



Preparing Tomorrow's Teachers:

Are **COLORADO's** education school graduates ready to teach reading and mathematics in elementary classrooms?

December 2009

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WITH PRINCIPAL FUNDING FROM:

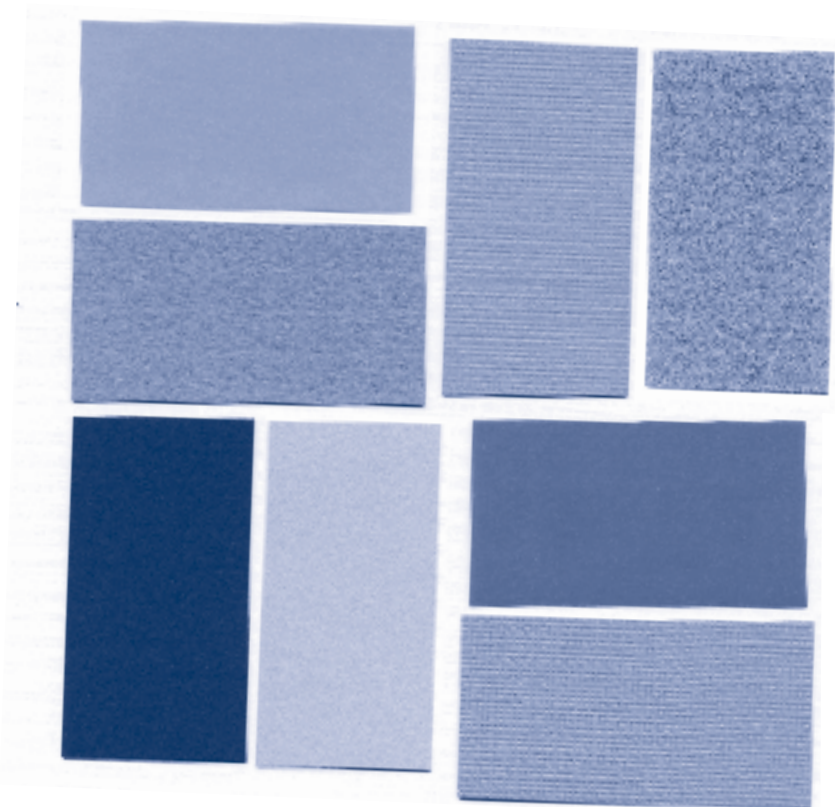
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INTRODUCTION

IMPROVING TEACHER EFFECTIVENESS IS HIGH ON THE LIST OF MOST EDUCATION REFORMERS IN COLORADO, AS IT IS NATIONALLY. EFFECTIVE TEACHING IN THE ELEMENTARY YEARS IS OF VITAL IMPORTANCE TO ENSURE NOT ONLY THAT CHILDREN MASTER FUNDAMENTAL SKILLS, BUT THAT PERFORMANCE GAPS NARROW RATHER THAN WIDEN BEYOND REPAIR. WE NOW KNOW THAT DISADVANTAGED STUDENTS CAN CATCH UP ACADEMICALLY WITH THEIR MORE ADVANTAGED PEERS IF THEY HAVE GREAT ELEMENTARY TEACHERS SEVERAL YEARS IN A ROW.

It is for these reasons that the National Council on Teacher Quality (NCTQ), a nonpartisan research and advocacy group dedicated to the systemic reform of the teaching profession, evaluates the adequacy of preparation provided by undergraduate education schools. These programs produce 70 percent of our nation's teachers. We think it is crucial to focus specifically on the quality of preparation of future elementary teachers in the core subjects of reading and mathematics.

Teacher preparation programs, or "ed schools" as they are more commonly known, do not now, nor have they ever, enjoyed a particularly positive reputation. Further, there is a growing body of research demonstrating that teacher preparation does not matter all that much and that a teacher with very little training can be as effective as a teacher who has had a lot of preparation. As a result, many education reformers are proposing that the solution to achieving better teacher quality is simply to attract more talented people into teaching, given that their preparation does not really matter.

In several significant ways, we respectfully disagree. NCTQ is deeply committed to high-quality formal teacher preparation, but, importantly, we are not defenders of the status quo. We also do not believe that it is a realistic strategy to fuel a profession with three million members nationally by only attracting more elite students. Yes, we need to be much more selective about who gets into teaching, and we strenuously advocate for that goal. But even smart people can become better teachers, particularly of young children, if they are provided with purposeful and systematic preparation.

*NCTQ has issued two national reports on the reading and mathematics preparation of elementary teachers in undergraduate education schools. The first, *What Education Schools Aren't Teaching about Reading and What Elementary Teachers Aren't Learning* was released in May 2006.¹ The second, *No Common Denominator: The Preparation of Elementary Teachers in Mathematics by America's Education Schools*, followed just over two years later.² These reports provide the methodological foundations for this analysis of teacher preparation in every undergraduate program in Colorado.*

1 http://www.nctq.org/p/publications/docs/nctq_reading_study_app_20071202065019.pdf
NCTQ has also released a report on reading preparation in elementary and special education programs in all of Indiana's undergraduate schools of education: http://www.nctq.org/p/publications/docs/nctq_full_study_indiana_reading_20090504110141.pdf.

2 http://www.nctq.org/p/publications/docs/nctq_ttmath_fullreport_20090605062928.pdf

AN OVERVIEW OF THE QUALITY OF UNDERGRADUATE ELEMENTARY TEACHER PREPARATION IN COLORADO

EACH YEAR ABOUT 2,400 WOMEN AND MEN GRADUATE FROM 15 COLLEGES LOCATED IN COLORADO WITH CERTIFICATION TO TEACH ELEMENTARY SCHOOL.³ THESE PREPARATORY PROGRAMS ARE REGULATED BY THE COLORADO DEPARTMENT OF EDUCATION AND THE COLORADO DEPARTMENT OF HIGHER EDUCATION. THESE OFFICES MUST EVALUATE EACH PROGRAM, DETERMINING IF IT MEETS STATE REQUIREMENTS AND PROVIDES A SUFFICIENTLY RIGOROUS CURRICULUM TO CONFER A COLORADO STATE TEACHING LICENSE ON ANYONE WHO SUCCESSFULLY COMPLETES THE COURSE OF STUDY. PASSING PROGRAMS ARE THEN FORMALLY "APPROVED" BY THE COLORADO COMMISSION ON HIGHER EDUCATION AND THE COLORADO STATE BOARD OF EDUCATION.

In our 2007 State Teacher Policy Yearbook, NCTQ found Colorado's policies related to teacher preparation and licensure to be in need of serious improvement,⁴ and our latest edition (forthcoming in January 2010) will show little progress has been made on the numerous goals connected to elementary teacher preparation. Some examples include:

- *Colorado does not ensure that its teacher preparation programs provide elementary teacher candidates with the broad liberal arts education necessary to achieve strong academic content standards for students.*
- *While Colorado does have standards that require teacher preparation programs to prepare new teachers in the science of reading instruction, it does not test whether new teachers have this critical knowledge before granting licensure.*
- *Although all teacher candidates in Colorado must complete coursework in mathematics, the state does not specify a minimum number of credit hours, the requisite content of such courses or that the courses must meet the needs of elementary teachers.*
- *Colorado does not require that applicants to education programs pass at least a test of basic skills, nor does it require such a test at any point during the completion of the program. This means that programs may lower their instructional rigor to accommodate less capable students, including spending valuable preparation time remediating basic skills.*
- *Colorado neither monitors nor caps the amount of professional coursework that programs can require.*
- *Colorado does not meet the goal of keeping its program approval process wholly separate from accreditation by one of the two national accrediting bodies, National Council for the Accreditation of Teacher Education (NCATE) or Teacher Education Accreditation Council (TEAC). Neither of these organizations has been able to demonstrate that an accredited program has met a higher-quality standard than one that is not accredited.⁵*

³ *The Colorado Department of Higher Education reported 2,371 graduates from 15 undergraduate programs preparing elementary teachers in 2008-09: Adams State College, Colorado Christian University, Colorado College, Colorado State University-Pueblo, Fort Lewis College, Mesa State College, Metropolitan State College of Denver, Regis College of Professional Studies (Regis University), Regis College (Regis University), University of Colorado at Boulder, University of Colorado at Colorado Springs, University of Colorado Denver, University of Northern Colorado and Western State College of Colorado.*

⁴ http://www.nctq.org/stpy/reports/stpy_Colorado.pdf

While this study does not cover all of these challenges, the state's regulatory framework provides important context for the focus of this paper. State regulatory weaknesses undoubtedly account for some program deficiencies, but we would argue they do not excuse them. There are no legitimate impediments to individual preparation programs filling any vacuum left by the state, and, in a few cases, programs do just that. For example, even though the state does not require that applicants to education schools pass a basic skills test, six Colorado programs do have entrance examinations that test for academic proficiency.

