



## ***ADVANCE SHEET– OCTOBER 2, 2020***

### **President's Letter**

In this issue, we include three past Calvert Institute for Policy Research publications on the problems of Maryland K-12, all of them originally published with the assistance of the Abell Foundation. The first of these is a publication on Distance Learning in Maryland, which fixes responsibility for the State's recent failure to be prepared to supply on-line education during the pandemic crisis. The second, not unrelated to the first, discusses Maryland's failure, unlike New Jersey and other states, to open the public school teaching force to the 90% of college graduates not holding degrees in education from the teacher's colleges once described a century ago by a famous private school headmaster, Horace Taft, as places where subnormal students are instructed by abnormal teachers. The third, not unrelated to the second, is a symposium in which two eminent scientists, John Toll and Donald Langenburg, both former Chancellors of the University of Maryland, discuss, among other things, Maryland's obstacles to recruitment of qualified science teachers.

George W. Liebmann

### **Member Spotlight: Honorable Pamela J. White**

The Honorable Pamela J. White joined the Circuit Court for Baltimore City on February 8, 2007. A matter of public record, and something that if you did not know, would be easy enough to discover. Did you know, however, that she joined another institution much earlier? By the title of the article I assume that many of you have guessed the answer, yes, the Library Company of the Baltimore Bar. On June 23, 1976, a law student at Washington and Lee University, she became a student member of the Library. On February 16, 1978, now a member of Ober, Grimes & Shriver, she would become an attorney member. You are probably thinking that the Library keeps some really thorough records, and you would be right, thanks to a system that was implemented by the legendary librarian who was at the helm in the mid-70's, Ms. Kai-Yun Chiu. The truth of the matter though is that I know these dates because when Judge White recently re-joined the Library she sent me a number of momentos including her receipts when she joined the Library and her first student membership card.

Although judges of the Circuit Court have complementary use of the Library, Judge White undoubtedly realizes that at times such as these, institutions that are in existence to serve and help others, might need a little help too. Over the past several weeks we have seen an increase in our rolls as firms and individuals have subscribed to membership to help the Library further its mission to provide legal services and collections to the bench and bar. To say that I am grateful to Judge White and to all the others is very much an understatement.

A brief examination of Judge White's biography in the Maryland Manual provides insight as to who she is and why she would think the welfare of an institution such as the Bar Library was of importance. A Member of the Equal Justice Committee, Judicial Council, she has also been a Member of the Baltimore City Local Pro Bono Committee since 2007. Over the years, Judge White has dedicated herself to causes ranging from accessibility to the courts to gender equality.

I find it interesting that Judge White came to the Court in 2007 after having worked as an attorney at Ober, Kaler from 1977 to 2007. Yes, indeed, thirty years: the number that most people think qualifies them for retirement. For Judge White it was a signal to pursue a new career, one of long hours and innumerable challenges. We are grateful to her for her selfless decision and for her support of our Library.

Joe Bennett



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# **Expanding Distance Learning in Maryland Schools**

October 23rd, 2014

Expanding Distance Learning in Maryland Schools

A Comparative Analysis of Distance Learning in Maryland and Other States

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### **1 Maryland Online Education at a Glance**

In the age of technological advancement, new tools and policies are exploding onto the education scene in states across the country. On top of traditional brick and mortar school environments, more and more students are seeing digital learning in their classrooms, taking some of their high school and elementary courses wholly online, or even fully participating in public education completely online.

This paper explores the potential of these new tools to improve student outcomes and examines how these are implemented in various states. Further, it compares the policies of state regulatory bodies and how they influence educational development and student incomes; contrasted with the *status quo* in Maryland.

#### **1.1 Maryland Structure**

High school credit is only available for MSDE (Maryland State Department of Education) approved online courses, which are defined as consisting of at least 80% of instruction online. Definitions of “80% online” are largely subjective.

Maryland Virtual Learning Opportunities was established by legislation passed in 2012.<sup>[1]</sup> MVLO under the MSDE provides for Maryland Virtual School (MVS), High School Assessment (HSA) resources and courses, and professional development. The HSA resources have been used by educators as an educational supplement to in-class instruction, as an aid in remediation and as a full online credit-bearing course.<sup>[2]</sup> The MVS is responsible for approving and licensing online education available to Local School Systems.

Local School Systems may implement online components in education with exemption from approval if the course is less than 80% online or if the course is non credit bearing. However, the student is still required to be “on premises”.

Students interested in taking courses through the MVS must obtain permission through the Local School System and the school principal. Fees can range from \$25-\$800 depending on the resource demands (human capital or otherwise) of the course. Fees may be paid by the school district or the family, depending on the decision of the local school system.

Vendors interested in submitting courses for review must pay a non-refundable \$1400 fee for review and the course must be requested by a local school system. If the course is not approved, the vendor has up to one year to fix and resubmit the course; after which the \$1400 fee must be paid again. Typically courses will be reviewed again every 3-5 years, with MSDE holding the right to review again after three years.

Maryland law has authorized the creation of a full-time online school, subject to MSDE approval.[3] As of March 7, 2012, no full-time online schools yet existed in Maryland.[4] According to *Keeping Pace*, an annual report by educators and policymakers on the state of virtual education nationwide: MSDE reports that “The Online Courses/Curriculum Resources are designed to be **flexible** so that teachers can use them as a whole course, use whole units within course, or just use some of the lessons and assessments.”[5]

MVLO received \$400,000 from 2008-2009; and as there is no statutory funding for the virtual school as is common in many other states MVS has to rely on funding primarily from course fees. Due to a lack of local funds MVS enrolment has experienced a decline.[6]

## 1.2 Fact and Figures

As of the 2009-2010 school year, of the 28 states that then had virtual schools, “Maryland Virtual School remains among the smallest of the state virtual schools, only larger than Connecticut.”[7]

The 2009-2010 school year saw only 633 course enrollments through Maryland’s Virtual School, down from 710 in 2008-2009.[8] Enrollment in Maryland’s public schools in 2008-2009 totaled 843,861, and totaled 848,412 in 2009-2010.[9] Thus only a maximum of .07% of Maryland’s public school students participated in 2009-2010, down from .08% in 2008-2009. For every one Maryland public school student who participated in MVS 2009-2010, at least 1340 students did not, and for every one student who participated in 2008-2009, at least 1188 did not.[10]

Page 12 of the Maryland *Online Learning* report says that Maryland’s Virtual School only has 633 course enrollments in 2009-2010. Yet Page 21 of this report mentions that the Montgomery County e-learning program is the largest district program in Maryland, with 1100 course enrollments in the same year. “MCPS online courses are customizable at the course and individual levels, and are used as online courses, hybrid courses, for credit recovery, or to enhance and individualize classroom instruction.”[11] The only courses Montgomery County offers are courses that are approved for credit by MSDE’s MVS.[12] For the 633 figure to be correct, and the 1100 figure to be correct, the Montgomery County figure could include HSA prep students who are not taking HSA classes as a part of MVS, or they could be running a district-operated program—it seems the latter as the case, as MCPS operates a program that includes online coursework that must be approved by both them and MSDE.[13] The fact that Montgomery County did not also offer (3 years ago) these classes as general classes for credit through MVS does not necessarily mean that they do not offer the same courses for HSA. This therefore provides us with an idea of how many kids are involved in distance learning in Maryland—if Montgomery County’s 1100 is the most of any of Maryland’s 24 school districts, then there must have been no more than a total of about 26000 throughout the state in 2008-

2009, and probably far less than that. It may also be possible that Montgomery County is using the approved courses in some kind of a hybrid, unapproved way, but I have no evidence that that is allowed, and that would seem to violate the standard that online courses must generally involve more than 80% of instruction taking place online, and even if this was the case, the numbers would be included in the numbers reported on page 12. In any case, Montgomery County taught 141,722 students in 2009-2010.[14] With just 1100 course enrollments, the largest online learning program in the state had a maximum of just .7% of their students involved in online learning—and that is even including the dubious assumption that no single student was enrolled in more than one online course. The existence and enrollment figures of the Montgomery County program reveal that districts must have programs of their own, in addition to the state program if the above is not true—and remember, the new COMAR did not become part of the law until April 1, 2013.

In 2009-2010, Washington County had 65 course enrollments out of a total of 21,902 students, for a maximum total of just .3% of their students involved in online coursework. The total number of students who were actually involved is likely less, unless no student enrolled in more than one online course.[15]

As far as blended and supplemental online learning, most all of the 31 states with virtual schools have more students participating in these classes than the state of Maryland.[16]

#### *Maryland Advisory Council for Virtual Learning*

The Maryland Advisory Council for Virtual Learning (MACVL) was established in law in 2012, and is intended to “encourage and support students in on-line education in accordance with national standards and State Law”.[17] The council considers and offers recommendations on issues surrounding online, digital and distance education such as access, infrastructure, sustainability and funding. The Council is supposed to submit a report to the legislature by December 1 every year. This is included in Chapter 290 of Maryland’s Acts of 2012 (link [http://mgaleg.maryland.gov/2012rs/chapters\\_noln/Ch\\_290\\_sb0689T.pdf](http://mgaleg.maryland.gov/2012rs/chapters_noln/Ch_290_sb0689T.pdf) ), which was approved in May 2012.[18]

Though tasked with making recommendations to improve distance learning, the law specifically authorizes virtual learning for the purposes of ensuring equality and only offering that which is not otherwise available—this may limit the scope of feasible recommendations. Moreover, policies adopted by MSDE on June 26, 2012 require school districts to submit online course enrollment data, which is “required by the Maryland Department of Budget and Management for its Managing for Results Annual Performance Report (MFR) for the Senate and House fiscal committees and to help determine the effectiveness of courses.”[19]

#### *Backlog and Lack of Funding*

A 2012 review of existing law conducted by Maryland’s Department of Legislative Services noted that MSDE is *required* to develop and review online courses for approval. Yet “MSDE does not have the staff or funding to approve *any* new online courses...and currently has a backlog of 17 courses that need to be reviewed. MSDE anticipates that the number and variety of

online courses will continue to grow and local school systems and online course vendors will continue to ask MSDE to review online courses for approval.” They are thus failing to move forward at all, and the backlog is likely increasing, since the bill this references includes funding only for a part-time staffer for the MACVL rather than for needed staff to actually get approval of programs moving, and there is no evidence that they were required to hire someone and the fiscal situation in Maryland remains roughly the same.[20]

Two counties were selected out in a report from MSDE for their use of online technologies in their schools:

#### *Baltimore County Public Schools*

*“BCPS is currently using online courses to expand the range of subjects available to students, to allow students to take a course when there are too few enrollments to justify a face-to-face course in a particular school, to alleviate student scheduling conflicts, and to provide an online experience for students who will be using 21st century technologies throughout their lives. Online teachers communicate with students using email and online discussion forums, as well as by phone and fax. Each student taking an online course has an on-site mentor who is available as needed to provide support. The mentor works with the online teacher, proctors exams, provides science labs, and offers curricular support. BCPS also has a District Coordinator for Online Learning to help ensure a high-quality online learning experience for students. During the 2009-10 school year, 27 secondary schools provided 19 online courses for 139 BCPS students.*

*Courses included AP® Art History, AP® Biology, AP® Physics-C, AP® French Language, AP® Environmental Science, and Algebra 2. Four students took Multi-Variable Calculus online from Stanford university’s Education Program for Gifted youth, and 16 middle school students took online Geometry so they could move more quickly to higher-level math courses. Online learning in the BCPS program has grown from 26 students in the 2004–05 school year to 139 students for 2009–10, with the numbers expected to increase annually.”[21]*

That same year, Baltimore County Public Schools had 104,000 students.[22] Therefore .1% of their students were participating in online learning in 2009-2010—only 1 out of every 749.

#### *Frederick County Virtual School*

*“The need to support students with a variety of needs prompted the creation of the Frederick County Virtual School, offering Advanced Placement® courses, options for student athletes, and courses with low enrollment that are not economical to offer in the brick-and-mortar school. The overall online program, the Virtual School and Evening High School, generated approximately 400 course enrollments in fall semester 2010.”[23]*

Frederick County’s Public Schools educated 40,188 students in 2010—thus less than 1% of Frederick County’s students were able to enjoy the benefits of distance learning.[24]



*“Online learning in Frederick County Public Schools (FCPS) has grown from a strategy to improve educational alternatives for the Evening High School program to providing a broad range of online learning options from credit recovery to Advanced Placement. Online learning was first used to provide an alternative for at-risk students who were unsuccessful in the traditional school setting. These students use online courses to move through the subject at an individual pace, coming to a set location two nights a week with a qualified teacher to guide the students through the coursework. “*

### **1.3 Blended Learning in Maryland**

Blended learning, which can include education incorporating up to 80% online based education, is also being explored in Maryland. One example is the Hybrid Course Process and Product Consortium from 2010.

#### **The Hybrid Course Process and Product Consortium**

“Maryland has created the Hybrid Course Process and Product consortium, a Title II-D Education Technology grant funded partnership formed to address the need by school systems to create a model for hybrid, or blended learning, course development. This partnership grant is examining the current best practices and research-based strategies to develop and pilot a hybrid course in World History, including researching best practices in history instruction, in hybrid course development and implementation, and in the use of portfolio assessment. From the course development, a process guide will be created outlining findings and evaluations of the process. Local school systems will then have the opportunity to apply the process guide to their own course development efforts. This blended learning effort should be expanded into greater use of online content, tools, and resources in classrooms across the state. In addition, a blended learning program may form the basis for exploring how online courses can be used to develop continuity of learning plans for Maryland schools.”[\[25\]](#)

Many school districts have interest in expanding the use of online learning in the classroom. Participating school districts include: Cecil, Baltimore, Calvert, Carroll, Kent, PG, Washington, Worcester Counties and Baltimore City are all participating.[\[26\]](#) The program was part of a grant project managed through MSDE, so being their own pilot project they may not have needed to set a firm protocol for outside approval.[\[27\]](#)

The course appears to be set up to allow for in-class instruction, or a combination, and an initial report affiliated with the project described the course as such.[\[28\]](#) Yet some parts of the project[\[29\]](#) seem like they might require students to actually be in a classroom with others to work with partners and between groups to present findings to the class.[\[30\]](#) Online courses can be updated to account for changes in knowledge or best practices, while traditional instructional tools like textbooks may be more problematic or expensive, to update.

The course goes beyond the written content found in textbooks; also featuring audio and video content, simulations, individual and group activities.[\[31\]](#) Arden Stara, a Social Studies Resource Teacher in Howard County Public Schools, stated that teachers were “extremely excited” about the course.[\[32\]](#) Another teacher reported that students “loved the course,” particularly noting that

the students enjoyed the mapping, the easy availability of definitions for words they were not familiar with, and the videos.[33] Students of diverse backgrounds could see their own history in the course; and liked being able to take control of their own education.[34]

A final evaluation report on the World History project was submitted to Cecil County Public Schools in December 2013. Since the project is still being evaluated it is unlikely to have been widely adopted yet.[35]

### **1.3.1 Greater than 20% but Less Than 80%**

COMAR 13A.04.15 explains that blended courses, which the state defines as courses in which less than 20% of instruction is conducted online, [as well as non-credit bearing online courses] do not need MSDE approval, while credit-bearing online courses must be approved by MSDE. This leaves an odd sort of no man's land about courses that have at least 20% of instruction online but less than 80%—MSDE does not need to approve it, but could students get credit for it? Katie Egan's interpretation, along with that of her team, which included MSDE personnel, was that yes, less than 80% was ok to do without separate approval. For less than 20% of coursework, a class that met 5 days/week for 45 minutes each day could have no more than 45 minutes of online instruction each week.

Another consideration is the measurement of time – if a student has home access to the internet and the portal with online resources, should those minutes count towards the percentage of online instructive time? How would it be measured? Could schools take un-approved online courses by keeping the online time down to 20% and simply print off hardcopies of the online materials and use the rest of the materials on a projector? These are all questions that leave a large area of potential dispute.

### **1.4 Full Time Learning**

MSDE does not currently have a full-time online school option. Current Maryland regulations require students of charter schools to be physically “on premises”.[36]

### **1.5 room for improvement**

The public policy research and analysis firm Evergreen Education Group's comprehensive 2012 report on online learning across the United States referred to Maryland as a state that has “neither a significant state virtual school nor online charter schools drawing students from all districts in the state,” and stated that Maryland is home to a disproportionate amount of school “districts that are not yet offering significant online or blended courses,” which total about 25% nationwide.[37]

*“Maryland, however, has lagged behind most other states in implementing extensive online programs, largely because the state has not yet prioritized online learning. Some Maryland educators recognize the value of online learning; for example Dr. Colleen Seremet, the former Assistant State Superintendent of Instruction for the Maryland State Department of Education, notes that online learning allows school districts to provide quality online experiences, and*

*provides greater equity and flexibility to students through online access to the High School Assessment (HSA) test preparation courses and other courses. Dr. Seremet notes, however, that the common thinking across Maryland has not caught up to educational technology practice. 'We need to stop thinking about courses and curricula (especially textbooks) in a traditional sense and start thinking about digital content that can be mixed and matched by teachers and curriculum experts for a variety of learning experiences... Although Maryland has created Maryland Virtual Learning Opportunities, and several districts have implemented online learning opportunities for their students, the state is far behind most other states in terms of creating online learning programs and options.'*"[38]

## **2 SUPPORT FOR BLENDED AND ONLINE LEARNING**

*"Maryland's plan is intended to boost student achievement, reduce gaps in achievement among student subgroups, turn around struggling schools, develop a 'statewide technology infrastructure that links all data elements with analytic and instructional tools to monitor and promote student achievement, and improve the teaching profession, including the expansion of online educator professional development for capacity-building and sustainability.'*"[39]

A 2010 MSDE report revealed that school district administrators in both Queen Anne's and Anne Arundel counties support expanded use of online learning. Queen Anne's County Public Schools Superintendant Dr. Carol A. Williamson stresses "the value of online learning" and noted that she "would find the funding within our budget to start an online program" pending the arrival of more reliable internet service in the county and the presence of educators who were prepared to implement an online education program.[40] Anne Arundel County Public Schools Superintendent Dr. Kevin M. Maxwell noted, "Online learning gives us the ability to have students participate in courses they otherwise would not be able to access." An Anne Arundel County assistant superintendent recognized the value of preparing students for college coursework, which is increasingly online, stating, "High schools really should be preparing their students for advanced learning by requiring them to take at least one online course."[41]

Former Maryland State Superintendent of Schools Nancy Grasmick said, "Online learning is growing rapidly across the United States, as an ever increasing number of parents, students, and educators become familiar with the benefits of learning unconstrained by time and place... Through online learning we can provide greater equity of learning for our students, particularly in making accelerated learning and high-level courses available to students in small districts where the funding will not support a teacher for only a few students...Nationally, online learning is proving to be a successful strategy in creating greater access to education for all, and many state virtual schools are focused on alleviating inequities in rural or inner-city regions."[42]

## **3. advantages**

For most of history education has been limited by factors that are completely beyond the students' control and largely beyond the control of the parents as well. Factors that most Americans have had no choice but to leave to chance include whether a child lives in a good school district; whether the child is being taught by a talented teacher; whether a talented

teacher's teaching style meshes with the student's instructional level, learning style, and interests, and whether the parents can afford the private school alternative are each.

