differentiated number of Carnegie units are also required for the given diploma, which typically means a specific number of units required for a given content area. Forty-five of the 50 states set the total number of Carnegie units required for graduation as well as the number of units required for the identified content areas or electives. Colorado has a constitutional prohibition against establishing state requirements, and New Jersey and Indiana do not use standard Carnegie units (USDE, 1993).

The Carnegie unit is the method used by Iowa high schools to determine if a student has met the locally established graduation requirements. Specifically for accredited public and nonpublic schools, Chapter 281-12.5(18) of the Iowa Administrative Code defines a unit to be a course which meets one of the following criteria: It is taught for at least 200 minutes per week for 36 weeks;

it is taught for the equivalent of 120 hours of instruction; or it is an equated requirement as a part of an innovative program.

Current Iowa law requires students to complete coursework in physical education and social studies only. Chapter 256.11(5)"g", Code of Iowa, requires that all physically able students in grades nine through 12 participate in physical education while enrolled in school. During the 75th General Assembly of the State of Iowa an amendment was made to Chapter 280.9A, Code of Iowa, effective July 1, 1994, which requires that all students complete as a requirement of graduation one year of American history and one semester of American government. Iowa law mandates what an accredited school district or high school must provide for enrolled students; Chapter 256.11(5)"a" through "j" identifies the required number of Carnegie units that must be offered and taught at the high school level. The minimum program to be offered and taught in grades nine through twelve is as follows:

a. Five units of science including physics and chemistry; the units of physics and chemistry may be taught in alternate years.
b. Five units of social studies . . . .
c. Six units of English-language arts.
d. Four units of a sequential program in mathematics.
e. Two additional units of mathematics.
f. Four sequential units of one foreign language other than American sign language . . . .
g. All students physically able shall be required to participate in physical education activities during each semester they are enrolled in school except as otherwise provided for in this paragraph. A minimum of one-eighth unit each semester is required . . . .
h. A minimum of three sequential units in at least four of the following six vocational service areas; agriculture, business or office occupations, health occupations, family and consumer sciences or home economics occupations, industrial technology or trade and industrial education, and marketing education . . . .
i. Three units in the fine arts which shall include at least two of the following: dance, music, theatre, and visual arts.
j. One unit of health education . . . .

Chapter 280.14, Code of Iowa, states that the board or governing authority of each school and school district shall establish the high school graduation requirements for its students. More specifically, Chapter 281-12.3(7), Iowa Administrative Code, states that each board providing a program through grade 12 shall adopt a policy establishing the requirements students must meet for high school graduation, including provisions for early graduation.

The Department collects data regarding local district graduation requirements for the areas of mathematics, science, English and social studies. The most recent data available is for the 1993-94 school year (Appendix B) which indicates the percent of districts requiring a given number of Carnegie units. This information is provided by K-12 district enrollment category. The majority of the districts require students to complete two or more units of mathematics and science and three or more units of English and social studies for high school graduation.

In a cover letter written for a 1991 publication (ED 332 320), William T. Randall, Colorado Commissioner of Education, stated that a high school diploma was traditionally an unwritten guarantee that its holder possessed certain skills and knowledge. However, now the perception of the public is that it symbolizes the time the student spent in school and does not reflect quality student performance or what a student is capable of doing, according to Randall.

POLICY ISSUES

The completion of a specified number of Carnegie units is the predominate, traditionally accepted method used for the awarding of a high school diploma. Since its initial usage in the early 1900s, various characteristics of the Carnegie unit developed, as follows:

- It is commonly accepted practice or tradition.

- It establishes the parameters for the number of grades in a high school and the length of the school year, the school day, and the class period.

- It provides uniformity, with specific time allotments for high school subjects, and regularizes programming and scheduling.

- It reports a student's high school work in terms of how many hours and years were spent on a subject rather than how much knowledge and competence were acquired.

- It emphasizes time spent rather than what is learned, the quality of what is learned, and what the needs, interests and abilities of the students are.

- It is used to establish for all students a required number of units to graduate.

- It may not allow for previously acquired knowledge, except in Iowa where a local district school board may wish to use 281—12.5(19) of the Iowa Administrative Code.

- It generally assumes that all students acquire the same amount of knowledge in the same amount of time.

- It allows institutions of higher education to establish entrance requirements, which may simplify the preparation of college-bound students.

- It allows for the acceptance or denial of required units for admission to institutions of higher education or postsecondary programs based specifically upon the course title, not course content.

- It is convenient for academic bookkeeping and the maintenance of student progress by use of the traditional transcript.

- It is accepted and generally understood by principals, teachers, students, parents/guardians and college personnel.

- It may cause incomparability of credits earned from school to school, and the variability of absolute value of credits from subject to subject or content area to content area is a possibility.

- It has led to a standardized test admission requirement in some colleges and universities.

Educational Issues

In reviewing the form of the Carnegie unit as the accepted practice in Iowa schools for the granting of a high school diploma, the following issues should be considered.

The Carnegie unit gives teachers a sense of security about the amount of time available to cover a given subject or course and assists in course planning and development. Because it demands specific requirements in subjects, it may make innovation difficult.

For students, the Carnegie unit assumes that certain academic skills and knowledge are necessary (Barrington, 1987). It can also create difficulty for special populations of students such as special education, gifted and talented, and limited-English-speaking students in meeting high school graduation requirements.

Teaching integrated courses may be made more difficult by the Iowa Administrative Code's requirements of offer and teach specified units and licensure. However, the waiver now available to local school district in 281—12.8 of the Iowa Administrative Code may accommodate such innovative practices. New units, such as community service (Boyer, 1983; Harrison, 1987; Morris, 1992), can be readily added to local graduation requirements.

Administrative Issues

If the status quo is maintained in Iowa schools, then there are not any new or additional administrative issues to be considered. The current Iowa Administrative Code, specifically 281—12.5(19), allows local boards to award

credit on a performance basis through the administration of an examination, provided the examination covers the content ordinarily included in the regular course. The language in this rule does not specifically define what is meant by the word "examination," hence a written or oral examination, portfolios, projects, or performance tasks could be considered as examples of what could be used.

State vs. Local Control

Iowa has a long history of local control. In light of the existing practice and state mandates, the establishment of additional policy(ies) and direction(s), additional legislative mandates, or additional rule-making authority would create more state level control than presently exists.

TESTING

HISTORY AND CURRENT STATUS

Even as the Carnegie unit was being implemented at the turn of this century, the Carnegie Foundation began to posture that testing could be more effective in determining if a student was ready for college. During the 1930s and 1940s various agencies were formed for the purposes of testing. In 1947 the Educational Testing Services (ETS) was incorporated, consolidating these agencies into one (Lageman, 1983).

The University of Iowa initiated the original Iowa High School Testing Program as the first statewide testing program of its type and scope during the 1928-29 school year. This program later was called the Iowa Testing Program (ITP) which it is still known as today (Peterson, 1983). The majority of the school districts in Iowa use ITP's standardized norm referenced instruments--the Iowa Test of Basic Skills (ITBS) and the Iowa Tests of Educational Development (ITED).

The ITBS measures the academic growth of students through the eighth grade in various areas such as vocabulary, reading, language and mathematics. "Composite scores across grades 3 through 8 have been relatively stable and are at or near all time high levels" (Iowa Department of Education [Iowa DE], 1993).

For grades 9-12 the ITED is used to measure the academic growth of students in the areas of vocabulary, interpretation of literature, correctness and appropriateness of expression, quantitative thinking, analysis of social studies and science materials, and use of sources of information. "Average composite scores for Iowa students have increased steadily since 1987 and in 1992 are at all time highs" (Iowa DE, 1993).

The ACT (American College Testing) college entrance examination has four parts--English, mathematics, reading, and science reasoning. Annually Iowa students have consistently scored above the national composite score (Iowa DE, 1993).

In recent years educators have been faced with the wide-spread perception that American society is in trouble because school quality and standards have declined. Students and teachers are thought to be less well prepared than 15 to 20 years ago. Nationally test score data show that mean levels of pupil performance have declined during the last 15 years. On international tests of academic achievement in 19 different subjects, American students were never ranked first or second, but were ranked last seven times (Airasian, 1987). Iowa students, however, rank better in international comparisons. In a comparison with the industrialized nations in the Organization for Economic Cooperation and Development (Taiwan, South Korea, Switzerland, former Soviet Union, Hungary, France, Israel, Canada, Slovenia, Ireland and Scotland) Iowa 13-year-olds tie South Korea and are second only to Taiwan in mathematics competency scores (Crawford, 1993).

In response, to the preception that nationally school quality and standards have declined, 29 states required pupils to take competency tests at selected points on the educational ladder by the end of 1984. Currently, the three most common purposes of state testing programs are accountability, instructional improvement, and program evaluation. Next are student diagnosis/ placement and high school graduation. Virtually all states test students in mathematics and language, and most also test in science, writing and social studies. Legislation requiring high school students to demonstrate mastery, on a state-mandated graduation test in order to receive a regular high school diploma has passed in 17 states and is pending in others (Airasian, 1987).

Of those states that mandate competency tests for high school graduation purposes, just one state program uses a norm-referenced test, and 20 use criterion-referenced tests. Two are using performance tests, 13 use writing samples and no state program uses portfolios (Barton, 1994). In a norm-referenced test student performance is compared to that of other students taking the same test. In a criterion-referenced test student performance is compared to a predetermined performance criteria. A performance test requires a student to produce a response, i.e. a writing assessment.

High school graduation tests, or minimum competency tests, became popular in the United States during the late 70s and more so in the 80s as a response to *A Nation at Risk* (1983). Tests were seen as a means to ensure that high school graduates possessed a satisfactory level of basic skills, usually reading and mathematics, needed for success. The public links state-mandated tests to the maintenance of educational standards and to traditional educational values. Tests are viewed as "fair" because all students are required to take and pass the same test, and "objective" because decisions made from the tests are not influenced greatly by teachers', parents' or principals' personal biases (Bond, 1993).

In the Fall, 1979 the State Board of Public Instruction received the *Final Report of the Task Force on Student Achievement in Iowa.* This task force was created by the Department to address the state and national concern for the quality of Iowa schooling. One finding from the task force was that "schools and teachers needed to use available achievement data more effectively in helping individual students and in analyzing their programs" (Iowa DE, 1979). Also due to the longevity of the Iowa Testing Programs, another finding was that Iowa students were achieving better than students in any other state. In addition the task force recommended that a minimum competency testing program was not needed for the state (Iowa DE, 1979).

Cautions were surfacing from education in the late 70's and early 80's with respect to the use and misuse of tests (Linn, Madaus & Pedulla, 1982). In this paper published in 1982, four cautions were expressed concerning minimum competency testing.

> These cautions are (1) the lack of a defensible means of setting a standard or minimum passing score that divides students into two classes--the competent and the incompetent; (2) the fallability of the tests which is a limitation in any test use but looms very large when major decisions are based solely on the basis of a test score; (3) the adverse impact of rigid reliance on test results for certain groups of minority and handicapped students, which may be partially a consequence of differences in educational experiences and/or of bias in certain items on the test; and (4) the limited validity and/or general lack of evidence

of validity of the test for the purposes of diploma denial, grade-to-grade promotion, or assignment to remedial programs.

A new wave of educational reform in the 1990s has brought a resurgence of interest in high school graduation tests, but the types of skills that are now deemed essential to success have changed. The emphasis now is on students achieving at a higher, not minimum, level (Bond, 1993).