SCOPE OF THIS ANALYSIS

WE EVALUATED COLORADO'S 15 UNDERGRADUATE ELEMENTARY TEACHER PREPARATION PROGRAMS ACROSS FOUR CRITICAL AREAS:

- *Admission standards*
- *Teacher preparation in reading*
- *Teacher preparation in elementary mathematics*
- *Exit standards*

METHODOLOGY: ADMISSION STANDARDS

Most teacher preparation programs in the U.S., even those housed in departments rather than professional schools, have an application process that takes place at the end of the sophomore or beginning of the junior year of undergraduate education. This application process presents an opportunity to select only candidates that meet high standards. Unfortunately, in programs across the nation, not just in Colorado, this is an opportunity that is currently squandered. Most of the nation's teachers come from the bottom third of high school graduates going to college. In contrast, countries whose students outperform ours consistently attract students from the top third of their high school classes.⁶

Colorado allows each teacher preparation program to develop its own entrance standards, although they all are subject to state approval. Testing requirements for program admission vary widely, with some schools requiring a college placement test (such as the COMPASS or MAPP, the Measure of Academic Proficiency and Progress), some requiring a standardized test designed for teachers (Praxis I, Praxis II, or Colorado's own Program for Licensing Assessments for Colorado Educators, the PLACE), and still others requiring no test at all. However, due to the levels of scores chosen as thresholds for admission, the requirement variations likely result in selectivity that is little different than that of states with alternative or more uniform testing requirements. For example, 50 states require that applicants take the Praxis I, but this tests knowledge of mathematics, reading and writing skills that are typically acquired in sixth or seventh grade. Further, states set the minimum passing score so low that a candidate need correctly answer only about 40 to 60 percent of the items.

Ideally, admission tests should require that future elementary teachers demonstrate true proficiency at the high school level, whether they acquire that proficiency in high school or through remediation in their first few years of college.⁷

In rating admission standards, we evaluate whether programs limit teacher preparation programs to candidates in the

⁵ See A. Levine, "Educating School Teachers," (Washington, D.C.: The Education Schools Project, 2006) 61-70.

⁶ McKinsey & Co., "How the World's Best-Performing School Systems Come Out on Top," (September 2007) 16.

top half of high school students going to college.⁸ To determine if this standard is met, we first look at the selectivity of the college or university of which each program is a part, as rated by U.S. News and World Report. Programs in colleges that are “more selective” or “most selective” meet the standard, since applicants to the teacher preparation programs have already met the college’s rigorous admission standards. For programs in colleges or universities with lower selectivity, we then look at whether the program uses a standardized test for admission that is designed to identify the appropriate level of academic proficiency.⁹

METHODOLOGY: STANDARDS FOR TEACHER PREPARATION IN READING

Despite the fact that student reading achievement in Colorado is slightly above the national average, it remains a chronic problem. On the most recent National Assessment of Educational Progress (NAEP), 64 percent of Colorado fourth graders and 65 percent of Colorado eighth graders read below the proficient level.¹⁰ Over the past 60 years, scientists from many fields have worked to determine how people learn to read and why some struggle. This science of reading has led to a number of breakthroughs that can dramatically reduce the number of children destined to become functionally illiterate or barely literate adults. By routinely applying in the classroom the lessons learned from these scientific findings, most reading failure could be avoided. It is estimated that the current failure rate of 20 to 50 percent could be reduced to the range of 2 to 10 percent.

Despite the overwhelming evidence, educators have been slow to adopt these scientifically based practices. In our first national study of teacher preparation, in a representative sample of 72 institutions, we found that only 15 percent were teaching the five instructional components of the science of reading (phonemic awareness, phonics, fluency, vocabulary and comprehension) in even the most rudimentary sense.

Our rating of Colorado’s teacher preparation programs on reading preparation uses the same methodology employed in our national study. Programs are reviewed to determine whether instruction is provided on the five components of the science of reading in any reading course required of students who aspire to teach kindergarten through grade six. We looked for such evidence both in course syllabi and in reviewing each of the required textbooks. (To date, we have reviewed over 600 such textbooks.) When we encountered any sort of ambiguity, we always gave the school the benefit of the doubt.

We understand that a course’s intended goals and topics as reflected by syllabi and textbooks may differ from what actually happens in the classroom. However, it is reasonable to assume that college professors give thought and consideration to their syllabi and course readings, which represent the intended structure of their courses and emphasize what they view as essential knowledge. If anything, less—not more—of what the syllabi and texts suggest is apt to be covered in class.

Nonetheless, in recognition of the inherent limitations of our methodology, we always invite programs to submit additional materials. Only four did so.

Reviews of both the reading textbooks used in Colorado and the recommended textbooks not used in the state can be

7 For recommendations on mathematics standards for admission, see http://www.nctq.org/p/docs/nctq_nmsi_stem_initiative.pdf.

8 This is not the same as a standard that selects for the top half of students seeking to become teachers.

9 To illustrate that a “selective” rating for an institution may not be sufficient as a screen for admission to an education school, note that the middle 50 percent of students in Colorado’s four “selective” colleges had sums of SAT Critical Reading and Math scores from a low range of 920 to 980 points to a high range of 1150 to 1210 points. The nation’s average SAT score sum in 2009 was 1017.

10 See <http://www.nces.ed.gov/nationsreportcard/states/profile.asp>.

found in Appendix A following the program ratings. Our national study contains more information on the science of reading and the methodology used in evaluating reading preparation.¹¹

METHODOLOGY: STANDARDS FOR TEACHER PREPARATION IN MATHEMATICS

Compared to their counterparts in other countries, the performance of American students in mathematics is mediocre. In turn, compared to their counterparts in other states, the performance of Colorado's students in mathematics is only slightly above mediocre. On the most recent NAEP, 55 percent of Colorado fourth graders and 60 percent of Colorado eighth graders had mathematics scores below the proficient level.¹² Since mathematics knowledge is cumulative, a critical step in improving this performance is the foundation laid in elementary school. Achieving results there is directly linked to the capability of elementary teachers to provide effective instruction in mathematics.

There is increasing consensus that prospective elementary teachers—who are notoriously weak in mathematical competency—are best trained by college mathematics courses that are designed specifically for teachers and that impart a deep understanding of elementary and middle school mathematics concepts. A calculus or statistics course is fine to take as an elective, but numerous professional organizations of mathematicians recommend that aspiring elementary teachers take three semester courses in “elementary mathematics content.”¹³ These courses should cover four subject areas: numbers and operations, algebra, geometry and measurement and—to a lesser degree—data analysis and probability.

Despite this emerging consensus on how to prepare elementary teachers to be truly competent mathematics instructors, there is enormous variability in the nature of coursework requirements among education schools in the U.S. Our national study of teacher preparation in mathematics in a representative sample of 77 institutions found that only 15 percent were doing an adequate job.

NCTQ's rating of Colorado's teacher preparation programs on mathematics preparation is based on examination of syllabi and required primary textbooks in coursework designed for teacher audiences. These materials were used to assess whether the coursework covers essential topics in mathematics and devotes sufficient time to those topics. It should be noted that there are far fewer mathematics textbooks than reading textbooks: About a dozen mathematics textbooks are chosen for use repeatedly, whereas the number of reading textbooks we have reviewed for our studies now totals approximately 600, with no end to new ones in sight.

As in the case of reading preparation, we believe that the syllabi and textbooks capture the scope of knowledge that the professor thinks is important, but we would have supplemented our review with any additional materials had programs provided them to us in response to our solicitation. Only four did so. Again, as in the case of our reading analysis, our evaluations in mathematics preparation were generous, always giving a program the benefit of the doubt if we encountered any ambiguity.

Reviews of both elementary content mathematics textbooks used in Colorado and a recommended textbook not used in the state can be found in Appendix B. Our national study contains more information on the elementary content coursework

11 http://www.nctq.org/p/publications/docs/nctq_reading_study_app_20071202065019.pdf

12 These numbers are slightly higher than the national averages. See <http://www.nces.ed.gov/nationsreportcard/states/profile.asp>

13 We also recommend that aspiring elementary teachers take a semester course dealing with methods of teaching mathematics at the elementary level (not a methods course that addresses multiple subjects and/or multiple grade spans). Our rating process does not, however, include consideration of methods coursework.

that is recommended for elementary teacher preparation and the methodology used to evaluate that preparation.¹⁴

METHODOLOGY: EXIT STANDARDS

If elementary teachers are to teach well, they must acquire many essential teaching skills as well as a solid understanding of content. Licensing examinations are required by states to ensure that teachers meet a minimum standard for subject-matter knowledge. Unfortunately, for a number of reasons that we will enumerate, most current elementary teacher licensing examinations now used in the U.S. are not up to the task. In lieu of sufficient exit standards required by the state, elementary teacher preparation programs that have a serious commitment to ensuring the quality of their graduates should have their own exit examinations.