According to U.S. Department of Education research, 'students who took all or part of their class online performed better, on average, than those taking the same course through traditional face-to-face instruction.'

A host of factors, including direct access to the educator, may be helping to boost students' performance. A MSDE report sheds light on this from the educators' perspective: "online teachers report that they know their students better online than in a face-to-face course." [43]

The report asserts, "online teachers report that they know their students better online than in a face-to-face course." [44]

Implementation of blended-to-fully-online models yield, on average, a savings to the school district and taxpayer. Recent findings from the International Association for K-12 Online Learning showed average per-student spending of \$11,282 traditionally, compared with only \$8,900 in blended learning and \$6,400 for fully-online education.

Virtual learning gives all school districts, especially smaller districts, access to the best educators in a wide array of subjects.

According to most school district administrators in a recent survey, important benefits from online learning included expanding school curriculum, offering advanced courses for gifted students and allowing students to take a course over again. The flexibility of online learning gives both the educator and student the tools to serve diverse learning styles and needs.

A report on the MSDE website flatly states, "Across most states and all grade levels, students are finding increased opportunity, flexibility and convenience through online learning. Teachers are discovering that online instruction offers them more professional flexibility, through adjunct teaching and telecommuting opportunities. Administrators are exploring ways to offer a wider range of courses to students and professional development opportunities to educators." [45]

The Maryland State Department of Education is well-aware of the merits of online education for public school students, noting in 2012 that its existing program has a number of advantages:

*"Expand the range of courses and opportunities offered to students;*

- Provide additional support and extended time to students who would benefit from this added support;*

- Allow juniors or seniors who need a course to be able to graduate within the four-year period to make up that course;*

- Present high quality instruction to students in special education, alternative education settings, or home and hospital instruction;*

- *Offer courses for students when no qualified teachers are available to teach the courses;*
- *Allow students to take a course when there are too few students who need a certain course to be able to assign a teacher to teach that course;*
- *Provide courses for students who have schedules that prevent them from taking a course when it is offered.”[46]*

The State of Online Learning in Maryland includes information that sheds lights on some other advantages of online learning—namely that online schools can improve education by allowing flexibility within, or even the abandonment of, seat-time requirements. The report notes that seat-time requirements, in which students are required to spend specific amounts of time learning specific content regardless of how quickly or slowly each individual student actually masters the content, “do not apply to the online environment.”[47] The report notes that mastery-based education, rather than seat-time based education, “allows students to move through a course at any pace, while maintaining the high quality standards currently demanded in the face-to-face environment.” Noting that “student outcomes” are the “educational goal,” they state that reliance on seat-time requirements is “a poor proxy for” ensuring positive student outcomes.” They also emphasize that coursework in which “mastery becomes the constant and time becomes the variable...is the way education should be operated,” as opposed to the situation that seat-time requirements present, in which time is the constant and mastery becomes the variable.[48]

There is also some evidence that online learning can help school districts save money. The International Association for K-12 Online Learning, a non-profit organization, reported in February 2013 that “The current U.S. average per pupil expenditures for a fully- online model are estimated at \$6,400 and for blending learning are \$8,900. Traditional school models have an average per pupil expenditure of \$11,282.”[49]

*“Students appear to be benefiting from online learning programs. While evidence about the effectiveness of K-12 online learning programs is limited, there is reason to believe that students can learn effectively online. In 2009, the U.S. Department of Education published a meta-analysis of evidence-based studies of K-12 and postsecondary online learning programs. The study reported that ‘students who took all or part of their class online performed better, on average, than those taking the same course through traditional face-to-face instruction.’ In addition, online learning has the potential to improve productivity and lower the cost of education, reducing the burden on taxpayers.”[50]*

#### **4. COMPETENCY BASED EDUCATION**

The technological advancements of online-and-blended education knock down logistical and scale-related barriers to competency-based education for the average student. Online-and-blended learning gives every school district and student the ability to access the advantages of competency-based education.

The relative lack of data about online learning can be supplemented by the reasonable amount of evidence demonstrating that competency-based education (one of the advantages of online

education) yields positive outcomes. By demonstrating the advantages of one of the key educational strategies that online learning can promote, evidence supporting the use of competency-based education can also be fairly interpreted as evidence supporting the use of online learning.

#### **4.1 What does “Competency Based” mean?**

The concept of “competency-based education” is known by a variety of different names, including “standards-based,” “outcomes-based,” “performance-based,” and “proficiency-based.” For the purposes of this report—and as a general rule for reviewing relevant education policy and research content—these terms have the same meaning.

Competency Works, a collaborative organization led by the non-profit International Association for K-12 Online Learning, explains that competency-based education is education in which “students advance upon mastery...Competencies include explicit, measurable, transferable learning objectives that empower students...Assessment is meaningful and a positive learning experience for students...Students receive timely, differentiated support based on their individual learning needs...Learning outcomes emphasize competencies that include application and creation of knowledge, along with the development of important skills and dispositions.”<sup>[51]</sup> Competency Works had stated plainly that one of the main arguments in favor of competency-based education is “to take advantage of the extraordinary technological advances in online learning for personalization, allowing students to learn at their own pace, any time and everywhere.”<sup>[52]</sup>

A simple thought exercise, developed by New Hampshire High School Principal Brian M. Stack, persuasively demonstrates that competency-based learning is preferable to more traditional, seat-time-based educational models. In the thought exercise, Stack questions whether it would be preferable to ride on an airplane whose pilot was educated at a traditional flight school, or a pilot who was educated at a competency-based flight school. In a recent article, Stack explained the differences between the schools:

##### ***“School #1: The Traditional School***

*v*

*At school #1, the pilot completed a series of readings, homework, and classwork assignments, participated in class discussions about those assignments, and took quizzes and tests to demonstrate that he understood the material that was presented in class. Some of his quizzes and tests were done on paper or the computer and some were “performance-based” (meaning that likely he had to actually fly a simulator or an actual plane with an instructor). His final grade was obtained by weighting all of his assignments appropriately (quizzes and tests counted more) and averaging everything together. Since his average was above an 80%, he was deemed “proficient” and was awarded his pilot’s license.”*

##### ***“School #2: The Competency-Based School***

*v*

*At school #2, the pilot completed all of the same types of readings, assignments and assessments just like in the traditional school. Some of his quizzes and tests were done on paper and some were performance-based, just like the traditional school. The difference in this school was that each of the assessments he took were directly linked to competencies that looked something like this:*

v

*Competency #1: The student will learn how to successfully make a plane take-off.  
Competency #2: The student will learn how to successfully land a plane.  
Competency #3: The student will learn how to successfully fly a plane in the air.  
The pilot was not considered “proficient” in pilot school until he demonstrated proficiency in each competency. Once he did, he would be deemed “proficient” and awarded his pilot’s license.”*

Stack admits that it can be difficult to decide which school’s education is better without the following “critical hint: In the traditional school, it is possible to fail an individual assessment provided the grades on other assessments and assignments were high enough so that the final course average was still above an 80%. Knowing this, what if the one test the pilot failed happened to be the one on how to land a plane?”

In sum, Stack’s hypothetical explains “that a traditional model is a flawed system because it allows students to be deemed proficient when in reality there are gaps in their learning. This is the danger of averaging grades without first connecting them to learning targets.”[53]

In a recent report written by a group that includes a former teacher, a former superintendent in Washington state, and a former White House Special Assistant to the President for Domestic Policy, the authors noted, “while technology is not a necessary component of competency education per se, advances in educational technology have made it possible to bring competency education to scale through an ever-expanding set of tools that can personalize and customize learning. The authors contend that without leveraging technology and discovering new ways to use time and resources differently, we will fail to achieve the goals of college- and career-ready standards like the Common Core State Standards (CCSS). Shifting to competency education is an important step in this process.”[54] The authors also noted, “today’s current system holds back students who could be excelling and moves students on who aren’t ready.”[55]

Digital learning and competency-based education broadly overlap—each have similar goals for personalized learning, advancement, and assessment and accountability.[56]

Competency-based education is anytime, anywhere, any-pace learning. These pathways validate student learning that occurs outside the school building, as well as in school, but outside the traditional constraints of seat time and divisions of content areas. In other words, competency-based education allows students to learn and demonstrate learning more like they do outside school – and more like we do, as adults in our daily lives – by learning what they need, as they need it, in a context that makes the learning relevant. These pathways enable districts and schools to provide student-centered, personalized learning systems through which students of all ages and ability levels develop both ownership and control of their learning. And, as the U.S.

Department of Education acknowledges, competency-based pathways present “an opportunity to achieve greater efficiency and increase productivity”.[57]

MMW said, “Many students find competency education more motivating and engaging than traditional approaches. The chance to progress at one’s own pace is particularly important to struggling students.”[58]

## **5. Flipped Classroom**

An innovative practice known as “flipping the classroom” is one way that distance learning can positively impact students. “Flipping the classroom” is “a practice that uses homework time for lectures and class time for homework. The switch allows students to watch the lectures online outside of the classroom and then bring their homework to class to work on under the teacher’s supervision.”[59] California University of Pennsylvania Professor Joseph Zisk reports that flipping the classroom gives teachers “more time to get content across to the student,” and allows for more hands-on, personalized instruction, and ultimately “helps with the learning.” One Pittsburgh-area Algebra teacher echoed Zisk’s conclusions, noting that flipping his classroom allowed him to become more of a “coach in the classroom.”[60] Flipping the classroom allows students greater freedom to learn concepts at their own pace, allows them the ability to re-watch lectures that deal with difficult content, provides them with solid study resources prior to tests, and can be accessed portably through smartphones and iPods. Moreover, flipping the classroom allows students who miss class due to illness or athletic events to easily keep up with the rest of their class. Moreover, there is evidence that students are finding flipping the classroom effective—indeed, one Pittsburgh-area math student explained that flipping her classroom was “one of the most useful resources that any of my teachers have ever provided us with...

Not only does it help prepare me for tests and keep me up-to-date when I am absent, but I anticipate it being a key component of studying for finals.”[61] Laura J. Hummell, another Professor at the California University of Pennsylvania, agreed that flipping K-12 classrooms brings increased flexibility to teachers and students. Hummell noted that flipping K-12 classrooms brings several additional advantages, including allowing students to interact with and be exposed to subject matter experts, allowing parents to know more about what their children are learning in school, and providing students the chance to experience a greater variety of subject matter and types of instruction.[62]

**“The primary role of the teacher in the traditional classroom is usually ‘master of content.’ The primary role of the teacher in the flipped classroom is usually ‘professional learning coach.’ In the flipped classroom, the teacher structures the classroom activities to personalize the learning for individual students.”[63]**

More evidence supporting the value of flipping the classroom comes from Genesee County, Michigan, where high school economics teacher Mike Peter’s students watch video lectures at home and practice what they learned in class. A Michigan newspaper recently reported, “By using technology in this way and ‘flipping the classroom’ it allows teachers like Mike Peter to spend more time working one-on-one with students as they practice material...Mr. Peter spoke



about the change he has seen in his classroom since implementing the method. ‘It has made a huge difference in my classroom, just in seeing the students grasp the material that much better’ he said. ‘With flip teaching the students can watch my lecture at home, pause it, write down questions or move onto the next lecture if they feel like they’ve grasped the content.’ When students were asked what they thought of the new method, they noted how much they enjoyed the change and felt as if the material was easier to grasp when they were able to work at their own pace and have more time for in-class discussion.” Mr. Peter’s student teacher stated that he felt that the ““students were moving toward mixed-mode college style class. I definitely feel like this is where education is heading.”” The student teacher “also noted how he saw the benefits of students being able to submit comments/questions online to receive feedback without the social pressures of raising their hand in class.”[64] Mr. Peter’s students thus are completing a blended style of instruction—using both in person and online educational tools—that is increasingly used at colleges and universities all over the country through websites like Blackboard and Weebly.

Also, as the Flipped Classroom Facebook group points out, asking kids to take personal, independent responsibility for their coursework is a huge step forward. As they succeed, they will gain confidence in their ability to work independently and take personal responsibility for doing the schoolwork they need to do. This will serve them well as they move on to college and prepare them well for the kind of independent thinking that characterizes capable adults.

It may also be possible that this will get kids reading more, though in this case it would help me to show that kids don’t read much, or are not very good at it.

Flipped learning also allows teachers to take advantage of ready-made content, which is all over the internet and is increasingly on YouTube.

*The Washington Post* recently reported that at least one Maryland private school, Potomac’s Bullis School, is already featuring the flipped classroom. “The philosophy behind the flip is that teachers can spend time working with students who need their help in the classroom — and students can work together to solve problems — rather than sitting home alone with work they might not understand and with nobody to ask for help.”[65] Stacey Roshan explains that flipping her 11<sup>th</sup> grade AP calculus class had a very positive impact, noting that previously, her AP Calculus ““was a really anxious environment”” in which students were ““trying to get through way too much material with not enough time.”” After flipping her class, she is now able to “provide one-on-one time with students” and ““create an environment where students could really work together.”” One of Roshan’s students, Brook Gutschick, felt the flip was a success, noting that she had never made such quick progress in Math before and claiming that she “no longer ha[d] ‘to sit at home and struggle with [her] homework.’” Gutschick went on, ““ “There is a lot more support with this and it’s a lot easier to learn.”” The Post reported that another AP Calculus teacher who flipped her classroom using Roshan’s video lectures saw “students become more independent learners...because they work with one another more often in class and they get more individual attention. She said she gave her students a practice AP Calculus exam and they did better than ever.”[66] This article explains that her students watch 20-30 minute videos about 4 nights per week. If every class was flipped, that would definitely be a lot of time spent doing homework each week.[67]

In a CNN article about Roshan, she wrote that under the traditional format, “when the end of the class period felt like stepping off of a treadmill that had been running at full speed for 45 minutes, I knew I had a problem. I had talked as quickly as I could, and students had responded with as many questions as they could get in, but most of the time they had many unanswered questions and frequently found it necessary to come in after school for extra instruction.” After flipping her classroom, she found she was “enjoying the way my classroom was running and found that it was erasing the anxiety level while maintaining, and even increasing, the rigor of the course.” She also reported dramatic improvements in her students’ AP test scores– “78% of my students scored a “4” or “5” on the AP exam, and no one scored below a “3,” whereas the previous year, just 58% of my students scored a “4” or “5” on the exam.[68]

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One of the pioneers of flipping the classroom reports that some teachers have made their lectures available as Podcasts. He also noted, ““We had about 160 kids taking chemistry class, and 30 had no [computer] access. We burned DVDs, handed them out and said, “Push play.” We also burned them onto flash drives. A lot of kids had computers but no Internet access.””[69]

There is also a persuasive argument that flipping the classroom is good for “at risk” students. The Superintendent of a rural Illinois school-district in which about 65% of students qualify for reduced price lunches has flipped every class in the local high school. He stated, ““I do not believe it is fair that a student’s success depends on the house they live in or who they live with,” he said. ‘The current model sends a great deal of the work with the student to be completed at home. Two equally motivated students go home with work. One has two educated parents that help the student until 10 p.m., [and] understands and completes the homework, while the other student receives no support at home. Each returns to school with very different grades put into the book. Of course, I am not drawing this comparison in each home because there are always exceptions. However, as subgroups, this paints an accurate picture.””[70] An article written before this school year started notes that the school was most likely going to account for some students’ lack of home internet access by extending the school’s hours and therefore the availability of the school’s computer labs.[71]

There is other positive evidence about flipping the classroom from Minnesota. “In 2011, six fifth-grade teachers from five different elementary schools participated in a pilot project called ‘Flipped Math Classroom’... Results from standardized tests in September and January were compared with 6 control classrooms. Although there was no statistical difference in scores between the flipped classes and the control classes, the flipped classrooms ended up about 2 weeks ahead on the pacing calendar. In other words, with no sacrifice in performance, students in the flipped classes covered more of the curriculum in the same amount of time. In March, 2012, the Stillwater Board of Education approved an expansion of the flipped classrooms. Flipped Math Classroom expanded from six fifth-grade classes to twenty five classes in grades 4, 5, and 6. These new flipped teachers participated in a Winter Institute and began Flipped Math Classroom in the spring. By summer of 2012, a few other teachers at the high school, junior high schools and elementary schools began planning for flipped classroom in math and science content areas.”[72]

## **6. Policy in other states**

State policy can and does significantly affect what type of virtual learning opportunities and environments students in their home state will have. States can choose to use in state or out of state public or private providers and choose whether these resources are made available to public school, private school, charter school or home school students. These possibilities along with the different funding and oversight mechanisms result in a diverse policy landscape among the states. This section serves as a brief cross-section of what this policy looks like across America.

For perspective, the following table shows 2011-2012 K-12 Students Enrolled in Full-Time Online Education, By State.[\[73\]](#)

State	2011-2012 Student Enrollment	Total State Public School Population	% of State Public School Students Enrolled in Full Time Online School
Arizona	39,000	1,077,831	3.62%
Arkansas	500	480,559	0.1%
California	23,228	6,263,449	0.37%
Colorado	16,221	832,368	1.95%
Florida	9,666	2,634,522	0.37%
Georgia	10,591	1,667,685	0.64%
Hawaii	1,500	180,196	0.83%
Idaho	5,200	276,299	1.88%
Indiana	3,733	1,046,661	0.36%
Kansas	2,952	474,489	0.62%
Louisiana	2,000	690,915	0.29%
Maryland	0	854,086	0%
Massachusetts	484	957,053	0.05%
Michigan	4,049	1,649,082	0.25%
Minnesota	8,146	837,053	0.97%

Nevada	8,735	428,947	2.04%
New Hampshire	103	197,140	0.05%
Ohio	35,391	1,764,297	2.01%
Oklahoma	4,810	654,802	0.73%
Oregon	5,577	582,839	0.96%
Pennsylvania	32,322	1,786,103	1.81%
South Carolina	7,985	723,143	1.10%
Tennessee	1,800	972,549	0.19%
Texas	6,209	4,850,210	0.23%
Utah	3,075	582,793	0.53%
Virginia	484	1,245,340	0.04%
Washington	2,515	1,035,347	0.24%
Wisconsin	4,482	872,436	0.51%
Wyoming	1,138	88,155	1.29%

Thus about a quarter of a million students around the country are enrolled in full-time online public school programs, and come from a majority of states. Yet Maryland has none. However, Maryland does (as noted earlier) have a state-sponsored virtual school.