Three characteristics of the new high school certification tests have emerged. First, the new tests are mandated by state legislatures or state boards of education. The Iowa General Assembly has not empowered the State Board to mandate testing of any kind. Second, the state-mandated testing programs eliminate most local district discretion in the selection, administration, content coverage, scoring and interpretation of the tests. Third, the tests have built-in sanctions or rewards associated with specific levels of test performance. These three characteristics result in greater state control of important decisions that were traditionally made at the local level (Airasian, 1987).

The United States has had very little experience with state-mandated certification or graduation tests. The Regent's Examination in New York is similar to the new high school graduation tests in some respects, but the Regent's Examination is elective and is not used to deny a high school diploma. Scholastic Aptitude Tests are also elective and used to measure achievement, not to certify students (Airasian, 1987).

External exams are common in European countries and former colonies of these nations. In these countries an agency external to the school (e.g. ministry of education, a university, a research bureau) sets a series of examinations in a wide variety of specific high school courses. Only one examination is constructed for each course such as chemistry, French, history, algebra, art, and all students in the country take the same exam. Students must pass a certain number of the exams to be certified as successfully completing the high school level of education. Admittance to the next level of education is dependent upon the marks received in these exams (Airasian, 1987).

According to Airasian the European external exam system is similar to the new high school graduation tests in many ways. Both are constructed by an outside agency. Both are mandated. Both are standardized in content, administration and scoring across districts. Both have preset passing scores. Both are used to make important decisions about pupils. However, there are two major differences. The European external exams are designed to measure mastery of content in specific courses. In the United States high school graduation tests typically focus upon basic, non-course-specific mathematics and verbal skills. The European external exams, which are used to determine the next level of education, are constructed to vigorously test subject mastery, so that 30 to 40 percent fail a given examination. The high school graduation tests measure minimum competence, so that 10 percent fail (Airasian, 1987).

A brief review of graduation requirements in the North Central region of the United States (Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin) indicates that Indiana, Michigan, and Ohio require some type of competency testing at the high school level (Bond, 1993).

In 1992 the Indiana legislature passed The Work Force Development Bill, which takes effect in the 1994-95 school year. All tenth grade students will take an exam that will yield both individual and school-based scores. Students will be expected to pass the exam and receive a certificate as one requirement for graduation, although exceptions will exist for special education students and students in need of an alternative form of assessment. Students who pass the exam will be expected to develop a career plan and choose a technical or college preparatory curriculum for the remainder of the high school years. Varied certificates will be issued depending on the program chosen.

In the fall of 1991, the Michigan Legislature enacted two high school graduation requirements. The State School Aid Act requires all public schools to award state endorsements on the high school diplomas of pupils who meet certain criteria. The pupils who graduate in 1994, 1995 or 1996 must achieve a certain score on the Michigan Educational Assessment Program tests in mathematics, reading and science or on a locally adopted,

state-approved test in these content areas. The act also requires schools to offer proficiency testing as a prerequisite for high school graduation. Beginning with the graduating class of 1997, a pupil will not receive a high school diploma without achieving a passing score on the assessment instruments developed by the state department of education and approved by the state board of education. The test will be administered for the first time in the spring of 1995 for the class of 1997.

To graduate after September 15, 1993, Ohio students must pass state proficiency tests in reading, writing, mathematics and citizenship in addition to completing the 18 Carnegie units required. Beginning in the 1998-99 school year, students must also pass a science test. Students first take the state proficiency tests in November of their ninth grade year. Makeup tests are offered twice each year until all required tests are passed. Students with identified disabilities must take the tests, unless exemptions are granted through the individual education plan.

POLICY ISSUES

An expert panel convened by the North Central Regional Educational Laboratory (NCREL) has developed recommendations for states considering testing as a graduation requirement. It advises states to move slowly and to document every step of the design and implementation process. It cautions against attempting to develop a competency test without sufficient staff and resources and recommends some benchmark definitions of "sufficient." Technical standards, such as those of the American Educational Research Association (AERA), the American Psychological Association (APA), or the National Council on Measurement in Education (NCME), must be applied to the assessment, and the tests must be fair and consistently applied to all who take them. These standards are not as well-defined for the newer, nontraditional assessments, and the panel advises against using these assessments, especially when they involve observing and rating performance levels, for high stakes purposes until and unless sufficient research has demonstrated their effectiveness for this purpose.

In light of liability considerations, states and/or local districts are advised to inform students and their parents about the test requirement and the content of the test by the ninth grade if the test is to be a condition of graduation. Students must receive instruction in the knowledge and skills included on the test prior to its implementation. Specific procedures for special education and limited-English-proficient students, including exemption, special administrative adaptations, and adapted versions of the test, must be addressed.

There are six broad policy issues that a state should consider if it is developing statewide competency testing: curriculum issues, psychometric issues, educational issues, legal issues, administrative issues, and human and financial resources (Bond, 1993).

Curriculum Issues

The curriculum should serve as the guide, and the test should include only content that students have had the opportunity to learn. Testing should start small, with only those subjects specified in the law or, if not specified, those considered most important.

Teaching to the test must be minimized by ensuring test security measures and that the sample covered by the assessment is not merely a minimal set of objectives or a "lowest common denominator" of what schools already teach. High school graduation tests themselves are typically tests of minimum competence and are geared to an eighth or ninth grade level.

When a test is used for promotion purposes there should be ample evidence that the test covers only the specific or generalized knowledge, skills, and abilities that students have the opportunity to learn. There should also be evidence that what is being tested is indeed being taught. Teachers may need staff development opportunities. Both Ernest Boyer and Terrel Bell have called for the imposition of a number of course-focused examinations as prerequisites to high school graduation.

Psychometric Issues

Test construction, administration, and scoring and reporting of results should be governed by the *Standards for Educational Psychological Testing* (AERA, APA, NCME, 1985) in order to assure technical soundness and be legally defensible.

The test must sample the content being tested sufficiently to justify its name--e.g. reading test, writing test, literacy test. Evidence must support the claim of the test results. Research evidence must show that persons who pass the test, in fact, perform better in post-high school life than those who do not pass the test.

A sufficient number of high quality test items must be written to allow for losses due to pilot testing and to build enough test forms to sustain the program through the first two years. Field testing with a sample of students is critical prior to the use of a test for high stakes purposes.

Standards must be set in a legally defensible fashion. It is important that large numbers of students do not fail who teachers believe should have passed. Standards should be based on the first live administration of the test, not the pilot testing.

All items to be used on a test should be free of ethnic, cultural and gender bias. A committee with the proper representation should review the test items for bias.

Test scores should reflect differences in the knowledge and skills of the test-takers. Reliability estimates are needed for internal consistency. Scoring methods must guarantee accuracy.

Scores should be reported as "pass or fail" if it is a competency graduation test. The scale should be determined by a technical advisory committee.

Sufficient test forms should be available to avoid using the same items each year.

Local personnel must be trained to administer the tests, with random auditing to ensure uniformity.

Educational Issues

Failure to achieve a satisfactory score on a graduation test must be followed by assistance to pass in the future.

Early grade testing can help identify those students who will need additional assistance. Students who are unable to pass the test after four or five attempts should be given unlimited opportunity to retake the exam through an adult education program. Planning for remediation for local schools should be assisted by the state.

Specific test-taking procedures for special education students and English-as-a-Second Language (ESL) students should be adopted by the state board, unless the law the addresses this issue. In many states hundreds of pupils have failed the graduation test multiple times and have been denied a regular diploma. A disproportionate percentage of the failing pupils are members of racial or language minority groups.

Students in adult education programs should be given the opportunity to take the high school graduation test, if they desire a high school diploma.

Legal Issues

The state attorney general needs to be involved in the test development process. Many of the legal issues concerning high school graduation testing were addressed in the case of Debra P. v. Turlington (1983, 1984), a broad-based challenge to Florida's graduation test.

The standards mentioned in the psychometric section above determine the technical soundness of a graduation test if challenged in court. Documentation of the process used to select test content, to prevent bias, to assure reliability and validity, to set the cut score, and to ensure

standardization of administration is essential. All steps in the design and implementation process should be kept on file for at least five years. Detailed policies regarding what should be documented and for how long must be determined and understood by everyone working with the test.

It is important to determine the liability of the staff and advisory committees prior to implementation.

Individual students need sufficient notice of new graduation requirements, including information about the content of the test. Parents and students should be notified when students are in the ninth grade.

Administrative Issues.

A uniform set of rules for test administration will need to be established by the state. Documentation of the formal procedures used to establish these rules and to inform schools about the rules must be kept.

The state board of education needs to publish administrative rules. The rules should deal with issues such as frequency and timing of the test, rescoring policies, procedures for handling transfer students and special students, and test security.

An annual test schedule should be developed and distributed to all districts. A graduation test should be given for the first time in the spring of the tenth grade and twice more in the junior and senior years.

Human and Financial Resources

Any high school graduation test must be well-conceived and carefully implemented. The state needs to have input from local educators and content/technical experts. The panel recommends the following: a department of education steering committee, a testing policy advisory committee, a bias review committee, a technical advisory committee, a content review committee for each content area, an overall content review committee, and a standard-setting committee.

The panel recommends the following staff at the state level: one staff person for each major content area to address content issues, one measurement specialist to address psychometric issues, one person whose sole task is to manage any outside contracts and monitor the contractors, one person to manage staff, and an overall supervisor to ensure that all of the important work is done. Sufficient resources in staff and money are needed to do the job right (Bond, 1993).

GRADE POINT AVERAGE (GPA)

HISTORY AND CURRENT STATUS

Prior to the late 18th century, evaluation of a student's learning was through student demonstration of performance or in the form of a narrative and served the purpose of informing the student of his/her progress in mastering the content area before moving on to a new subject area or to college. If a rating was done, it was of the teacher, to gauge whether he or she was successful in imparting knowledge to his or her students. As the number of students with access to public education increased, high schools began to measure educational progress by using percentages to inform students of their performance in comparison to other students. Percentage grades or scores were used increasingly by teachers to group students, in the hopes this would facilitate teaching, and they were also used by colleges to screen applicants (Kirschenbaum, Napier & Simon, 1971).

In 1912 and 1913, Starch and Elliott published research on the extent to which teachers' grades were subjectively determined. Even when concrete subject matter, such as geometry, was the focus of the student work, the grades assigned to the same paper by multiple teachers varied by as much as 47 points out of 100, spanning what would later be the entire range typically reflected in grades A through F. The move to letter grades, partly in response to these findings, was an attempt to reduce the variation among scores. Some teachers attempted to ensure uniformity of distribution of grades through the use of a curve; this approach had its own problems, however, because not all groups of students had equal abilities, and performance that was assigned a certain grade in one group of students was not equivalent to performance assigned the same grade in a different group (Kirschenbaum, Napier & Simon, 1971).

The first movement to abolish grades entirely occurred in the 1920s. Some schools instituted narrative reporting, pass-fail systems, or mastery approaches. Other groups advocated for maintaining the concept of grading, but attempted to ensure that grades were objectively determined (Kirschenbaum, Napier & Simon, 1971). Innovations in testing that began

during World War I led to the development of standardized tests to measure learning (Kirschenbaum, Napier & Simon, 1971; Blynt, 1992).

Even in the 1930s, however, some groups of educators were concerned that the use of standardized testing would not contribute to individualization of student learning and creative thinking. There were also concerns about the relationship of the learning that was measured in this way to success in real life, and the possibility that negative effects on learning would result from competition between students. Understanding the child and helping him or her was believed to be more important than judging and labeling the child. Grades were not believed to result in effective communication among teacher, parent and student and were not seen to meaningfully measure progress or result in student learning (Kirschenbaum, Napier & Simon, 1971).