Colorado requires that all aspiring elementary teachers pass either the Praxis II Elementary Education: Content Knowledge or Colorado's PLACE Elementary Education test to receive a license. It is one of 26 states using the Praxis II for licensing purposes, and among the states that administer this test, its minimum passing score, or "cut" score, is ninth highest. Colorado's use of a state licensing test and more rigorous passing score for the Praxis II than most other states might seem to be sufficient to ensure that elementary teachers know what they will teach. However, both the Praxis II and the PLACE are wholly inadequate to the task of determining whether an elementary teacher knows sufficient content.

The structure and scoring of both the Praxis II and PLACE are fundamentally flawed. On the Praxis II, a candidate's score represents a composite of his or her performance in four different areas (reading/language arts,¹⁵ mathematics, science and social studies). While area subscores are computed and reported to teacher preparation programs, passing scores are not established for each specific subject area. To achieve an overall passing score, it is not necessary to do well on all areas of the test, as if a newly hired teacher can be excused from having to teach each subject with at least a minimum level of competence. For example, it may be possible to answer almost every mathematics problem incorrectly and still pass the test. Similarly, the total score of the PLACE is the composite of the candidate's performance in six subject areas (language arts and literacy, science, mathematics, social studies, humanities and wellness and physical education). Though subarea scores are provided, passing scores are not required in each specific subject area. As is the case with the Praxis II, it is possible to achieve a passing cumulative score while performing poorly on specific subject areas.

The Praxis II is also inadequate because it tests content understanding at only the elementary and middle school level. To teach mathematics well to an elementary student requires more than a superficial understanding that barely exceeds what is taught. Further, independent studies of Praxis reading tests have deemed most tests in this series—including the test that is an option in Colorado—inadequate for assessing knowledge of scientifically based reading instruction.¹⁶ Practice test questions from the PLACE give every indication that it suffers from these same flaws.

Because neither the Praxis II nor the PLACE are adequate to the task of ensuring that elementary teachers have acquired the necessary knowledge, Colorado should reconsider its testing requirements, looking to a few other states for guidance. While no state has yet developed rigorous licensing tests with separate passing scores for every subject taught in elementary school, a few states have made

¹⁴ http://www.nctq.org/p/publications/docs/nctq_ttmath_fullreport_20090605062928.pdf

¹⁵ The Praxis II Content Knowledge test includes knowledge of reading instruction, which would more accurately fall under the heading of pedagogy than content knowledge. While some states require a separate test of reading pedagogy, many states, like Colorado, rely solely on the content test to measure candidates' knowledge of reading instruction.

progress on the important subjects of reading and mathematics. Massachusetts, Virginia and Connecticut use rigorous, stand-alone tests of reading pedagogy. Massachusetts has also developed a rigorous, stand-alone mathematics test.¹⁷

In the absence of an adequate state licensing test, it is incumbent upon Colorado's teacher preparation programs to use their own series of exit tests to verify that graduates meet acceptable levels of performance. Because no program in the state currently reports having its own exit test, every program received a failing rating on this standard.

OTHER DATA REPORTED

Although the state does not require any Colorado preparation program to obtain accreditation, most have done so, and we note on each rating sheet whether programs have been accredited by NCATE or TEAC. Our indication of the type of accreditation does not represent a rating of any kind, as there is no evidence that links accreditation to higher-quality preparation or that shows it has the effect of improving preparation.

Each rating sheet also identifies the opportunities we afforded the preparation programs to provide us with course materials or comments relevant to our evaluation. Colorado College was inadvertently not afforded any opportunities to respond to our evaluation.¹⁸

In addition to soliciting syllabi necessary for our evaluation from most programs early on, we sent the preliminary results of our analyses in reading and mathematics preparation to each program at the conclusion of our work. Each was asked to provide any additional materials that might lead us to alter our ratings, as well as general comments of any kind. Only four elected to submit additional materials. Four programs offered a comment, which can be found in Appendix C.

FINDINGS

COLORADO'S COLLEGES AND UNIVERSITIES ARE MORE SELECTIVE THAN COLLEGES AND UNIVERSITIES ACROSS THE COUNTRY, ALLOWING SOME OF ITS TEACHER PREPARATION PROGRAMS TO BENEFIT FROM A MORE SELECTIVE POOL OF APPLICANTS.

Five of Colorado's 15 undergraduate teacher preparation programs are housed in colleges or universities with "more" or "most selective" admission standards. However, these programs account for only about 20 percent of the elementary teachers produced by Colorado's undergraduate education schools. Because of the levels of selectivity of their colleges, the remaining ten education programs face a higher hurdle in screening for highly proficient teacher candidates, and none meets the challenge.

WHILE MOST PREPARATION PROGRAMS IN COLORADO PROVIDE SOME EXPOSURE TO EFFECTIVE READING INSTRUCTION, THEY DO NOT FULLY PREPARE CANDIDATES TO TEACH THE SCIENCE OF READING.

16 S. Stotsky, "Why American Students Do Not Learn to Read Very Well: The Unintended Consequences of Title II and Teacher Testing," *Third Education Group Review*, Vol. 2 No. 2 (2006); and D. W. Rigden, "Report on Licensure Alignment with the Essential Components of Effective Reading Instruction" (Washington, D.C.: Reading First Teacher Education Network, 2006).

17 <http://www.doe.mass.edu/news/news.asp?id=5801>

18 Colorado College was inadvertently not afforded any opportunities to respond to our evaluation.

Reading preparation in Colorado tends to be either very weak or very strong. Six of Colorado's 15 preparation programs (40 percent) provide training to teacher candidates in all five components of effective reading instruction, but these programs account for less than 20 percent of the elementary teachers produced by Colorado's undergraduate education schools.¹⁹ Another program comes close, covering four of the five components, but the absence of one component does not inspire confidence in this program. This is not a situation in which "coming close" is good enough.

On the other hand, seven programs addressed three or fewer components, with two programs addressing only one component and another two covering no aspect of the science of reading. It is notable that one of the components most often overlooked by these seven programs as well as the program that covers four components is phonemic awareness, the fundamental building block of emergent literacy. The other component most commonly not taught is vocabulary.

Though these results are discouraging, they did represent a higher percentage of programs attempting to teach the science of reading than we found in either our national study²⁰ or in studies of other states. Nationally, 15 percent of programs taught all components of the science of reading. Programs in Indiana,²¹ New Mexico and Utah²² taught all components in 15 percent, 13 percent and 22 percent respectively.

PROGRAMS USE A WIDE VARIETY OF READING TEXTBOOKS, MANY OF WHICH DO NOT ADDRESS THE SCIENCE OF READING.

We found more than 40 different reading textbooks in use in Colorado's 15 preparation programs. Although more programs used core and supplemental texts that appropriately addressed the science of reading than we have found in most other states, many programs that used these strong texts also used unacceptable texts. As a result, teacher candidates are exposed to inaccurate, incomplete and often misleading accounts of reading instruction. When a strong text is in use in a particular course, we found that there was a high likelihood that students would also be exposed to an extremely poor one in that course or in their next course.

ONLY TWO COLORADO PREPARATION PROGRAMS SATISFACTORILY COVER THE MATHEMATICS CONTENT THAT ELEMENTARY TEACHERS NEED, AND EIGHT ARE SERIOUSLY DEFICIENT. ALGEBRA INSTRUCTION, WHILE STRONGER THAN THE NATIONAL AVERAGE, IS STILL INADEQUATE.

There is extreme variation in Colorado on the number and nature of elementary mathematics courses required of aspiring elementary teachers.²³ The two strongest programs are very strong, offering sufficient breadth and depth of coursework, while poor programs are very weak, lacking in all areas.²⁴ Four of the programs need to add more elementary content coursework and eight others need to both add elementary content coursework and improve that coursework's focus and textbook support.²⁵

Attention to algebra is not quite as paltry in Colorado as we found nationally: On average, the state's prospective elementary teachers receive six hours of algebra instruction, greater than the four-hour national average. However, this is still far below the 24 hours of algebra needed by teachers to adequately prepare their elementary students for middle school mathematics.

¹⁹ Preparation at one program could not be evaluated because syllabi were not provided despite repeated requests.

¹⁸ http://www.nctq.org/p/publications/docs/nctq_reading_study_app_20071202065019.pdf

²¹ http://www.nctq.org/p/publications/docs/nctq_full_study_indiana_reading_20090729025658.pdf

²² The fact that there are only eight teacher preparation programs in New Mexico and only nine in Utah means that a change in the score of one program can have considerable impact on these percentages, a fact that should be taken into account when considering them. Reports for New Mexico and Utah can be found at <http://www.nctq.org/p/publications/reports.jsp>. Our report on Wyoming, also available at that address, indicates that its one teacher preparation program did not teach all five components of the science of reading.