Measured by the number of course enrollments, Maryland had the second smallest state virtual school program in 2009-2010, of the 28 states that had programs. It is also useful to determine how large Maryland's virtual school program was as a percentage of overall public school enrollment—Maryland also had the 3<sup>rd</sup> smallest percentage. Though virtual schools are often not the only online option in various states, there are often each state government's-led online learning initiative, and therefore provides an informative way of assessing how effective state government-led online initiatives have been between states. Moreover, since Maryland is not one of the states in which meaningfully broad online opportunities exist outside of the MVS, this comparison might actually make Maryland's online learning status quo seem less disastrous than it actually is when compared to other states.

The following table on State Virtual School Course enrollments is taken from the 2009-10 State of Online Learning, Maryland. [74]

State	Total Public School Enrollment, 2009-2010	Total Number of Course Enrollments in State Virtual School, 2009-2010[75]	Maximum Possible % of students involved in State Virtual School
Alabama	748,889	31,187	4.2%
Arkansas	480,559	5,000	1.0%
Colorado	832,368	1,379	0.2%
Connecticut	563,985	250	0.04%
Florida	2,634,522	213,926	8.1%
Georgia	1,667,685	12,143	0.7%
Hawaii	180,196	2,500	1.4%
Idaho	276,299	14,345	5.2%
Illinois	2,104,175	2,445	0.1%
Iowa	491,842	750	0.2%
Kentucky	680,089	1,615	0.2%
Louisiana	690,915	14,001	2.0%
Maryland	848,412	633	0.07%
Michigan	1,649,082	15,060	0.9%
Mississippi	492,481	6,357	1.3%
Missouri	917,982	2,900	0.3%
New Hampshire	197,140	8,000	4.1%
New Mexico	334,419	2,063	0.6%
North Carolina	1,483,397	73,658	5.0%

North Dakota	95,073	2,350	2.5%
South Carolina	723,143	17,181	2.4%
South Dakota	123,713	2,900	2.3%
Tennessee	972,549	1,754	0.2%
Texas	4,850,210	1,867	0.04%
Utah	582,793	7,846	1.3%
Virginia	1,245,340	6,276	0.5%
West Virginia	282,662	3,924	1.4%
Wisconsin	872,436	2,212	0.2%

The International Association for K-12 Online Learning, a non-profit organization, reported in February 2013 that 27 states have virtual schools, and 31 states plus the District of Columbia offer a full-time K-12 online school option statewide.[\[76\]](#)

## 6.1 OHIO

### Fully Online and Part Time Online Education, Blended Schools

As of the 2013-2014 school year Ohio saw 26 eschools in operation that had served 38,519 students the previous year. Students are able to navigate all supplemental courses using the ilearnOhio platform; which showcases state approved provider offerings. Courses are mostly attached to a fee. Since established by HB153 in 2011, ilearnOhio is the authorizing entity for all courses and providers. It currently operates off of a \$1,500,000 appropriation. Enrollments were up 9% over SY 2011-2012, accounting for 2.42% of the students in Ohio.[\[77\]](#) To date 564 online courses are offered via the platform for grades 5 and up.[\[78\]](#) Access to online programs has nearly saturated all school districts in Ohio with access and participation from 611 of Ohio's 614 school districts.[\[79\]](#)

Private and homeschool students do have access to the ilearnOhio platform- however most courses do then incur a fee. A waiver has been made available for AP courses one-time for these and public school students.[\[80\]](#)

Ohio is home to a number of fully blended schools with a focus on providing education to inner-city children.[\[81\]](#)

## **Ohio Virtual Academy High School(OHVA)[82]**

OHVA is the largest fully online provider in Ohio, serving 13,160 students according to recent figures. [83] Like many other entities nationwide, it uses curriculum provider K12 Inc. The students are given course materials and loaned a computer to take their lessons; some course time is “off-line” in that students utilize hardcopy materials away from their computer. For oversight, OHVA is run by a Board of Trustees Ohio Virtual Academy is run by a Board of Trustees, “composed of nine community leaders, some of whom are OHVA parents.”[84] The Board meetings are public with recorded minutes.

Although an online virtual charter provider, OHVA is given the same place as an accredited public school and offers the same diploma.[85]

Although in many ways “fully online” younger grades are estimated to only spend less than a third of their study time actually on a computer. Further, the OHVA has been actively working to not only improve social interaction online but to offer many social gatherings and field trips. The State of Ohio also requires a minimum of four in person meetings with a teacher annually.[86]

All OHVA educators are state licensed, offering 130 high school courses which include college credit, AP and elective modules.

A significant portion of the big student migration to online teaching is parental intervention to combat bullying. A survey of parents showed that 23% enrolled because of bullying in the traditional public school setting- 94% of those parents said that the moved helped to stop bullying.[87]

One family made the news with their move. After seeing their daughter come home bruised, scratched and emotionally broken, they fought with every tool at their disposal to end the bullying. No avenue stopped the bullying. According to the parents:

“A girl spit in her face...it was disheartening... there were incidents on the bus where she was verbally abused by older kids. The physical stuff started on the bus.” [88]

Following the change, the bullying concluded and the parents articulated their appreciation of being aware of their children’s interactions with other children. On top of a stipend for internet costs and a loan computer, courses are tuition as OHVA is offered as part of the public school system. [89]

## **Electronic High School of Tomorrow(ECOT)**

ECOT is also a large provider classified as a “community school”, acting as an independent public school. The school at last count served 12,496 students. [90] As with OHVA, ECOT students must take state assessment and proficiency examinations, with an expectation of 25 hours of class time per week.[91] Under the ECOT umbrella are four different schools: K-5, 6-7, 8-10, 11-12.

As an innovative move to make up for the social “gap” that can happen with online based education, ECOT recently instituted a school “lunch period”. This was a direct response to parent input and aims to make the students more engaged with each other.<sup>[92]</sup>

Further, ECOT has created an in-person commencement ceremony for graduates.<sup>[93]</sup> During the school year, students across the state can participate in school sponsored field trips and even dances.<sup>[94]</sup>

Any licensed teacher may educate through ECOT, with all traditional teaching benefits plus 12 sick leave days, remote work, technology stipend, commuting cost savings. <sup>[95]</sup>

Three new district based eSchools were approved to open in 13-14; Mosaica Online Academy of Ohio<sup>[96]</sup>, Provost Academy of Ohio<sup>[97]</sup>, Insight School of Ohio<sup>[98]</sup>.

### **Massive Open Online Course (MOOC)**

Massive Open Online Courses can vary greatly in content and structure, but all essentially offer free education and tools to any consumers across borders. These may be used by casual learners at home or integrated into a professional learning environment.

Through ilearnOhio, Ohio is one of the states that has started looking at the advantages of including MOOCs in the educational smorgasbord. On the supplemental course offerings ilearnOhio lists 14 courses from Coursera. Although there is no immediate academic credit awarded for the course completion it may qualify for Flex Credit. <sup>[99]</sup> *Coursera* is best summed up by their mission statement:

“Coursera” is an education platform that partners with top universities and organizations worldwide, to offer courses online for anyone to take, for free.

We envision a future where everyone has access to a world-class education. We aim to empower people with education that will improve their lives, the lives of their families, and the communities they live in.

Coursera currently offers over 750 courses to over 9.5 million users from 111 institutions around the world.<sup>[100]</sup>

### **Policy Action**

HB 59<sup>[101]</sup> – 2013, –

HB 59 contained the 2014-2015 state budget. As is common with such bills, a wide array of code was updated, including education policy. The bill sought to steady the rate of growth in eSchools by capping annual growth to 15% for eSchools with greater than 3,000 student enrollment. eSchools under 3,000 enrollment were capped at 25% growth per year.



The bill also made available \$675,000 in new grants to all schools for acquisition of digital text and content through iLearnOhio. It also made up to \$24,150 per year available through grants to the 490 poorest schools for the establishment of new distance learning.

SB316 (2012)[\[102\]](#)

2012's SB316 allowed schools to either create or convert fully or partially into blended schools. The bill required that schools openly declare any changes annually and prohibited eCommunity schools from being blended.

State Code 3302.4 2012 [\[103\]](#)

This statute caps student enrollment at 125 pupils per educator and, among other rules, allows for competency based learning. Competency based learning allows completion upon mastering and acts as an exemption from seat-time based learning.

HB 555(2012) [\[104\]](#)

This bill ended a standing moratorium on new schools, however limited the creation of new schools to 5 per year.

## **6.2 Colorado**

### **Fully Online and Part Time Online Education, Blended Schools**

In school year 2012-2013, a reported 17,289 different students utilized either part-time online or fully online education; with numbers growing over the previous year.[\[105\]](#) However, the Colorado Online Learning state virtual school saw student enrollments drop over a third from the prior school year.[\[106\]](#)

Colorado utilizes a wide different array of programs: five are multi district charter, eleven are from single districts, 26 are multiple district fully online schools.[\[107\]](#) Current figures represent over 2% of the school population. [\[108\]](#)

Colorado started pioneering the “flipped classroom” in 2007, started by CO high school educators Jon Bergmann and Aaron Sams.[\[109\]](#) Since then the number of schools, programs and teachers who have started flipping their classrooms has grown. Many teachers have welcomed this option, with one saying:

“It’s about that personalized face-to-face time. Now that you’re not spending all of class time doing lectures, you’re working one on one with students,”[\[110\]](#)

Educators in flipped classrooms have seen student assessment improve as much as 9%.[\[111\]](#)

## Policy

In 2011 the legislature passed HB11-1277. This legislation reduced the amount of regulations and requirements on reporting. It also removed sunseting standards on online school approvals, allowing online schools to remain in operation until the Colorado Department of Education has reason to believe the school is not in substantial compliance and launches an investigation. [112]

In 2007 the legislature passed HB1037. The bill provides a \$480,000/year appropriation to fund providers offering online courses to school districts. The per-student funding may not exceed \$200 per student per semester.

Providers of supplemental online courses are required to file a report annually with a variety of data, as well as student completion rates.

Perhaps one of the most intriguing policy moves as HB12-1124(12); which instructed the Colorado Department of Education to commission a full study of digital learning in Colorado and its issues with integration. [113] The report is reviewed more in depth in the state policy reports overview.

HB12-1124 (12) directed CDE to commission study of digital learning integration issues. Result was *Digital Learning in Colorado: Opportunities and Recommendations* from 2013.

### 6.3 OKLAHOMA

#### Fully Online and Part Time Online Education, Blended Schools

Oklahoma saw 6,298 students enrolled in online courses in 2012-2013 with over 30% increase on the prior year.[114] Along with Nevada, Oklahoma prohibits any home school or private school children from participating in publicly funded online education. [115] Local school districts are given the power to decide whether online supplemental course providers are allowed, not the student. [116]

The online providers are offered through the Oklahoma Supplemental Online Course program. [117] Over 3000 courses are currently available. [118] Educators for supplemental courses must be Oklahoma certified and currently a member at another accredited institution; further all courses must be compliant with Oklahoma's Priority Academics in Student Skills or Common Core State Standards. [119] Funding is pro-rated, with up to five hours of supplemental online instruction for free – school is not obliged to pay beyond the per pupil rate. [120] Schools also do not have to provide internet connectivity or equipment if the student is working on the supplemental course remote. [121] Schools are allowed to negotiate lower rates than pro-rated, or if they decide they may pay a higher rate. [122]

Oklahoma Virtual Charter Academy[123] is one of Oklahoma's two fully online charter schools with the latest enrollment figures at 2,782. [124] The OKVCA, which offers education for K-12 with participation from over 250 districts, had its first commencement in 2013. Looking back at the offerings, class Valedictorian Devyn Garcia stated:

*“I had a lot of flexibility. I was able to work and go to school and still do really well. And I really enjoyed that aspect of it.”*<sup>[125]</sup>

The other fully online charter school, Epic One Charter School, saw 2,241 enrollments in school year 2012-2013. <sup>[126]</sup> On top of offering K-12 education, EOCS incorporates a one-on-one program where a certified teacher is provided to construct an individualized learning plan. Students are also supplied with \$800 to cover educational expenses. <sup>[127]</sup>

Oklahoma Virtual High School, run by Advanced Academics, <sup>[128]</sup> currently educates 765 students as a fully online public high school. <sup>[129]</sup> Although remote, all students have access to certified teachers on-demand from 6am to 9pm. <sup>[130]</sup>

Oklahoma Connections Academy is the other fully online public school, run by Connections Academy. <sup>[131]</sup> OKCA is authorized by the Oklahoma Statewide Virtual Charter School Board and currently serves 510 students. <sup>[132]</sup> On top of oversight from the state board, OKCA has an independent school board. <sup>[133]</sup> Connections Academy has served students in 27 states in come capacity. <sup>[134]</sup>

## **Policy**

Due to concerns that the definition “educationally appropriate” gave school districts a wide berth to avoid supplemental online courses, <sup>[135]</sup> in 2013 the legislature passed SB419. The bill narrowed the “educationally appropriate” definition to cover all courses that are not a substantial repeat of a previously taken course. <sup>[136]</sup>

In 2012 the legislature passed SB1816, which established the Statewide Virtual Charter School Board for oversight. <sup>[137]</sup> Standards were further amended by SB267 in 2013. <sup>[138]</sup> The board authorizes all statewide virtual schools, established its procedures and policy, and districts are prohibited from offering fully online courses to students outside of their district. <sup>[139]</sup>

## **6.4 Wyoming**

### **Fully Online and Part Time Online Education, Blended Schools**

Wyoming has both supplemental and fully online distance learning programs accessed through The Wyoming Switchboard Network for K-12 students. <sup>[140]</sup> The Network has over 700 courses available along with additional information on the providers and education policies. Wyoming has 1,377 fully online students accounting for 1.7% of the school population. <sup>[141]</sup> There are 1,096 supplemental enrollments; numbers in both areas grow year to year. <sup>[142]</sup>

An annual reporting to the legislature and governor is required with information that allows for comparison between state-and-distance performances along with provider-to-provider comparisons. <sup>[143]</sup>

Proficiency Assessments for Wyoming Students is the primary assessment tool in Wyoming education. [144] PAWS assesses students grade 3-11 in reading, math and science. There is no significant difference in proficiency between the reports; with DE students in some cases slightly outperforming traditional students and vice versa depending on year and subject. The Wyoming Switchboard 11-12 report does provide a useful table comparing the percentage of students “proficient and advanced” across providers; with most students achieving a proficient or advanced standard in most all subjects.[145]

There are five statewide online programs in Wyoming:

*1. Wyoming “e” Academy of Virtual Education(Fremont County)*

\*Offers full-time curriculum to in-district students and supplemental to high school statewide

\*Courses by WeAVE and Fort Washakie Charter High School; roughly 50 local students plus up to 200 students enrolled in their courses through their own school district.[146]

*2. Campbell County Virtual School[147]*

\*Offers full-time K-6[148]

\*Is run through K12 Inc.[149]

*3. Uinta County School Dist #1’s Evanston Virtual High School[150]*

\*Provides supplemental courses for 9-12

\*Available to student residents of other districts outside of Uinta County Dist #1; but a memorandum of understanding between the resident district and UCD1 must be first completed.[151]

\*In a unique case Evanston Virtual High School does not seem to be constructed alongside one of the multistate entities such as *Connections* and *K12*, but to quite possibly be wholly constructed within the district to provide this service throughout the state. [152]

*4. Wyoming Connections Academy*

\*Run through *Connections Academy*[153]

\*Big Horn County School Dist #1; full-time and supplemental course to K-12[154]

\*Students are given a loan computer and stipend to pay internet costs[155]

*5. The Wyoming Virtual Academy (Niobrera County)[156]*

\*Provides full-time and supplemental to K-12.

\*Powered by K12 Inc.

\*No computer or stipend provided [157]

Students may choose to do full online education through their resident district or may transfer into a district that manages fully online.

In July 2013 a distance education update was presented to the Joint Education Interim Committee reviewing the history of distance learning policy and making recommendations.[158] This is a useful resource to get a deeper view of the state of online education in Wyoming. In September 2009 a report was presented on the State of Wyoming Governor's Task Force on Distance Education, Videoconferencing & IP Based communications.[159] Perhaps most comprehensive was the Resident District Handbook published by the Wyoming Switchboard Network for SY 12-13[160]

## **Policy**

The Wyoming Switchboard Network was established in 2008 following SB0070, which was following recommendations by the Wyoming K-12 Distance Education Task Force. [161]

Wyoming provides a grant of \$500,000 per biennium to help develop distance learning opportunities. Of the grant monies, funding went 30% to professional development, 20% to course design and creation, 33% to maintenance and operation, 17% to additional content design and creation; evaluation; accreditation. [162]

Students have no legislative guarantee of right to choose at course level. Students may use several providers for their courses at school but districts have right to deny request to enroll in out-of-dist course. [163] This policy is the same as Kansas and Oregon.

## **6.5 Idaho**

### **Fully Online and Part Time Online Education, Blended Schools**

Idaho provides a state virtual school, has seven fully online schools as well as some district programs. In a research paper published on the Maryland State Department of Education website, it was noted that

“States such as Idaho ... have far larger state virtual schools despite having significantly smaller student populations.”[164]

Idaho was also the recipient of a 3<sup>rd</sup> place ranking nationwide for online policy and practice by the Center for Digital Education as long ago as 2008. [165] As of school year 2012-2013, Idaho had 19,036 online course enrollments.

Much of the online learning is provided through the Idaho Digital Learning Academy(IDLA), which provides blended learning training, [166] site coordination, [167] professional development[168] and a course catalogue. [169]

Idaho has numerous virtual schools, with a 5,213 total enrollment in 2012-2013[170], they are:

- *Idaho Virtual Academy*[\[171\]](#)
- *INSPIRE Connections Academy*[\[172\]](#)
- *iSucceed Virtual High School*

–iSucceed allows dual enrollment as long as student takes at least 5 classes with iSucceed[\[173\]](#)

-Offers college courses/high school courses concurrently.

-Accredited by the Northwest Accreditation Commission; authorized by the Idaho Public School Charter Commission. Founded by parents and community members as a non-profit since 2008[\[174\]](#)

-iSucceed appears to be whole conceived and grown in Idaho and not under an outside network.

- *Richard McKenna Charter High School (Blended)*[\[175\]](#)
- *Another Choice Virtual School*[\[176\]](#)
- *Idaho Connections Online School*[\[177\]](#)  
-Formerly Kaplan Academy of Idaho, is statewide and uses curriculum provider ODYSSEYWARE.
- *Kootenai Bridge Academy (16-20 age)*

\*KBAServes following types of students; [\[178\]](#)

- \* “Not finishing high school by the end of their senior year.
- \* Behind in credits that are required by the end of their senior year.
- \* Returning to school to graduate after dropping out during their junior or senior year.
- \* Referred to the school by their high school counselor for various reasons.
- \* Needs a shorter school day because of scheduling conflicts.
- \* Health issues that require a shorter day.”

