

State-Mandated Math Courses for Teacher Preparation Programs

Query – 07.08.2009

Query:

Massachusetts recently instituted a separate math licensing test for elementary teachers, and the pass rates for the first round or two were dismal. Many of us believe that the teacher preparation programs will respond appropriately and, where necessary, add appropriate math course requirements. On the other hand, there are those who believe that this isn't going to happen, and there is early chatter that either our state legislature or state K-12 education department may consider a MANDATE to all teacher preparation programs in the state, detailing the number and content of math course requirements necessary for a preparation program to obtain approval.

I am seeking to gather information about what policies other states may have considered and implemented if/when faced with a similar situation.

That is:

- **Are there any states out there that have existing state mandates on higher education course requirements for teacher preparation programs or other academic/professional programs?**
- **If so, where did the mandate come from: Dept of Higher Ed, Dept of K-12 Ed, Governor, State Legislature, ...?**
- **What circumstances led to this mandate, how was it "received", and how is it working?**

Thanks very much for your help here.

From: Massachusetts

Responses:

Nevada	The Nevada Legislature and the NSHE Board of Regents have set no course requirements. However, the Commission on Professional Standards, established by the legislature under the State Board of Education, sets learning outcome/content requirements for teachers to be licensed in Nevada that indirectly mandate certain courses in every area for every type of certification.
Washington	<p>Washington doesn't have required "courses" for teacher preparation – we have defined knowledge and skill competencies that are then assessed via content knowledge and instructional methodology assessments. We found, and some other states have found, that course names aren't that meaningful – the actual content under the same name varies to a surprising degree. Defined subject knowledge competencies help provide common definition and the assessments, as part of accountability system of teacher prep programs, ensure it is acquired.</p> <p>Further – we went through a rigorous alignment process of our teacher competencies to our student standards. Like MA, when the PESB took over, we found the elementary ed competencies pretty weak in math. We've now beefed them up considerably, but again – not by saying "increase course requirements by two more math classes" or "all elementary ed teachers have to take analytic geometry" – but by more clearly defining the content they must master.</p>

	<p>I think it's also important to remember, most teachers now don't get their content knowledge from the college of education / their teacher prep program – it's through their liberal arts degree. So to some degree it's about the admission practices of the college of ed and their relationship with colleges of liberal arts. Why are you admitting candidates who can't handle the math on an elementary ed test (that is assuming it's a good test and aligned with certification standards / program expectations) and what do we need to do to beef up the math knowledge of all liberal arts graduates in this era of STEM?</p> <p>So yes, increased expectations for colleges of education tied with their accreditation is important – but if candidates come to colleges of education with weak math skills – you're looking at a much longer program – and there's always pressure for expedience in teacher prep. Generally policymakers want undergrads out in four years and post-grad certification only programs to be a year or less. So partnership between liberal arts and colleges of ed are crucial.</p> <p>The various competencies can be found online - http://www.k12.wa.us/certification/profed/competency.aspx</p>
West Virginia	<p>In 2004, the WV Higher Education Policy Commission approved Series 46, <i>Standards for Subject-Area Content in Secondary-Level teacher Preparation Programs</i>. The policy was an outgrowth of the recommendations of a Task Force established by the Commission. The task force was charged with recommending ways to improve the quality of teacher preparation in secondary-level subject-content areas. The Commission was influenced by a national report from the Teaching Commission entitled <i>Teaching at Risk</i>. I have summarized some key points of the policy which may be found on our web site www.hepc.wvnet.edu.</p> <ol style="list-style-type: none"> 1. The standards are designed to assure minimum levels of subject-area preparation in secondary-level teacher preparation programs. 2. Each institution shall provide its secondary-level programs in core academic areas require at least the equivalency of corresponding content majors in terms of academic rigor and credit hours completed in content areas. 3. The subject-area curriculum must include some form of culminating educational experience in the content area, such as a capstone course. 4. Each institution was required to file a copy of its revised secondary-level teacher preparation curricula with the Commission. <p>The reports filed by institution indicated that the institutions, where required, modified the subject-area curricula through the addition of hours and courses. Contact me if you have further questions.</p>
West Virginia	West Virginia has no such mandates.
Missouri	In Missouri, the specific content of teacher preparation programs is primarily governed by the state's K-12 agency, the Department of Elementary and Secondary Education. In Missouri, DESE has defined fairly extensive competencies, the Missouri