COLORADO'S PREPARATION PROGRAMS VARY WIDELY IN SELECTED TEXTBOOKS FOR MATHEMATICS CONTENT COURSEWORK.

As with coursework, Colorado's programs are at either extreme in terms of the quality of textbooks used in mathematics content courses. Exactly 50 percent of courses utilize a strong textbook, more than the 34 percent found in the national study. But another 25 percent use no text at all, greater than the six percent found nationally. Of the rest of the Colorado mathematics content courses supported by a textbook, five percent utilize a text that is completely inadequate in all areas (numbers and operations, algebra, geometry and data analysis and probability), 10 percent use a textbook that is inadequate in two of the four math subject areas and the remaining 10 percent use a text that is inadequate in one of the four areas.

MOST OF COLORADO'S PREPARATION PROGRAMS HAVE A DEDICATED ELEMENTARY MATHEMATICS METHODS COURSE.

Nine preparation programs (about 60 percent) require a three-credit course in elementary mathematics methods. This is a greater proportion than we found in our national study, in which only about half of the programs did so.

Of the six remaining programs, four programs had mixed courses, unwisely covering both mathematics and science in one methods course. The final two programs covered no mathematics methods at all.

NO PREPARATION PROGRAM IN THE STATE ENSURES THAT ASPIRING ELEMENTARY TEACHERS KNOW THE SCIENCE OF READING INSTRUCTION AND UNDERSTAND ELEMENTARY MATHEMATICS CONTENT AT A DEPTH THAT IS SUFFICIENT FOR INSTRUCTION.

The unequivocal weaknesses of the Praxis II and PLACE content tests as assessments of the capacity to teach elementary school necessitates that Colorado's preparation programs develop and use exit assessments that do so. No program has recognized this need and responded to it.

RECOMMENDATIONS

STATES

It falls to states to spearhead improvement of education schools by better exercising the oversight authority that they already hold. Most education schools or departments will only be able to overcome possible internal resistance or resistance from other departments in their institutions if reform is statewide.

THE COLORADO DEPARTMENT OF EDUCATION AND/OR COLORADO DEPARTMENT OF HIGHER EDUCATION SHOULD

23 In terms of the amount of mathematics coursework designed either for the general or teacher audience that is required of elementary teacher candidates, Colorado may be slightly below the national average: Colorado programs require an average of 2.1 mathematics content courses, whereas the average in our national sample was 2.5 courses.

24 These two strong programs account for half of the elementary teachers produced by Colorado's undergraduate education schools.

25 Preparation at one program could not be evaluated because syllabi were not provided despite repeated requests.

ESTABLISH ENTRANCE STANDARDS FOR THE STATE'S TEACHER PREPARATION PROGRAMS TO ENSURE THAT EVERY ASPIRING TEACHER ENTERS COLLEGE ALREADY POSSESSING HIGH SCHOOL LEVEL READING AND WRITING SKILLS AND HAVING A COMPETENT GRASP OF HIGH SCHOOL GEOMETRY AND SECOND-YEAR HIGH SCHOOL ALGEBRA. THESE ENTRANCE STANDARDS SHOULD INCLUDE ACCEPTABLE SCORES ON STANDARDIZED ASSESSMENTS SUCH AS THE COLLEGIATE ASSESSMENT OF ACADEMIC PROFICIENCY.²⁶

The argument that this will lead to shortages of teacher candidates is a red herring commonly offered to resist change. A significant problem in the profession is that more talented students eschew teacher preparation because the programs are perceived as unchallenging and dull, and they are increasingly entering teaching through alternate routes. Programs can teach to a higher standard and still produce the number of teachers needed by elementary schools, as Massachusetts has found since 2001-2002, when new and more rigorous requirements and assessments began to be phased in.

THE COLORADO DEPARTMENT OF EDUCATION AND/OR COLORADO DEPARTMENT OF HIGHER EDUCATION SHOULD STRENGTHEN THEIR MATHEMATICS STANDARDS AND ADOPT WHOLLY NEW ASSESSMENTS TO TEST FOR THEIR STANDARDS IN READING AND MATHEMATICS.

Colorado currently requires elementary teacher preparation programs to address "phonological and linguistic skills related to reading," including phonemic awareness, concepts about print and systematic, explicit phonics, reading comprehension and vocabulary development. While these are strong standards, Colorado does not provide similar specifics in mathematics, nor does the state provide adequate coursework or assessment requirements in either subject. However, even a combination of standards and coursework requirements does not prevent education schools from deciding independently, and all too often inappropriately, what should be taught. Absent a test, there is no assurance that education schools are teaching to the necessary standards.

For an example of a regulatory framework that ensures that elementary teachers are prepared to teach the science of reading, Colorado should look to Virginia or Massachusetts.

Virginia requires all teacher candidates to complete coursework that focuses on the science of reading and to pass a reading exam. Massachusetts has standards that clearly address the science of reading and also requires all elementary candidates to pass a reading exam. The tests offered by both Virginia and Massachusetts have been rated as among a very small number that actually verify teacher candidates' knowledge of the science of reading.²⁷

Massachusetts is also a model for developing a regulatory framework that accomplishes these goals in the area of mathematics preparation. Our national study of the preparation of elementary teachers in mathematics discusses Massachusetts' regulations and assessment in some detail.²⁸

EDUCATION SCHOOLS

TO IMPROVE READING PREPARATION

TO IMPROVE MATHEMATICS PREPARATION

²⁶ The Collegiate Assessment of Academic Proficiency (CAAP) is the standardized, nationally normed assessment program from ACT designed to be administered after a student's sophomore year. It enables postsecondary institutions to assess and evaluate the outcomes of their general education programs.

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| <p>1. <i>Build faculty expertise in the science of reading. Whether the lack of teacher preparation in the science of reading is due to philosophical opposition or to unawareness of the research science, education schools must have the expertise to deliver scientifically based reading coursework.</i></p> | <p>1. <i>Education schools should require three mathematics courses addressing elementary and middle school topics and one mathematics methods course focused on elementary topics and numbers and operations in particular.</i></p> |
| <p>2. <i>Ensure that the overall program design allows for sufficient and proper coverage of reading instruction, with a coordinated sequence of teacher training in reading.</i></p> | <p>2. <i>Teacher preparation programs should make it possible for an aspiring teacher to test out of mathematics content course requirements. Current licensing tests are inadequate, but a new generation of standardized tests that can evaluate mathematical understanding at the requisite depth may soon be available.</i></p> |
| <p>3. <i>Provide guidance to help instructors select strong textbooks from the vast number of available options. The wide range of textbooks in use means that teacher candidates are exposed to different but inaccurate, incomplete, and often misleading accounts of reading instruction.</i></p> | <p>3. <i>While the algebra preparation provided to prospective elementary teachers may be stronger than in most programs nationwide, it could be given even high priority in elementary content instruction.²⁹</i></p> |
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INSTITUTIONAL ADMINISTRATORS AND TEACHER EDUCATION PROGRAMS

Unlike teacher preparation in reading, which is typically contained in the education school, preparation in mathematics usually involves both the education school and the mathematics department. For that reason, university administrators must take the lead in orchestrating the interdepartmental communication, coordination and innovation necessary for coherent preparation of elementary teachers for mathematics instruction.

By itself, leadership from the education department is not sufficient for improving instruction in the content courses elementary teachers need in mathematics. Mathematics departments must find the means to staff elementary content courses with instructors who have adequate professional preparation in mathematics and ensure that instruction is rigorous and relevant. These instructors might find helpful the syllabi, lecture notes and other resources we have posted at www.nctq.org/resources/math.

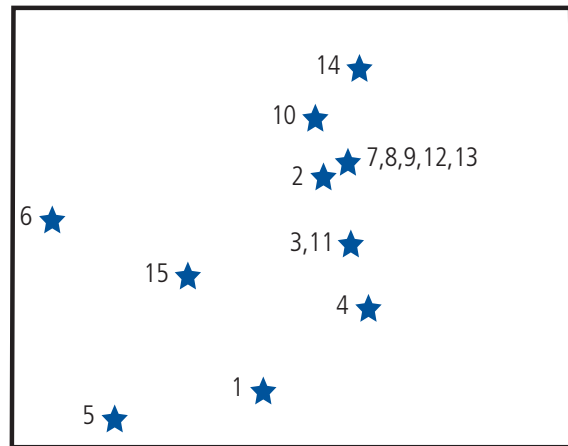
²⁷ Stotsky (2006) and Rigden (2006)

²⁸ See p. 54 of the report at http://www.nctq.org/p/publications/docs/nctq_tmath_fullreport_20090605062928.pdf

28 While elementary teachers do not deal explicitly with algebra in their instruction, they need to understand it as the generalization of the arithmetic they address while studying numbers and operations. They also need to be aware of algebra's connection to many of the patterns, properties, relationships, rules and models that will occupy their elementary students.