## Policy

SB 1184 allowed for laptops to be provided for all students, provided for review and approval for online courses and opened up student choice for online school enrolment without threat of district veto. Signatures were gathered to defeat the measure and it was defeated on the ballot with 66% of the vote. Requirements that students take at least two online courses to graduate and partial online education funding have since been removed from rule.

Funding was re-established for the digital learning academy with SB1091 [\[179\]](#)in 2013. The IDLA is funded \$1,350,000 plus a \$221/course funding resulting in a current biennium funding for 13-14 at \$6,400,000. Further the state is developing a single online directory to provide access to all online education in Idaho whether from IDLA/charter schools/school districts. The funding costs appropriated for portal development is \$150,000.

With the advent of SB1028[\[180\]](#) in 2013 students may now, at the guidance and discretion of school districts, obtain credit based on subject “mastery” instead of seat time.

HB221[\[181\]](#) in the 2013 session; prohibits local school boards from authorizing new public virtual school charter.

## MOOCs

Many educators nationwide have utilized MOOCs to aid their instruction; Idaho notably started a formal partnership with the Khan Academy in May 2012 with funding assistance from the Albertson Foundation. Thanks to a \$1,800,000 grant, 118 teachers in 49 schools now utilize Khan resources as a part of their instruction. [182] The Albertson grant has been used for technical assistance, training, technology and assessment. [183] For potential users of the grant, applications were excepted from charter schools, traditional public schools and private schools. [184] Actual use of Khan Academy resources is completely free. [185]

Teachers have indicated this tool has allowed them to keep students up to date during the summer months to minimize the need for fall “catchup”. David Mullins, a teacher at the Idaho Arts Charter (K-8), said:

“Being able to take a child and being able to see ‘wow they are really struggling here’. So now when I’ve got everybody else doing this I can slip around back without anybody else noticing that I’m helping somebody because they’re slower; and allowing that child to keep their dignity because I was able to privately identify what it was that they needed help with, that was awesome.”[186]

Another educator, originally dubious of the “flipped classroom”, started trying out using Khan Academy daily in her 7<sup>th</sup> grade classroom, and is now sold. She said:

“I’m actually teaching better,” she says. “But now instead of teaching the standards, I’m teaching the students.” [187]

According to the founder of Khan Academy:

“In Idaho, we hope to see educators using Khan Academy to individualize their instruction ... teachers will be able to focus their attention on specific students who are struggling while the rest of the class engages with material appropriate for them.”[188]

## 6.6 Arizona

### Fully Online and Part Time Online Education, Blended Schools

Arizona has 22 virtual charter schools along with 52 part and full-time options at local districts; an estimated 42,000 students received part or fully online instruction in 2012-2013. [189] Enrollment has been growing year to year. [190] Arizona does not have a state virtual school.

Students have the ability to choose full or part time instruction from one or more providers, with online funding for supplemental courses set at 85% of base funding. [191]

One of the largest Arizona programs is the *Mesa Distance Learning Program*; unique in that it not only offers full and part time online instruction but is completely sponsored by a public school district.[192] It also offers courses for out of state students and served 25,164 students in

2012-2013. [193] 947 of those students were full time, most being out of the school district. 67 high school courses are currently offered, [194] offerings are free to home school students.

Vetting is offered through the *Arizona Online Instruction* program (AOI). [195] School districts or charter schools can apply to incorporate online programs, with 74 currently approved programs. [196] Charter school applications go through the Arizona State Board of Charter Schools and school district applications are run through the State Board of Education (SBE). 52 of the programs are from school districts, 22 are charter. Fully online programs receive 95% of base funding, with dollars following the student and may be split. [197] If a student fails to take state assessments and the school sees less than 95% of students complying with assessments, the student is not allowed to continue on the online course.

## **Policy**

Governance and policy around full and part time online education revolves around 2009's SB1196[198] and HB2129[199] from 2010.

### **6.7 Minnesota**

Minnesota has 27 providers for supplemental and full time online education, [200] with 9,196 students enrolled in various programs. [201] Funding is only awarded to providers if the student actually completes their course. [202] With 83,608 total course enrollments, [203] funding is awarded on 88% of the base model with 12% going to the local district. [204]

The Minnesota Department of Education (MDE) engages in reviews and approval measures as well as posting lists of all fully online schools and school districts that allow part time enrollment from nonresident districts. [205] Further, full listing of courses are provided. [206] If a school desires to have majority online learning and receive funding they must be approved by the MDE.

The Missoula Learning Commons is the main repository of course listing from approved providers, created in partnership with the University of Minnesota and Minnesota State Colleges. [207] At the time of writing, 2,564 courses are available on the MLC.

### **6.8 Utah**

Utah has four statewide schools providing full time online education as well as many district programs utilizing the state's online education program. [208] Latest numbers show multiple-district fully online enrollment in Utah at 3,336; with annual growth over 5x in the prior five years. [209] Students are allowed to choose providers and funding follows the student at the course. Further, private and homeschool students are allowed to participate for free. Uniquely Utah splits up funding based on completion, with 50% at enrollment and 50% at completion. Students may advance at a personal pace upon completion. [210]

Charter schools or school districts may contract with a private online provider or apply to be an online provider themselves.



Utah's online education portal is known as the Statewide Online Education Program(SOEP). [211] SOEP was conceptualized by Senate Bill 65[212] in 2011, with further amendments made by Senate Bill 178 in 2012. [213] The State Board of Education is required to submit a report on the performance of all online providers.

Utah Electronic High School acts mostly as a supplemental online provider to local school districts, seeing 10,308 enrollments in courses for school year 2012-2013. UEHS is given a line item funding budget instead of per pupil funding and only gives diplomas to dropout students after their traditional class has passed graduation.

## **6.9 Florida**

*"As of 2012, Florida is the first state to offer full and part-time [online learning] options to all students in grades K-12."*[214]

Florida incorporates a number of competency-based practices into their Virtual School, which is widely-regarded as the most successful state virtual school in the country. Students receive feedback from multiple sources, can conduct self-assessments, allow students to demonstrate mastery of key concepts verbally, and allow students to skip instructional modules that they demonstrate mastery of in pre-testing.[215] These practices demonstrate that online education can provide rigorous, personalized learning and assessments that use student time efficiently—and can be provided to large numbers of people at one time, as the Florida system has thousands of students.

*"In Florida, the Department of Education approves online course providers, in addition to courses, before they work with school districts."*[216]

With full and part time choice for all students, 240,000 students enrolled in at least one online course in 2012-2013. [217] With enrollment growing significantly year to year, an estimated 14,000 students participated in multi-district online programs 2012-2013. [218]

Florida Virtual School is the largest state virtual school in the nation, with supplemental options as well as full time education (FLVS FT), partnered with Connections Academy.[219] All courses are currently available to homeschool students. [220] One of the most intriguing FLVS offerings are extensive training for potential certification in high tech fields with Oracle, Microsoft and Cisco. [221] FLVS also makes its courses available to out of state for a fee.

Florida also participates in the Virtual Independent School Network(VISNET), which is a consortium of schools over four states. [222] VISNET aims to provide member schools with resources, tools and professional development. Fully blended private schools can and do use courses from FLVS and teachers both in house and from the FLVS.[223]

The state authorizes many types of providers, funded with a prorated portion of FTE upon completion. [224] Along with Alabama, Michigan and Virginia, [225] Florida students are required to complete at least one online course grade 6-12 to graduate. [226]

The state is also looking at the possible usefulness of MOOCs: in 2013 HB7029 required the department of education to review MOOCs and consider processes for approval, funding, accountability and credit through MOOCs. [227]

All districts provide full time and part time virtual instruction K-12; all schools have at least one option through the Virtual Instruction Program (VIP), [228] many have three. [229]

HB7029 in 2013[230] created a statewide online course catalog and lifts previous restrictions on across district lines for courses. The bill allows possibility of including MOOCs in certain subjects, includes approved providers who agree to participate in statewide assessment, requires operational audit to legislature, prohibits district from forcing student to take online course at specific time or place; requires DOE to identify measures of quality based student outcomes.

This model of funding, in which funds “follow the student,” has been used most successfully by Florida. Indeed, the State of Online Learning in Maryland reports, “This approach, of proportional funding following the student, is the only funding model that has allowed for growth to meet student demand; it is why Florida Virtual School is five times larger than any other state virtual school in the country.”[231] Moreover, as the report says, following Florida’s funding model “entails two key components. First, it frees districts and online schools from seat-time requirements that do not apply to the online environment. Second, it allows funding based on mastery, and allows students to move through a course at any pace, while maintaining the high quality standards currently demanded in the face-to-face environment. Funding based on mastery makes sense because it ties funding to the educational goal—student outcomes—instead of a poor proxy for that outcome [seat-time]. Julie Young, President and Chief Executive Officer of Florida Virtual School, has noted that in online courses mastery becomes the constant and time becomes the variable, which is the way education should be operated, and funded.”[232]

Since Florida’s Virtual School funding model is, according to the SOLM Report, “the only funding model that has allowed for growth to meet student demand,” the Florida Virtual School’s enrollment figures provide a reasonable basis for estimating the demand for student participation in a number of other state virtual schools, including Maryland’s.[233] The 2009-2010 school year saw Florida’s 2,634,522 public school students total 213,926 course enrollments, meaning that a maximum of 8.1% of Florida’s public school students were enrolled in online coursework through the state’s virtual school. Using the reasonable assumption that Maryland’s public school students had about the same level of interest in enrolling in the state’s virtual school during the same year, Maryland’s 848,412 public school students should have totaled about 69,000 course enrollments. Instead, Maryland’s Virtual School had only 633 course enrollments. There can be no serious doubt that Maryland’s Virtual School is failing to meet public school students’ demands—an information brochure published by MSDE about MVS specifically emphasizes, “Enrollment is based on course availability”.

According to a recent Maryland State report:

“Florida Virtual School’s funding model and state policies are illustrative. The state law that allows all students in the state to choose FLVS, and that mandates that the public education

funding follow the student, is the key reason for this growth. In its early years, and prior to the present funding model,

FLVS received over \$20 million of initial funding. Funding of FLVS is now based on successful course completions—one of very few large-scale, mastery-based, funding models in K-12 education.

The overall result is that the funding flowing to FLVS is far larger than funding for other state virtual schools, and also that the funding is tied to the number of students, allowing FLVS to plan for growth.”[\[234\]](#)

## **7. conclusion: INNOVATIONS AVAILABLE TO MARYLAND**

Considering the plethora of policy solutions in other states Maryland has a handful of tools available to increase access to online education for students and improve student outcomes.

Notable are the recommendations provided by the *State of Online Learning in Maryland 2010-2011* report, which include:[\[235\]](#)

- Expanding Maryland Virtual School for supplemental course opportunities
- Funding for sustainable growth
- Course Funding based on completions
- Use Maryland State Department of Education to support schools looking to provide online courses
- Mandatory online learning requirement
- Provide blended learning opportunities

The report also recommends that Maryland’s public schools adopt an online learning requirement, as even in cases in which online learning is not needed to solve a scheduling issue or provide a highly-qualified teacher when one would not otherwise be available, “online courses provide information and technology literacy skills to students.”[\[236\]](#) The report also recommends that Maryland’s public schools expand the use of blended learning—not just as a valuable complement to traditional instruction, but as a part of a statewide “continuity of learning plan” that some observers believe are important to have should schools be closed due to pandemic, natural disaster, or other disruption.[\[237\]](#) Though the thought of schools being closed due to a natural disaster or outbreak of a communicable disease like SARS or H1N1 is unpleasant, online learning can help mitigate the potential disruption to children’s education, as it did in Singapore in 2009 when some schools closed due to hundreds of confirmed cases of the swine flu.[\[238\]](#) “Singapore holds e-learning week once a year: e-learning is a process model for continuity of learning, with e-learning week once a year, it is “non-alarmist”, sets up e-learning processes and models in school using e-learning and blended learning models. Singapore schools still hold classes face-to-face throughout the year, but use e-learning processes and tools so that they are prepared in the case of a pandemic and are ready and prepared to shut schools down if they need to, with e-learning as the continuity of learning model. This promotes the use of technology and e-learning for teaching and learning every day. Staff members at schools know what to do and how to use the technology and students know what is expected of

them.”[239] With almost 500,000 students, Singapore’s school system demonstrates that setting up an online education infrastructure that can serve large numbers of students is feasible.[240]

## **Study MOOCs**

The Legislature and/or MSDE may further study Massive Online Open Courses and their possible role in Maryland education. As seen in Idaho, teachers use these free and open resources to help their students keep sharp with their subjects over summer. Many across the country use it to supplement their classes already; and other states have considered or implemented mechanisms by which certain MOOC courses may qualify students for certain credits. This option is intriguing as any utilizing of MOOC courseware would come at no expense to the general fund or taxpayer.

As seen in Florida, HB 7029 in 2013 has looked into possible approval, accountability, funding and credit for use of these courses. [241]

## **Funding**

In order to maintain flexibility, scalability and choice, funding may follow the pupil with whatever provider is used in online education. There is a wide array of formulas depending on a percentage of FTE or the unit of course time measure that respective states use. It is commonplace to see the funding be a smaller percentage than is awarded to traditional schools.

Maryland could consider a funding formula that rewards and encourages course completion.[242] For example: Florida and Minnesota only fund upon completion, Louisiana and Michigan fund part at the start of the course, the rest upon completion.[243] In some cases a portion of the completion funding is awarded still if the course is completed after the course deadline, if it happens before graduation.

## **State Assessment, State Standards and Accountability Standards**

In order to encourage participation in state assessments, Maryland may choose to prohibit students from continuing an online program if they do not take state assessments and the school has less than 95% rate of state assessment participation, as is done in Arizona.

For effective and timely scrutiny by educated officials and the public, Maryland may require an annually published report made available to the public and submitted to the Governor and the legislature. The report may be an audit, collected by MSDE or self reported data collected into the report. It should provide performance data comparing not only distance and online education with the traditional classroom but should also show a contrast with various supplemental and fully online providers, one example of this in practice is the annual report prepared in Wyoming.[244] Another example is available in Arizona, where public and charter virtual school reports are prepared by the AZ Dept. of Ed. and sent annually to the Governor and the Legislature. The report should also include enrollment data showcasing how many students from each district participate in part-and-full-time education.

## MISCEllaneous

Other considerations include:

- Providing for funding and infrastructure to pro-actively offer full time online education for students. This would likely require an amendment of Md. EDUCATION Code Ann. §9-102 (12) to address the physical presence “on school premises” requirement.
- Implementation of competency based standards, where students may advance upon mastery of the course material.
- Offering a robust portal of diverse course offerings with students.
- Factoring in other students (such as private, homeschool, out of state) either on a free or fee-based rate. This may be a policy consideration balancing finances with access.
- Training for high-tech certifications for students who want to fast track into a high-tech career in programming or other fields.
- Online-course requirements for graduation, some states allow 6-12 grades count instead of just high school.

### **Recommended Online Learning Studies and Reports**

*Understanding the Implications of Online Learning for Educational Productivity* – US Department of Education, Office of Educational Technology, January 2012

*Online Course Graduation Requirement: A report for the Maryland General Assembly* – The Maryland State Department of Education & The Maryland Advisory Council for Virtual Learning, December 2013

*A Study of Online Learning: Perspectives of Online Learners and Educators – Report to the Colorado Department of Education Unit of Online Learning*, Buechner Institute for Governance, October 2012

*The State of Online Learning in Maryland 2010-11*, Evergreen Education Group, Maryland State Department of Education, December 2010

*State of Wyoming Governor’s Task Force on Distance Education, Videoconferencing, & IP-Based Communications*, Wainhouse Research, September 2009

*Performance Audit 2013-02: Distance and Online Education Programs in Utah Schools*, Utah State Board of Education Internal Audit Department, February 2014

*Keeping Pace with K-12 Online & Blended Learning: An Annual Review of Policy and Practice*, Evergreen Education Group, 2014

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[1] HB 1197 (2002) <http://mgaleg.maryland.gov/2002rs/bills/hb/hb1197t.PDF> Accessed 10/9/14

[2] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 16. Accessed 10/2/14

[3] [http://mgaleg.maryland.gov/2010rs/fnotes/bil\\_0002/hb1362.pdf](http://mgaleg.maryland.gov/2010rs/fnotes/bil_0002/hb1362.pdf) Accessed 10/2/14

[4] [http://mdk12online.org/docs/Memo\\_Supt\\_Summer\\_School\\_Online\\_Courses.pdf](http://mdk12online.org/docs/Memo_Supt_Summer_School_Online_Courses.pdf) Accessed 10/2/14

[5] <http://mdk12online.org/schools/hsacourses.htm>. Accessed 10/2/14

[6] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 17-9 Accessed 10/2/14

[7] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 13. Accessed 10/2/14

[8] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 12. Accessed 10/2/14

[9] <http://mdreportcard.org/Enrollment.aspx?PV=34:17:99:AAAA:1:N:0:13:1:2:1:1:1:1:3> Accessed 10/2/14

[10] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 13. Accessed 10/2/14

[11] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 12, 21. It may also be that this

figure include even students who used the online coursework for less than 80% of the course, therefore not meeting Maryland's definition of "online course." This would fall in line with Katie Egan's interpretation of the law, apparently endorsed by MSDE, which effectively means that the use of online content to support a teacher in the classroom is no different than a regular course in the classroom and therefore requires no additional approval from MSDE.