	<p>Standards for Teacher Education Programs (MoSTEP) - http://dese.mo.gov/divteachqual/teached/MoSTEP/, which the institutions can then map onto courses for DESE’s review and approval.</p> <p>There is, then, a fairly defined structure of semester hours which a candidate for certification must complete, depending on their area of focus - http://dese.mo.gov/schoollaw/rulesregs/EducCertManual/Index.htm. New teacher preparation programs (which are quite rare at this point, especially at the baccalaureate level), would need to be approved by the MDHE and DESE, although we would of course take a coordinated approach.</p> <p>As for history, I’m afraid I can’t say much – I’ve never known it to be any different, and I can say that while there are always changes that could be envisioned, the basic structure of teacher prep in Missouri is regarded as fairly settled at this point. We have gone through some other exercises in the recent past that revolved around competency development - http://www.dhe.mo.gov/mdhe/boardbook2content.jsp?id=545 – and I believe we were able to get institutional buy-in, but constant, multi-layered communication is of course a necessity.</p>
Wisconsin	<p>I'm not sure if Phil will be responding, but here is my stream of thinking on the query. Feel free to share as you wish.</p> <ul style="list-style-type: none"> • Wisconsin administrative code <u>does not</u> mandate specific content area courses for teacher preparation programs. The new State Code, implemented in 2004, focuses on the demonstration of outcomes (documented knowledge and skills) not inputs (i.e., courses and credits). To meet program approval, the state requires programs to establish a rigorous and comprehensive assessment system where graduates/program completers demonstrate subject-matter knowledge and content and general pedagogy through a variety of assessments-these typically include performances in coursework, PRAXIS I and II and field-based observations. • That said, while most all of Wisconsin's graduates/program completers in education pass the entry and exit math assessments, some students do not meet program admissions criteria to get into an education (e.g., PRAXIS I). While test-related limitations account for some of the "failure" we know many students do not pass because they lack adequate preparation in mathematics. This problem is symbolic of the national trend data, which over the last few years has revealed there is an increase in the number of high school graduates needing math remediation in college. • So, if any efforts to improve preparation in mathematics (for future teachers and their students) are to succeed (and I agree that we do need higher performance standards for content knowledge and content pedagogy), they must emerge from a partnership between K-12 and higher education. Creating a set of more rigorous requirements in higher education, or teacher preparation specifically, without carefully aligning these requirements with K-12, will lead to increased failure and an increase in the need to provide remediation at the college level. <p>My comments are generated from our experience in Wisconsin where we are</p>

	<p><u>attempting</u> to address this problem on a variety of fronts recognizing that the problem of inadequate preparation in mathematics is a complex problem and K-12 and higher education share the responsibility for arriving at solutions.</p> <p>Good luck and we are always happy to join with others in an attempt to find effective and efficient solutions to these kinds of challenges.</p>
Mississippi	<p>Prior to being admitted to a teacher education program, students shall have completed minimum of 44 semester hours of coursework achieving a minimum grade point average of 2.5 on this coursework (4.0 system).</p> <p>Teacher candidates shall be required to complete specific programs of study:</p> <p><u>K-3 teacher candidate program of study.</u></p> <p>An interdisciplinary program of study, which shall include, but is not limited to courses (or their equivalents) in:</p> <p>English- 12 semester hours Mathematics- 9 semester hours Science- 9 semester hours Social Studies- 12 semester hours Fine Arts/Teaching of Fine Arts- 6 semester hours Reading- 15 semester hours Special Education- 3 semester hours Classroom Management Data Analysis/Evaluation</p> <p><u>K-6 or K-6 with 4-8 Subject Area teacher candidate program of study</u></p> <p>An interdisciplinary program of study, which shall include two 18 or 21- hour content concentrations* which shall include, but not be limited to, courses (or their equivalents) in:</p> <p>English – 12 semester hours Mathematics – 9 semester hours Science – 9 semester hours Social Studies – 12 semester hours Fine Arts/Teaching of Fine Arts – 6 semester hours Reading – 15 semester hours Special Education – 3 semester hours Classroom Management Data Analysis/Evaluation</p> <p><u>Middle Grade Pedagogy</u></p> <p>*[K-6 Candidate] = 18 semester hours of academic content courses, a total which can include 3 semester hours of academic pedagogy courses in each of the concentration</p>