Nevertheless, by the end of the 1940s, approximately 80 percent of the nation's schools were employing some form of the five-grade system. From the 1940s into the 1960s, there was discussion of the need for measurable behavioral objectives on which grades would be based. Other concerns also remained: parent involvement, negative self-concept resulting from poor grades, reliability, validity, and competition for grades (Kirschenbaum, Napier & Simon, 1971).

Several states have instituted grade point average requirements for high school students. Currently, Idaho requires each student to meet one of three sets of requirements: receiving a C average in core curriculum, passing a set of two junior class competency tests, or completing the local district's achievement plan for graduation. This three-option process includes both alternatives and local control. Reportedly, the only districts that have experienced problems are those that have not developed a local district plan and therefore lack an alternative for students who are unable to graduate through the other two options. The issue of teachers inflating grades to allow more district students to graduate has not been raised as a major concern (Teele, 1994).

Florida currently requires a GPA of 1.5 on a four-point scale in the 24 specific credits required for graduation. This has been in effect for about six years. At its inception, concerns were voiced that teachers would inflate grades to

guarantee that students would graduate, and that a 1.0 (D) average was sufficient, since that represented a passing grade. According to a consultant at its department of education, Florida is currently considering raising the required GPA to 2.0. A phase-in period will probably be implemented, with the required GPA raised gradually over the course of a few years. Florida also will pay $2,000-2,500 yearly of a student's tuition at a Florida college if the student meets several criteria, including a specific GPA (USDE, 1993; Ashburn, 1994).

Other states, including Virginia, Oregon and Louisiana, also provide recognition of good grades through special designations on diplomas (USDE, 1993).

POLICY ISSUES

Grades, grade point average (GPA), and class ranking are already in place, have a long history of use, and are viewed by many as easy and efficient, recognized, comfortable, familiar and accepted. Teacher ease, administrative convenience, and college admissions requirements have all contributed to maintaining the traditional system.

Some major purposes of grading may be described as administrative, student, teacher, or guidance functions. Administrative functions include gauging whether students have passed or failed, and should or should not be promoted or graduate; providing a means for employers to evaluate job applicants; exchanging information between school districts; summarizing student performance, learning, and work to date; evaluating courses; ensuring accountability; providing the public with a guarantee of competence; and giving college admissions departments information regarding patterns of student performance (Iowa DE, 1987). About two-thirds of administrators, however, do not believe grades are an effective way to inform parents and students of school progress (Burton, 1983).

Student functions include reward and recognition for achievement; giving feedback regarding progress; motivation; closure or completion; testing ability to stand up to stress and pressure; giving experience of and testing

performance in real-life situations; and preparing students for a stratified society (Iowa DE, 1987).

Teacher functions include evaluating students' progress during the course; assessing the amount of effort put in by a student; giving feedback on teaching; comparing students to other students or to some criteria of excellence; maintaining standards; and maintaining staff authority over students (Iowa DE, 1987).

Guidance functions include assisting in the personal development of students; predicting future performance; screening of candidates for occupations and schools; stimulating students to greater efforts; determining the number of courses in which a student should enroll; deciding on the advisability of a student's enrolling in other courses; permitting participation in extracurricular activities and competing for and winning scholarships; and preserving the existing structure of society (Iowa DE, 1987).

Parent functions include feedback on student progress and appropriateness of course placement and evaluating the success of the special education student's Individual Educational Program (IEP) (Iowa DE, 1987). Parents seem to find the present grading system informative regarding the quality of the student's work, whether the student can take orders, the student's effort and development, and how the student compares to others. They would, however, like to see grades supplemented by more teacher comments (Burton, 1983).

Grade point averages (GPAs) are based upon grades, and class rank is typically based upon GPA. The latter two are used for four purposes: intrinsic motivation for students; admission to some colleges, universities, and educational programs; to predict academic success in college; and eligibility for merit awards (Gilman & Swan, 1989).

Educational Issues

Any state requirements that alter grading practices have ramifications not only for grades but also for grade point averages, class ranking, and college admission requirements, all of which are based on grades.

Grades are often assumed to motivate students. The students most likely to be motivated by grades, however, are the high-achieving ones, who least need that motivation. For those who don't do well, grades may actually be a disincentive. The traditional grading system has never been demonstrated to be the best incentive. Raising academic standards by increasing grade point average requirements may not provide students with additional incentive. Raising the GPA or class rank appears to act as a motivator for only a very few students (Farkas & Hotchkiss, 1985; Keith, 1989; Kirschenbaum, Napier & Simon, 1991; National Association of Secondary School Principals [NASSP], 1983).

Grades are often seen as predictors of success in college, life, and the world of work. Grades and high school rank, typically based on GPA, are the best predictors of academic success in college (Kirschenbaum, Napier & Simon, 1971; NASSP, 1983; Chase & Jacobs, 1989; Siegel & Anderson, 1991). Over 80 percent of colleges consider high school grades, based upon GPA or rank-in-class, the single most important or a very important factor in making their admissions decisions (NASSP, 1983). Therefore, the arbitrariness of grades can make a very real difference in whether a student is accepted to a certain college, receives a certain scholarship, or graduates from high school if GPA is used as the graduation criterion. Findings are mixed regarding whether high grades are predictive of good job performance (Bretz, 1989; Dye & Reck, 1989; Kirschenbaum, Napier & Simon, 1971).

To achieve good grades may require a student to adopt goals considered important by others rather than to develop his/her own goals. Grades also may lead students toward courses in which they can get better grades, rather than toward their own interests and capabilities, which may remain undiscovered. Occupational or career decisions and outcomes may therefore be strongly influenced by grades. Shaping attitudes that earn higher grades may also interfere with the student's developing his or her own values. The pursuit of grades may actually keep the student from the pursuit of knowledge by introducing an artificial, external goal that comes to replace curiosity and intrinsic love of learning (Blynt, 1992; Kirschenbaum, Napier & Simon, 1971; Farkas & Hotchkiss, 1985).

Many subjective factors, including teacher values, bias, and lack of objectivity, can influence grades, which are most often based on criteria set by the individual teacher, not determined in some standardized fashion. Even when teachers are given very specific criteria or standards to use in grading, there is wide variation in the scores assigned. Reliability is also low when the same teacher grades the same paper after a period of time, such as a few months. Teacher factors that may influence teachers' subjective judgment of students include teacher experience, content area or department, selection of test questions and teacher fatigue (Gilman & Swan, 1989; Nitko & Niemierko, 1993; Kirschenbaum, Napier & Simon, 1971; Brooks, 1990; Blynt, 1992; Theodory & Day, 1985; NASSP, 1983).

Factors on which teachers may base grades include student potential; student's self-evaluation; universal standards; student effort, behavior, creativity and originality; and a quality scale based on teacher's personal taste. Student factors that may influence teachers' subjective judgment include disruptiveness, neatness, troublesomeness, enthusiasm for the subject, noise level, spelling, punctuation, how well the message is communicated, whether the student demonstrates how the answer was determined, student history or other information, student manipulation of the teacher, classroom behavior/participation, agreement with the teacher's attitudes or opinions, and student belief in whether giving the teacher what he/she wants to hear will result in a better grade. Additionally, a student who chooses to take issue with a teacher, may find that his/her grades suffer as a result (Burton, 1983; Bateman, 1988; Kirschenbaum, Napier & Simon, 1971; Abrami & Mizener, 1985).

Gender bias may also be a factor in grading. Girls' assigned grades may be higher than boys', with the same actual level of achievement, possibly because girls usually internalize school good conduct rules better than do boys (Kirschenbaum, Napier & Simon, 1971; Sadker & Sadker, 1994). However, the tradeoff may be that teachers expect less of girls to earn the same grade and, therefore, boys may actually learn more. Historically, many teachers have assumed that boys had higher aptitude in mathematics and science areas. Some research suggests that girls' aptitudes are equally high. Research shows

that girls demonstrate increased achievement in mathematics and science in all-female classes than in mixed classes (Sadker & Sadker, 1994).

The relationship between grades and standardized tests or outcome measures has also been explored. The correlation has been found to be high, but also high is the correlation between content-area scores for individual students (Smith, 1990; Kirschenbaum, Napier & Simon, 1971). The College Board's August 1994 press release addresses grade inflation: the percentage of students reporting A averages increased from 28% to 32% between 1987 and 1994. However, average SAT scores fell 6 to 15 points over the same period.

Grades can affect student-teacher relationships. It is difficult for teachers to teach or help students if they also must judge them. Grades give teachers power over students. For students, "playing the game" constitutes catering to teacher preferences (Kirschenbaum, Napier & Simon, 1971; Abrami & Mizener, 1985). Teachers and students seem to negotiate for grades, in an incentive-based system. Students tend to receive lower grades in courses that are in high demand, including advanced or college preparatory courses (Farkas & Hotchkiss, 1985; Bravin, 1983).

Grades can also affect student-to-student relationships, including the creation of competition between students. Within the traditional grading system, cheating pays and is therefore prevalent, even though reduced by the use of honor systems (Blynt, 1992; Kirschenbaum, Napier & Simon, 1971; Davis 1992). Competition for valedictorian in a given graduating class may be particularly fierce. Some students may take less-challenging courses to ensure their GPA and class rank are not threatened. Using typical means of figuring class rank, one student's improving his or her rank results in the lowering of rank for another student (Doggett, 1988; NASSP, 1983; Bravin, 1983; Gilman & Swan, 1989).

Labeling and teacher expectations, as well as academic versus vocational tracking, can have an effect on the grades students are assigned. Labeling of students can determine teachers' expectations for the students; those who are expected to do well tend to be graded higher than those not expected to do well (Kirschenbaum, Napier & Simon, 1971). There may be striking socio-economic as well as racial differences between the number of students in

vocational versus academic tracks. Homework, expectations, and grades in the academic track are also significantly higher (Farkas & Hotchkiss, 1985).

Some teachers choose to grade using a curve; within a given class, there is assumed to be a normal distribution of student ability, achievement, and grades. However, groups of students are disparate, and may not follow a normal distribution in a given class. A curve may be used with the expectation that for each success [A], there is a failure [F]. On the other hand, if every student is expected to do well, to achieve certain goals, then one need not expect any failures. Individualized instruction is not likely to be consistent with the traditional application of the curve concept (Kirschenbaum, Napier & Simon, 1971).

Grades and self-concept are intertwined. Students receiving low grades tend to label themselves negatively, as low in ability or even as failures. Grades can become tied to a student's sense of self-worth and value as a human being (Burton, 1983; Mitchell, 1983; Darakjian, Michael & Knapp-Lee, 1985; Leonardson, 1986; Dobson, Campbell, Dobson, 1987; Kirschenbaum, Napier & Simon, 1971). Almost half of elementary school teachers and about one-fourth of middle and high school teachers believe that the letter grade system has a negative effect on self-concept (Burton, 1983). Student dissatisfaction with grades seems to be widespread (Mitchell, 1983).

Other studies have explored the relationship of students' individual differences, including socio-economic status and race, to grades assigned. Students of the same race and socio-economic status may spend their entire school careers together, even in the same academic or vocational track, because of residential segregation. Therefore, the academic track usually contains more white, high-socio-economic status students. These grouping effects seem to be negative for academic track and white students only in that taking more difficult courses decreases grade point averages (Farkas & Hotchkiss, 1985). Additionally, coursework and homework, rather than grades, are particularly powerful influences on Asian-American students' grades (Keith, 1989).