[12] <http://mdk12online.org/docs/MVSCourseDescriptions.pdf>;  
<http://www.montgomeryschoolsmd.org/departments/onlinelearning/APCourses.shtm>;  
<http://www.montgomeryschoolsmd.org/departments/onlinelearning/> Accessed 10/2/14

[13] <http://mdk12online.org/schools/hsacourses.htm>;  
[http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 16;  
<http://www.montgomeryschoolsmd.org/departments/onlinelearning/PDFs/MCPS-StudenteLearning-ProgramOverview.pdf> Accessed 10/2/14

[14] <http://msp.msde.state.md.us/Enrollment.aspx?PV=34:17:15:AAAA:1:N:0:13:1:2:1:1:1:1:3>  
Accessed 10/2/14

[15] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 21.  
<http://mdreportcard.org/Enrollment.aspx?PV=34:17:21:AAAA:1:N:0:13:1:2:1:1:1:1:3> Accessed 10/2/14

[16] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 5. Accessed 10/2/14

[17] Accessed 10/10/14 <http://msa.maryland.gov/msa/mdmanual/13sdoe/html/13agen.html>  
Accessed 10/2/14

[18] [http://mgaleg.maryland.gov/2012rs/chapters\\_noln/Ch\\_290\\_sb0689T.pdf](http://mgaleg.maryland.gov/2012rs/chapters_noln/Ch_290_sb0689T.pdf); Reports for 2012:  
[http://dlslibrary.state.md.us/publications/Exec/MSDE/ED7-10B-06\(c\)\\_2012.pdf](http://dlslibrary.state.md.us/publications/Exec/MSDE/ED7-10B-06(c)_2012.pdf) ; 2013:  
[http://dlslibrary.state.md.us/publications/Exec/MSDE/ED7-10B-06\(c\)\\_2013.pdf](http://dlslibrary.state.md.us/publications/Exec/MSDE/ED7-10B-06(c)_2013.pdf) Accessed 10/2/14

[19] [http://mdk12online.org/docs/Process\\_and\\_Procedures.pdf](http://mdk12online.org/docs/Process_and_Procedures.pdf), 2. Accessed 10/2/14

[20] [http://house.state.md.us/2012rs/fnotes/bil\\_0005/hb0745.pdf](http://house.state.md.us/2012rs/fnotes/bil_0005/hb0745.pdf), 3-4. Accessed 10/2/14

[21] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 8. Accessed 10/2/14

[22] [http://www.nctq.org/docs/24-09\\_7384.pdf](http://www.nctq.org/docs/24-09_7384.pdf), 2. Accessed 10/2/14

[23] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 10. Accessed 10/2/14

[24] <http://mdreportcard.org/Enrollment.aspx?PV=34:17:10:AAAA:1:N:0:13:1:2:1:1:1:1:3>  
Accessed 10/2/14

[25] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 26-7. Accessed 10/2/14

[26] <http://hcdppc.wikispaces.com/> Accessed 10/2/14

[27]  
[http://hcdppc.wikispaces.com/file/view/Student\\_Doc\\_WH.pdf/348586398/Student\\_Doc\\_WH.pdf](http://hcdppc.wikispaces.com/file/view/Student_Doc_WH.pdf/348586398/Student_Doc_WH.pdf)  
, 2<sup>nd</sup> page. Accessed 10/2/14

[28] [http://mdk12.org/instruction/curriculum/hsa/world\\_history/World\\_History\\_LitReview.pdf](http://mdk12.org/instruction/curriculum/hsa/world_history/World_History_LitReview.pdf),  
5. Accessed 10/2/14

[29] See Unit 4, Lesson C, Opening

[30] <http://cecilcounty.mdonlinegrants.org/index.php> Accessed 10/2/14

[31] See about 2:35 into the video here: <http://hcdppc.wikispaces.com/Home>

[32] Ibid., see about 2:15 into the video.

[33] About 4:15 into the video.

[34] 3:05 in, 3:25 in

[35] <http://hcdppc.wikispaces.com/evaluation;>  
<http://cecilcounty.mdonlinegrants.org/pages/spiffy563.php?unitNum=6&lessonNum=3&pageNum=3>  
Accessed 10/2/14

[36] Md. EDUCATION Code Ann. §9-102 (12) Accessed 10/10/14  
<http://www.aacps.org/charterschools/title9.pdf> Accessed 10/2/14

[37] <http://kpk12.com/cms/wp-content/uploads/KeepingPace2012.pdf>, 21. Accessed 10/2/14

[38] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 23. Accessed 10/2/14

[39] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 24. Accessed 10/2/14

[40] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 15. Accessed 10/2/14



- [41] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 18. Accessed 10/2/14
- [42] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 4. Accessed 10/2/14
- [43] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 9. Accessed 10/2/14
- [44] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 9. Accessed 10/2/14
- [45] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 7. Accessed 10/2/14
- [46] <http://mdk12online.org/docs/MVSBrochure.pdf> Accessed 10/2/14
- [47] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 25-6. Accessed 10/2/14
- [48] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 25-6. Accessed 10/2/14
- [49] [http://www.inacol.org/press/docs/nacol\\_fast\\_facts.pdf](http://www.inacol.org/press/docs/nacol_fast_facts.pdf) Accessed 10/2/14
- [50] <http://www.heritage.org/research/reports/2010/01/how-online-learning-is-revolutionizing-k12-education-and-benefiting-students> Accessed 10/2/14
- [51] <http://www.competencyworks.org/about/competency-education/> Accessed 10/2/14
- [52] *Ibid.*
- [53] <http://www.competencyworks.org/2013/03/which-pilot-do-you-want-flying-your-plane/#more-3040> Accessed 10/2/14
- [54] <http://www.digitallearningnow.com/wp-content/uploads/2013/01/CB-Paper-Final.pdf>, 37, 2. Accessed 10/2/14
- [55] <http://www.digitallearningnow.com/wp-content/uploads/2013/01/CB-Paper-Final.pdf>, 2.
- [56] <http://www.digitallearningnow.com/wp-content/uploads/2013/01/CB-Paper-Final.pdf>, 31.
- [57] Iowa Department of Education, “Competency-Based Education Task Force Preliminary Report,” 2013, page 8.

[58] [http://blogs.edweek.org/edweek/on\\_innovation/2012/11/answers\\_for\\_lessons\\_from\\_critics\\_of\\_competency-based\\_learning.html](http://blogs.edweek.org/edweek/on_innovation/2012/11/answers_for_lessons_from_critics_of_competency-based_learning.html) Accessed 10/2/14

[59] <http://www.post-gazette.com/stories/local/neighborhoods-west/new-twist-in-education-flipped-classroom-makes-homework-an-in-school-effort-puts-lectures-online-216213/> Accessed 10/2/14

[60] <http://www.post-gazette.com/stories/local/neighborhoods-west/new-twist-in-education-flipped-classroom-makes-homework-an-in-school-effort-puts-lectures-online-216213/> Accessed 10/2/14

[61] *Ibid.*

[62] The K-12 Flipped Classroom, Slides 5, 7-9. Presentation can be accessed at: <http://sloanconsortium.org/conference/2012/aln/k-12-flipped-classroom> Accessed 10/2/14

[63] <http://www.stillwater.k12.mn.us/departments/technology/technology-around-district/flipped-classroom> Accessed 10/2/14

[64] [http://www.mlive.com/flushing/index.ssf/2012/05/mt\\_morris\\_schools\\_leads\\_the\\_way.html](http://www.mlive.com/flushing/index.ssf/2012/05/mt_morris_schools_leads_the_way.html) Accessed 10/2/14

[65] [http://www.washingtonpost.com/local/education/the-flip-turning-a-classroom-upside-down/2012/06/03/gJQAYk55BV\\_story.html](http://www.washingtonpost.com/local/education/the-flip-turning-a-classroom-upside-down/2012/06/03/gJQAYk55BV_story.html) Accessed 10/2/14

[66] *Ibid.*

[67] [http://www.washingtonpost.com/local/education/the-flip-turning-a-classroom-upside-down/2012/06/03/gJQAYk55BV\\_story.html](http://www.washingtonpost.com/local/education/the-flip-turning-a-classroom-upside-down/2012/06/03/gJQAYk55BV_story.html) Accessed 10/2/14

[68] <http://schoolsofthought.blogs.cnn.com/2012/08/24/my-view-its-never-too-late-to-begin-flipping-your-classroom/> Accessed 10/2/14

[69] [http://www.washingtonpost.com/local/education/the-flip-classwork-at-home-homework-in-class/2012/04/15/gIQA1AajJT\\_story.html](http://www.washingtonpost.com/local/education/the-flip-classwork-at-home-homework-in-class/2012/04/15/gIQA1AajJT_story.html) Accessed 10/2/14

[70] [http://articles.washingtonpost.com/2012-06-03/local/35462583\\_1\\_students-classroom-homework](http://articles.washingtonpost.com/2012-06-03/local/35462583_1_students-classroom-homework) Accessed 10/2/14

[71] <http://www.pjstar.com/news/x1367608292/Havana-school-district-flips-over-homework-at-school-teaching-switch> Accessed 10/2/14

[72] <http://www.stillwater.k12.mn.us/departments/technology/technology-around-district/flipped-classroom>

[73] <http://kpk12.com/cms/wp-content/uploads/KeepingPace2012.pdf>, 27. As explained on page 27, the figures from AZ, OK, and CO include both full-time and supplemental students. Indiana's numbers include some students from blended schools. The most recent figures from the state of Washington could only be found for the 2010-11 school year. Figures were unavailable for Alaska and the District of Columbia. Arizona's 2011-2012 enrollment data is an estimate. The most recently available overall public school population figures for every state except Maryland are from 2009-2010, available here: <http://nces.ed.gov/pubs2011/2011347.pdf>, 6-7. The most recently available Maryland public school enrollment figures are from the 2011-2012 school year, available here: <http://msp.msde.state.md.us/Enrollment.aspx?PV=34:17:99:AAAA:1:N:0:13:1:2:1:1:1:1:3>. Accessed 10/2/14

[74] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 13; <http://nces.ed.gov/pubs2011/2011347.pdf>, 6 Accessed 10/2/14

[75] If there are other online learning paths in these states, the MSDE did not feel the need to mention them in the report whose information formed the basis for this chart. [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 12. Accessed 10/2/14

[76] [http://www.inacol.org/press/docs/nacol\\_fast\\_facts.pdf](http://www.inacol.org/press/docs/nacol_fast_facts.pdf) Accessed 10/2/14

[77] *Keeping Pace 2013*, 25.

[78] *Keeping Pace 2013*, 134.

[79] *Ibid.*

[80] *Keeping Pace 2013*, 33.

[81] *Keeping Pace 2013*, 42.

[82] Accessed 10/11/14 <http://www.k12.com/ohva/> Accessed 10/2/14

[83] <http://www.k12.com/ohva#.VC8xEPlDX3g> Accessed 10/2/14

[84] <http://www.k12.com/ohva/who-we-are/board#.VC8xmPlDX3g> Accessed 10/2/14

[85] <http://www.k12.com/ohva/faqs/general#.VC8xqfldX3g> Accessed 10/2/14

[86] *Ibid.*

[87] [http://www.starbeacon.com/news/local\\_news/article\\_13037ddd-bf2d-5b6b-818b-afa584758c79.html](http://www.starbeacon.com/news/local_news/article_13037ddd-bf2d-5b6b-818b-afa584758c79.html) Accessed 10/2/14

- [88] [http://www.starbeacon.com/news/local\\_news/article\\_13037ddd-bf2d-5b6b-818b-afa584758c79.html](http://www.starbeacon.com/news/local_news/article_13037ddd-bf2d-5b6b-818b-afa584758c79.html) Accessed 10/2/14
- [89] <http://www.k12.com/ohva/how-it-works/high-school#.VC81IvldX3g> Accessed 10/2/14
- [90] [http://odevax.ode.state.oh.us/htbin/ohio\\_educ\\_dir.com?dtype=09.+Community+Schools&dirn=&%20birn=&county=All+Counties](http://odevax.ode.state.oh.us/htbin/ohio_educ_dir.com?dtype=09.+Community+Schools&dirn=&%20birn=&county=All+Counties) Accessed 10/2/14
- [91] 3314.041, <http://codes.ohio.gov/orc/3314.041> Accessed 10/11/14
- [92] <http://www.ecotnews.com/middle-school-students-receive-virtual-lunch-period/> Accessed 10/2/14
- [93] <http://www.ecotnews.com/watch-entire-ecot-2014-graduation-ceremony/> Accessed 10/2/14
- [94] <http://www.ecotohio.org/Events/FieldTrips> Accessed 10/2/14
- [95] <http://www.ecotohio.org/Jobs/Teachers> Accessed 10/2/14
- [96] <http://mosaicaeducation.com/schools/mosaica-online-academy-of-ohio/> ; part of the Mosaica Network. Accessed 10/2/14
- [97] <http://oh.provostacademy.com/who-we-are/about-us> ; focus on at-risk and gifted youths. Backed up by EdisonLearning; <http://edisonlearning.com/> Accessed 10/2/14
- [98] <http://www.prnewswire.com/news-releases/insight-school-of-ohio-approved-by-department-of-education-213967071.html>; emphasis on at-risk youths. Part of the K12 network, homepage available at <http://www.k12.com/isoh/home#.VC9HqvldX3g> Accessed 10/2/14
- [99] *Keeping Pace 2013*, 39.; <http://ilearnohio.org/search/courses/> Accessed 10/2/14
- [100] <http://www.alexa.com/siteinfo/coursera.org#> Accessed 10/11/14
- [101] [http://www.legislature.state.oh.us/BillText130/130\\_HB\\_59\\_EN\\_N.html](http://www.legislature.state.oh.us/BillText130/130_HB_59_EN_N.html) Accessed 10/2/14
- [102] [http://www.legislature.state.oh.us/BillText129/129\\_SB\\_316\\_EN\\_N.html](http://www.legislature.state.oh.us/BillText129/129_SB_316_EN_N.html) Accessed 10/11/14
- [103] <http://codes.ohio.gov/orc/3302.41> Accessed 10/11/14
- [104] <http://stateimpact.npr.org/ohio/tag/hb-555/> Accessed 10/11/14
- [105] <http://www.cde.state.co.us/onlinelearning/download/rptEnrollmentAll1213.pdf>; Accessed 10/12/14

- [106] 1,007 students; *Keeping Pace* 2013, 78.  
<http://www.cde.state.co.us/onlinelearning/schools.htm> Accessed 10/2/14
- [107] Ibid.
- [108] *Keeping Pace* 2013, 25.
- [109] <http://ireport.cnn.com/docs/DOC-922796> Accessed 10/12/14
- [110] <http://www.npr.org/2012/12/07/166748835/more-teachers-flipping-the-school-day-upside-down> Accessed 10/12/14
- [111] <http://ireport.cnn.com/docs/DOC-922796> Accessed 10/12/14
- [112] <http://www.coloradocapitolwatch.com/bill/1/HB11-1277/2011/1/> Accessed 10/7/14
- [113] <http://www.coloradokids.org/issues/k12education/> Accessed 10/2/14
- [114] *Keeping Pace* 2013, 25.
- [115] *Keeping Pace* 2013, 33.
- [116] *Keeping Pace* 2013, 35.
- [117] <http://ok.gov/sde/sites/ok.gov.sde/files/Rules-Ch15Sub34SuppOnlineCourses.pdf>; rule coming from direction in SB380  
<http://www.oklegislature.gov/BillInfo.aspx?Bill=sb280&Session=1100> Accessed 10/5/14
- [118] OSDE Supplemental Online Course Information  
<http://www.ok.gov/sde/sites/ok.gov.sde/files/OK14-15SupplementalOnlineCourses.pdf>  
Accessed 10/5/14
- [119] Standards available at <http://ok.gov/sde/oklahoma-c3-priority-academic-student-skills>  
Accessed 10/5/14
- [120] 210: 15-34-3
- [121] 210: 15-34-2
- [122] 210: 15-34-14
- [123] Part of k12 Network <http://www.k12.com/ovca#.VDHIqPlX3g> Accessed 10/5/14
- [124] Data at <http://www.k12.com/sites/default/files/pdf/2013-K12-Academic-Report-Feb6-2013.pdf> Accessed 10/5/14

- [125] Reported by KJRH 5/18/13 <http://www.kjrh.com/news/local-news/oklahoma-virtual-charter-academics-first-graduating-class-turns-their-tassels-earns-their-diplomas> Accessed 10/5/14
- [126] <http://epiccharterschools.org/> Accessed 10/5/14
- [127] <http://epiccharterschools.org/about-epic/frequently-asked-questions/> Accessed 10/2/14
- [128] <http://www.advancedacademics.com/> Accessed 10/4/14
- [129] *Keeping Pace 2013*, 138.
- [130] <http://oklahomavirtualhighschool.com/about.html> Accessed 10/4/14
- [131] <http://www.connectionsacademy.com/oklahoma-virtual-school/home.aspx> Accessed 10/4/14
- [132] <http://www.connectionsacademy.com/oklahoma-virtual-school/our-school/home.aspx> Accessed 10/4/14
- [133] [http://www.connectionsacademy.com/Libraries/Board-Agendas/OKCA Board Meeting Schedule 14 15 APPROVED.pdf](http://www.connectionsacademy.com/Libraries/Board-Agendas/OKCA%20Board%20Meeting%20Schedule%2014%2015%20APPROVED.pdf) Accessed 10/5/14
- [134] <http://www.connectionsacademy.com/events.aspx> Accessed 10/5/14
- [135] 210:15-34-1(c)(2) Curriculum and Instruction Subchapter on Supplemental Online Course Procedures
- [136] Bill information available <http://legiscan.com/OK/bill/SB419/2013> Accessed 10/5/14
- [137] <http://www.oklegislature.gov/BillInfo.aspx?Bill=SB1816&session=1200> Accessed 10/5/14
- [138] <https://www.sos.ok.gov/documents/legislation/54th/2013/1R/SB/267.pdf> Accessed 10/5/14
- [139] <http://www.ok.gov/sde/statewide-virtual-charter-school-board> Accessed 10/5/14
- [140] *Keeping Pace 2013*, 15.
- [141] *Keeping Pace 2013*, 25.
- [142] *Keeping Pace 2013*, 162.
- [143] Most recent report via Wyoming Switchboard Network for SY 11-12; <http://www.wyomingswitchboard.net/Docs/2011-2012WyoDE.pdf> Accessed 10/8/14

- [144] More PAWS info from Department of Education  
<http://edu.wyoming.gov/educators/assessment/paws/> Accessed 10/8/14
- [145] Page 10; <http://www.wyomingswitchboard.net/Docs/2011-2012WyoDE.pdf> Accessed 10/8/14
- [146] <http://www.wyomingswitchboard.net/Providers/Statewide/WeAVE/Description.aspx> Accessed 10/8/14
- [147] <http://www.k12.com/ccvs> Accessed 10/8/14
- [148] <http://wyomingswitchboard.net/Providers/Statewide/CCVS/Description.aspx> Accessed 10/8/14
- [149] <http://www.k12.com/participating-schools/wyoming/1110#.VDWtzPldX3g> Accessed 10/8/14
- [150] School website <http://evhs1.uinta1.com/> Accessed 10/8/14
- [151] <http://wyomingswitchboard.net/Providers/Statewide/EVHS/Student.aspx> Accessed 10/8/14
- [152] <http://wyomingswitchboard.net/Providers/Statewide/EVHS/Contacts.aspx> Accessed 10/8/14
- [153] <http://www.connectionsacademy.com/wyoming-school/home.aspx> Accessed 10/8/14
- [154] <http://wyomingswitchboard.net/Providers/Statewide/WCA/Description.aspx> Accessed 10/8/14
- [155] *Ibid.*
- [156] [http://www.k12.com/wyva#.VDWwy\\_ldX3g](http://www.k12.com/wyva#.VDWwy_ldX3g) Accessed 10/8/14
- [157] <http://wyomingswitchboard.net/Providers/Statewide/WyVA/Description.aspx> Accessed 10/8/14
- [158] <http://legisweb.state.wy.us/InterimCommittee/2013/04Rpt0715Appendix16.pdf> Accessed 10/8/14
- [159] [http://www.uwyo.edu/accreditation/\\_files/docs/dist\\_learn\\_wh-consult\\_rep\\_rev.pdf](http://www.uwyo.edu/accreditation/_files/docs/dist_learn_wh-consult_rep_rev.pdf) Accessed 10/8/14
- [160] <http://wyomingswitchboard.net/Docs/WSNRDHB.pdf> Accessed 10/8/14
- [161] <http://legisweb.state.wy.us/2008/Bills/SF0070.pdf> ; summary at <http://legisweb.state.wy.us/2008/Summaries/SF0070.htm> Accessed 10/8/14

[162] Pg 14 2011-2012 Summary Report of Distance Education in Wyoming;  
<http://www.wyomingswitchboard.net/Docs/2011-2012WyoDE.pdf> Accessed 10/8/14

[163] *Keeping Pace* 2013,35.