PROGRAM RATINGS



1. Adams State College, Alamosa
2. Colorado Christian University, Lakewood
3. Colorado College, Colorado Springs
4. Colorado State University – Pueblo
5. Fort Lewis College, Durango
6. Mesa State College, Grand Junction
7. Metropolitan State College of Denver
8. Regis College of Professional Studies, Regis University, Denver
9. Regis College, Regis University, Denver
10. University of Colorado at Boulder
11. University of Colorado at Colorado Springs
12. University of Colorado Denver
13. University of Denver
14. University of Northern Colorado, Greeley
15. Western State College of Colorado, Gunnison



I. Admission standards ●

Comments: Rating is based on "more selective" university admissions. The education school also screens applicants for academic proficiency using the ACT, COMPASS or SAT test with a minimum level set around the 50th percentile of the nation's college applicants.

II. Teacher preparation in reading ●

Areas of strength: Coverage of all components of the science of reading.

Textbooks: *When Kids Can't Read: What Teachers Can Do: A Guide for Teachers 6-12* by Kyleene Beers, *Literacy Assessment: Helping Teachers Plan Instruction* (2nd ed) by J. David Cooper and Nancy D. Kiger, *Strategies That Work: Teaching Comprehension to Enhance Understanding* (1st ed) by Stephanie Harvey and Anne Goudvis, *Spotlight on Comprehension: Building a Literacy of Thoughtfulness* by Linda Hoyt, *Choice Words: How Our Language Affects Children's Learning* by Peter H. Johnston, *Locating and Correcting Reading Difficulties* (9th ed) by James L. Shanker and Ward A. Cockrum, *Content Area Reading: Literacy and Learning Across the Curriculum* (9th ed) by Richard T. Vacca and Jo Anne L. Vacca, *What's a Schwa Sound Anyway?: A Holistic Guide to Phonetics, Phonics, and Spelling* by Sandra Wilde.

Comments: Most of these texts do not support the science of reading. (See Appendix A.)

III. Teacher preparation in mathematics ◐

Areas of weakness: Coursework lacks depth and textbook support is inadequate.

Remedy: Additional coursework supported by a strong elementary content textbook.

Textbooks: *Math on Call: A Mathematics Handbook* by Andrew Kaplan, et al.

Comments: Elementary mathematics methods receive inadequate attention in the one methods course that covers both mathematics and science methods.

IV. Exit standards ○

Comments: The inadequacy of the Praxis II and PLACE exams (which serve as Colorado's licensing tests) means that the teacher preparation program does not verify that teacher candidates know content at a depth adequate for instruction.

Ratings: ● Meets standard ◐ Nearly meets standard ◑ Partly meets standard ◒ Meets a small part of standard
○ Fails to meet standard ? Cannot be determined NA Not applicable



I. Admission standards

Comments: Rating is based on "most selective" university admissions. Education school applicants are not screened using any standardized assessment of academic proficiency.

II. Teacher preparation in reading

Areas of strength: Coursework includes preparation to teach phonics strategies.

Areas of weakness: No evidence that coursework includes preparation to teach phonemic awareness, fluency, vocabulary and/or comprehension strategies.

Remedy: Provide training in teaching phonemic awareness, fluency, vocabulary and comprehension strategies.

Textbooks: *Self-Paced Phonics: A Text for Educators* (3rd ed) by G. Thomas Baer, *Literacy for the 21st Century: A Balanced Approach* (4th ed) by Gail E. Tompkins.

III. Teacher preparation in mathematics

Areas of weakness: No elementary content mathematics coursework is required.

Remedy: Adequate coursework with appropriate focus and strong textbook support.

Comments: This program received the same rating in *No Common Denominator*, our national report on the preparation of elementary teachers in mathematics, issued in June 2008.

IV. Exit standards

Comments: The inadequacy of the Praxis II and PLACE exams (which serve as Colorado's licensing tests) means that the teacher preparation program does not verify that teacher candidates know content at a depth adequate for instruction.

Accreditation: NCATE TEAC None ✓

Number of elementary teachers produced: 5 (13th highest in state)

Data are from 2008-2009, the most recent available from the Colorado Department of Higher Education.

Opportunities for institution to respond: Inadvertently not provided any opportunities to respond to our evaluation.

Ratings: Meets standard Nearly meets standard Partly meets standard Meets a small part of standard
 Fails to meet standard ? Cannot be determined **NA** Not applicable

Fort Lewis College
Durango, Colorado
Teacher Education Department



NCTQ
Elementary
Teacher
Preparation
Program
Ratings



I. Admission standards ○

Comments: The college is not "more" or "most selective" in its admissions. Education school applicants are not screened using any standardized assessment of academic proficiency.

II. Teacher preparation in reading ●

Areas of strength: Coverage of all components of the science of reading.

Textbooks: *Put Reading First: The Research Building Blocks for Teaching Children to Read* by Bonnie Armbruster, et al.

III. Teacher preparation in mathematics ◐

Areas of weakness: Coursework lacks depth and is not supported by a textbook.

Remedy: Adequate coursework with strong textbook support.

IV. Exit standards ○

Comments: The inadequacy of the Praxis II and PLACE exams (which serve as Colorado's licensing tests) means that the teacher preparation program does not verify that teacher candidates know content at a depth adequate for instruction.

Accreditation: NCATE

TEAC ✓

None

Number of elementary teachers produced: 85 (9th highest in state)

Data are from 2008-2009, the most recent available from the Colorado Department of Higher Education.

Opportunities for institution to respond: Correspondence: April 22, 2009; September 14, 2009; November 17, 2009

Ratings: ● Meets standard ◐ Nearly meets standard ◑ Partly meets standard ◒ Meets a small part of standard
○ Fails to meet standard ? Cannot be determined NA Not applicable



Mesa State College
Grand Junction, Colorado
Center for Teacher Education



NCTQ
Elementary
Teacher
Preparation
Program
Ratings

2009

I. Admission standards ●

Comments: The college is not selective in its undergraduate admissions. While the education school uses the Praxis I to screen applicants for academic proficiency, the minimum level for proficiency is set below the 50th percentile of the nation's applicants to teacher preparation programs.

II. Teacher preparation in reading ○

Areas of weakness: No preparation is provided in the science of reading.
Remedy: Coursework should address instruction in phonemic awareness, phonics, fluency, vocabulary and comprehension strategies.
Textbooks: *Literacy for the 21st Century: A Balanced Approach* (4th ed) by Gail E. Tompkins.

III. Teacher preparation in mathematics ●

Areas of strength: Coverage of most essential topics with adequate depth and the support of a strong textbook.
Areas of weakness: Algebra instruction.
Remedy: Increased focus on algebra.
Textbooks: *Mathematics for Elementary Teachers* (2nd ed) by Sybilla Beckmann.

IV. Exit standards ○

Comments: The inadequacy of the Praxis II and PLACE exams (which serve as Colorado's licensing tests) means that the teacher preparation program does not verify that teacher candidates know content at a depth adequate for instruction.

Accreditation: NCATE ✓ TEAC None

Number of elementary teachers produced: 91 (8th highest in state)

Data are from 2008-2009, the most recent available from the Colorado Department of Higher Education.

Opportunities for institution to respond: Correspondence: April 22, 2009; October 28, 2009

Ratings: ● Meets standard ● Nearly meets standard ● Partly meets standard ● Meets a small part of standard
○ Fails to meet standard ? Cannot be determined NA Not applicable



I. Admission standards

Comments: The college is not selective in its undergraduate admissions, nor are education school applicants screened using any standardized assessment of academic proficiency.

II. Teacher preparation in reading

Areas of strength: Coursework includes preparation to teach phonemic awareness and phonics strategies.

Areas of weakness: No evidence that coursework includes preparation to teach fluency, vocabulary or comprehension strategies.

Remedy: Provide training in teaching fluency, vocabulary and comprehension strategies.

Textbooks: *Phonics for the Teacher of Reading* (7th ed) by Marion A. Hull and Barbara J. Fox, *Dancing With the Pen: The Learner As a Writer* by the New Zealand Ministry of Education, *Literacy for the 21st Century: A Balanced Approach* (2nd ed) by Gail E. Tompkins, *Reading and Learning to Read* (4th ed) by Jo Anne L. Vacca, et al.

III. Teacher preparation in mathematics

Areas of weakness: Inadequate coverage of essential topics in coursework that lacks depth and the support of a textbook.

Remedy: Adequate coursework with better focus supported by a strong elementary content textbook.

Textbooks: No required content textbook.