Grading students in special populations, including special needs students, continues to be a major issue. If students with lower ability are graded upon effort, then grades lose their meaning as indicators of achievement.

The Iowa Department of Education 1987 publication, *Grading-Credit-Diploma: Accommodation Practices for Students with Disabilities,* states:

> Given the variety of purposes or functions of grading, the added dimension of the challenge presented by students with disabilities, and the idea that grading is an important aspect in documenting the educational experience of students, assignment of grades has created and will continue to create much debate within the educational community. No single best practice has been identified to resolve the problems inherent in assigning grades to students with disabilities who make a sincere effort, but because of their disabilities simply cannot measure up to either the teacher's standard or the school's standard in terms of meeting all the criteria for a given course or class when traditional methods of assessment, instruction, and grading are used.
>
> ...When adjustments to regular class content, expectations, standards, or grading practices are necessary, the IEP team shall develop a system for monitoring and reporting the performance of students that is clearly defined, based on objective criteria, and explained to the student and his/her parents.
>
> Ideally, a school district should develop a grading system or policy that is applicable to students in both general and special education, thus avoiding the problem of confusion.... This is paramount if students who receive instruction in special education programs are candidates to be mainstreamed into general education courses.

The National Association of Secondary School Principals (1983) recommends that all students in a given grade level be included in the figuring of class rank except for those "seriously limited in their ability to learn by reason of major mental or emotional handicaps," and those "whose previous schooling has been in other countries and in other languages than English."

Grading cycles may affect the curriculum. Tests, term papers, and projects are planned to coincide with grading periods. Paper-and-pencil tests, consisting of multiple choice questions, are easier to score and grade, even though they are not reflective of students' thinking skills. The resulting grades may become an end in themselves (Burton, 1983; Blynt, 1992).

Findings are mixed regarding the variability of grades within and among districts. Does a B at one school have the same meaning as a B at another school, even within the same district? The answer would appear to be "probably not." Distribution of grades within one college is very similar to that within another. If this can be extrapolated to high schools, then colleges, in order to assess the meaning of a given student's GPA, need to be aware of which high schools have higher academic performance standards, average ability and achievement, or ratings (Smith, 1990; Kirschenbaum, Napier & Simon, 1971; Dye & Reck, 1989; Marsh, 1986).

Marsh (1986) found that equally able students have lower academic self-concepts, and earned lower grades in high-ability schools than in low-ability schools and concluded that these findings may explain the difference in academic self-concept between black and white students. They also demonstrated that academic self-concept had a direct effect on subsequent school performance.

Legal Issues

The 1980 report prepared by The Council for Exceptional Children (Barresi & Mack, 1980) on graduation requirements indicated that there were court precedents dealing with the rights of students inherent in the 5th and 14th Amendments, protecting against discriminatory, exclusionary or arbitrary application of educational standards and policies to any class or group of students, such as students requiring special education. While the impact of these rulings on similar cases specifically involving students with disabilities has not yet been fully determined, it does appear a policy or practice by a school district that singles out a certain group or class of students for different treatment, such as a 'different' diploma or no diploma, would be a prime candidate for litigation (Barresi & Mack, 1980).

Administrative Issues

Currently, calculating GPAs and class rank is common practice, which continues to be recommended by the National Association of Secondary School Principals (1983).

Some sources have recommended the use of weighted GPAs and rankings. Several types of weighted systems have been proposed, including the quota system, which prescribes the number of each letter grade that a teacher can give to each class, based upon the ability of the students in the class. Another system is the avoidance model, in which no class ranking at all is reported on the student's high school transcript (Bravin, 1983; Gilman & Swan, 1989; Siegel & Anderson, 1991). However, any change in the GPA or ranking system, including how it is to be figured, will result in increased clerical work, as well as in staff time to communicate the rationale, method, and effects of the new system to students, parents, teachers, the public, and colleges to which records are sent (Gilman & Swan, 1989).

Problems reported with weighted systems include: teacher antagonism at the initiation of the system; difficult computations requiring additional hours of clerical work; the alleged promotion of elitism, which denigrates the quality of work in lower-weighted classes; and the difference in GPA and class rank that may result from students receiving the same grades in the same number of honors courses, but different numbers of "regular" classes. In a weighted system, taking the fewest of the latter will probably result in a higher GPA and rank (Gilman & Swan, 1989).

Colleges do not all agree about how GPA and class rank should be computed (NASSP, 1983; Siegel & Anderson, 1991). Most do prefer, however, to receive a class ranking on a transcript, with explanation of its calculation, since grades on a transcript can be recomputed by the college for comparison with other high schools, whereas class rank must stand as given by the high school (Siegel & Anderson, 1991). Some researchers have concluded that the use of weighted class rank does not result in a predictor of performance that is significantly better than unweighted rankings and that weighted class rankings are not worth the additional time and effort that must be put into computing them (Chase & Jacobs, 1989; Gilman & Swan, 1989).

The National Association of Secondary School Principals' (1983) recommendations regarding the use of weighted grade point averages are:

> Marks in all courses that are applicable for graduation credit should be counted when computing grade point averages, except for those courses a school may deliberately exclude because their academic

> content is judged to be minimally, if at all, related to academic achievement in college. Such exclusions, if any, should be made explicit on transcripts and school profiles, and should be consistently observed....
>
> When, in the judgment of a secondary school, its courses differ substantially in their levels of academic challenge, differential weighting for computing grade point averages is recommended as a means of assessing more fairly the academic achievements of its students.

Human and Financial Resources

The grading, GPA, and class rank system is already common practice. To change it would, of course, result in increased cost. The amount of funds, time, and additional teaching, clerical, and administrative staff would depend upon what changes were adopted and at what level.

State vs. Local Control

Some options for change might include a state-mandated minimum GPA for graduation, based upon local districts' current computation, or on the computation of grades in certain courses, or with weighting factors determined by the state. Another possibility is the local option of minimum GPA for graduation, based upon local determination of courses over which the grades are averaged and method of computation, including weighting as a possible factor. More local control would allow districts to assign their own values to courses and the weights assigned their grades.

Other Considerations

College admissions departments rely heavily upon grade point average and rank-in-class when considering applicants. Rank may be of even higher consideration than GPA, since "first-in-class" will always add to a particular student's desirability. This is especially true since the difference between a 3.795 and a 3.79 on a four-point scale may not be significant. Rank in class may be somewhat more meaningful across schools, allowing for possible differences between schools in overall achievement (The College Board, 1994, August). Although standardized tests may be considered more objective and reliable, using them in place of GPA or rank results in judging a student based

upon one morning's work rather than his or her entire high school career. If a high school chooses not to report grades, GPA, or class rank, then the focus will be on the student's standardized test score, whether reflective of the particular student's ability or not (Gilman & Swan, 1989; NASSP, 1983; Siegel & Anderson, 1991).

Some districts have tried alternative grading systems. Although over half of elementary teachers believed there might be workable alternatives to the letter grade system, fewer middle and high school teachers agreed. Checklists of student progress were supported by elementary teachers, but again, fewer middle and high school teachers agreed (Burton, 1983).

A percentage-based or numerical scoring system would be another option. However, one low percentage score can be very detrimental to a student's overall course rating, in some cases making it difficult for the student to bring the average of number scores up to a passing level. However, using letter grades, an F is offset to a C by one other score of A (Bateman, 1988). Another alternative method involves assigning grades based on matrices of tasks or content knowledge versus thinking skills. This requires the teacher's making a determination of whether certain basic knowledge and skills are a minimum requirement to passing the course, and what additional knowledge and skills are required to obtain grades above passing. Tasks are ranked by the teacher and a series of subtests are developed, based on the matrix. In order for students to have opportunities to practice higher-order thinking skills, the teacher must provide instructional time to rehearse strategies for solving unfamiliar problems (Nitko & Niemierko, 1993).

DEMONSTRATED MASTERY

HISTORY AND CURRENT STATUS

The earliest form of testing was introduced as long ago as 210 B.C. in China for the purpose of selecting applicants for civil service positions. Since that time there have been only three basic methods, and variations of them, employed universally to assess the level of proficiency of human achievement. The three methods require individuals to: give an oral or written answer to a question, such as essay or short answer, or to produce a product such as a portfolio, a research paper, or an object; demonstrate knowledge or skill by way of performance, such as conducting a chemistry experiment, reading orally, repairing an engine, or playing a piano concerto; or select an answer to a question from options offered, most commonly in a multiple-choice or true-false format (Madaus & Tan, 1993).

While the majority of testing in schools until as recently as the 1990s used multiple-choice or true-false methods, certain fields of learning used demonstrated mastery. Demonstrated mastery is the evidence of learning as shown through performance or some other active process that illustrates knowledge and understanding. It requires that the learner be able to thoughtfully apply certain knowledge and skills in a variety of contexts. The first two methods above are examples of demonstrated mastery, or what is often referred to as performance-based learning (Marzano, 1993).

One area of learning where demonstrated mastery has traditionally been used successfully is vocational education. The Mid-America Vocational Curriculum Consortium outlines the unique history of vocational education in a 1994 publication. It recognizes that around 1800 in the United States, the field of domestic science, later called home economics, began training girls and young women in needlework and sewing. By the 1880s, the first manual training school was founded in St. Louis, Missouri in conjunction with Washington University. These schools extended training into upper elementary and junior high grades and were the predecessors of what we now know as industrial arts. By 1917, students in high schools across the country were receiving training from independent programs in vocational

agriculture, trade/industry, and home economics, for which some federal funding had become available. Demonstrated mastery and performance-based methods continue to be used to assess students' skills and knowledge in the area of vocational education.

During a period of active standardized test development in the 1920s, 1930s, and 1940s, educators like Norman C. Meier worked to identify special abilities and artistic capacity in students and to discover the relationship between intelligence and heredity as evident in drawing. But generally speaking, the last 150 years of education in the fine arts have incorporated methods of assessment that enable a student to demonstrate a real understanding of various processes and ideas. In using artistic processes of creating, performing, and responding, students gain knowledge and an understanding of the arts and develop perceptual, technical, expressive, and intellectual skills. Performances have long determined the student's level of proficiency in vocal and instrumental music, dance, and theater. The concept of the portfolio, a collection of a student's best work and works in progress in visual art, could serve as a model for other content areas such as language arts, mathematics, and science (Clark, Zimmerman & Zurmuehlen, 1987).

In the United States, performance testing to test oral proficiency has only recently been used in the teaching of foreign language and the assessment of teachers' skills. Since 1986, the Iowa Department of Education has provided training to teachers of foreign languages through the American Council on the Teaching of Foreign Languages (ACTFL). The University of Iowa has also been providing this training since 1989. The state of Texas uses a similar method of authentic training called an oral proficiency interview to certify teachers of Spanish, and requires high school students who study Spanish to take part in a simulated oral proficiency interview. Urbandale (Iowa) Community School District teacher Sherry Winters uses video portfolios to assess her students' proficiency in Spanish at the high school level (Hoekstra, 1994).

Due to the many real-world contexts and applications possible, performance-based learning and assessment methods have increasingly been recognized as critical to preparing students for lifelong learning. In 1892 The National

Education Association established the Committee of Ten on Secondary School Studies. A general report was published in 1893 that recommended four courses of study for high school students: classical, Latin-scientific, modern language, and English, including ancient and modern foreign language. The committee argued that by demonstrating language abilities by speaking and writing most students were not only preparing for college, but preparing for life (Deighton, 1971).

