

MINIMAL COMPETENCY TESTING:

IMPLICATIONS FOR ILLINOIS

NED B. LOVELL

RODNEY P. RIEGLE

ASSOCIATE PROFESSORS

DEPARTMENT OF EDUCATIONAL ADMINISTRATION AND FOUNDATIONS

ILLINOIS STATE UNIVERSITY

February 22, 1979

This paper was prepared at the request of the Office of the Governor as a follow-up to the Governor's Conference on Education. The views and recommendations contained herein are solely those of the authors and are not the official positions of either the Governor's Office or Illinois State University.

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
A. Definition of MCT	
B. Purpose of this paper	
II. NATIONAL MCT TRENDS	1
A. Causes	
B. Legislative Responses	
C. Uses of MCT	
III. STATUS OF MCT IN ILLINOIS	2
A. Illinois Constitution	
B. SB 238	
C. Special Interest Groups	
IV. HOPES AND FEARS (POSSIBLE EFFECTS) OF MCT	3
A. Hopes	
B. Fears	
V. EVALUATION OF MCT	4
A. Justness	
B. Desirability	
C. Tolerability	
D. Effectiveness	
VI. RECOMMENDATIONS IF MCT IS ADOPTED	5
A. Public Relations	
B. Major Problems and Issues	
C. Supplemental Legislation	
D. Next Steps	
VII. RECOMMENDATIONS IF MCT IS NOT ADOPTED	11
A. Public Relations	
B. Alternative Legislation	
VIII. SUMMARY OF POLICY OPTIONS	12
IX. SELECTED BIBLIOGRAPHY	13

I. INTRODUCTION

A. Definition of MCT

Minimal Competency Testing (MCT) is a system of measuring students' mastery of certain skills. Existing MCT programs measure different areas including the three R's, functional literacy, citizenship, consumerism, social responsibility, career development, employment skills, survival skills, democracy, free enterprise, social studies, and natural science.

B. Purpose of This Paper

As with many educational reforms, MCT has occurred in some states with little attention to the implications of such a development. Any reform is more likely to succeed if it is based upon sufficient consideration of the needs to be addressed, the alternative responses available, and the implications as well as the strengths and weaknesses of each. Thus, this paper will explore the implications of MCT for Illinois. Because of the wealth of material available on MCT, however, the discussions are necessarily brief. Those who wish to further pursue one or more of the issues involved should consult the bibliography.

II. NATIONAL MCT TRENDS

A. Causes

Social promotion, declining test scores, grade inflation, etc., have caused some of the public to lose faith in the public schools and have prompted them to push for legislative action. George Gallup found that 65% of the public support the idea of required competencies as a prerequisite for graduation. Other polls have found the percentage to be as high as 80%. A poll of school board presidents by the National School Boards Association found that 76% believed that every student should be required to pass a minimum competency test as a prerequisite for graduation. Public criticism has been fueled by well-publicized lawsuits in which ill-prepared students seek redress from the schools (so far unsuccessfully). Public and legislative interest has been supplemented by recent academic research on competencies, behavioral objectives, and outcomes measurement all of which have become common in public education. This combination of forces has made MCT politically feasible.

B. Legislative Responses

The legislative response to public concern has been diverse, but thirty-six states have established some form of MCT. All fifty states have experienced legislative or state board activity (study, planning, discussion, drafting, implementation) in the area of setting standards for schools or students. Nearly all this activity has occurred since 1974.

Federal MCT legislation has been proposed by Congressman Mottl (D-Ohio) and supported by Admiral Hyman Rickover and Senators Hayakawa (R-Cal.) and Pell (D-R.I.). The Director of NIE and the Secretary of HEW have both opposed this legislation. Passage appears unlikely.

C. Uses of MCT

The standards set by MCT are utilized in a variety of ways. An analysis of legislation and policy shows that standards are used to determine who should graduate, be promoted, exit early from high school, receive extra help, or be excused from specific courses. At the institutional level, standards may influence the type and scope of instruction, as well as levels of financial support. In addition, MCT is also used to evaluate school programs. Control and uses of MCT apparently depend on the political climate and traditions existing in the various states. Some states permit decisions to be made at the local level while others have centralized programs. Various states appear to be adopting MCT on the assumption that tougher graduation requirements will satisfy public criticism of education as well as the demand for greater educational accountability.