Comments: This program received the same rating in *No Common Denominator*, our national report on the preparation of elementary teachers in mathematics, issued in June 2008.

IV. Exit standards

Comments: The inadequacy of the Praxis II and PLACE exams (which serve as Colorado's licensing tests) means that the teacher preparation program does not verify that teacher candidates know content at a depth adequate for instruction.

Accreditation: NCATE ✓ TEAC None

Number of elementary teachers produced: 322 (2nd highest in state)

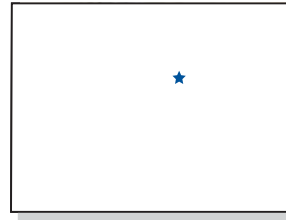
Data are from 2008-2009, the most recent available from the Colorado Department of Higher Education.

Opportunities for institution to respond: Correspondence: April 22, 2009; October 28, 2009

Ratings: ● Meets standard ● Nearly meets standard ● Partly meets standard ● Meets a small part of standard
 ○ Fails to meet standard ? Cannot be determined NA Not applicable



Regis College of Professional Studies
Regis University
 Denver, Colorado
 School of Education and Counseling



NCTQ
 Elementary
 Teacher
 Preparation
 Program
 Ratings

2009

I. Admission standards ●

Comments: Rating is based on "more selective" university admissions. Education school applicants are not screened using any standardized assessment of academic proficiency.

II. Teacher preparation in reading ●

Areas of strength: Coverage of all components of the science of reading.

Textbooks: *Put Reading First: The Research Building Blocks for Teaching Children to Read* by Bonnie Armbruster, et al.; *Literacy: Helping Children Construct Meaning* (6th ed) by J. David Cooper and Nancy D. Kiger; *The Voice of Evidence in Reading Research* by Peggy McCardle and Vinita Chhabra.

III. Teacher preparation in mathematics ○

Areas of weakness: No elementary content mathematics coursework is required.

Remedy: Adequate coursework with appropriate focus and strong textbook support.

IV. Exit standards ○

Comments: The inadequacy of the Praxis II and PLACE exams (which serve as Colorado's licensing tests) means that the teacher preparation program does not verify that teacher candidates know content at a depth adequate for instruction.

Accreditation: NCATE TEAC ✓ None

Number of elementary teachers produced: 173 (3rd highest in state)

Data are from 2008-2009, the most recent available from the Colorado Department of Higher Education.

Opportunities for institution to respond: Correspondence: April 22, 2009; June 4, 2009; October 28, 2009

Ratings: ● Meets standard ● Nearly meets standard ● Partly meets standard ● Meets a small part of standard
 ○ Fails to meet standard ? Cannot be determined NA Not applicable



University of Colorado at Boulder
 Boulder, Colorado
 School of Education



NCTQ
 Elementary
 Teacher
 Preparation
 Program
 Ratings

2009

I. Admission standards ●

Comments: Rating is based on "more selective" university admissions. Education school applicants are not screened using any standardized assessment of academic proficiency.

II. Teacher preparation in reading ●

Areas of strength: Coverage of all components of the science of reading.

Textbooks: *Reading Instruction for Students Who Are at Risk or Have Disabilities* by William D. Bursuck and Mary Damer, *Assessing Reading: Multiple Measures* (2nd ed) by Linda Diamond and B.J. Thorsnes, *Writing Workshop: The Essential Guide* by Ralph Fletcher and Joann Portalupi, *Writing Essentials: Raising Expectations and Results While Simplifying Teaching* by Regie Routman.

Comments: Only one course, Elementary Reading Assessment and Intervention, covers any components of the science of reading.

III. Teacher preparation in mathematics ●

Areas of strength: Textbook

Areas of weakness: Coursework lacks depth.

Remedy: Additional coursework.

Textbooks: *A Problem Solving Approach to Mathematics for Elementary School Teachers* (9th ed) by Rick Billstein, et al.

IV. Exit standards ○

Comments: The inadequacy of the Praxis II and PLACE exams (which serve as Colorado's licensing tests) means that the teacher preparation program does not verify that teacher candidates know content at a depth adequate for instruction.

Accreditation: NCATE ✓ TEAC None

Number of elementary teachers produced: **102** (6th highest in state)

Data are from 2007-08, the most recent available from the National Center for Education Statistics.

Opportunities for institution to respond: Correspondence: April 22, 2009; October 28, 2009

Ratings: ● Meets standard ● Nearly meets standard ● Partly meets standard ● Meets a small part of standard
 ○ Fails to meet standard ? Cannot be determined NA Not applicable

University of Denver
Denver, Colorado
Morgridge College of Education



NCTQ
Elementary
Teacher
Preparation
Program
Ratings



I. Admission standards ●

Comments: Rating is based on “more selective” university admissions. The College of Education also uses the Miller Analogies Test (MAT), PLACE and Praxis II to screen applicants for academic proficiency, but the minimum levels for proficiency are set below the 50th percentile of the nation’s teacher licensure applicants.

II. Teacher preparation in reading ◐

Areas of strength: Coursework includes preparation to teach vocabulary and comprehension strategies.

Areas of weakness: No evidence that coursework includes preparation to teach phonemic awareness, phonics and fluency strategies.

Remedy: Coursework should address instruction in phonemic awareness, phonics and fluency strategies.

Textbooks: *Content Area Reading and Literacy: Succeeding in Today’s Diverse Classrooms* (6th ed) by Donna E. Alvermann, et al.; *50 Content Area Strategies for Adolescent Literacy* by Douglas Fisher, et al.

III. Teacher preparation in mathematics ○

Areas of weakness: No elementary content mathematics coursework is required.

Remedy: Adequate coursework with appropriate focus and strong textbook support.

IV. Exit standards ○

Comments: The inadequacy of the Praxis II and PLACE exams (which serve as Colorado’s licensing tests) means that the teacher preparation program does not verify that teacher candidates know content at a depth adequate for instruction.

Accreditation: NCATE TEAC ✓ None

Number of elementary teachers produced: 0

Data are from 2008-2009, the most recent available from the Colorado Department of Higher Education.

Opportunities for institution to respond: Correspondence: April 22, 2009; October 28, 2009

Ratings: ● Meets standard ◐ Nearly meets standard ◑ Partly meets standard ◒ Meets a small part of standard
○ Fails to meet standard ? Cannot be determined NA Not applicable



University of Northern Colorado
 Greeley, Colorado
 College of Education and Behavioral Sciences



NCTQ
 Elementary
 Teacher
 Preparation
 Program
 Ratings

2009

I. Admission standards

Comments: The university is not selective in its undergraduate admissions nor are education school applicants screened using any standardized assessment of academic proficiency.

II. Teacher preparation in reading

Areas of strength: Coursework includes preparation to teach phonemic awareness, phonics, vocabulary and comprehension strategies.

Areas of weakness: No evidence that coursework includes preparation to teach fluency strategies.

Remedy: Provide training in teaching fluency strategies.

Textbooks: *Creating Literacy Instruction for All Students* (6th ed) by Thomas G. Gunning; *Basic Reading Inventory: Pre-Primer Through Grade Twelve and Early Literacy Assessments* (9th ed) by Jerry L. Johns; *Literacy Development in the Early Years* (5th ed) by Lesley Mandell Morrow; *Learning To Read and Write: Developmentally Appropriate Practices For Young Children* by Susan B. Neuman, et al.;

Comments: Not all textbooks support the science of reading. (See Appendix A.)

III. Teacher preparation in mathematics

Areas of strength: Coverage of most essential topics with adequate depth. Support of a strong textbook in two courses.

Areas of weakness: Algebra instruction and textbook support in geometry.

Remedy: Increased focus on algebra and a textbook providing strong support in elementary geometry.

Textbooks: *Mathematics for Elementary Teachers* (2nd ed) by Sybilla Beckmann; *Geometric Structures: An Inquiry-Based Textbook for Prospective Elementary Teachers* by Douglas B. Aichele, et al.

IV. Exit standards

Comments: The inadequacy of the Praxis II and PLACE exams (which serve as Colorado’s licensing tests) means that the teacher preparation program does not verify that teacher candidates know content at a depth adequate for instruction.

Ratings: Meets standard Nearly meets standard Partly meets standard Meets a small part of standard
 Fails to meet standard ? Cannot be determined **NA** Not applicable



Accreditation: **NCATE ✓** **TEAC** **None**

Number of elementary teachers produced: 1,102 (highest in state)

Data are from 2008-2009, the most recent available from the Colorado Department of Higher Education.