Since the 1950s there has been increased dissatisfaction with traditional, standardized testing, and numerous books critical of standardized tests and specifically the SAT, have been written. It was the writings of Hoffman and Houts, however, that predicted the widespread criticism of multiple-choice testing and the move to alternative methods now gaining momentum in the 1990s (Madaus & Tan, 1993).

As state departments of education, legislators, professional organizations and agencies in the field of education, and the general public scrutinize the meaning and validity of the diploma for high school graduation, new ideas for the improvement of the experience leading to graduation have become the focus for anticipated change. The National Association of State Boards of Education (NASBE), in a June 1994 "Policy Update," discusses the need for change. NASBE believes:

> There is a growing consensus among the education and business communities that for individual students - and the country as a whole - to compete in the 21st century, graduating students must be competent in higher-order, problem-solving and communication skills and be able to synthesize knowledge across disciplines. However, most local and state testing programs still focus on the mastery of basic skills by using multiple-choice, standardized tests that rarely succeed in assessing students' critical thinking skills or ability to work through complex problems. Performance assessments, on the other hand, are seen as a better way to measure students' abilities to solve real world problems, as well as being more accurate measures of whether students are meeting the new higher standards that are now being developed in most states.

The performance assessments relative to this new perspective on teaching and learning result in demonstrated mastery. The evidential document for

such learning is called a certificate of mastery. The certificate currently supplements the conventional diploma. Instead of measuring credits completed or number of years in school, it would require a demonstration of the deep mastery of core academic subjects as well as the capacity to apply this knowledge to the complex problems that characterize modern life and work (NCEE, 1994).

The certificate is considered to be developmentally appropriate for all students regardless of ability. An exceptionally bright student might be able to receive one at an earlier age than a student who is average or even below average in knowledge and ability. But no student would be able to leave high school without a certificate. The theory behind the certificate of mastery is that, given enough time and effort, all students can reach high standards.

Oregon is more advanced than any other state in the development of the certificate of mastery, although there has been some resistance from teacher unions in the state. Arguments point out that the certificate, both initial and advanced versions, would encourage students to dropout before graduating. The unions also assert that the certificate discriminates against rural and low-income students who have limited access to community college classes and apprenticeships required by the mastery program. In spite of these setbacks, legislation has ensured that the certificate of initial mastery will be offered to all students by 1997. Assessments will be linked to the certificate with the use of student portfolios (NCEE, 1994; Sommerfeld, 1993).

In the 1994 report by the National Center on Education and the Economy, the New Standards Project (NSP) is described as an effort to address the perceived need for performance standards and assessment. NSP was created in 1990 and is a voluntary partnership of 18 states, including Iowa, and six school districts. According to co-directors Marc Tucker and Lauren Resnick, The New Standards Project will bring new assessments to the education system that are powerful enough to drive reform in the way students learn and teachers teach. Iowa has been involved in The New Standards Project for two years, training teachers how to score assessment tasks and apply these skills in their own classrooms and schools. This fall in Iowa, 35 school districts will conduct performance assessments in fourth and eighth grade classrooms, and 30

districts will field test portfolio assessments in math and language arts at the elementary, middle and high school levels (Haack, 1994).

POLICY ISSUES

Curriculum

Important implications of performance-based learning are authenticity and high standards for student achievement both in content areas and synthesized knowledge. The latter might be referred to as an interdisciplinary approach to curriculum development. National standards have been published in the areas of mathematics and the arts (National Council of Teachers of Mathematics, 1989; Consortium of National Arts Education Associations, 1994). In both cases, content standards and performance standards allow and encourage an interdisciplinary and even an integrated approach. While many states are developing their own content and performance standards based to a degree on the national standards, Iowa currently does not mandate state level content or performance standards, instead allowing for local district choice. Schools may base achievement scores on standards, outcomes, goals, or some other locally approved result. Curricular approaches within a performance oriented learning environment would also be developmental and emphasize higher order thinking and reasoning skills. According to Howard Gardner, author of *The Unschooled Mind, How Children Think and How Schools Should Teach,* researchers at Johns Hopkins, M.I.T, and other well-regarded universities have documented that students who receive honor grades in college-level physics courses are frequently unable to solve basic problems and questions encountered in a form slightly different from that on which they have been formally instructed and tested. Based on research such as this, Gardner supports the concept of performance-based curriculum and assessment.

Instructional Practices

Proponents believe that teaching methods aimed at demonstrated mastery encourage divergent thinking, multiple learning styles, and student-directed learning, with the teacher as facilitator, and reduced seat time for students. In

contrast to traditional practices, learning is not time-based, but instead allows for individual advancement as appropriate to the student's knowledge and capabilities.

The Littleton, Colorado school district experimented with demonstrated mastery in the early 1990s by shifting instructional practices and testing from rote memorization to an investigative approach in the classroom. Criticism of the new system was minimal initially (Rothman, 1992). In *Education Week*, June 1994, an article illuminates a host of complaints from parents, community members, and some educators. Those resisting the reforms became critical of a series of 19 broadly stated demonstrations describing students' skills and knowledge in such areas as ethics, human relations, and critical thinking. The demonstrations became part of the student portfolio and were required for graduation. Objections were raised regarding the non-academic nature of the demonstrations and the reliability of the performance assessments. An effort to compromise failed and the district returned to the 1984 graduation requirements based on accumulated Carnegie units (Bradley, 1994).

In addressing learning styles, Gardner thinks teachers should consider emerging cognitive research which documents the extent to which students possess different kinds of minds and therefore learn, perform, recall, and understand in different ways. His concept identifies seven intelligences which give credibility to those students whose learning style may be linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, or intrapersonal (Gardner, 1991).

Assessment

Demonstrated mastery is probably best understood when methods of student assessment are examined. Performance assessment relies on multiple methods in addition to, not in place of, conventional testing. Performance assessment can be generally defined as an evaluation in which the student actively demonstrates specific skills and competencies. This evaluation may take place in either a contrived context such as a one-hour test period, or real-life context. Multiple methods, which also accommodate a variety of learning

styles for students can include methods which are authentic and real world in nature. They reflect what may actually happen in a typical problem-solving situation so that a student may experience it first-hand (The College Board, 1994, March). When considering multiple methods of assessment, it is important to recognize both standardized, norm-referenced testing and performance-based assessment. The need for linking assessments appropriate to the situation is addressed in a 1993 paper by Robert L. Linn. Linn discusses the demands of individual student achievement results and international comparisons as rationale for using assessments for multiple purposes and for comparing the results of those assessments (Linn, 1993). In addition to performance, methods may include portfolios, projects, exhibitions of mastery, and open-ended tests. Historically, of all content areas, art, music, dance, and theater have employed these methods more than any other subject. Arts PROPEL, a five-year collaborative project with the Educational Testing Service and the Pittsburgh Public Schools illustrates the use of multiple and alternative methods of assessment in music, visual art, and imaginative writing (Gardner, 1991).

Critical thinking skills such as analyzing, connecting, and evaluating are underscored in both standardized testing and performance assessment methods. The ITED have contained an emphasis on these skills since the 1940's when E.F. Lindquist, the major author of these early tests, wrote:

> Essentially, [they] are intended to measure the pupil's ability to do critical thinking ...[These tests] are concerned not so much with what the pupil has learned, in the sense of specific information, but rather with how well [he/she] can use whatever [he/she] has learned in acquiring, interpreting and evaluating new ideas, in relating new ideas to old, and in applying broad concepts and generalizations to new situations or in the solution of problems. These, it is to be hoped, are the lasting and ultimate outcomes--not only of an effective course of formal school instruction, but also any other genuinely educational experience, ... in-school or out-of-school.

Subsequent editions of the ITED has not only emphasized these skills, but the most recent edition has expanded upon them (University of Iowa, 1994).

To date, 13 states have or are currently implementing performance assessments, and 28 are in the planning stage for such methods. Most states also continue to administer the traditional standardized tests (NASBE, 1994). According to the Council for Educational Development and Research and the National Association of State Boards of Education, there are three exceptions: Massachusetts uses only performance and writing assessment; Vermont uses primarily portfolio assessment, with a short criterion-referenced math test and writing sample; and Kentucky plans to use performance exclusively, but is currently in a transitional phase, employing a multiple-choice and short answer test. In Iowa, the University of Northern Iowa has been awarded a grant by the National Board of Professional Teaching Standards to evaluate the teaching ability of art teachers based on the development and presentation of a portfolio during the 1994-95 school year (Trent, 1994).

The Educational Testing Service reports that England, Scotland, the former Soviet Union, Taiwan, and five provinces of Canada participated in the International Assessment of Educational Progress (IAEP) in 1992 using performance assessment for math and science in addition to the traditional standardized tests. Relative performances, although different from the written form covering the same curricular areas, suggested that the "hands-on" methods of assessment allowed students to demonstrate their skills in ways that were not possible with traditional tests (ETS, 1992).

Cost

Some educational experts believe that performance assessments are likely to be two to four times as expensive as standardized tests. Specific new materials or equipment, training for teachers and administrators and the cost of hiring substitute teachers during training may be required (Office of Educational Research and Improvement [OERI], 1994; NASBE, 1994).

Time

Under this system, teachers will have a significant role in the development of performance assessments and therefore significant ownership. However, increased participation may mean more time spent, and some critical of

performance assessment will see this as threatening to the time needed for direct instruction (OERI, 1994; NASBE, 1994).

Teacher Development and Training

Adequate training is necessary for teachers to be successful in performance-based methods of teaching and learning. In order to have commitment and ownership in this concept, teachers must be knowledgeable of and involved in the design, administration, and scoring of assessment tasks, curriculum development, and new instructional practices. In addition, teacher licensure and certification will be impacted (OERI, 1994; NASBE, 1994).

Equity

Those who support performance assessment and related curricular and teaching practices, suggest that these methods are the most equitable ones for evaluating students. Unlike standardized tests, performance-based teaching and learning use multiple samples of student work, collected and created over time; they use criteria students are aware of and have even helped to identify; and they allow for multiple human judgments. A concern about the use of performance assessments is that they are open-ended and evaluation may be highly subjective. Further, there may be a gap between the time performance assessments are implemented and when students have actually had the opportunity to learn the methods measured by the tests. Policymakers must proceed with caution if attaching high stakes such as graduation requirements to performance assessments (OERI, 1994; NASBE, 1994).

Higher Education Admissions

As states and school districts require students to develop portfolios, projects, and other forms of demonstrated mastery for graduation, the acceptance or denial of such documentation for admittance to a postsecondary institution becomes a potential issue. Institutions of higher learning are just now exploring these methods as options in addition to or lieu of the Carnegie unit and the completion of specified coursework by the high school graduate (Gardner, 1991).

SPECIAL POPULATIONS

AT-RISK STUDENTS AND FAMILIES

More than any other country in the world, the United States believes that natural ability, rather than effort, explains achievement. The result is that we communicate to millions of students every year, especially to low-income and minority students, that we do not believe that they have what it takes to learn. They then live up to our expectations, despite the evidence that they can meet very high performance standards under the right conditions (NCEE, 1990).

Research in Iowa indicates that 30 percent or more of a given school population could be considered at-risk of failure in the education program, dropping out, or not being productive upon leaving school (Morley, 1993). The percentage of status dropouts represents the proportion of individuals at any given time who are not enrolled in school and who have not completed high school. The status dropout percentage for 16-19 year olds in Iowa in 1990 was 6.5 percent (Iowa DE, 1993).