III. STATUS OF MCT IN ILLINOIS

A. Illinois Constitution

The Constitution of the State of Illinois says that "The State shall provide for an efficient system of high quality public educational institutions and services." While it is doubtful that this specifically entails MCT, it could be argued that MCT is one (perhaps important) method by which the State could, at least partially, carry out this responsibility. Thus, the MCT movement can be viewed as essentially a movement stemming from a political need for a more efficient management of the educational system.

A. SB 238

SB238 charges the IOE with the duty of preparing procedures and materials to encourage and assist local school districts to develop minimal competency testing by December 15, 1978. The IOE is required to report to the General Assembly recommendations for legislation resulting from IOE policy study and cost analysis by June 30, 1980. The IOE has conducted a series of awareness conferences and identified a cadre of consultants from public schools and universities who are available to assist local school districts. In addition, some IOE staff members who interact with local districts are being trained. The IOE identified several pilot districts which were experimenting with different approaches to MCT but this approach is being de-emphasized. Several large districts which enroll about 40% of all Illinois students already have MCT programs "in place." Chicago and Peoria are two with perhaps the most developed plans. The IOE is attempting to ascertain the degree of local interest in and

implementation of MCT. They have circulated a questionnaire to all districts to ascertain this involvement. Thus far 87% of the districts have responded. The IOE has scheduled a major meeting for sometime in May at which activities for 1979-80 will be planned.

C. Special Interest Groups

MCT seems to have no organized proponents at the state level. The pressure for MCT is coming from the public and a few legislators. The opposition is easier to identify. The large educational groups, Illinois Education Association, Illinois Federation of Teachers, Illinois Association of School Administrators and the Illinois School Board Association, have taken positions against state controlled MCT. The IEA and IFT are fearful it will be used against teachers. The IASA and IASB are fearful it will be used to further erode local control. At least some employees of the IOE appeared to be active and influential in the drive to postpone legislative action on MCT because of their belief that MCT needs further study. The Illinois Office of Education has not endorsed SB 238 and believes the costs associated with its implementation may be "burdensome" in terms of the need for new staff, preparation of test materials, and follow-up evaluations and reports. The State Board has opposed mandatory testing for minimal competencies, either from the state level or through locally-developed standards. Spokespersons for the Illinois Association of School Boards (IASB) and the Illinois Education Association (IEA) do not object to SB 238. They view the bill as a compromise and preferable to other legislation which would mandate minimal testing on a statewide basis. The Illinois PTA and the Illinois Chamber of Commerce both oppose MCT unless it is tied to local control.

IV. HOPES AND FEARS (POSSIBLE EFFECTS) OF MCT

Below are some of the most commonly voiced assertions regarding the possible effects of MCT. At this point in time, they should be regarded merely as hopes and fears rather than substantiated arguments.

A. Hopes

Proponents claim that MCT will:

1. Stop social promotion and restore the value of a high school diploma,
2. Ensure that all graduates possess the basic skills (3R's) and are functionally literate,
3. Make teachers and schools accountable for teaching the basics,
4. Help coordinate education from grade to grade and school to school,
5. Accurately inform parents about their children's progress,
6. Prevent minority students from being pushed up and out without the basic skills.

7. Quiet public criticism and generate public support of education.

B. Fears

Opponents claim that MCT will:

1. Cause critical thinking, attitude development, creativity, athletics, music, fine arts and other "non-basic" areas to be ignored,
2. Increase state control of education at the expense of local control and also increase the influence of professional bureaucrats,
3. Cause handicapped, gifted, bilingual and other students with unique needs to be shunted aside,
4. Be used as the sole basis for awarding diplomas and evaluating teachers and schools,
5. Be used to prevent minority students from graduating,
6. Increase the number of dropouts and thus the unemployment rate,
7. Permit students to graduate early. This coupled with increased dropouts will cause many teachers to be laid off.
8. Be extremely costly especially when remediation is used to correct shortcomings,
9. Generate an incredible amount of litigation.

V. EVALUATION OF MCT

As is the case with most complex issues the "correct" course of action is not obvious. Any policy decision, however, should be based on the following criteria.

A. Justness

As long as MCT is tied to diagnosis and remediation and is not simply a punitive or labelling device, then it appears to be just. MCT also appears to be consistent with the Illinois constitution.