[164] Pg. 23, *The State of Online Learning in Maryland 2010-2011*, Accessed 10/10/14  
[http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf) \$\$

[165] <http://www.idahodigitallearning.org/AboutUs/WhoWeAre.aspx> Accessed 10/8/14

[166] <http://www.idahodigitallearning.org/Educators/BlendedLearning.aspx> Accessed 10/8/14

[167] <http://www.idahodigitallearning.org/Educators/SiteCoordinators.aspx> Accessed 10/8/14

[168] <http://www.idahodigitallearning.org/Educators/TrainingRegistration.aspx> Accessed 10/8/14

[169] <http://www.idahodigitallearning.org/Students/Courses/CourseCatalog.aspx> Accessed 10/8/14

[170] <http://kpk12.com/states/idaho/> Accessed 10/8/14

[171] Run through the K12 Network; <http://www.k12.com/idva> Accessed 10/8/14

[172] Through Connections Academy <http://www.connectionsacademy.com/idaho-online-school/home.aspx> Accessed 10/8/14

[173] <http://isucceedvhs.net/faq/> Accessed 10/8/14

[174] <http://isucceedvhs.net/about/history/> Accessed 10/8/14

[175] <http://www.rmckenna.org/High%20School%20Program/onlineLearning.htm> Accessed 10/8/14

[176] <http://anotherchoicecharter.org/> Accessed 10/8/14

[177] [http://www.iconschool.org/learn\\_about\\_icon](http://www.iconschool.org/learn_about_icon) Accessed 10/8/14

[178] <http://kootenaibridgeacademy.org/education/components/faq/faq.php?sectiondetailid=561> Accessed 10/8/14

[179] <http://www.legislature.idaho.gov/legislation/2013/S1091Bookmark.htm> Accessed 10/8/14

[180] <http://www.legislature.idaho.gov/idstat/Title33/T33CH16SECT33-1620.htm> Accessed 10/8/14



- [181] <http://www.legislature.idaho.gov/legislation/2013/H0221.pdf> Accessed 10/8/14
- [182] <http://www.khanidaho.org/wp-content/uploads/2013/07/Khan-Academy-In-Idaho-Map-2014.pdf> Accessed 10/8/14
- [183] <http://www.khanidaho.org/resources/Khan-Academy-Idaho-Release.pdf> Accessed 10/8/14
- [184] *Ibid.*
- [185] [www.khanacademy.org](http://www.khanacademy.org) Accessed 10/8/14
- [186] <https://www.khanacademy.org/talks-and-interviews/other-features/v/khan-academy-in-idaho> Accessed 10/8/14
- [187] Accessed 10/8/14 <http://boisestatepublicradio.org/post/48-idaho-schools-flip-classroom-and-pilot-khan-academy-online-learning>
- [188] *Ibid.*
- [189] *Keeping Pace 2013*, 12.
- [190] *Keeping Pace 2013*, 25.
- [191] *Keeping Pace 2013*, 37.
- [192] <https://www.mdlp.org/> Accessed 10/8/14
- [193] Accessed 10/8/14
- [194] <https://www.mdlp.org/index.php?page=catalog> Accessed 10/8/14
- [195] Existing AOI Schools; <http://www.azed.gov/state-board-education/files/2014/06/list-of-aoi-districts-2014.pdf> Accessed 10/8/14
- [196] *Keeping Pace 2013*, 71.
- [197] [http://www.azauditor.gov/ASD/PDF/Charter\\_Schools/USFRCS\\_Memo\\_%2083.pdf](http://www.azauditor.gov/ASD/PDF/Charter_Schools/USFRCS_Memo_%2083.pdf) Accessed 10/8/14
- [198] [http://www.azleg.gov/legtext/49leg/1r/summary/s.1196\\_house%20changes%20memo.doc.htm](http://www.azleg.gov/legtext/49leg/1r/summary/s.1196_house%20changes%20memo.doc.htm) Accessed 10/8/14
- [199] <http://www.azleg.gov/legtext/49leg/2r/bills/hb2129s.pdf> Accessed 10/4/14
- [200] *Keeping Pace 2013*, 13.

- [201] *Keeping Pace* 2013, 25.
- [202] *Keeping Pace* 2013, 36.
- [203] *Keeping Pace* 2013, 112.
- [204] *Keeping Pace* 2013, 37.
- [205] SF1528 in 2012
- [206] List of providers,  
<http://education.state.mn.us/MDE/StuSuc/EnrollChoice/Online/index.html> Accessed 10/9/14
- [207] <https://mnlearningcommons.us/> Accessed 10/9/14
- [208] *Keeping Pace* 2013, 15.
- [209] *Keeping Pace* 2013, 25.
- [210] *Keeping Pace* 2013, 37.
- [211] <http://schools.utah.gov/edonline/> Accessed 10/9/14
- [212] <http://le.utah.gov/~2011/bills/static/SB0065.html> Accessed 10/9/14
- [213] <http://le.utah.gov/~2012/htmldoc/sbillhtm/sb0178.htm> Accessed 10/9/14
- [214] [http://www.inacol.org/cms/wp-content/uploads/2013/04/iNACOL\\_FastFacts\\_Feb2013.pdf](http://www.inacol.org/cms/wp-content/uploads/2013/04/iNACOL_FastFacts_Feb2013.pdf)  
Accessed 10/5/14
- [215] <http://www.digitallearningnow.com/wp-content/uploads/2013/01/CB-Paper-Final.pdf>, 28.  
Accessed 10/4/14
- [216] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 26.
- [217] *Keeping Pace* 2013, 12.
- [218] *Keeping Pace* 2013, 25.
- [219] <http://www.flvs.net/Pages/default.aspx> Accessed 10/10/14
- [220] <http://www.flvs.net/Homeschool/Pages/default.aspx?source=flvshome> Accessed 10/10/14
- [221] [http://www.flvs.net/Students/Pages/certificate-courses.aspx?source=homeschoolhub\\_banner](http://www.flvs.net/Students/Pages/certificate-courses.aspx?source=homeschoolhub_banner) Accessed 10/10/14

- [222] <http://www.vis-network.org/> Accessed 10/9/14
- [223] *Keeping Pace 2013*, 32.
- [224] *Keeping Pace 2013*, 37.
- [225] *Keeping Pace 2013*, 38.
- [226] CS/CS/HB7197 in 2011  
<http://www.myfloridahouse.gov/sections/Bills/billsdetail.aspx?BillId=46852> Accessed 10/10/14
- [227] <http://www.fldoe.org/GR/pdf/2013/hb7029.pdf> Accessed 10/10/14
- [228] <http://www.fldoe.org/schools/virtual-schools/DistrictVIP.asp> Accessed 10/10/14
- [229] <http://www.fldoe.org/schools/virtual-schools/pdf/SparsitySupplement.pdf> Accessed 10/10/14
- [230] <http://www.flsenate.gov/Session/Bill/2013/7029/BillText/er/PDF> Accessed 10/10/14
- [231] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 25. Accessed 10/8/14
- [232] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 25-6. Accessed 10/8/14
- [233] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 25. Accessed 10/8/14
- [234] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 13. Accessed 10/8/14
- [235] *The State of Online Learning in Maryland 2010-2011*, 5.
- [236] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 26. Accessed 10/1/14
- [237] [http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning\\_MD\\_2010\\_2011.pdf](http://www.marylandpublicschools.org/NR/rdonlyres/D895AEF0-476A-46CF-86E5-A77C87A4E129/27450/OnlineLearning_MD_2010_2011.pdf), 26-7. Accessed 10/1/14
- [238] <http://www.inacol.org/col/> Accessed 10/1/14
- [239] *Ibid.*
- [240] <http://www.moe.gov.sg/education/education-statistics-digest/files/esd-2012.pdf>, 3.  
Accessed 10/3/14

[241] <http://www.fldoe.org/GR/pdf/2013/hb7029.pdf> Accessed 10/10/14

[242] *Keeping Pace* 2013, 36.

[243] 50/50 and 80/20; respectively.

[244] Most recent report via Wyoming Switchboard Network for SY 11-12;  
<http://www.wyomingswitchboard.net/Docs/2011-2012WyoDE.pdf> Accessed 10/8/14



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# **Solving Maryland's Teacher Staffing Crisis: A Comparative Analysis of Teacher Certification in Maryland and Other States**

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June 2013

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## **Executive Summary**

Maryland's public schools consistently suffer from shortages of qualified teachers, especially in science, math, technology, foreign language, special education, and English for Speakers of Other Languages. They also suffer from broad geographical teacher shortages and shortages of male and minority teachers. These shortages have been largely caused by Maryland's particularly burdensome traditional teacher certification policies, which function as barriers and disincentives to entering the teaching profession. States all over the country have used alternative certification to address teacher shortages, but Maryland's failure to embrace alternative certification pathways has allowed the State's teacher shortages to persist.

While more research is needed to gain a complete picture of how Maryland's traditional and alternative teacher certification requirements compare with requirements in all other states, initial evidence indicates that both traditional and alternative certification in Maryland is more burdensome than in other states, including states whose teaching professions rank higher than Maryland's.

The educational and training requirements of traditional teacher certification are designed to enhance the quality of the teaching force. However, as study after study has found, such involved requirements have failed to produce any observable effect on teacher performance. In fact, many studies have reported that alternatively certified teachers outperform their traditionally certified counterparts.

There is a large and growing body of evidence that shows that alternatively certified teachers benefit school districts in a variety of ways. In addition to performing at least as well in the classroom, and sometimes better than traditionally certified teachers, alternatively certified teachers help increase the diversity of the teaching force by attracting higher percentages of men and racial minorities to the profession, diminish the use of emergency certification, expand the pool of individuals interested in becoming teachers, and help close the gap between the qualifications of teachers in high-income areas and those in low-income areas. Alternative certification in Maryland already has a track record of success in producing badly needed science, technology, engineering, and mathematics (STEM) teachers, producing more than half as many new STEM teachers as the traditional programs produced candidates between 2010 and 2012, despite producing six times fewer teachers in all subjects over the same period.

Despite the overwhelming positive evidence about alternative certification, only 12% of Maryland's new teacher hires over the last 2 years have been alternatively certified, well below the recent 5-year national average of 40% and in spite of Maryland's critical teacher shortages. A total of 840 of those 902 alternatively certified teachers worked in Baltimore City and Prince George's County, while Maryland's remaining 22 jurisdictions hired a combined total of only 62 alternatively certified teachers over the last 2 years.

Without a policy change, Maryland's public schools will continue to suffer from shortages of qualified teachers in critical subjects, geographical teacher shortages, and shortages of male and minority teachers. Yet Maryland can make substantial progress toward resolving their shortage of public school teachers and strengthen its teaching force by altering and curtailing the state-mandated certification requirements that currently serve as barriers to entering and remaining in the teaching profession. This will allow Maryland to attract greater numbers of candidates interested in teaching and certify them more quickly, helping address Maryland's long-term teacher shortages. Maryland should also emulate other states that have had positive results in teacher performance, staffing, and diversity by more actively employing alternative certification.

In September 1997, the Maryland State Department of Education (MSDE) reported a disturbing trend in Maryland's public schools—shortages of qualified teachers in crucial subjects. Just as it had the year before, MSDE identified science, computer science, special education, and English for Speakers of Other Languages (ESOL) as “critical shortage areas.” 1997 marked computer science's 4th consecutive year as a critical shortage area, general science's 6th consecutive year as a critical shortage area, and physical science's 6th consecutive year as a critical shortage area. The 1997 report also added a new critical shortage area—mathematics teachers.<sup>1</sup>

## Teacher Shortages in Maryland's Public Schools, 1997-2012

[illegible]

## Sources: Maryland Teacher Staffing Reports<sup>2</sup>

1 Maryland State Department of Education, Maryland Teacher Staffing Report, 1997-1999 (Baltimore: Maryland State Department of Education, 1997), iii-iv, 13.

2 Ibid.; Howard Libit, “State’s shortage of teachers to worsen, school board says,” The Baltimore Sun (Baltimore, MD), Sept. 27, 2000, accessed March 7, 2013, [http://articles.baltimoresun.com/2000-09-27/news/0009270104\\_1\\_teachers-school-systems-school-year](http://articles.baltimoresun.com/2000-09-27/news/0009270104_1_teachers-school-systems-school-year); Maryland General Assembly, “HB 1031 Fiscal Note,” Department of Legislative Services, published 2002, accessed March 7, 2013, <http://www.docstoc.com/docs/129090881/Fiscal-Note-Document>; Maryland State Department of Education, “Maryland Teacher Staffing Report, 2003-2005,” Maryland State Department of Education, published 2003, accessed March 7, 2013, <http://www.msde.state.md.us/paab/pdf/Staffing2002-04.pdf>, iv- v. [Hereafter “Maryland Teacher Staffing Report, 2003-2005”]; Maryland State Department of Education, “Maryland Teacher Staffing Report, 2004-2006,” Maryland State Department of Education, published 2004, accessed March 7, 2013, <http://cdm16064.contentdm.oclc.org/cdm/singleitem/collection/p266901coll7/id/1812/rec/10>, vi-vii. [Hereafter “Maryland Teacher Staffing Report, 2004-2006”]; Maryland State Department of Education, “Maryland Teacher Staffing Report, 2006-2008,” Maryland State Department of Education, published 2006, accessed March 7, 2013, <http://www.marylandpublicschools.org/NR/rdonlyres/9976F033-036D-49D1-9D13-A3EA68FADAD9/11225/TeacherStaffing20062008final.pdf>, vi-vii. [Hereafter “Maryland Teacher Staffing Report, 2006-2008”]; Maryland State Department of Education, “Maryland Teacher Staffing Report, 2008- 2010,” Maryland State Department of Education, published 2008, accessed March 7, 2013, <http://www.marylandpublicschools.org/NR/rdonlyres/F7D49A8D-E9D0-4C49-9DE6-3A878BC9F1F4/18393/MarylandTeacherStaffingReport20082011.pdf>, vi-vii. [Hereafter “Maryland Teacher

Staffing Report, 2008-2010”]; Maryland State Department of Education, “Maryland Teacher Staffing Report, 2010-2012,” Maryland State Publications Depository & Distribution Program, published 2010, accessed March 6, 2013, <http://mdstatedocs.slrsrc.info/cdm/singleitem/collection/mdgov/id/82/rec/12>, vi- viii. [Hereafter “Maryland Teacher Staffing Report, 2010-2012”] ; Maryland State Department of Education, “Maryland Teacher Staffing Report, 2012-2014,” Maryland State Department of Education, published 2012, accessed March 5, 2013, <http://www.marylandpublicschools.org/NR/rdonlyres/F3F5D904-0F5E-4FC7-87CE-464FC17DABB5/33624/MarylandTeacherReport20122014.pdf>, vi-viii. [Hereafter “Maryland Teacher Staffing Report, 2012-2014”]

The above chart includes information from every available Maryland Teacher Staffing Report dating back to 1997. While the Maryland State Department of Education has produced the report every 2 years in recent years, prior to that they published the report annually. The change in the frequency of the report’s publication, combined with the fact that some of the reports from the late 1990s were not available, account for the irregular assemblage of report years. There is no



evidence to suggest that the reports from the missing years within this date range would mention information that would be inconsistent with this report's overall findings of long-term, widespread teacher shortages throughout Maryland.

As indicated above, the available MSDE Teacher Staffing reports from 1997 to 2012 have all reported shortages of Computer Science, Science, Math and Special Education teachers. Shortages have also been reported in Career and Technology teachers in seven of the nine reports, shortages of ESOL teachers in eight of the nine, and shortages of foreign language teachers in five of the nine. The most recent seven reports also note shortages of male and minority teachers. The most recent eight reports list shortages in at least 19 of Maryland's 24 school districts, and six of the eight report shortages in every single Maryland school district.

Maryland's public school teaching shortage continues currently. In September 2012, MSDE reported shortages of career and technology teachers as well as teachers of science, computer science, math, special education, foreign language and ESOL. MSDE also reported a general shortage of teachers in 20 of Maryland's 24 public school systems and shortages of men and minority teachers throughout Maryland.<sup>3</sup>

Clearly, Maryland's teacher staffing policies have grossly failed to meet the needs of Maryland's public school children for well over a decade. Without changes to these policies, Maryland will continue to operate understaffed public schools, continue to fail to meet the needs of our children and, ultimately, fail to meet the future needs of our State.

#### *Maryland Teacher Certification Background and Status Quo*

Though a teacher shortage in any content or geographical area is a serious problem, Maryland's consistent shortage of qualified teachers in science, technology, engineering and mathematics (STEM) is particularly disturbing, considering that knowledge of science and technology continues to be an increasingly important part of being competitive in the world economy and active in society. Indeed, Governor O'Malley's 2009 STEM Task Force plainly stated that to prepare Maryland's children "to excel and compete not only on a global scale, but also as full participants in our society, in our civic culture, and as participants in the growth of our economy," Maryland needs to "[rethink] how to recruit and retain the most highly qualified, broadly educated teachers into Maryland public schools."<sup>4</sup>

3 "Maryland Teacher Staffing Report, 2012-2014," vi-viii.

4 Governor's STEM Task Force, "Investing in STEM to Secure Maryland's Future," State of Maryland, published 2009, accessed March 6, 2013, [http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/012000/012098/unrestrict ed/20090986 e.pdf#xml=http://127.0.0.1/taxis/search/pdfhi.txt?query=%22Maryland+Teacher+Staffing+Report%22&pr=msa\\_coll&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&rlead=500&rdepth=0&suf s=0&order=r&mode=&opts=adv&cq=&sr=-1&id=4e2705e22b](http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/012000/012098/unrestrict ed/20090986 e.pdf#xml=http://127.0.0.1/taxis/search/pdfhi.txt?query=%22Maryland+Teacher+Staffing+Report%22&pr=msa_coll&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&rlead=500&rdepth=0&suf s=0&order=r&mode=&opts=adv&cq=&sr=-1&id=4e2705e22b), 29. [Hereafter Governor's

STEM Task Force, "Investing in STEM to Secure Maryland's Future," State of Maryland, published 2009, accessed March 6, 2013]

There is already strong evidence that American students are lagging behind the rest of the world in their performance in science, math and technology.<sup>5</sup> While it is impossible to determine exactly how much of this shortfall results from the teacher shortage, a lack of teachers in STEM subjects is clearly playing a critical role in America's students' ongoing difficulties in STEM education.