Opportunities for institution to respond: Correspondence: April 22, 2009; October 28, 2009

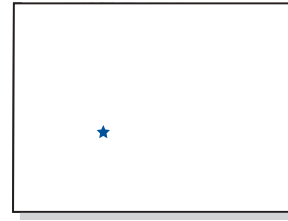
Ratings: ● Meets standard ◐ Nearly meets standard ◑ Partly meets standard ◒ Meets a small part of standard
○ Fails to meet standard ? Cannot be determined NA Not applicable



Western State College of Colorado

Gunnison, Colorado

Teacher Education Program



NCTQ
Elementary
Teacher
Preparation
Program
Ratings

2009

I. Admission standards ●

Comments: Information on this college's selectivity is not available from *US News and World Report*. While the education program uses Praxis I to screen applicants for academic proficiency, a minimum passing score is not specified.

II. Teacher preparation in reading ●

Areas of strength: Coverage of all components of the science of reading.

Textbooks: *Assessing Reading: Multiple Measures* (2nd ed) by Linda Diamond and B.J.

Thorsnes; *Teaching Reading Sourcebook* (2nd ed) by Bill Honig, et al; *Report of the National Reading Panel: Teaching Children to Read* by the National Reading Panel.

III. Teacher preparation in mathematics ●

Areas of weakness: Coursework lacks depth and the support of a strong textbook.

Remedy: Additional coursework supported by a strong textbook.

Textbooks: *Mathematics for Elementary School Teachers* (4th ed) by Tom Bassarear.

IV. Exit standards ○

Comments: The inadequacy of the Praxis II and PLACE exams (which serve as Colorado's licensing tests) means that the teacher preparation program does not verify that teacher candidates know content at a depth adequate for instruction.

Accreditation: NCATE TEAC ✓ None

Number of elementary teachers produced: 17 (12th highest in state)

Data are from 2008-2009, the most recent available from the Colorado Department of Higher Education.

Opportunities for institution to respond: Correspondence: April 22, 2009; October 28, 2009

Ratings: ● Meets standard ● Nearly meets standard ● Partly meets standard ● Meets a small part of standard
○ Fails to meet standard ? Cannot be determined NA Not applicable

APPENDIX A: RATINGS OF READING TEXTBOOKS

TEXTBOOK SCORES

AUTHOR	TITLE	NO. OF COURSES IN WHICH TEXT IS READ	RATING
<i>Alvermann, Donna E.; Phelps, Stephen E.; Gillis, Victoria Ridgeway</i>	<i>Content Area Reading and Literacy: Succeeding in Today's Diverse Classrooms (6th ed)</i>	1	Acceptable supplemental
<i>Armbruster, Bonnie B.; Lebr, Fran; Osborn, Jean</i>	<i>Put Reading First: The Research Building Blocks for Teaching Children to Read</i>	2	Acceptable supplemental
<i>Baer, G. Thomas</i>	<i>Self-Paced Phonics: A Text for Educators (5rd ed)</i>	1	Acceptable supplemental
<i>Barton, Linda</i>	<i>Quick Flip Questions for Critical Thinking</i>	1	Not relevant
<i>Beers, Kylee</i>	<i>When Kids Can't Read: What Teachers Can Do: A Guide for Teachers 6-12</i>	1	Not acceptable supplemental
<i>Buruck, William D.; Damer, Mary</i>	<i>Reading Instruction for Students Who Are at Risk or Have Disabilities</i>	1	Acceptable core
<i>Calkins, Lucy; Hartman, Amanda; White, Zoe</i>	<i>One to One: The Art of Conferencing with Young Writers</i>	1	Not relevant
<i>Cooper, J. David; Kiger, Nancy D.</i>	<i>Literacy Assessment: Helping Teacher Plan Instruction (2nd ed)</i>	1	Not acceptable supplemental
<i>Cooper, J. David; Kiger, Nancy D.</i>	<i>Literacy: Helping Children Construct Meaning (6th ed)</i>	2	Not acceptable core
<i>Diamond, Linda; Thorness, B.J. (Eds.)</i>	<i>Assessing Reading: Multiple Measures (2nd ed)</i>	4	Acceptable supplemental
<i>Eltridge, J. Lloyd</i>	<i>Phonics for Teachers: Self-Instruction, Methods and Activities (2nd ed)</i>	1	Acceptable supplemental
<i>Fisher, Douglas; Brozo, William G.; Frey, Nancy; Ivey, Gay</i>	<i>50 Content Area Strategies for Adolescent Literacy</i>	1	Not relevant
<i>Fletcher, Ralph; Portolupi, Joann</i>	<i>Writing Workshop: The Essential Guide</i>	1	Not acceptable supplemental
<i>Flippo, Rona F.</i>	<i>Assessing Readers: Qualitative Diagnosis and Instruction (2nd ed)</i>	1	Not acceptable supplemental
<i>Fountas, Irene C.; Pinnell, Gay Su</i>	<i>Guiding Readers and Writers, Grades 5-6: Teaching Comprehension, Genre, and Content Literacy</i>	1	Not acceptable core
<i>Gunning, Thomas G.</i>	<i>Creating Literacy Instruction for All Students (6th ed)</i>	1	Acceptable core
<i>Harvey, Stephanie; Goudvis, Anne</i>	<i>Strategies That Work: Teaching Comprehension to Enhance Understanding (1st ed)</i>	1	Acceptable supplemental
<i>Honig, Bill; Diamond, Linda; Gutlohn, Linda</i>	<i>Teaching Reading Sourcebook (2nd ed)</i>	2	Acceptable core
<i>Hoyt, Linda</i>	<i>Spotlight on Comprehension: Building a Literacy of Thoughtfulness</i>	1	Not acceptable supplemental

Huck, Charlotte S.; Hepler, Susan; Hickman, Janet; Kiefer, Barbara Z.	<i>Children's Literature in the Elementary School (7th ed)</i>	1	Not relevant
Hull, Marion A.; Fox, Barbara J.	<i>Phonics for the Teacher of Reading (7th ed)</i>	1	Acceptable supplemental
Johns, Jerry L.	<i>Basic Reading Inventory: Pre-Primer Through Grade Twelve and Early Literacy Assessments (9th ed)</i>	1	Not acceptable supplemental
Johnston, Peter H.	<i>Choice Words: How Our Language Affects Children's Learning</i>	1	Not relevant
Leu, Donald J.; Kinzer, Charles K.; Wilson, Robert M.; Hall, Mary Anne	<i>Phonics, Phonemic Awareness, and Word Analysis for Teachers: An Interactive Tutorial (8th ed)</i>	1	Not acceptable supplemental
McCarole, Peggy; Chhabra, Vinita	<i>The Voice of Evidence in Reading Research</i>	1	Acceptable core
Morrow, Lesley Mandell	<i>Literacy Development in the Early Years (5th ed)</i>	1	Not acceptable core
National Reading Panel	<i>Report of the National Reading Panel: Teaching Children to Read</i>	1	Acceptable core
Nettles, Diane H.	<i>Toolkit for Teachers of Literacy</i>	1	Not acceptable supplemental
Neuman, Susan B.; Copple, Carol; Bredencamp, Sue	<i>Learning To Read And Write: Developmentally Appropriate Practices For Young Children</i>	1	Not acceptable supplemental
New Zealand Ministry of Education	<i>Dancing With the Pen: The Learner As a Writer</i>	1	Not acceptable supplemental
Paley, Vivian Gussin	<i>Wally's Stories: Conversations in the Kindergarten</i>	1	Not relevant
Parker, Walter C.	<i>Social Studies in Elementary Education (12th ed)</i>	1	Not relevant
Reiss, Jodi	<i>ESOL Strategies for Teaching Content: Facilitating Instruction for English Language Learners</i>	1	Not relevant
Reutzel, D. Ray; Cooter, Robert B.	<i>Teaching Children to Read: The Teacher Makes the Difference (5th ed)</i>	1	Not acceptable supplemental
Routman, Regie	<i>Writing Essentials: Raising Expectations and Results While Simplifying Teaching</i>	1	Not acceptable core
Shanker, James L.; Cockrum, Ward A.	<i>Locating and Correcting Reading Difficulties (9th ed)</i>	1	Acceptable core
Swaby, Barbara E.R.	<i>Journey into Literacy: A Workbook for Parents and Teachers of Young (2nd ed)</i>	1	Not relevant
Temple, Charles A.; Martinez, Miriam A.; Yokaota, Junko	<i>Children's Books in Children's Hands: An Introduction to Their Literature (5rd ed)</i>	1	Not relevant
Thompson, Susan Conklin	<i>Children as Illustrators: Making Meaning Through Art and Language</i>	1	Not relevant
Tompkins, Gail E.	<i>Language Arts Essentials</i>	1	Not relevant
Tompkins, Gail E.	<i>Literacy for the 21st Century: A Balanced Approach (2nd ed)</i>	2	Not acceptable core
Tompkins, Gail E.	<i>Literacy for the 21st Century: A Balanced Approach (4th ed)</i>	5	Not acceptable core
Tompkins, Gail E.	<i>Teaching Writing: Balancing Process and Product (5th ed)</i>	1	Not relevant
Uribe, Maria; Nathenson-Mejia, Sally	<i>Literacy Essentials for English Language Learners: Successful Transitions</i>	1	Not relevant