Research conducted in Iowa indicates that increased requirements for graduation may contribute to higher dropout rates (Morley, 1991). Nationally, research on this issue is inconclusive (Wilson, 1993; Center for Policy Research in Education [CPRE], 1989; Reforms neither help nor hurt ..., 1989).

Requiring more academic courses on top of those already mandated, especially without other policy changes, can lead to increased concerns about quality of courses added, pressures on student time and extracurricular activities, losses of vocational courses and electives, and problems for at-risk students (CPRE, 1989).

Over 50 policies and practices have been identified in Iowa schools that contribute to student failure. Required minimum course loads, graduation by the age of 18, and lack of accommodation in school scheduling to access other community services are practices that negate higher achievement and promote dropping out for some students (Iowa DE, 1989).

Chapter 281—61, Iowa Administrative Code, requires school districts to develop objectives for schools, programs, and support services for dropouts and dropout prevention. As well, the school districts must conduct an annual evaluation to determine student growth and quality of programming in the three areas of required objectives (Iowa DE, 1994, June).

Students who dropout and return and graduate from Iowa alternative schools are as productive as other high school graduates and in some areas exceed the productivity of other high school graduates (Veale, 1990).

Higher standards for student behavior and performance can encourage student effort, discourage absenteeism, and reduce the probability of dropping out (CPRE, 1989).

Research on instruction for different kinds of student learners indicates that educators could be experiencing students with seven distinct intelligences which need to be considered in education program policy and practice decisions. To reach the educational content of courses, it is necessary to go beyond general course labels and categories like mathematics, and focus on learning objectives--especially learning objectives stressing higher order learning skills. Research indicates that high levels of non-specific credit requirements do not guarantee useful educational content, interfere with valuable extracurricular activities, and may result in reduction of student effort (CPRE, 1989).

The National Center on Education and the Economy has proposed a new certificate of initial mastery to replace the high school diploma because the diploma has become a certificate of attendance not reflecting any specific accomplishment. The certificate would be based on common standards for core academic subjects and applied learning, which includes such skills as problem solving and use of technology. The certificate of mastery would accommodate different learner abilities and interests, varied time, and varied curriculum selection (NCEE, 1994).

The current grading system is based on a belief that there will be winners and losers in education. As a result, many students assume that they can't learn and that no one really cares (Banner, 1993). Research on grading special needs students indicates broad inconsistencies on the part of teachers in grading student work and varying purposes for grading among students, parents, teachers, administrators, and guidance counselors. Twelve alternative evaluation and reporting procedures are recommended to accommodate different student learners: verbal tests, shortened tests, use of different levels of questions for different learners, different frequencies of tests for different learners, varied length of time for completion, varied responses to match student strengths, verbal review of findings as opposed to testing, peer tutoring, instructional packets, checklists, class interaction, course projects, performance-based assessment (Iowa Association of Alternative Education, 1991).

According to a Congressionally mandated study, disabled and disadvantaged students nationally are increasingly concentrated in vocational classes, earning 43 percent of all vocational credits (Olson, 1994). The study also found that special needs students tend to be concentrated in training for low-status occupations. In general, high school vocational programs are not very demanding, and vocational students end up earning fewer academic credits, and on the average are assigned 40 percent as much homework, and are less likely to be assigned writing in class (Olson, 1994).

The 1990 Perkins Act requires states to develop performance standards for vocational education and encourages districts to integrate academic and vocational education and to create stronger ties with postsecondary institutions through tech prep type programs (Olson, 1994).

More than half of our young people leave school without the knowledge or foundation required to find and hold a good job. These people face the bleak possibilities of dead-end work interrupted by periods of unemployment (U.S. Department of Labor, 1992). The unemployment rate for dropouts is about two times that of high school graduates nationwide. The real earnings of high school graduates and dropouts are declining, with the worst decline for

dropouts, especially dropouts within minority populations (Policy Information Center, 1990).

Unlike virtually all of our leading competitors, the United States has no national system capable of setting high academic standards for the non-college bound or assessing their achievement against those standards (General Accounting Office, 1990). America may have the worst school-to-work transition system of any advanced industrialized country. Foreign nations insist that virtually all of their students reach a high educational standard; provide professionalized education to non-college bound students to prepare them for their trades and to ease their school-to-work transition; operate comprehensive labor market systems which combine training, labor market information, job search and income maintenance for the unemployed; support company based training through general revenues or payroll taxes and have national consensus on the importance of moving to high productivity forms of work organization and building high wage economies. The United States does none of these (NCCE, 1990).

Creation of the certificate of mastery would require a new approach to student performance assessment -- a system of multiple opportunities for success, rather than a single, high stakes moment of possible failure. Youth centers can be established to assure that all students not having success in the regular schools reach a productivity standard. A comprehensive system of technical and professional certificates can be created for all of our students and adult workers who do not pursue a baccalaureate degree. All employers can be given incentives to invest in further education and training of workers. A system of employment and a training board can be established to organize and oversee the new school-to work transition programs and training systems (NCCE, 1990).

STUDENTS WITH DISABILITIES

To make students with disabilities settle for less than their nondisabled peers, simply because the manner in which graduation requirements are satisfied is different, is to deprive students with disabilities of their current, guaranteed

constitutional rights. Policies can be established that are realistic, meaningful, and equitably applied to all students (Iowa DE, 1987).

Four guiding principles have been developed by Iowa for graduation of students with disabilities (Iowa DE, 1987). The principles are:

> School districts shall permit students with disabilities to generate credit towards graduation through special education provided that the special education program is not a tutoring program and the special education program is clearly defined by the student's Individualized Education Program (IEP).
>
> A tentative long range educational plan identifying how credit requirements for graduation will be satisfied shall be developed for each student requiring special education prior to the end of the ninth grade year.
>
> Students with disabilities satisfying the graduation requirement and completing the program defined by their IEPs shall be awarded the standard diploma, participate in graduation activities, and be afforded the amenities provided all other graduating students.
>
> The school transcripts of students with disabilities shall accurately reflect their educational program by noting any graduation requirements satisfied by an individually prescribed program.

In Iowa seven guiding principles have been identified for guiding assessment for persons with disabilities (Iowa DE, 1987). The seven principles are:

> Participation of students with disabilities in general education classes shall be determined by the IEP team and noted on the IEP of the students involved. The IEP shall also indicate any instructional accommodations that need to be made for students to participate in general education classes.
>
> Any adjustments to the content, expectations, standards, or grading practices of a general education class for students with disabilities shall be determined by the IEP team and noted on the IEP of the students.
>
> When adjustments to regular class content, expectations, standards, or grading practices are necessary, the IEP team shall develop a system for monitoring and reporting the performance of students that is clearly defined, based on objective criteria, and explained to the student and his/her parents.

Whenever students with disabilities earn credit through an individually prescribed program provided by a special education program, the system for monitoring and reporting the performance of the students shall be clearly identified, based on objective criteria, and included as part of the IEP. The special education teacher shall be responsible for monitoring and reporting the performance of these students.

School districts shall permit and encourage the use of alternative methods of reporting student progress and performance of students with disabilities who participate in general education classes when necessary.

The system for reporting progress and performance of students shall include three separate reports or grades which include:

- how students are progressing relative to their abilities
- how the performance of students compares to other students of their age and grade level
- how the effort of the students contributes to their progress and performance.

The system for reporting the progress and performance of students shall clearly state what the students must do to improve their performance.

Americans with disabilities are not as optimistic about their lives in 1994 as they were in 1986 (Disabled getting more education ..., 1994). Employers won't recognize their capability to work full time; they think no full time work is available in their line or they can't find it; they don't have the skills, education or training needed for work; and they can't get affordable, convenient or accessible transportation. Over two-thirds of disabled adults in the United States are still not working. This is also true in Iowa.

The "Individuals with Disabilities Act" (IDEA) specifies that there must be a statement of needed transition services in the IEP of each student by the age of 16, and younger, if appropriate. This statement must include the areas of instruction, community experiences, and the development of employment or other post-school, adult living objectives. If appropriate, a statement of each

public agency's responsibilities or linkages, or both, should be included. The IEP is required before the student leaves the school setting (O'Leary, 1992).

Transition services in the IDEA means a coordinated set of activities for a student, designed within an outcome-oriented process, which promotes movement from school to post-school activities, including postsecondary education, vocational training, integrated employment (including supported employment), continuing and adult education, adult services, independent living or community participation. The coordinated set of activities must be based upon the individual student needs; take into account a student's preferences; and must include instruction, community experiences, the development of employment and other post-school adult living objectives, and, if appropriate, the acquisition of daily living skills and functional vocational education (O'Leary, 1992).

The "Iowa Transition Model" promotes transition planning and the involvement of the individual in the process. It has five components: awareness, which begins at age 12 and continues throughout the transition planning process; identification of need, which begins at age 13 and continues throughout the transition planning process; planning and implementation, which begins at age 14; follow-up, which begins just prior to the point of graduation and extends into adult life; and evaluation. Evaluation of the individual's satisfaction with the transition planning process and of the individual's progress is done continuously throughout each of the components. Each component in the transition process continues through the next so individuals can begin the process at an early age and work to catch up to the planning stage (Transition Process, 1992).

EPILOGUE

This policy study was prepared to provide the members of the State Board of Education background information addressing the various aspects of high school graduation requirements. This study pursued the four areas -- Carnegie unit, testing, grade point average, and demonstrated mastery -- along with some consideration to the special student populations of at-risk and persons with disabilities.

This study illuminates a vast array of potential issues for further, in-depth examination. These areas for consideration could include, but are not limited to, Goals 2000, special student populations not mentioned previously, emerging issues in assessment, and school-to-work. It has not been the intent of this study that one set of issues or a single topic supercede another. All topics and issues, current and future, need to be viewed in the broad context of what is required for Iowa students to successfully complete a high school education.