Without a change in policy, there is no reason to expect improvement. In 2009, the National Association of Alternative Certification projected a "shortfall of 280,000 qualified math and science teachers by 2015."<sup>6</sup> Governor O'Malley's STEM Task Force reported in 2009 that nationally, "The size and composition of the school-aged population are expected to increase by 10% in the next two decades. All of these students will be required to take more—and more advanced—mathematics and science, compounding the existing teacher shortage problem. Trend data indicate that the percentage of high school mathematics and science teachers age 50 and older is steadily increasing, leading to high retirement rates. Urban and rural schools, often the location of the traditionally underserved, are finding it especially difficult to recruit and retain highly qualified mathematics and science teachers. School districts that are importing mathematics and science teacher from overseas find their off-shore supply threatened by the instability in the number of available visas and by an international shortage of mathematics and science teachers."<sup>7</sup> Of the 7285 new hires in Maryland's public schools between 2010 and 2012, 4220 were from outside of Maryland, demonstrating that all of Maryland's certification routes together are not producing sufficient teachers to staff its public schools.<sup>8</sup>

Like most other states, one way that Maryland has sought to fill its teacher shortage, especially in the STEM subjects, has been through alternative teacher certification. Rather than obtaining the Standard Professional Certificate as graduates of university-based traditional teacher certification programs, alternatively certified teachers receive a Resident Teacher Certificate, and have fewer education requirements to complete before beginning their teaching careers. The 2012- 2014 Maryland Teacher Staffing Report describes Maryland's alternative certification status quo as follows: "The Maryland Approved Alternative Preparation Programs (MAAPP) are designed to attract and recruit into teaching liberal arts graduates and career changers who possess academic content backgrounds in the arts and sciences, but did not complete teacher preparation programs."<sup>9</sup> The idea is to bring in content experts, not pedagogical experts.

Both the United States as a whole and various states have managed to avoid acute teacher shortages by embracing alternative certification. The National Center for Alternative Certification notes, "New Jersey reports that about 40 percent of its new hires come through alternate routes. For Texas and California, about one-third of their states' new hires come through alternate routes. Additional states where alternative routes to teacher certification are growing rapidly in producing more and more of the state's new teachers are: Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, South Carolina, Tennessee, and Virginia."<sup>10</sup> These states have clearly managed to avoid more severe teacher shortages by embracing alternative certification. Nationally, the National Center

5 Stand for Children Leadership Center, "What We Stand For: STEM," Stand for Children Leadership Center, accessed March 6, 2013, <http://standleadershipcenter.org/what-we-stand-STEM>.

6 National Association for Alternative Certification, "Quality Indicators for Non-traditional Teacher Preparation Programs," National Association for Alternative Certification, accessed March 6, 2013, <http://www.alt-teachercert.org/QI%20overview.pdf>.

7 Governor's STEM Task Force, "Investing in STEM to Secure Maryland's Future," State of Maryland, published 2009, accessed March 6, 2013, 9-10.

8 "Maryland Teacher Staffing Report, 2012-2014," 19. 9 "Maryland Teacher Staffing Report, 2012-2014," 41.

10 National Center for Alternative Certification, "Introduction and Overview," National Center for Alternative Certification, published 2010, accessed March 6, 2013, <http://www.teach-now.org/intro.cfm>.

for Education Information reported that as of 2011, 16% of the teaching profession had entered the field through alternative certification, including 40% of new hires between 2005 and 2010.<sup>11</sup> The National Center for Education Statistics reports that in 2008 18.3% of public high school teachers had originally entered the profession through alternative certification, including 51.5% of health sciences teachers, 43% of construction, architecture, and engineering teachers, and 37.9% of computer and information sciences teachers.<sup>12</sup>

Despite long-term teaching shortages, especially in STEM subjects, Maryland's use of alternatively certified teachers has been sparse and inconsistent, falling well short of states like New Jersey, Texas and California. Maryland's 24 school districts hired a combined 504 alternatively certified teachers in 2010-2011 and an additional 398 in 2011-2012, for a total of 902 in the last two years. Over that same period, Maryland's public school systems hired 7285 teachers. Thus only about 12% of Maryland's new hires over the last 2 years have been alternatively certified, well below the reported national 5-year average of 40% and despite Maryland's critical teacher shortages. Notably, 201 of these alternatively certified teachers hired in Maryland between 2010 and 2012 were hired to teach science, technology, engineering or math, though they taught in just 5 of Maryland's 24 public school systems.<sup>13</sup>

Maryland's leaders are justifiably proud of the fact that Maryland's public schools have been ranked first in the country for a 5th straight year by Education Week magazine.<sup>14</sup> Yet Education Week also determined that Maryland's teaching profession earned only a low B, leaving substantial room for improvement.<sup>15</sup> A different assessment, conducted in 2011 by the National Council on Teacher Quality, gave Maryland's teacher policies a grade of D+.<sup>16</sup> There is little doubt that the State government must continue working to improve Maryland's teacher policies and profession.

Maryland's existing traditional certification regulations require prospective teachers to make a much greater commitment than most other states, particularly regarding the amount and

specificity of the coursework, the length of the student teaching period, and long-term continuing education requirements. Traditionally certified teachers in Maryland are required to hold a bachelor's degree as a result of completing a university-based teacher training program. By law this program must include 27 credit hours of education coursework, and include 6-12 credits of coursework in reading instruction regardless of the subject to be taught. Prospective teachers must also complete a 100-day student teaching stint spread over two semesters. These stringent certification requirements preclude about 90% of the Maryland's college graduates from entering the

11 C. Emily Feistritzer, "Profile of Teachers in the U.S. 2011," National Center for Education Information, published 2011, accessed March 6, 2013, [http://www.ncei.com/Profile\\_Teachers\\_US\\_2011.pdf](http://www.ncei.com/Profile_Teachers_US_2011.pdf), 21. [Hereafter C. Emily Feistritzer, "Profile of Teachers in the U.S. 2011," National Center for Education Information]

12 National Center for Education Statistics, "Table H120. Percentage of grade 9 through 12 public school teachers who entered teaching through alternative certification, percentage who were 'highly qualified,' and percentage distribution of teachers' type of certification, by school type and main teaching assignment: 2008," National Center for Education Statistics, accessed March 6, 2013, <http://nces.ed.gov/surveys/ctes/tables/h120.asp>.

13 "Maryland Teacher Staffing Report, 2012-2014," 44; 19; 43.

14 Maryland State Department of Education, "News Release: National Publication Places State's System at the Head of Class for Fifth Straight Year," Maryland State Department of Education, published 2013, accessed March 6, 2013, [http://marylandpublicschools.org/MSDE/pressrelease\\_details/2013\\_01\\_10.htm](http://marylandpublicschools.org/MSDE/pressrelease_details/2013_01_10.htm).

15 Education Week, "State Report Cards," Education Week, published 2013, accessed March 6, 2013, [http://www.edweek.org/ew/qc/2013/state\\_report\\_cards.html](http://www.edweek.org/ew/qc/2013/state_report_cards.html). [Hereafter Education Week 2013 State Report Cards]

16 National Council on Teacher Quality, "2011 State Teacher Policy Yearbook: Maryland," National Council on Teacher Quality, published 2011, accessed March 6, 2013, [http://www.nctq.org/stpy11/reports/stpy11\\_maryland\\_report.pdf](http://www.nctq.org/stpy11/reports/stpy11_maryland_report.pdf).

State's teaching force.<sup>17</sup> These requirements have remained unchanged despite the fact that the State fails to produce enough teaching candidates to help alleviate the teacher shortage crisis.<sup>18</sup> Though suffering ongoing teacher shortages, these traditional certification requirements have remained mostly stagnant for years.

The educational and training requirements of traditional teacher certification in Maryland are designed to ensure that Maryland's public schools are fully staffed, and to enhance the quality of the teaching force. Even a cursory assessment of Maryland's public school teacher profession reveals that the State has failed on both counts.

Maryland's long-term teacher shortages prove that current policies are not yielding as many teachers as Maryland needs. Maryland's traditional certification requirements are onerous compared to other states, deterring candidates from entering the teaching profession. Exacerbating this problem is the fact that alternative certification is nonexistent in most of Maryland and underutilized where it is used. As a result, Maryland is failing to tap a reserve of thousands of teaching candidates that have proved vitally important in states like New Jersey, Texas and California.

A large and growing body of evidence indicates that alternative certification offers a solution to teacher shortages by curtailing or removing the onerous traditional certification requirements that prohibit candidates from entering the teaching profession. The National Academy of Education has noted that "streamlining the process of becoming a teacher can increase the applicant pool, especially in such hard-to-staff areas as special education, science, and mathematics."<sup>19</sup> The MSDE's most recent Teacher Staffing Report provides perhaps the strongest evidence that alternative certification increases applicant pools, especially for STEM subjects: between 2010 and 2012 Maryland's alternative teacher certification programs produced more than half as many new STEM teachers as traditional programs produced candidates – this despite producing more than 6 times fewer teachers in all subjects (902 vs. 5957).<sup>20</sup> As a state with long-term shortages of teachers of technology, math, science, foreign language, and special education, Maryland should embrace that which increases the applicant pool to allow us to better meet our children's educational needs.

Maryland's traditional certification requirements are also failing to enhance the quality of the teaching force. Expanding the teacher applicant pool through alternative certification is only worthwhile if alternatively certified teachers perform at least as well in the classroom as traditionally certified teachers. Fortunately, comparing the performance of traditionally certified teachers with the performance of alternately certified teachers allows an easy assessment of the value of traditional certification requirements. Georgia State University Economics Professor Tim R. Sass recently observed, "If teacher licensure serves to promote quality by requiring coursework that makes teachers more effective, then alternatively certified teachers, who are not required to take as many education courses as traditionally prepared teachers, should be less productive."<sup>21</sup> If the extra

17 Calvert Institute for Policy Research, "Maryland's Protective Tariff Against Teachers," Calvert Institute for Policy Research, published 2012, accessed March 6, 2013, [http://www.calvertinstitute.org/?post\\_type=post&p=1191](http://www.calvertinstitute.org/?post_type=post&p=1191). [Hereafter Calvert Institute for Policy Research, "Maryland's Protective Tariff Against Teachers"]

18 "Maryland Teacher Staffing Report, 2012-2014," 19.

19 National Academy of Education, "Improving Teacher Quality and Distribution," National Academy of Education, published 2009, accessed March 6, 2013, <http://cepa.stanford.edu/sites/default/files/NAE%20Teacher%20Quality.pdf>. [Hereafter National Academy of Education, "Improving Teacher Quality and Distribution"]

20 "Maryland Teacher Staffing Report, 2012-2014," 43.

21 Tim R. Sass, "Certification Requirements and Teacher Quality: A Comparison of Alternative Routes to Teaching," Learning Front, published 2011, accessed March 6, 2013, [http://www.learningfront.com/Media/Alternative\\_Certification\\_and\\_Teacher\\_Quality\\_11.pdf](http://www.learningfront.com/Media/Alternative_Certification_and_Teacher_Quality_11.pdf), 3-4. [Hereafter Sass, "Certification Requirements and Teacher Quality: A Comparison of Alternative Routes to Teaching"]

work that traditional certification requires does not lead to better student outcomes, then there is no reason to continue requiring traditionally certified teachers to complete such rigorous requirements.

As this report will detail, repeated recent studies from governments and academics all over the country have shown no statistically significant difference in student performance between students of alternatively certified teachers and students of traditionally certified teachers. In fact, some alternative certification programs, including Teach for America, which is already active in Maryland and looking to expand further in the state, have repeatedly produced teachers that perform better than their traditionally certified counterparts. A preponderance of research data explains that the use of alternative certification does not harm the overall quality of the teaching force. Maryland's teacher certification policies thus fail to accomplish the two main objectives of teacher certification policies: ensuring that schools are properly staffed, and enhancing the quality of the teaching force.

Without a policy change, Maryland's public schools will continue to suffer from shortages of qualified teachers in critical subjects, geographical teacher shortages, and shortages of male and minority teachers. Yet Maryland can make substantial progress toward resolving their shortage of public school teachers by altering and curtailing the state-mandated certification requirements that currently serve as barriers to entering and remaining in the teaching profession. Maryland should emulate other states that have had positive results in teacher performance, staffing and diversity by more actively employing alternative certification pathways, and curtail existing barriers to entering the teaching profession by implementing less onerous traditional certification requirements.

### **Difficulties Inherent to Discussions of Traditional and Alternative Certification**

Analyses of various paths to teacher certification are fraught with difficulties for several reasons. First, the line between traditional and alternative certification is often blurry.<sup>22</sup> A 2009 report prepared for the US Department of Education explored the details of randomly selected traditional and alternative certification programs for elementary school teachers and observed that required instruction time in alternative certification programs ranged from 75 hours to 795 hours, while the included traditional certification programs required between 240 and 1380 hours of instruction.<sup>23</sup> There is, therefore, some overlap in the amounts of required instruction time between the two groups. However, while some alternatively certified teachers receive more instruction than some traditionally certified teachers, in general traditionally certified teachers receive substantially more instruction than alternatively certified teachers.

Second, the great variation in alternative certification programs makes it difficult to discuss alternative certification programs as a group. Some programs, like Teach for America, aim for elite students while others accept almost anyone with a Bachelor's degree. Still others seek to increase the demographic diversity of teachers.<sup>24</sup> One recent analysis of alternative certification programs explains that different people can have very different experiences within the same certification pathway, that there is substantial overlap in preparation experiences between pathways, and that the

22 Pam Grossman and Susanna Loeb, "Learning from Multiple Routes," *Educational Leadership* (May 2010): 25, accessed March 6, 2013, [http://cepa.stanford.edu/sites/default/files/grossman%20loeb\\_Learning%20From%20Multiple%20Routes.pdf](http://cepa.stanford.edu/sites/default/files/grossman%20loeb_Learning%20From%20Multiple%20Routes.pdf). [Hereafter Grossman and Loeb, "Learning from Multiple Routes"]

23 Jill Constantine, Daniel Player, Tim Silva, Kristin Hallgren, Mary Grider, and John Deke, "An Evaluation of Teachers Trained Through Different Routes to Certification," Institute of Education Sciences, published 2009, accessed March 6, 2013, <http://www.eric.ed.gov/PDFS/ED504313.pdf>, xxiii, 27, 35. [Hereafter Constantine, et. al., "An Evaluation of Teachers Trained Through Different Routes to Certification"]

24 Grossman and Loeb, "Learning from Multiple Routes," 25.

differences themselves can vary between grade-level and subject matter preparation.<sup>25</sup> Moreover, there is a great variety in the required amount and content of training in various alternative certification programs. A 2009 report prepared for the US Department of Education explored the details of randomly selected traditional and alternative certification programs for elementary school teachers, and observed, "Teachers in high-coursework programs were required to take, on average, 150 hours of instruction before they became teachers of record, an additional 150 hours during their first year of teaching, and 131 more hours after their first year. In contrast, low-coursework AC teachers were required to take an average of 115 hours of instruction before they became teachers of record, an additional 63 hours during their first year of teaching, and 1 more hour after their first year."<sup>26</sup> Alternative certification programs can therefore differ substantially.

A third difficulty is that gauging teacher performance is a complex and imperfect exercise. The value of classroom evaluation, a traditional method of assessing teaching performance, has been largely discredited by the notable 2009 research finding that 98% of teachers from 14 large American school districts were rated as "satisfactory," leaving little room for subtle observations or constructive criticism about how performance differs between teachers.<sup>27</sup> Test results are also a flawed metric, since content from one grade level to the next is not always comparable and because tests do nothing to limit results to only things teachers can affect. Indeed, teachers have little control over students' personal development, and no control over students' home lives. Though student testing is a limited method of assessing teacher performance, it remains the best available method.<sup>28</sup>

Though discussions of traditional and alternative certification are beset by difficulties, there is

nonetheless great value in analyzing the effect of teacher certification policies on the teaching force and student outcomes.

## **Overview and Criticism of the Traditional Model of Teacher Certification**

Candidates who are interested in pursuing traditional certification in Maryland must first complete a number of requirements in accordance with State laws and regulations. To attain traditional certification as an elementary or secondary school teacher in Maryland, candidates are required to complete a Bachelor's degree that includes 27 credit hours of education courses, including 12 hours of coursework in reading instruction for elementary school teachers and 6 hours for secondary school teachers. State law also requires candidates to complete a 100-day teaching internship over two semesters, regardless of whether candidates are pursuing certification in an undergraduate or graduate program.<sup>29</sup> Applicants must also achieve acceptable standardized test

25 Marsha Ing and Susanna Loeb, "Assessing the Effectiveness of Teachers from Different Pathways: Issues and Results," Center for Education Policy Analysis at Stanford University, accessed March 6, 2013, <http://cepa.stanford.edu/sites/default/files/Assessingtheeffectivenessofteachersloebbassok.pdf>, 159. [Hereafter Ing and Loeb, "Assessing the Effectiveness of Teachers from Different Pathways: Issues and Results"] The following link makes it clear that this selection was published in 2008: Center for Education and Policy Analysis at Stanford University, "Assessing the Effectiveness of Teachers from Different Pathways: Issues and Results," Center for Education Policy Analysis at Stanford University, accessed March 7, 2013, <http://cepa.stanford.edu/content/assessing-effectiveness-teachers-different-pathways-issues-and-results>.

26 Constantine, et. al., "An Evaluation of Teachers Trained Through Different Routes to Certification," 31-2. The researchers chose to break down AC programs into subgroups that either required a comparatively great amount of coursework, or comparatively less coursework.

27 Thomas J. Kane, Amy L. Wooten, Eric S. Taylor, and John H. Tyler, "Evaluating Teacher Effectiveness," Center for Education Policy Analysis at Stanford University, published 2011, accessed March 6, 2013, <http://cepa.stanford.edu/content/evaluating-teacher-effectiveness>.