B. Desirability

MCT has been adopted by thirty-six states and has great public support. Popularity, however, is not the same as educational desirability. All educational groups in Illinois oppose MCT, but they, of course, have a vested interest. National educational experts are divided on this issue. See Section IV for a discussion of possible effects.

C. Tolerability

Adoption of MCT will cost money. IOE estimates 12-25 million annually. Rejection of MCT may cost votes. Political costs (and financial side-effects) are difficult to estimate.

D. Effectiveness

It is difficult to determine if MCT is the most effective means to achieve an "efficient" and "high quality" educational system. Some measurement experts argue that the testing technology required to make MCT valid and/or reliable simply does not exist. It should also be kept in mind that if the present opposition to MCT by the Illinois educational establishment continues the effectiveness of MCT will be greatly impaired.

VI. RECOMMENDATIONS IF MCT IS ADOPTED

A. Public Relations

In view of widespread opposition by the educational establishment in Illinois, MCT should be advocated as a positive, perhaps inevitable (because of public support), addition to an already sound state educational system, rather than as a panacea for a gravely ill system. (Illinois students average 10 points higher than the national average on the Scholastic Aptitude Test, for example). Increased participation by special interest groups (teachers, administrators, minorities, etc.) should be pursued. Data supportive of MCT should be gathered and widely publicized. It should be noted that after Florida adopted state-wide MCT, the state Commissioner of Education was re-elected by an overwhelming margin.

B. Major Problems and Issues

Any MCT legislation should be framed in light of several possible problems.

1. Legal Problems

- a. If MCT is used as a requirement for graduation and it measures knowledge and/or skills that have not been taught in school (e. g., life skills), then it may be a violation of substantive due process.
- b. Culturally and/or linguistically biased tests will generate discrimination claims made under Title VI.
- c. If the test purports to be predictive of minimal adult competency but in fact is not, then it may violate substantive due process.
- d. An inadequate phase-in period (less than 2-3 years) for a test which measures 12 years of cumulative learning may constitute a violation of due process. The legal requirement for adequate notice of significant changes in graduation requirements is stronger for elementary and secondary public schools than for postsecondary education because courts usually apply a stricter standard to cases where education is compulsory.
- e. To be manifestly fair to all students, and to avoid charges of discrimination, provisions should be provided for multiple evaluation, learning, and

remedial opportunities. Steps should be taken to ensure that remediation does not cause students who fail the test to be tracked in all courses. States and/or districts may be legally vulnerable if standards are established for purely punitive purposes, either to withhold promotion or graduation, or to simply identify pupils as 'low achievers' rather than for diagnostic and remedial purposes.

2. Special Education

The courts have ruled that all handicapped students have the right to an education under the equal protection clause of the 14th Amendment. The Education for All Handicapped Children Act, P.L. 94-142, requires that schools provide this equal protection by the means of an individualized education program (IEP) tailored to each child's special need. While the IEP is not considered a binding contract by the Bureau of Education for the Handicapped, it is clear that Congress intended for the IEP to bring an element of accountability into special education programming. If the goals established by a student's IEP are different than that of a MCT program and passing the test is a prerequisite for a high school diploma, the school district has a problem. Changing the IEP may be one choice, excusing the student from the test is another. Either option will probably be contested by various special interest groups. Section 504 of the Rehabilitation Act of 1973 provides that students may not be excluded from educational programs because of a handicap. Handicapped students must be individually accommodated. Steps must be taken to ensure equal opportunity for promotion and graduation.

3. Local vs. State Control

Striking the appropriate balance between state and local control, between strong legislation and flexible policy, is always difficult. The following contrasting points of view are illustrative.

- | <u>State Control</u> | <u>Local Control</u> |
|--|---|
| a. Total local control will lead to meaningless tests. | a. Local needs and priorities vary; therefore, it is difficult to set a single standard for the entire state. |
| b. Lack of common expectations will emerge from districts. | b. For the program to be effective, the local board, community and teacher need to feel ownership. |

- | | |
|--|--|
| <ul style="list-style-type: none"> c. High mobility at both pre- and post-graduate levels requires uniformity of testing. d. If the process is left entirely in the hands of educators, it will remain suspect. e. Strong legislation is necessary to stimulate change. | <ul style="list-style-type: none"> c. Local boards are ultimately accountable and thus should control local testing programs. d. Policies, as opposed to laws, are flexible and can be easily changed if necessary. e. Centralization of control will not solve the technical problems. |
|--|--|

Some kind of compromise should also be considered (Regional or county consortiums, for example). A few local districts in Illinois have voluntarily gone on record as favoring a county or state test, largely because they feel they lack the expertise to do the job themselves.