Vacca, Richard T.; Vacca, Jo Anne L.	<i>Content Area Reading: Literacy and Learning Across the Curriculum (9th ed)</i>	1	Not acceptable core
Vacca, Jo Anne L.; Vacca Richard T.; Gove, Mary K.	<i>Reading and Learning to Read (4th ed)</i>	1	Not acceptable core
Wilde, Sandra	<i>What's a Schwa Sound Anyway?: A Holistic Guide to Phonetics, Phonics and Spelling</i>	1	Not acceptable supplemental
Wilson, Robert M.; Hall, MaryAnne	<i>Programmed Word Attack for Teachers (6th ed)</i>	1	Acceptable supplemental

OTHER ACCEPTABLE CORE TEXTS USED IN OTHER STATES

Author(s)	Title
Birch, Judith R.	<i>Multisensory Teaching of Basic Language Skills (2nd ed)¹</i>
Carnine, Douglas W.; Silbert, Jerry; Kame'enui, Edward J.; Tarver, Sara G.; Jungjohann, Kathleen	<i>Teaching Struggling and At-Risk Readers: A Direct Instruction Approach¹</i>
Cooper, J. David; Kiger, Nancy D.	<i>Literacy Assessment: Helping Teachers Plan Instruction (5rd ed)</i>
Gillet, Jean Wallace; Temple, Charles; Crawford, Alan	<i>Understanding Reading Problems: Assessment and Instruction (7th ed)</i>
Graves, Michael E.; Juel Connie; Graves, Bonnie B.	<i>Teaching Reading in the 21st Century (4th ed)</i>
Gunning, Thomas G.	<i>Assessing and Correcting Reading and Writing Difficulties (5rd ed)</i>
Gunning, Thomas G.	<i>Creating Literacy Instruction for All Students (7th ed)</i>

¹ This core textbook has been used in reviewed special education courses only.

APPENDIX B: RATINGS OF ELEMENTARY CONTENT MATHEMATICS TEXTBOOKS

TEXTBOOK SCORES

THE FOLLOWING TABLE SUMMARIZES THE SCORES OF TEXTBOOKS USED IN COLORADO'S UNDERGRADUATE TEACHER PREPARATION PROGRAMS. THE LAST LINE (HIGHLIGHTED) OF THE TABLE SHOWS THE RATINGS OF HIGHLY RECOMMENDED TEXTBOOKS NOT USED IN THE STATE.

AUTHOR AND TEXTBOOK	NUMBERS & OPERATIONS (54 POINTS POSSIBLE)	ALGEBRA (39 POINTS POSSIBLE)	GEOMETRY (54 POINTS POSSIBLE)	DATA ANALYSIS & PROBABILITY (19 POINTS POSSIBLE)	TOTAL SCORE (166 POINTS POSSIBLE)
Bassarear, Tom <i>MATHEMATICS FOR ELEMENTARY TEACHERS (4TH ED)</i>	21 ¹	3 ¹	33	19	76
Beckmann, Sybilla <i>MATHEMATICS FOR ELEMENTARY TEACHERS (2ND ED)</i>	54 ¹	29	48	19	150
Billstein, Rick; Libeskind, Shlomo; Lott, Johnny <i>A PROBLEM SOLVING APPROACH TO MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS (9TH ED)</i>	35	33 ^{1,2}	50	19	137
Muisser, Gary; Burger, William; Peterson, Blake <i>MATHEMATICS FOR ELEMENTARY TEACHERS: A CONTEMPORARY APPROACH (8TH ED)</i>	45	16	45	19	125
Van de Walle ³ <i>ELEMENTARY AND MIDDLE SCHOOL MATHEMATICS: TEACHING DEVELOPMENTALLY (5TH ED)</i>	16	2	5	11	34
Parker, Thomas; Baldrige, Scott <i>ELEMENTARY MATHEMATICS FOR TEACHERS AND ELEMENTARY GEOMETRY FOR TEACHERS</i>	54 ¹	24	54 ¹	19	151

Aichele, Douglas; Wolfe, John Geometric Structures: An Inquiry-Based Textbook for Prospective Elementary Teachers, was used in one course. It could not be rated using the rubric normally used for elementary content textbooks because it is an activity book rather than a rigorous treatment of the subject that includes non-trivial problems, including "word problems" with applications.

Kaplan, Andrew; et al. Math on Call: A Mathematics Handbook was used in one course. It has been reviewed as inadequate in all content areas but not scored.

1 Appendix D of our national report on mathematics preparation comments extensively on the section of this textbook that is indicated.

2 This score was reported earlier as "58," but a score of 55 has been used for purposes of rating coursework.

3 This is a methods textbook evaluated for content.

APPENDIX C: COMMENTS FROM COLORADO TEACHER PREPARATION PROGRAMS

WE SOLICITED COMMENTS FROM ALL BUT ONE OF THE FIFTEEN PREPARATION PROGRAMS EVALUATED IN THIS STUDY.¹ FOUR PROGRAMS RESPONDED AND THEIR COMMENTS ARE FOUND BELOW:

FORT LEWIS COLLEGE

Fort Lewis College did not submit materials to NCTQ because its narrow methodology leads to invalid conclusions. NCTQ primarily bases its conclusions on whether key terms and NCTQ approved textbooks appear on course syllabi. NCTQ acknowledges that today's expert instructors use a variety of resources, not all listed on their syllabi, yet still continues to assess instruction by whether the title of one of its specifically ordained texts appears there. Thorough program reviews are possible. State and national program reviewers read substantive college data based reports, followed by on-site visits where they speak with content and education faculty, administrators, students, alumni, and teachers and principals in area schools. They also question and probe, visit classes and observe students actually teaching. NCTQ fails in all these respects. NCTQ allows a 200 word rejoinder from the college to publish in its report, an overtly defensive restriction. That NCTQ rates our reading program a "pass" does not excuse it from accountability for its increasingly notorious weak methodology. Readers should view our web site <http://extended-campus.fortlewis.edu/> to see that our math, literacy and other state and nationally accredited programs are among the best in the U.S.

METROPOLITAN STATE COLLEGE OF DENVER

Every teacher education program in the state is jointly authorized by the Colorado Department of Education (CDE) and the Colorado Department of Higher Education (CDHE) and by CDE's Colorado Literacy Council (<http://highered.colorado.gov/Academics/TeacherEd/>). Evaluation by CDE and CDHE focuses on outcomes (student performance) rather than inputs (such as syllabi and textbooks). This process of outcomes assessment is state-of-the-art in education. Metro State is authorized by both entities to offer teacher preparation programs as well as voluntarily participating in national review and accreditation by the NCATE and our own internal program review process. Students in the teacher preparation programs at Metro State complete a teacher work sample (outcome), and must also pass a content exam (the PLACE or PRAXIS) prior to student teaching. Thus, Metro State ensures that all of our graduates are well prepared for starting their career in education in alignment with state and national standards.

UNIVERSITY OF COLORADO DENVER

The UC Denver teacher education program is in the midst of a major redesign to ensure that all program graduates can serve as effective teachers in urban schools. The program has few undergraduates; it consists largely of people who hold BAs in liberal arts (with an average GPA of 3.5) who are preparing to become teachers in a master's program. Because NCTQ did not appropriately engage our staff in its studies, its review is focused on a small number of students and on curriculum that will be changed by fall 2010. Elementary teacher candidates learn to teach math and reading in two integrated contexts—in university classrooms (the only learning opportunity examined by NCTQ) and during 100+ days teaching math and reading alongside experienced urban teachers. They demonstrate their competence in "teacher work samples" required for licensure—a robust assessment of their abilities to conduct a pre-assessment, design and

¹ Colorado College was inadvertently not afforded any opportunity to comment on our evaluation.

teach a unit of study based on standards, and a post-assessment of student learning. What matters is that our students demonstrate that they know the content of reading and math and that their teaching results in student learning. What does not matter is how well our syllabi are written against NCTQ's input criteria.

UNIVERSITY OF NORTHERN COLORADO

Thank you for the opportunity to examine the program review findings for UNC, to check for errors in your findings, and to provide a response. We agree with the "meets standards" rating for our elementary mathematics preparation. You made this determination by reviewing all five of the courses required of our candidates. In fact, initially you requested only two of the math syllabi, and requested the other three when you realized your omission. We disagree with the rating of "nearly meets standard" for our elementary reading preparation. Although all five components are listed in the course outcomes and content of the three reading syllabi you reviewed, there are four additional literacy courses required of all our candidates that you did not request or review. Through all this coursework UNC provides comprehensive instruction in all five basic components of reading.

This report is available online from www.nctq.org



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