APPENDIX A

State requirements for high school graduation, in Carnegie units: 1980 and 1992

State	1980	1992								First graduating class to which these requirements apply	Notes
			Subject areas								
	All courses	All courses	English/ language arts	Social studies	Mathe-matics	Science	Physical education/ health	Electives	Other courses		
1	2	3	4	5	6	7	8	9	10	11	12
Alabama											
Standard	20	22	4	3	2	2	1.5	9.5		1989	Must become computer literate through related coursework. Minimum competency test is required for graduation.
Advanced	—	22	4	4	3	3	1.5	4	2 foreign languages, .5 home/ personal management		
Alaska	19	21	4	3	2	2	1	9			
Arizona	16	20	4	2.5	2	2	—	9	.5 free enterprise	1991	Minimum competency test is required for graduation.
Arkansas	16	20	4	3	3	2	1	6.5	.5 fine arts	1988	Social studies options: 2 or 3 units social studies and 1 practical arts.
California											
Standard	(1)	13	3	3	2	2	2	—	1 fine arts or foreign language	—	The state board has published "Model Graduation Requirements" to be used as a guide by local districts. These include specifics in core subjects plus computer studies and foreign language. Test and cut-off standards for early exit, with parental approval. Minimum competency test is required for graduation.
Advanced	—	16	3	3	3	2	2	—	2 in same foreign language, 1 fine arts	—	
Colorado	—	(2)	(2)	(2)	(2)	(2)	(2)	(2)		—	State has constitutional prohibition against state requirements. School accreditation requirements total 30 units covering language arts, social studies, math, foreign language, fine/vocational/practical arts, health/safety, and physical education.
Connecticut	(2)	20	4	3	3	2	1	6	1 arts or vocational education	1988	
Delaware	18	19	4	3	2	2	1.5	6.5		1987	Minimum competency test is required for graduation.
District of Columbia	18	23.5	4	3.5	3	3	1.5	3.5	2 foreign languages; 1 life skills; 1 career/vocational; .5 fine arts; .5 music	1996	Electives must include life skills seminar or passage of a test. D.C. requires 100 hours of community service without credit.
Florida											
Standard	(2)	24	4	3	3	3	0.5	9	.5 practical/exploratory vocational education; .5 performing arts or speech and debate; .5 life management skills	1989	2 of science units must include labs. Students must have 1.5 GPA to graduate. Junior and senior students may receive dual credits for college coursework. Vocational students may substitute certain vocational courses to satisfy up to 2 required credits in each of the areas of English, math, and science. Minimum competency test is required for graduation.
Academic scholars	—	26	4	3	4	4	1	7	2 of same foreign language; 1 fine arts	—	
Georgia											
Standard	20	21	4	3	3	3	1	6	1 computer technology and/or fine arts and/or vocational education and/or ROTC	1997	Students who completed 4 units of vocational education receive a state seal of endorsement from the State Board of Education. Algebra is required. Minimum competency is required for graduation.
Advanced	—	21	4	3	3	3	1	4	2 foreign languages; 1 fine arts, vocational education, computer technology, or ROTC	1988	
Hawaii	20	22	4	4	3	3	1.5	6	.5 guidance	1997	

State requirements for high school graduation, in Carnegie units: 1980 and 1992—Continued

State	1980	1992								First graduating class to which these requirements apply	Notes
			Subject areas								
	All courses	All courses	English/ language arts	Social studies	Mathe-matics	Science	Physical education/ health	Electives	Other courses		
1	2	3	4	5	6	7	8	9	10	11	12
Idaho	18	21	4	2	2	2	1.5	6	.5 each: reading, speech, and consumer education; 2 humanities	1989	Practical arts may substitute for 1 unit of humanities. State requires a C average, demonstrated competency in core curriculum on a junior class competency test, or adherence to local district's achievement plan for graduation. State level minimum competency test is an option for the local districts. If passed, students receive special proficiency endorsement on their diploma.
Illinois	16	16	3	2	2	1	4.5	2.25	.25 consumer education; 1 art, foreign language, music, or vocational education	1988	1 year of math may be computer technology. 1 year of social studies must be U.S. history or half U.S. history and half American government. Beginning 1985–86, the school boards were allowed to excuse 11–12th grades from physical education to: 1)participate in interscholastic athletics or 2)enroll in academic class required for college admission or to graduate from high school. 9–12th grade pupils may elect to take a consumer education proficiency test; if passed, they are excused from requirement.
Indiana											
Standard	16	19.5	4	2	2	2	1.5	8		1989	State does not use standard Carnegie units.
Academic honors	—	24	4	3	4	4	1	4 or	3 or 4 in foreign language (3 in 1 or 2 years each in 2)	1990	
Iowa	—	—	—	—	—	—	1	—		1989	Legislative requirements in effect for many years. Local districts determine remaining requirements. State allows junior and senior students to receive dual credits for college coursework.
Kansas	17	21	4	3	2	2	1	9		1989	
Kentucky											
Standard	18	20	4	2	3	2	.1	7	1 additional math, science, social studies, or vocational education	1987	
Commonwealth	—	22	5	2	—	—	—	1	1 foreign language in advance placement and 6 units in math and science	1986	
Louisiana											
Standard	20	23	4	3	3	3	2	7.5	.5 computer literacy	1989	
Scholar program	—	23	4	3	3	3	2	7.5	.5 computer literacy	1987	Students with ACT score of 29 or above, 3.5 GPA with no semester grade lower than a B, no unexcused absences, and no suspensions receive a Scholar Program seal on their diploma. Algebra is required. Minimum competency test is required for graduation.
Regents' scholar	—	24	4	3.5	3	3	2	4.5	3 foreign languages, 1 fine arts	1983	
Maine	([3])	16	4	2	2	2	1.5	3.5	1 fine arts	1989	American history is required. All students must pass computer proficiency standards. 1 of the science units must include a lab.
Maryland	20	21	4	3	3	2	1	5	1 fine arts; 1 industrial arts/technology education, home economics, vocational education, or computer studies; and 1 community service	1997	After grade 11, 4 credits must be earned. Students can earn statewide certificate of merit with fulfillment of additional requirements. Special education certificates are available for students unable to meet requirements but who complete a special education program. Minimum competency test, writing test, and passage of quiz on citizenship are required for graduation.
Massachusetts	—	—	—	1	—	—	4	—		—	American history is required. Local boards determine additional requirements.

State requirements for high school graduation, in Carnegie units: 1980 and 1992—Continued

State	1980	1992								First graduating class to which these requirements apply	Notes
			Subject areas								
	All courses	All courses	English/ language arts	Social studies	Mathematics	Science	Physical education/ health	Electives	Other courses		
1	2	3	4	5	6	7	8	9	10	11	12
Michigan											
Standard[4]	—	—	4	3	3	2	1	—	2 foreign languages, fine or performing arts, or vocational education; .5 computer education	—	
College preparatory[4]	—	—	4	3	3	2	1	—	At least 2 years foreign language	—	
Minnesota	15	20	4	3	1	1	1.5	9.5		1982	Junior and senior students may receive dual credits for college coursework.
Mississippi	16	18	4	2	2	2	—	8		1989	At least 1 science unit must include a lab. Minimum competency test is required for graduation.
Missouri											
Standard	20	22	3	2	2	2	1	10	1 practical arts; 1 fine arts	1988	
College preparatory	20	24	4	3	3	3	1	8	1 practical arts; 1 fine arts	1988	College preparation diploma became available to qualifying graduates. For college preparation, specific core subjects must be taken.
Montana	16	20	4	2	2	2	1	7	1 fine arts; 1 vocational education; 1 practical arts	1992	
Nebraska	—	—	—	—	—	—	—	—		1991	200 credit hours are required for graduation, with at least 80 percent in core curriculum courses.
Nevada	19	22.5	4	2	2	2	2.5	8.5	1 arts/humanities; .5 computer literacy	1992	Computer literacy may be waived by demonstration of competency. Minimum competency test is required for graduation.
New Hampshire	16	19.75	4	2.5	2	2	1.25	4	.5 arts; .5 computer science; 3 units from 2 of the following: arts, foreign language, practical arts, or vocational education	1989	Minimum competency test for high school graduation is an option of the local districts.
New Jersey	—	21.5	4	3	3	2	4	4	1 fine, practical, or performing arts; .5 career exploration	1990	92 credit hours are required for graduation. State does not use standard Carnegie units. Minimum competency test is required for graduation.
New Mexico	20	23	4	3	3	2	1	9	1 communication skills	1990	State board requires student computer literacy prior to graduation. Languages other than English can satisfy communication skills requirement, emphasizing writing and speaking. Students preparing for college have an advanced curriculum. State level minimum competency test is an option of the local districts; passing students receive a special proficiency endorsement on their diploma.
New York											
Local diploma	16	18.5	4	4	2	2	.5	([5])	1 art and/or music; .5 health; 2 noncredit units of physical education beyond the total	1989	3–5 units from a sequence of specific courses must be chosen by the Regents' diploma students and is an additional requirement for local. Minimum competency test is required for graduation.
Regents' diploma	18	18.5	4	4	2	2	.5	([5])		1989	For a Regents' diploma, comprehensive exams are required in most subjects.
North Carolina											
Standard	16	20	4	2	2	2	1	9		1987	1 science class must include a lab. Minimum competency test is required for graduation.
Scholars program	—	22	4	3	3	3	1	4	2 foreign languages; 2 additional: English, math, social science, or foreign language	1994	
North Dakota	17	17	4	3	2	2	1	5	Social studies must include 1 unit of world history, and 1 unit of U.S. history, each with a strong geography component	1994	1 unit of higher level foreign language may be substituted for the 4th unit of English; 1 unit math may be business math. Although 17 units are required, the local education agencies are urged to require a minimum of 20 units.
Ohio	17	18	3	2	2	1	1	9		1988	Minimum competency test is required for graduation.

State requirements for high school graduation, in Carnegie units: 1980 and 1992—Continued

State	1980	1992								First graduating class to which these requirements apply	Notes
			Subject areas								
	All courses	All courses	English/ language arts	Social studies	Mathematics	Science	Physical education/ health	Electives	Other courses		
1	2	3	4	5	6	7	8	9	10	11	12
Oklahoma											
Standard	18	20	4	2	2	2	—	10		1987	
College preparatory	10.5	15	4	2	3	2	—	—	4 from: math, history, computer science, economics, English, geography, government, foreign language, sociology, science, speech, and psychology	1988	If foreign language is elected, 2 years in the same language is required. Total hour requirement is less, but more rigorous and restrictive for college preparatory path.
Oregon	21	22	3	3.5	2	2	2	8	.5 career development; 1 applied arts, fine arts, or foreign language	1988	Minimum competency test is required for graduation. 3.5 GPA students receive an honors seal on their diploma.
Pennsylvania	13	21	4	3	3	3	1	5	2 arts/humanities	1989	Computer science can be an option instead of arts and humanities. State has prescribed learning objectives and curriculum guidelines for 12 goals of quality education.
Rhode Island											
Standard	16	16	4	2	2	2	—	6		1989	
College preparatory	16	18	4	2	3	2	—	4	2 foreign languages; .5 arts; .5 computer literacy	1989	
South Carolina											
Standard	18	20	4	3	3	2	1	7		1987	If approved, 1 unit of computer science can count for a math requirement. 1 unit of science and 6 or more in a specific occupational service area can fulfill the science requirement. Junior and senior students may receive dual credits for college coursework. Minimum competency test is required for graduation.
Academic achievement honors	—	22	4	3	3	2	1	7	2 foreign languages	1986	
South Dakota	16	20	4	3	2	3	—	7	.5 computer studies; .5 fine arts	1989	Requirements include 3 science courses and 7 electives.
Tennessee											
Standard	18	20	4	1	2	2	1.5	9	.5 economics	1989	Economics requirement may include: 1 semester in economics, out-of-school experiences through Junior Achievement, or marketing education. Minimum competency test is required for graduation.
Honors, general education	—	20.5	4	3	3	3	1.5	2	2 in same foreign language; 2 fine visual or performing arts	1988	
Honors, vocational education	—	20.5	4	3	3	3	1.5	2	4 in same vocational education program	1989	
Texas											
Standard	18	21	4	2.5	3	2	1.5/.5	7	.5 economics/free enterprise	1988	1.5 units of physical education and .5 of health are required for either program. Minimum competency test is required for graduation. Junior and senior students can receive dual credits for college coursework.
College preparatory	18	22	4	2.5	3	3	1.5/.5	3	.5 economics/free enterprise; 2 foreign languages; 1 computer science; 1 fine arts	1988	
Utah	15	24	3	3	2	2	2	9.5	1.5 arts; 1 vocational education; optional .5 computer science	1988	State board makes specific course recommendations for college entry, vocational, etc.