While the data in this area is skimpy, it appears that where states administer the test, score them, and handle all reporting, the costs (in time, staff, and money) are relatively small. In states where local districts must devise their own test, have it approved by the state, and then implement their own program, the cost is higher.

4. Perception vs. Reality

Numerous studies indicate that the extreme condemnation currently focused on schools is not entirely justified. For example, recent data shows that the percentage of 17 and 18 year olds able to pass a minimal competency reading test has risen from 45% in WWI, to 65% in WWII, to 80% at present. Unfortunately, increased success breeds increased expectations.

On the other hand, the National Assessment of Educational Progress (NAEP) estimates that 13% of the nation's 17-year old high school students are functionally illiterate. NAEP defines functional literacy as being able to perform tasks necessary to function in American society, such as reading newspapers, instructions, and drivers license tests.

5. Inner City and Minority Students

NAEP found that 21% of the 17-year old students from urban areas and 42% of the black students nationwide were functionally illiterate. A disproportionate percentage of minority students failed Florida's initial functional literacy test. The NAACP has challenged Florida's program in the courts.

C. Supplementary Legislation

Adoption of MCT may require supplemental legislation. The following list is illustrative only.

1. Certification

Currently elementary teachers in Illinois may be certified with only one 2-hour course in reading. Consequently, the ability of many teachers to properly teach reading is suspect. While some colleges may require more of their students, it would appear expedient for the certification board or the legislature to require more reading courses if reading is a priority. If we are to improve the reading skills of students it would appear prudent to increase the reading qualifications of beginning teachers. Additional required course work in other basic subjects (math and writing) may also be in order. Upgrading the teaching of reading and other basic subjects through the certification route will be a slow process. Thus, the requirement that all elementary (and perhaps secondary) teachers take additional in-service training in order to renew their certificate would appear to be a valid consideration.
2. National Teachers Exam

Prior to employment the only quality control of teacher education is certification. Presently, the certification board delegates much of the responsibility to the teacher education institutions of Illinois. The National Teachers Exam or a similar measure might well be considered as a means of screening entry into the profession. Such a step would not only help screen out unqualified teachers but might also serve to improve the quality of teacher education programs. The National Teacher Exam has been legitimized by the U. S. Supreme Court as a test for certification purposes. Several states and the Chicago public schools are currently utilizing such a test.
3. Time Requirements

Research has proven that there is a positive relationship between the time spent on a subject and achievement. The state may wish to establish minimum time requirements for the basic subjects (reading, writing and mathematics). Such a step would clearly spell out for teachers what the educational priorities of the state are and should lead to increased achievement in the basic subjects. Such a step would also serve as a buffer for local school boards who are continually pressured to provide additional programs and services by their communities. It would have a similar purpose when legislators contemplate additional mandates for the instructional program.
4. Remediation

MCT may be challenged on legal grounds if it does not include remediation for those students who fail the test. Additional funds may be necessary to assure adequate remediation. In

addition, school districts might redeploy staff for remediation. Care should be taken to assure that remediation doesn't get left to the poorer teachers and that those assigned the responsibility are properly trained.

5. Problem Learners
Many teachers simply have not been trained to teach students who have difficulty learning. The Illinois Office of Education and the various state universities could be requested to develop in-service and pre-service programs dealing with problem learners.
6. Alternative Programs
Some authorities believe that many students simply don't fit the standard curriculum. School offerings either are not relevant for these students or existing teaching methodology is not appropriate for their needs. The state may wish to encourage the exploration of alternatives to meet the needs of these students. Successful programs should be recognized, rewarded, and disseminated.
7. Utilization of Media
The IOE and/or universities could be encouraged to develop short educational programs for newspapers, radio and TV. These programs could be utilized to instruct students and parents in specific educational objectives.
8. Increased Guidance for Dropouts
Traditionally, students dropped out voluntarily. If MCT is tied to graduation, the state in effect will be forcing some students to drop out. In this eventuality the state has a moral obligation to assist these students with employability skills and/or different educational alternatives. In addition to the moral obligation, such programs may provide social benefits accruing from a higher rate of employment.
9. Legal Indemnification
Depending on the MCT model selected by the state, various degrees of liability will be thrust upon local educators and board members. If a state test is given at the behest of legislators, it may be that legislators will also have increased liability. Legislation which will provide maximum protection, given the responsibilities brought on by MCT, may be in order.
10. Minimums vs. Maximums
A commonly voiced fear is that minimal standards set by a Minimal Competency Test will become maximum rather than minimum. Safeguards must be developed to assure that broader educational goals of the schools are not forgotten. The needs of the gifted and above average students must be protected. Higher learning must not be neglected. Local