	<p>areas.</p> <p>*[4-8 Subject Area Candidate] = 21 semester hours of academic content courses, a total which can include 3-6 hours of pedagogy courses in each of the concentration areas.</p> <p><u>7-12 Subject Area Teacher candidate program of study:</u></p> <p>The 7-12 teacher candidate must have a major in a content area licensed by the state and complete a program of study, which shall include, but I not limited to courses (or their equivalents) in:</p> <p>Special Education – 3 semester hours Classroom Management Data Analysis/Evaluation Pedagogy/Literacy/Reading Integration</p>
Ohio	<p>Dr. Barbara Danley, Vice Chancellor for Academic Affairs and System Integration, asked that I respond to your request for any information related to mandated courses in teacher education programs in Ohio.</p> <p>At the current time, only teachers of early and middle grades have three semester hours of Phonics as specified in the Ohio Revised Code. There are no other course requirements for teachers to teach in the state of Ohio.</p> <p>There are requirements under administrative code that teachers have 12 weeks of student teaching, align programs with academic content standards, provide evidence that candidates understand value-added analyses, complete 12 semester hours of reading if teaching in lower grades, and come from an Ohio school that is fully accredited by NCATE or TEAC. However, after the passage of HB1 (currently in conference), the Chancellor will decide if these or any other requirements will remain.</p> <p>I hope this is helpful. Please let me know if I can answer any additional questions related to teacher education programs in Ohio.</p>
New Mexico	<p>Since 1986 New Mexico law has required 6 credits of math for elementary teachers.</p> <p>The state’s recently created math and Science Advisory Council recommended to the Secretary of Public Education and Legislature that the requirement be raised to 9 credits. (This was the requirement at some universities and responds to the recommendation contained in the CBMS publication entitled “The Mathematical Preparation of Teachers”.) Earlier this year the Legislature followed through and raised the requirement. This has led to a group of math faculty from across the state to begin to work collaboratively on implementing this new statewide requirement.</p>
South Dakota	<p>I’ve inserted information for SD below. Feel free to follow up if you have questions.</p> <p>Are there any states out there that have existing state mandates on higher</p>

	<p>education course requirements for teacher preparation programs or other academic/professional programs?</p> <p>In SD, all teachers must complete a three-credit Indian Studies course and a three-credit human relations course.</p> <p>If so, where did the mandate come from: Dept of Higher Ed, Dept of K-12 Ed, Governor, State Legislature, ...?</p> <p>These requirements are set in statute.</p> <p>What circumstances led to this mandate, how was it “received”, and how is it working?</p> <p>These requirements have been in place for approximately twenty years. Since these were established before my appointment, I believe these courses were specified to address perceived critical needs in South Dakota. I gather there was some push-back initially, a decade or so ago there were a couple of round tables held to discuss these but there are few if any comments about these requirements at this point in time.</p>
Alabama	<p>State mandates on higher education course requirements for teacher preparation programs originate with the Alabama State Department of Education (ALSDE) and are recorded in regulation (Administrative Code). The ALSDE is the regulatory agency for teacher education and certification. With respect to curriculum in mathematics education, the regulations regarding required coursework for state-approved programs are non-prescriptive but call for broad content knowledge and mastery in application.</p> <p>The emphasis of the state in teacher education is focused more on the restructuring of schools that would allow for optional career paths that optimize instructional improvement and provide teachers with broader responsibilities for curriculum design and leadership roles. This restructuring agenda, The Professional Pathways system, was the outcome of the work of a Governor’s Commission on Quality Teaching that recently issued its multi-year study report (December 2008).</p> <p>For additional information on this initiative, you may wish to contact Tony Thacker of the ALSDE: tthacker@ALSDE.edu.</p> <p>Let me know if you have additional questions.</p>
Oklahoma	<p>In Oklahoma, our Regents policy states the following:</p> <p>"Students majoring in early childhood, elementary, and special education are required to successfully complete a minimum of 12 semester hours in liberal arts and sciences course work in each of the academic core areas: English, mathematics, science, and social sciences. These courses may be taken at either a community college or university."</p>