State requirements for high school graduation, in Carnegie units: 1980 and 1992—Continued

State	1980	1992								First graduating class to which these requirements apply	Notes
	All courses	All courses	Subject areas								
			English/ language arts	Social studies	Mathematics	Science	Physical education/ health	Electives	Other courses		
1	2	3	4	5	6	7	8	9	10	11	12
Vermont	—	14.5	4	3	0 to 5	0 to 5	1.5	—	1 arts; 5 units in math and science	1989	To allow more flexibility to both vocational education students and smaller or more rural districts, the previous math and science requirement of 3 units in each was modified to a combination of 5 units which may be 2 of one and 3 of the other.
Virginia											
Standard	18	21	4	3	2	2	2	6	1 additional math or science; 1 fine or practical arts	1989	An appropriate vocational education class or ROTC may satisfy math or science. B average or better earns a state seal on the diploma. Junior and senior students can receive dual credits for college coursework. Minimum competency test is required for graduation.
Advanced studies	18	23	4	3	3	3	2	4	3 foreign languages; 1 fine or practical arts	1989	
Washington	—	19	3	2.5	2	2	2	5.5	1 occupational education; 1 fine/ visual or performing arts	1991	
West Virginia	18	21	4	3	2	2	2	7	1 applied arts, fine or performing arts, or foreign language	1989	State has approved, but not implemented, an advanced studies certificate.
Wisconsin	(2)	13	4	3	2	2	2	—		1989	Electives and passage of a minimum competency test as a requirement for graduation are options of local districts. State recommends that districts require a total of 22 units.
Wyoming	18	18	(2)	1	(2)	(2)	(2)	(2)	Local board determines remaining requirements	—	Accreditation standards indicate 4 units of English/ language arts, 3 social studies courses, 2 math courses, and 2 science courses.

[1] State permits local board to set minimum academic standards.

[2] Local boards determine requirements.

[3] State requires four credits in English/language arts. Local boards determine remaining requirements.

[4] Legislative requirements in effect for many years. Local boards determine additional requirements. The state board, in January 1984, published graduation requirement guidelines which local districts are urged to incorporate. Included in the recommendations are a minimum of 15.5 units, which includes an option of 2 units picked from a foreign language/fine or performing arts/vocational education and .5 computer education. Recommendations include modified academic coursework for students who are college-bound.

[5] Electives vary for the local (regular) and the Regents' (college-bound) diploma.

—Data not available or not applicable.

NOTE.—Local school districts frequently have other graduation requirements in addition to state requirements.

SOURCE: Education Commission of the States, *Clearinghouse Notes,* "Minimum High School Graduation Requirements: Standard Diplomas," 1980 and October 1992. (This table was prepared February 1993.)

States using minimum-competency testing, by government level setting standards, grade levels assessed, and expected uses of standards: November 1992

States using minimum-competency testing	Government level setting standards [1]	Grade levels assessed [1]	Expected uses					First graduating class assessed [1]	Still using competency tests in 1992
			Grade promotion [1]	High school graduation [1]	Early exit [1]	Remediation [1]	Other [1]		
1	2	3	4	5	6	7	8	9	10
Alabama	State	3,6,9,11		X		X	X	1985	X
Arizona	State/local	8,12	(2)	X				1976	
Arkansas	State	3,4,6,8				X			X
California	State/local	4–11,16 yr. old+	X	X	X	X		1979	X
Colorado	Local	9,12		(3)					
Connecticut [4]	State	4,6,8				X	X		
Delaware	State	1–8,11		X			X	1981	
Florida	State/local	3,5,8,11	X	X	X			1983	
Georgia	State	K,1,3,6,8,10	(5)	X		X	X	1985	X
Hawaii [6]	State	3,9–12		X		X	X	1983	X
Idaho	State	8–12				X	X	1982	
Illinois	Local	Local option					(3)		
Indiana	Local	3,6,8,10				X	X		
Kansas [7]	State	2,4,6,8,10					(3)		
Kentucky [8]		K–12	X	X		X			
Louisiana [9]	State	2,3,4,5	X			X			X
Maryland	State	7,9		X		X	X	1982	X
Massachusetts	Local	Local option				X			
Michigan	State	4,7,10				X	(3)		
Mississippi	State	3,5,8,11		X			X	[10] 1987	X
Missouri	State	8+					X		
Nebraska	Local	5+					X		X
Nevada	State	3,6,9,11		X		X		1982	X
New Hampshire [11]	State	4,8,12	(2)	(2)			(2)		
New Jersey	State	9–12		X		X	X	1985	X
New Mexico	State	Local option, 10–12					X	1981	X
New York	State	3,5,6,8–12		X		X		1979	X
North Carolina [12]	State	3,6,8,10		X			X	1980	X
Ohio	Local	Local option [13]					(2)	1990	
Oklahoma [14]	None	3,6,9,12					X		
Oregon	Local	Local option		X				1978	
Pennsylvania	State	3,5,8				X			
South Carolina [15]	State	1,2,3,6,8,11	X	X		X	X	1990	X
Tennessee [16]	State/local	3,6,8,9–12	X	X		X	X	1982	X
Texas [17]	State	1,3,5,7,9,11,12		X		X		1987	X
Utah	Local	Local option				X	X	1988	
Vermont	State	1–8	(18)			X	X	1981	
Virginia	State/local	K-6,10–12		X			X	1981	
Wisconsin	Local	1–4,5–8,9–10	(3)	(3)		X			
Wyoming	Local	Local option				X			

[1] Based on information from November 1985.

[2] Legislation in 1983 called for development of a minimum course of study and criteria for high school graduation standards and for grade-to-grade promotion. Local school districts were to implement standards.

[3] Local option.

[4] A new program of state testing for grade 4 began in 1985 and expanded to grades 6 and 8 in 1986. The 9th grade state proficiency test, begun in 1980, was administered for the final time in 1986.

[5] Beginning in fall 1985, 3rd grade students had to demonstrate acceptable performance on criterion-referenced tests in mathematics and reading before promotion to the 4th grade. Beginning in 1988–89 school year, students must pass school readiness test to be eligible for first grade.

[6] Students have three options: paper and pencil test; performance test; or course. First time taken (grade 9) must be paper and pencil test.

[7] The Kansas Minimum Competency Assessment (MCA) was re-established by 1984 legislative action (SB 473). The MCA was in effect for 5 school years, 1984–85 through 1988–89.

[8] Legislation in 1984 required the state superintendent to recommend process of using test results for promotion and graduation to the 1986 legislature.

[9] Grade 8 was added beginning with 1986–87 school year.

[10] Although first class assessed graduated in 1987, the first class required to pass for graduation was the class of 1989.

[11] Students are tested in elementary, middle, and high school. Some local districts test at grades other than 4, 8, and 12.

[12] Grades 3, 6, and 8 are given an annual standardized achievement test. Local school districts use the results as a diagnostic tool.

[13] Locally based tests in the areas of English composition, mathematics, and reading are required at least once in grades 1–4. Tests in grades 5–8 and 9–11 will be implemented no later than 1989–90.

[14] Test was given in Oklahoma during the 1978–79 school year. There has been no followup to the program. However, a plan for statewide testing was submitted for legislative action in January 1985.

[15] The South Carolina Education Improvement Act of 1984 specified that the 11th grade test being used to gather baseline data be replaced in 1985–86 school year with an exit examination in the 10th grade. All students graduating in 1990 and after must pass the examination.

[16] Local districts use the state-designated tests at grades 3, 6, and 8 for remediation and to advise on grade retention. The Tennessee high school test, first taken at grade 9, is required for graduation.

[17] Texas HB 72 (1984) mandated the new testing program. New requirements became effective in 1985–86 school year.

[18] Vermont Basic Competency Program requires students to master the basics before they complete 8th grade.

NOTE.—Some states have dates for assessing the first high school graduating class but do not expect to use the results to determine whether students will graduate.

SOURCE: Education Commission of the States, *Clearinghouse Notes*, "State Activity—Minimum Competency Testing, as of November 1985"; and "Student Minimal Competency Testing." (This table was prepared March 1993.)

APPENDIX B

Distribution of Iowa Public School Districts by Enrollment Category and Number of Districts Operating High Schools

K-12 District Enrollment Category	Number of Iowa Public School Districts	Number of Iowa Public School Districts with High Schools
0-249	37	11
250-399	57	45
400-599	86	85
600-999	105	105
1000-2499	78	78
2500-7499	25	25
7500 or more	9	9
Total	397	358

Source: Iowa Department of Education, Basic Educational Data Survey, Enrollment File, 1993-94

Number of Carnegie Units of Mathematics Required for Graduation by District Enrollment Category

Mathematics									
Enrollment Category	**Carnegie Units**								
	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
	(Percent of Districts)								
0-249	—	—	—	—	81.8%	—	18.2%	—	—
250-399	—	—	2.2	2.2	77.8	6.7	11.1	—	—
400-599	—	—	—	—	81.2	3.5	15.3	—	—
600-999	—	—	4.8	1.9	76.2	7.6	9.5	—	—
1000-2499	—	—	2.6	9.0	75.6	2.6	10.3	—	—
2500-7499	—	—	16.0	4.0	76.0	—	4.0	—	—
7500 or more	—	—	—	—	100.0	—	—	—	—

Source: Iowa Department of Education, Basic Educational Data Survey, Policy and Procedures File, 1993-94

Number of Carnegie Units of Science Required for Graduation by District Enrollment Category

Science									
Enrollment Category	**Carnegie Units**								
	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
	(Percent of Districts)								
0-249	—	—	9.1%	—	81.8%	—	9.1 %	—	—
250-399	—	—	—	2.2	80.0	4.4	13.3	—	—
400-599	—	—	3.5	—	83.6	4.7	8.2	—	—
600-999	1.0	—	3.8	1.9	81.9	3.8	7.6	—	—
1000-2499	—	—	5.1	2.6	78.2	5.1	9.0	—	—
2500-7499	—	—	16.0	8.0	72.0	—	4.0	—	—
7500 or more	—	—	11.1	—	88.9	—	—	—	—

Source: Iowa Department of Education, Basic Educational Data Survey, Policy and Procedures File, 1993-94

Number of Carnegie Units of English/Language Arts Required for Graduation by District Enrollment Category

English/Language Arts									
Enrollment Category	**Carnegie Units**								
	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
	(Percent of Districts)								
0-249	—	—	—	—	—	—	36.4%	18.2%	45.5%
250-399	—	—	—	—	—	—	42.2	15.6	42.2
400-599	—	—	—	—	—	1.2	24.7	22.4	51.8
600-999	—	—	—	—	2.9	—	26.7	25.7	44.8
1000-2499	—	—	—	—	—	—	41.0	37.2	21.8
2500-7499	—	—	—	—	4.0	—	52.0	20.0	24.0
7500 or more	—	—	—	—	—	—	33.3	22.2	44.4

Source: Iowa Department of Education, Basic Educational Data Survey, Policy and Procedures File, 1993-94

Number of Carnegie Units of Social Studies Required for Graduation by District Enrollment Category

Social Studies									
Enrollment Category	**Carnegie Units**								
	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
	(Percent of Districts)								
0-249	—	—	—	—	9.1%	—	72.7%	9.1%	9.1%
250-399	—	—	—	2.2	4.4	13.3	55.6	4.4	20.0
400-599	—	—	—	—	4.7	8.3	62.4	18.8	5.9
600-999	—	—	—	4.8	9.5	11.4	52.4	16.2	5.7
1000-2499	—	—	—	—	5.1	9.0	62.8	16.7	6.4
2500-7499	—	—	—	—	16.0	24.0	52.0	8.0	—
7500 or more	—	—	—	—	—	22.2	77.8	—	—

Source: Iowa Department of Education, Basic Educational Data Survey, Policy and Procedures File, 1993-94

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