- districts should be encouraged and expected to set requirements beyond state mandated minimums.
11. Transfer Students
Transfers within the state and from other states may encounter different MCT variations and/or utilizations. This same problem may occur if different elementary schools feeding the same high school have different MCT requirements, or if students from the same elementary school feed different high schools with different MCT requirements. State-wide guidelines may be needed.
 12. Inner City and Minority Students
Because of the probability that a disproportionate percentage of inner city and minority students will fail MCT, those schools may require extra financial and/or staff support.
 13. Special Education Students
Some legislation is in order here, but it is not clear just what. Some states excuse handicapped students from the test. Other states have provided them with a modified form of the test. Some states provide handicapped students special assistance for the test which is given to everyone. Maryland excuses students if they cannot read 10 percent of the test items. Other states feel that if a student is expected to be self-sufficient as an adult, then the basic or survival skills are needed and should be provided and tested. State guidelines may be in order.
 14. Private Schools
Private schools may require special legislation.
 15. Increased Funding for Elementary Education
Some states have recognized the importance of early diagnosis and remediation by increasing funding at the elementary level.

D. Next Steps

Before specific recommendations can be made and alternatives seriously explored, direction is needed in three areas.

1. Policy Direction
There are at least eight key elements that should be integral parts of any MCT legislation.
 - a. What competencies will be required? (Basic skills, life skills, school subjects, etc.)
 - b. How will they be measured? (Paper and pencil, simulation, etc.)
 - c. When will test occur? (8th grade, 12th grade, every year, etc.)
 - d. How many minimums will be set? (Single standard or multiple)
 - e. How high will the minimums be set?
 - f. Will the test be utilized to evaluate schools or students, or even the teacher?
 - g. What will be done with the incompetent?

- h. Who will control the test (Local, county, regional, state)

Answers to these questions will allow a more efficient development of alternatives.

2. Economic

The direction the state takes on educational programs should be realistically related to the resources that will be available for their implementation. Costs will accrue from test development, test administration, reporting, remediation, just to mention the most obvious. Direction from the state concerning the dollar support which may be reasonably expected will have significant impact on the screening and selection of alternatives.

3. Time

If a valid test is to be in place by 1981, a state controlled test would appear to be the only choice. More time is needed if the state is to profit from the experience and mistakes of other states, generate grassroots support, and/or begin pilot projects. However, the political realities may be such that the state does not have the luxury of slow, deliberate action. Indication of time constraints would greatly facilitate the generation of feasible alternatives.

VII. RECOMMENDATIONS IF MCT IS NOT ADOPTED

A. Public Relations

In view of the widespread public support for MCT, if it is rejected the reason(s) for rejection should be widely publicized. In the present political climate, excessive cost is probably the reason most acceptable to the public.

B. Alternative Legislation

Alternative legislation which may accomplish some of the same goals as MCT should be considered. The following are illustrative.

1. Certification - See Section VI C.
2. National Teachers Exam - See Section VI C.
3. Time Requirements - See Section VI C.
4. Remediation - See Section VI C.
5. In-Service Education - See Section VI C.
6. Increased Funding for Elementary Education - See Section VI C.
7. Scaled Diplomas

Rather than establish minimal standards for graduation, simply record each student's score on a battery of standardized tests on his/her diploma.

VIII. SUMMARY OF POLICY OPTIONS

MCT is a complex issue made even more complex because of the incredible amount of literature it has generated. In addition, MCT is embedded in an even more complex process -- education -- which in turn is embedded in another complex enterprise -- politics. Thus, not only is there no simple solution to this problem, but those who claim to have a simple solution should be carefully avoided. Having said that, however, it is important not to become paralyzed in the face of uncertainty. Given the above caveats, there are two possible global options for policy-makers.