	<p>"Institution officials are permitted to select the course work in each of the core areas that is appropriately suited to meet the established teacher preparation competencies and related assessments. However, professional education courses (methods courses) may not be included in the minimum twelve-hour blocks."</p> <p>About mathematics specifically our policy states:</p> <p>"College and university officials are to review the mathematics curriculum and develop and/or modify courses that will meet the standards proposed by the National Council of Teachers of Mathematics."</p> <p>The deans/colleges of ed in Oklahoma comply with this policy, and Oklahoma also requires the teacher candidates to pass a general education test (The Oklahoma General Education Test - OGET) (Most colleges require a passing score on this test before the candidates can be admitted into teacher education). The OGET includes the following six sub-areas: Critical Thinking Skills: Reading and Communications; Communication Skills; Critical Thinking Skills: Mathematics; Computation Skills; Liberal Studies: Science, Art and Literature, Social Sciences; and Critical Thinking Skills: Writing</p> <p>Please let me know if you have further questions!</p>
Oregon	<p>Oregon does not require specific coursework in any content area. We do require passing a content test for licensure. At the middle and high school levels, generally a major or degree in the content area is necessary to pass the content required tests.</p>
Maryland	<p>Maryland requires teacher prep programs to include reading courses.</p> <p>Below is a description of the reading course initiative describing the evolution and current status of required reading courses in Maryland. This requirement is in COMAR as recommended by the Maryland State Board of Education as proposed by the Maryland State Task Force on Reading. I have attached a description of the history and various web links. Hope this will be helpful.</p> <p>Maryland Reading Course Initiative Background</p> <p>Maryland has implemented a variety of steps to support the development of reading competencies for pre-service and in-service teachers. There have been efforts by numerous groups: the work of the Maryland State Task Force on Reading, the regulations supported in COMAR by the Maryland State Board of Education, the Reading Professional Development Committee, the Reading Course Revision Guidelines Committee, the Office of Reading First, and the Peer Review Course Revision Committee. Supported by the leadership of the Division of Certification and Accreditation through Program Approval, Maryland certified teachers have extensive experiences in developing knowledge and skills in reading.</p> <p>In December of 1997 the Maryland State Task Force on Reading made recommendations to the State Board of Education describing the content of reading</p>

theory and methodology which should be taught to Maryland teachers seeking certification. In the Final Report of the Maryland State Task Force on Reading, <http://www.marylandpublicschools.org/NR/rdonlyres/431E9BB4-A8C6-40B3-942E-DD89C362B23E/0/TaskForce.pdf>, published in October 1998, specific inputs for the following four courses were suggested by the Task Force for Early Childhood, Elementary Education, and Special Education K-8 teacher candidates and in-service teachers:

- * Processes and Acquisition of Reading
- * Reading Instruction
- * Assessment for Reading Instruction
- * Materials and Motivations for Reading

The Task Force outlined its recommendations for pre-service teacher preparation for all candidates seeking secondary teaching certification as follows:

- * Methods of Teaching Reading in the Secondary Content Areas, Part I
- * Methods of Teaching Reading in the Secondary Content Areas, Part II

The recommendations became Maryland State Board approved COMAR regulations in Reading.

In 1998 the Reading Professional Development Committee was charged with identifying the knowledge, skills, and performances for each of the required reading courses outlined in the regulations adopted by the State Board of Education on July 28-29, 1998. The work of the Reading Professional Development Committee resulted in recommended content for courses for Early Childhood, Elementary and Special Education courses in Processes and Acquisition of Reading, Instruction of Reading, Assessment for Reading Instruction, and Materials for Teaching Reading as well as content for two secondary level content reading courses.

Maryland colleges and universities were charged with examining, redesigning, and in some cases creating reading courses to meet the identified knowledge, skills, and performances identified in the regulations. The course submission and review process resulted in the publication of a listing of Maryland State Approved Reading Courses Offered by Colleges & Universities:

<http://www.marylandpublicschools.org/NR/rdonlyres/C90FEC83-190A-4EFD-92E1-7344E7527C2B/20490/MarylandApprovedReadingCoursesJune2009.pdf>

Generic frameworks for Continuing Professional Development (CPD) Reading Courses for Local Education Systems were also created and disseminated.

While Maryland was moving forward with its implementation of required reading courses based on criteria identified by the Reading Professional Development Committee, in 1997, Congress asked the Director of the National Institute of Child Health and Human Development (NICHD), in consultation with the Secretary of Education, to convene a national panel to assess the status of research-based knowledge, including the effectiveness of various approaches to teaching children to

	<p>read. The results of that study were reported by the National Reading Panel.</p> <p>In 2003 the Maryland State Department of Education was the recipient of a U.S. Department of Education Reading First grant. Under the auspices of the grant, an opportunity to revisit the content of the four elementary courses was provided. Dr. Nancy Grasmick, State Superintendent of Schools, issued the charge to the committee consisting of leaders in reading representing institutions of higher education and local educational systems to examine current course designs, revise them, and add skills, knowledge, and competencies crucial to preparing teachers to teach reading using Scientifically Based Reading Research (SBRR). The work of that committee is described in the document entitled Reading Course Revision Guidelines for Elementary, Early Childhood and Special Education, http://www.marylandpublicschools.org/NR/rdonlyres/C90FEC83-190A-4EFD-92E1-7344E7527C2B/7875/ReadingCourseRevisionGuidelines1.pdf, published in November, 2004. The definition of SBRR is provided on page iv of the document. The Reading Course Revision Guidelines address phonemic awareness, phonics, fluency, vocabulary, comprehension, and motivation.</p> <p>Following the statewide distributions of the competencies identified in 1999 and in 2004, two-year and four-year colleges and universities developed new reading courses for submission to the MSDE for review through a blind peer review process conducted by higher education and local school system reading professionals serving on the Peer Reading Course Review Committee. The new or revised reading courses are for teacher preparation programs and/or teacher certification renewal. Technical assistance was provided to IHEs on a large scale and individual basis. See Reading Course Revision Support Materials: http://www.marylandpublicschools.org/NR/rdonlyres/C90FEC83-190A-4EFD-92E1-7344E7527C2B/6304/ReadingCourseRevisionSupportMaterials.pdf</p> <p>As indicated earlier, the Maryland State Approved Reading Courses Offered by Colleges & Universities website identifies the state approved reading courses offered by two-year and four-year institutions of higher education noting with SBRR those courses that have been successfully submitted to meet the Reading Course Revision Guidelines addressing Scientifically Based Reading Research. At this point over 200 courses have been successfully approved as meeting the identified criteria. Other approved courses meet the criteria of the existing secondary level content guidelines, Teaching Reading in the Secondary Content Areas, Part I and Part II.</p>
Florida	<p>Thank you for your inquiry and the opportunity to provide input on policies related to state-mandated curricular requirements for teacher preparation programs.</p> <p>State-approved teacher preparation programs in Florida are governed by <u>1004.04 F.S.</u> and State Board of Education Rule <u>6A-5.066</u>. Prior to 2006, the Florida Legislature mandated that each state-approved teacher preparation program include a specific set of courses in its general education curriculum. Those requirements were included in State Board of Education Rule 6A-5.066. That rule was revised in 2006 to remove the specific course requirements and instead require a set of core competencies that all candidates must demonstrate successfully prior to program completion.</p>

	<p>State-approved teacher preparation programs in Florida are required to have a Uniform Core Curriculum that provides knowledge and “a foundation in scientifically researched, knowledge-based reading literacy and computational skills acquisition; classroom management; school safety; professional ethics; educational law; human development and learning; and understanding of the Sunshine State Standards content measured by state achievement tests, reading and interpretation of data, and use of data to improve student achievement.”</p> <p>All completers also must have mastered the 12 <i>Educator Accomplished Practices</i> at the pre-professional level. In addition, students enrolled in the program must be prepared in state-mandated reading competencies approved by the State Board for a reading endorsement. Candidates in pre-kindergarten-primary, elementary, and exceptional student education are required to satisfy Reading Competencies One through Five of the State Board-approved reading endorsement. Candidates in middle grades, secondary, and K-12 special area certification programs are required to demonstrate competencies associated with Competencies One and Two only.</p> <p>Having a set of stringent course requirements was difficult for the colleges of education. Part of the difficulty stemmed from trying to maintain a 120-credit hour degree program as required by <u>1007.25</u> F.S., while adhering to other state-mandated requirements needed for continued state program approval. Keeping a balance between the two was sometimes difficult. Since SBE 6A-5.066 was revised, colleges of education have been given greater flexibility in designing course requirements for students enrolled in the programs while at the same time adhering to state requirements. The feedback that the Board of Governors Office has received regarding the changes in SBE rule has been positive.</p> <p>More information about the requirements for obtaining state program approval and what should be included in the uniform core curriculum can be found at http://www.fldoe.org/profdev/approval.asp. If you have additional questions, please contact Dr. Sundra Kincey at Sundra.Kincey@flbog.edu.</p>
New York	<p>I responded to the questions after each in the text below.</p> <p>Are there any states out there that have existing state mandates on higher education course requirements for teacher preparation programs or other academic/professional programs?</p> <p>RESPONSE: In New York State, the Board of Regents adopted new regulations in September 1999, with these new regulations becoming effective on February 2, 2004. All content specific teacher preparation programs are required to include a major or its equivalent in the subject to be taught. By NY regulation, a major must include at least 30 sem hour credits of study in a sequential program of study that includes depth and breadth of study in the specific content.</p> <p>If so, where did the mandate come from: Dept of Higher Ed, Dept of K-12 Ed, Governor, State Legislature, ...?</p>

RESPONSE: The Higher Education Committee of the New York State Board of Regents adopted the regulations and recommended to the full board. The full Board adopted the regulations on September 17, 1999.

What circumstances led to this mandate, how was it "received", and how is it working?

RESPONSE: The Board of Regents wanted teachers to be better prepared in the teaching content areas. It mandated that the education departments had to collaborate with the liberal arts and sciences program faculty to ensure rigor of study. It was a struggle at first but seems to have worked. Generally, statewide pass rates on content specialty tests have improved and are in the mid to upper 90th percentile.