A. Reject MCT

1. Rescind SB 238: In all likelihood this is moot. Public relations will be a prime consideration if this choice is made.

B. Adopt MCT

If the concept of MCT is adopted, then there are several further options to consider.

1. Do nothing more. Due to SB 238 leadership has devolved to the local districts. Wait and see what the IOE and the local districts develop and recommend.
2. Provide additional funding and direction. The IOE needs additional manpower in order to be of any real help to local districts. The IOE has recently hired one person to coordinate MCT efforts but the position is temporary and will run out of funds in September 1979. Supplemental legislation providing guidelines concerning graduation, transfer students, special education, etc., may be helpful to local districts. The state may wish to encourage consortiums of districts as a means of test development and implementation.
3. Adopt the state test procedure.
If the state chooses this option the experience of other states would be extremely helpful. The educational profession can be expected to strongly resist such an effort.
4. Adopt a regional or county test or some other compromise. There is historical precedent for county testing. Some have suggested the IOE PST regions as the locus of test control.
5. Increase reliance on the Illinois Inventory of Educational Progress (IIEP) which is directed by the IOE. The sampling procedures currently utilized provide data on the status of education in the state, but not on individual students, schools, or districts.

This paper is intended to provide background information which will facilitate a discussion of the future of MCT in Illinois. This issue is extremely complex and the authors have attempted to synthesize a great mass of information in such a way that it will be helpful to policy makers. Additional research is necessary once certain global decisions are made. Comprehensive long-range planning involving practitioners and policy makers at many levels is necessary to achieve the support and flexibility required for any successful legislation. Even if MCT turns out to be just a fad and "goes away" the political forces that gave MCT impetus are likely to "stay around" and require political attention for quite some time.

IX. SELECTED BIBLIOGRAPHY

- Barry D. Anderson, "The Costs of Legislated Minimal Competency Requirements," in Readi-Reference Packet, September 12, 1977, 27 pp.
- Henry M. Brickell, "Seven Key Notes on Minimal Competency Testing," Washington, D.C.: National Institute of Education, October 1977, 12 pp.
- Joseph M. Cronin, "Can Illinois Schools Pass the Test?" unpublished paper, n.d., 16 pp.
- Gene Glass, "Standards and Criteria," Evaluation Center, West Michigan University, Kalamazoo, Michigan, 1977, 55 pp.
- Thomas F. Green, "Minimal Educational Standards," in Readi-Reference Packet, n.d., 35 pp.
- "Issue Paper on Minimum Competency Testing," Illinois Office of Education, Springfield, Illinois, n.d., 4 pp.
- E. W. Kelley, "The Politics of Proficiency," unpublished paper, submitted to NIE Basic Skills Group, n.d., 47 pp.
- C. Thomas Kerins, "Minimum Competency Testing: A Step Forward or Backward for Education?" unpublished paper, delivered to Illinois Principals Association Conference, May 1, 1978, 25 pp.
- Ned Lovell, "Minimal Competency: Can We Live With It?" Illinois School Board Journal 46:6 (November-December 1978), 10-13.

Ned Lovell and Rodney P. Riegle, "Minimal Competency Testing: Hopes, Fears, and Fallacies," unpublished paper.

Merle Steven McClung, "Are Competency Testing Programs Fair? Legal? Phi Delta Kappan 59:6 (February 1978), 397-400.

Barbara S. Miller, editor, "Minimum Competency Testing: A Report of Four Regional Conferences" Cemrel, Inc., St. Louis, Missouri, January 1978, 73 pp.

Ellis B. Page, "Escaping the Minimum Competency Dilemma: Scaled Certification" CAPT Newsletter III:V (May 1978), 6-12.

Chris Piphos, "State Activity: Minimum Competency Testing," unpublished paper prepared for the Education Commission of the States, January 1, 1979, 13 pp.

Readi-Reference Packet: Competency-Based Education, State Board of Education, Springfield, Illinois, 1978.

William G. Spady and Douglas E. Mitchell, "Competency Based Education Organizational Issues and Implications" Educational Researcher 6:2 (February 1977), 9-15.

Paul L. Tractenberg, "The Legal Implications of Statewide Pupil Performance Standards," in Readi-Reference Packet, n. d., 44 pp.

Arthur E. Wise, "A Critique of Minimal Competency Testing," Phi Delta Kappan, May 1978.