28 Ing and Loeb, "Assessing the Effectiveness of Teachers from Different Pathways: Issues and Results," 162-3.

29 University of Maryland, Baltimore County, "UMBC Master of Arts in Teaching," University of Maryland, Baltimore County, accessed March 6, 2013, [http://www.umbc.edu/education/programs/12\\_Months\\_SEC\\_MAT/index.php](http://www.umbc.edu/education/programs/12_Months_SEC_MAT/index.php); Washington College, "Teacher Certification," Washington College, accessed March 6, 2013, <http://www.washcoll.edu/departments/education/teachercertification.php>.



scores.<sup>30</sup> Once gaining the initial certification, candidates are then required to complete 6 semester hours of continuing education credit within 5 years, ultimately leading to the required completion of a Master's degree within 10 years.<sup>31</sup>

Though Education Week continues to laud Maryland's public schools, there remains much to criticize about Maryland's use of the traditional model of teacher certification and about traditional certification in general. Taking note of Maryland's consistent, long-term teacher shortages in areas like math, computer science, science, special education and foreign language, The Maryland Teacher Shortage Task Force identified a number of traditional certification's shortcomings in its 2008 report, observing, "Attracting undergraduates majoring in high-demand content areas and attracting career- changers, especially in high-demand areas, are part of building a quality teacher corps. But career- changers need routes to the classroom that cost relatively little in terms of money or time, and graduates in high-demand fields typically have appealing and varied career options, with higher salaries, outside education. Consequently, recruiting well requires skillful marketing but also program flexibility, multiple options, and incentives.[sic]"<sup>32</sup> The Task Force went on to suggest that MSDE explore the idea of easing student teaching requirements, and to assess how community colleges might get more involved in developing teaching candidates.<sup>33</sup> The Task Force also recommended a general reassessment of Maryland's teacher education policies, specifically including a review of "the cost and productivity of different pathways to certification and their relative effectiveness, especially how they impact the quality and supply of teachers."<sup>34</sup> A different State task force, reporting in 2009 about STEM in Maryland, stated that to attract enough teachers to solve Maryland's STEM teacher shortage, "Maryland must ... expand access to Maryland's alternative preparation programs for STEM career-changers and retirees...[and] create new programs for undergraduates to attract Maryland's STEM college students into STEM teaching."<sup>35</sup> Thus two different State task forces have broached broad changes to Maryland's traditional certification status quo and acknowledged that alternative certification could help solve the long-term staffing problems the State has had in problem areas.

30 Elizabeth A. Kaye, ed., *Requirements for Certification* (Chicago: The University of Chicago Press, 2012), 123-5. [Hereafter *Requirements for Certification*] COMAR 13A.12.02.06, available at <http://www.dsd.state.md.us/comar/getfile.aspx?file=13a.12.02.06.htm> ; COMAR 13A.12.02.04, available at <http://www.dsd.state.md.us/comar/getfile.aspx?file=13a.12.02.04.htm> ; COMAR 13A.12.01.05, available at <http://www.dsd.state.md.us/comar/getfile.aspx?file=13a.12.01.05.htm>; COMAR 13A.12.02, available at [http://www.dsd.state.md.us/comar/SubtitleSearch.aspx?search=13A.12.02.\\*](http://www.dsd.state.md.us/comar/SubtitleSearch.aspx?search=13A.12.02.*); Maryland State Department of Education, "FAQ," Maryland State Department of Education, accessed March 6, 2013, [http://www.marylandpublicschools.org/MSDE/divisions/certification/certification\\_branch/faq.](http://www.marylandpublicschools.org/MSDE/divisions/certification/certification_branch/faq.); Calvert Institute for Policy Research, "Maryland's Protective Tariff Against Teachers."

31 Bernard J. Sadusky to Members of the State Board of Education, January 24, 2012, "Presentation of the Final Report of the Reconfiguration of the Current Certification Structure and Summary of PSTEB Deliberations," Maryland Association of Boards of Education, accessed March 6, 2013, <http://www.mabe.org/wp->

content/uploads/2012/02/PSTEBCertReconfigReport2012.pdf.; Requirements for Certification, 123-5.

32 Maryland Teacher Shortage Task Force, “Maryland Teacher Shortage Task Force Report,” Maryland State Archives, published 2008, accessed March 6, 2013, [http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/011000/011024/unrestricted/20080492e.pdf#xml=http://127.0.0.1/taxis/search/pdfhi.txt?query=%22Maryland+Teacher+Staffing+Report%22&pr=ecpclio\\_coll&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&rlead=500&rdepth=0&sufs=0&order=r&mode=&opts=adv&cq=&sr=-1&id=4a0486b77c](http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/011000/011024/unrestricted/20080492e.pdf#xml=http://127.0.0.1/taxis/search/pdfhi.txt?query=%22Maryland+Teacher+Staffing+Report%22&pr=ecpclio_coll&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&rlead=500&rdepth=0&sufs=0&order=r&mode=&opts=adv&cq=&sr=-1&id=4a0486b77c), 2-3. [Hereafter Maryland Teacher Shortage Task Force Report]

33 Ibid., 7. Florida provides an interesting example of how community colleges can help alternatively certify teaching candidates.

34 Ibid., 8.

35 Governor’s STEM Task Force, “Investing in STEM to Secure Maryland’s Future,” State of Maryland, published 2009, accessed March 6, 2013, 11.

A comparison of programs at Maryland’s two largest providers of traditionally certified teachers with average program requirements from several other states throughout the country demonstrates that traditional certification in Maryland often requires the completion of far more onerous requirements than traditional certification does elsewhere. A 2009 report prepared for the US Department of Education explored the details of randomly selected traditional and alternative certification programs for elementary school teachers and observed that required instruction time in traditional certification programs required between 240 and 1380 hours of instruction, averaging 642 hours of instruction with a median of 644.5 hours.<sup>36</sup> Yet Towson University’s Bachelor’s degree in Early Childhood Education requires students to complete 71 credits of education coursework, for a total of 1065 hours of instruction.<sup>37</sup> Similarly, a degree in Elementary Education from Towson University requires 73-74 credits of coursework, for a total of 1095-1110 hours of instruction.<sup>38</sup> The University of Maryland’s Bachelor’s degree program in Early Childhood Education likewise requires students to complete 67 credits of education coursework, for a total of 1005 hours of instruction.<sup>39</sup> Similarly, a degree in Elementary Education from the University of Maryland requires between 61 and 79 credits of coursework, for a total of between 915 and 1185 hours of instruction.<sup>40</sup> Traditional certification for elementary school teachers in Maryland thus routinely requires students to complete hundreds of hours of instruction more than students seeking the same certification in other states.

36 Constantine, et. al., “An Evaluation of Teachers Trained Through Different Routes to Certification,” xxiii, 27, 35. Since the Department of Education’s 2009 study dealt with randomly selected elementary school certification programs, a comparison of their findings with the status quo in Maryland also requires a comparison to elementary school teacher certification. Towson University and the University of Maryland produce the most teaching candidates of any of Maryland’s universities (“Maryland Teacher Staffing Report, 2012-2014,” 35), so exploring

their elementary school teacher certification program allows the exploration of the experiences of many of Maryland's teachers.

37 Towson University, "Undergraduate Catalog, 2012-2013," Towson University, accessed March 6, 2013, [http://www.towson.edu/main/academics/ugrad/documents/UGcatalog\\_2012-13.pdf](http://www.towson.edu/main/academics/ugrad/documents/UGcatalog_2012-13.pdf), 71-2. This figure includes internships. An additional 9 credit hours of prerequisites are required in education courses, but these courses can also be used to satisfy Towson's general course requirements for all students. It would therefore be inappropriate to include these additional 9 credit hours in the figures above. Even so, it is worth noting that including these 9 credits of required education courses, Early Childhood Education students at Towson University actually complete 1200 hours of coursework.

38 Ibid., 74-5. This figure includes internship coursework. The Professional Program is listed as 61-62 credits, but there are 12 credits of additional prerequisites in education coursework that do not satisfy Towson's general course requirements for students regardless of their major.

39 This figure includes internship coursework. The program also includes 12 additional credits of required education coursework, for an actual total of 79 credits of coursework and 1185 hours of instruction, but it would not be appropriate to include those 12 credits in the figures above because these 12 credits can also be used to satisfy the general course requirements that apply to all students regardless of their major. University of Maryland, "Human Development/Institute for Child Study (EDHD)," University of Maryland, accessed March 6, 2013, <http://www.umd.edu/catalog/index.cfm/show/content.section/c/1/ss/2624/s/151>.; University of Maryland, "General Education Courses," University of Maryland, accessed March 6, 2013, <http://www.sis.umd.edu/bin/soc?crs=gened&term=201301>.; University of Maryland, "Undergraduate Catalog," University of Maryland, accessed March 6, 2013, <http://ia701206.us.archive.org/19/items/UndergraduateCatalogUniversityOfMarylandCollegePark2012-2013/2012-2013UndergraduateCatalogForArchives.pdf>.

40 These figures include internship coursework. The range in credits and hours of instruction is due to uncertainty about whether or not it is appropriate to include 18 credits of required classwork in a student selected Area of Emphasis. The figures above exclude an additional 26 credits of required coursework that can also be used to satisfy the general educational requirements that all students must complete regardless of their course of study, bringing the actual total number of credits that the program requires to between 87 and 105, for a total number of hours of instruction that falls between 1305 and 1575 hours. To put those figures in perspective, it is worth noting that the DOE's 2009 report that assessed random elementary school alternative and traditional certification programs stated that the most labor-intensive traditional certification program they surveyed required 1380 hours of instruction (Constantine, et. al., "An Evaluation of Teachers Trained Through Different Routes to Certification," xxiii). University of Maryland, "Curriculum and Instruction- Elementary Education (EDCI)," University of Maryland, accessed March 6, 2013, <http://www.umd.edu/catalog/index.cfm/show/content.section/c/1/ss/2622/s/242>.; University of Maryland, "General Education Courses," University of Maryland, accessed March 6, 2013, <http://www.sis.umd.edu/bin/soc?crs=gened&term=201301>.; University of Maryland, "Undergraduate Catalog," University of Maryland, accessed March 6,

2013, <http://ia701206.us.archive.org/19/items/UndergraduateCatalogUniversityOfMarylandCollegePark2012-2013/2012-2013UndergraduateCatalogForArchives.pdf>.

Another criticism of traditional certification is that traditional certification programs put little effort into recruiting top-tier intellectual talents and insufficiently monitor the caliber of candidates that they admit into their programs. A 2008 article written by two Stanford University faculty members notes that university programs, while focusing on developing teaching skills, have put very little effort into its recruiting and selection processes.<sup>41</sup> Conversely, some alternative certification programs that focus heavily on recruitment and selection of quality candidates, including Teach for America (TFA) and the American Board for Certification of Teacher Excellence (ABCTE), have consistently produced teachers that perform better than traditionally certified teachers.

A small but growing body of recent evidence indicates that candidates with higher intellectual and academic qualifications are more likely to perform well in the classroom than candidates with less impressive intellectual and academic records. A 2011 report written by a Georgia State University Economics Professor Tim R. Sass compared traditional and alternative certification programs in Florida, and observed, “It appears that the low entry requirements [a less onerous workload, as explained below] of [TFA and ABCTE] attract individuals with greater intellectual ability and (at least for math) this trumps any human capital enhancement that may accrue from coursework in education.”<sup>42</sup> Another report, written by several Stanford University faculty members, explores the recruitment of math teachers in New York City and concurs with Sass’s conclusion, stating that “programs can influence their outcomes through both the recruitment and selection of promising candidates and strong preparation...TFA has invested heavily in the recruitment and selection of its Corps members and our findings suggest this effort accounts for a substantial portion of the achievement differences between TFA and...College Recommended teachers.”<sup>43</sup>

There are also good reasons to criticize traditional certification programs’ emphasis on courses on pedagogy. Indeed, since one of the primary general differences between traditional and alternative certification is that alternative certification tends to have less pedagogical coursework, the fact that numerous studies have found no difference between the performance of traditionally and alternatively certified teachers (discussed in detail below) demonstrates the limited overall value of pedagogical coursework on teacher performance. Moreover, a 2009 report written by scholars from Stanford University, The State University of New York, and the University of Virginia notes that their research “results do not support the hypothesis that greater opportunities to learn how students learn influence student achievement among 1st-year or 2nd-year teachers.”<sup>44</sup> Traditional certification, both in general and specifically in Maryland, thus suffers from a variety of shortcomings.

41 Ing and Loeb, “Assessing the Effectiveness of Teachers from Different Pathways: Issues and Results,” 184-5.

42 Sass, “Certification Requirements and Teacher Quality: A Comparison of Alternative Routes to Teaching,” 21.

43 Donald Boyd, Pamela Grossman, Hamilton Lankford, Susanna Loeb, Matthew Ronfeldt, and James Wyckoff, "Recruiting Effective Math Teachers, Evidence from New York City," Center for Education Policy Analysis at Stanford University, accessed March 6, 2013, <http://cepa.stanford.edu/sites/default/files/NYC%20Math%20Teachers%20AERJ%20revision.pdf>, 25. [Hereafter Boyd, *et.al.*, "Recruiting Effective Math Teachers, Evidence from New York City"]

44 Donald J. Boyd, Pamela L. Grossman, Hamilton Lankford, Susanna Loeb, and James Wyckoff, "Teacher Preparation and Student Achievement," *Educational Evaluation and Policy Analysis* Vol. 31, no. 4 (2009): 436, 435, accessed March 6, 2013, <http://cepa.stanford.edu/sites/default/files/Preparation%20and%20Achievement.pdf>. [Hereafter Boyd *et. al.*, "Teacher Preparation and Student Achievement"]

### **The State of Alternative Teacher Certification in Maryland**

A 2007 report from the National Council on Teacher Quality expertly explains the theory behind alternative certification, emphasizing that alternative certification aims to streamline a process of allowing talented subject matter experts to teach without imposing tedious requirements on them.<sup>45</sup> A recent report written by two professors at the University of Nebraska at Kearney described alternatively certified teachers as a group, noting, "Alternatively certified teachers possess bachelor's degrees specific to their subject areas of expertise before entering an alternative certification program. Many have amassed several years of employment and thus have real-world experience in careers utilizing their expertise. Nationally, nearly forty percent of alternative teacher certification candidates have a master's degree or higher, and most are recruited for areas where demand for teachers is the greatest—large cities and now rural areas—and in subject areas in greatest demand, including mathematics, science, and special education."<sup>46</sup> In recent years, alternative teacher certification has become increasingly popular throughout the United States. Forty-seven states and the District of Columbia offer at least one alternative certification pathway.<sup>47</sup>

In its two most recent Teacher Staffing Reports, the Maryland State Department of Education (MSDE) stated plainly that alternative certification "has been very successful in Maryland."<sup>48</sup> MSDE sanctions a special Resident Teacher Certificate (RTC) specifically for alternatively certified teachers. According to MSDE, "the Resident Teacher Certificate is designed to attract and recruit into teaching, liberal arts graduates and career changers who possess academic content backgrounds in the arts and sciences, but who did not complete teacher preparation programs.[sic]"<sup>49</sup> The RTC is valid for 2 years, is non-renewable, and aims to bring in content experts, not pedagogical experts.<sup>50</sup>

Though the RTC represents a decent first step toward a thoughtful, effective alternative certification policy, alternative certification in Maryland remains flawed in three major ways. First, instead of providing an open path for any aspiring student or career changer to become alternatively certified, Maryland limits alternative certification to programs sponsored by particular school districts. Rather than acquiring a certification that can be used to teach in schools throughout Maryland, teachers involved in alternative certification programs are only eligible for teaching positions in the school system with which their program is partnered. For

example, one who pursued alternative certification through the State-approved program with the Urban Teacher Center would be able to teach in Baltimore City but not in any of Maryland's other 23 school districts.<sup>51</sup> A second

45 Kate Walsh and Sandi Jacobs, "Alternative Certification Isn't Alternative," National Council on Teacher Quality, published 2007, accessed March 6, 2013, [http://www.nctq.org/p/publications/docs/Alternative\\_Certification\\_Isnt\\_Alternative.pdf](http://www.nctq.org/p/publications/docs/Alternative_Certification_Isnt_Alternative.pdf), 7. [Hereafter Walsh and Jacobs, "Alternative Certification Isn't Alternative,"]

46 Wendy L. McCarty and Demaris Dietz, "Alternative Teacher Certification: The Case for Transition to Teaching," Journal of Applied Learning in Higher Education Vol. 3 (2011): 47, accessed March 6, 2013, [http://www.missouriwestern.edu/appliedlearning/journalvol3/JALHE\\_Vol\\_3\\_McCarty\\_45-58.pdf](http://www.missouriwestern.edu/appliedlearning/journalvol3/JALHE_Vol_3_McCarty_45-58.pdf). [Hereafter McCarty and Dietz, "Alternative Teacher Certification: The Case for Transition to Teaching"]

47 National Academy of Education, "Improving Teacher Quality and Distribution."

48 "Maryland Teacher Staffing Report, 2010-2012," 58.; "Maryland Teacher Staffing Report, 2012- 2014," 43.

49 "Maryland Teacher Staffing Report, 2012-2014," 7.

50 Requirements for Certification, 125.

51 Maryland State Department of Education, "Maryland Approved Alternative Teacher Preparation Programs Directory," Maryland State Department of Education, published 2012, accessed March 6, 2013, <http://www.marylandpublicschools.org/NR/rdonlyres/6662E011-70C1-44A0-BD5E-693AE1267EC0/33881/MAAPPDirectoryUpdatedOctober222012.pdf>. [Hereafter Maryland State Department of Education, "Maryland Approved Alternative Teacher Preparation Programs Directory"]

problem is that Maryland currently does not have any approved online alternative certification programs.<sup>52</sup> This could easily be remedied at no cost to the State by approving ABCTE, as discussed in more detail below. A third major problem is that most of Maryland's public school systems have completely ignored alternative certification. From 2010-2012, teacher shortages existed in 19 of Maryland's 24 school districts.<sup>53</sup> Despite being understaffed, 15 of these 19 counties did not hire a single alternatively certified teacher, and 14 of these 15 did not even have an alternative certification program.<sup>54</sup> Howard County had an alternative certification program but did not hire a single person from it from 2010-2012, despite being understaffed.<sup>55</sup>

Most of the Maryland school systems that do recognize alternative certification have underutilized it. Only Baltimore City and Prince George's County have taken serious steps toward hiring alternatively certified teachers. The most recent Maryland Teacher Staffing Report

shows that Maryland school systems hired 504 alternatively certified teachers in 2010-2011 and an additional 398 in 2011-2012, for a total of 902 over that 2 year period. The report notes that Maryland public school systems hired a total of 7285 teachers over that same period. Therefore only 12% of Maryland's new hires over the last 2 years have been alternatively certified, well below the previous 5-year's national average of 40% and despite Maryland's critical teacher shortages. A total of 840 of those 902 teachers worked in Baltimore City or Prince George's County, while Maryland's remaining 22 jurisdictions hired a combined total of only 62 alternatively certified teachers over the last 2 years.<sup>56</sup> Since those 22 jurisdictions hired a total of 5187 teachers over that period, only 1.2% of their new hires were alternatively certified despite their need for teachers.<sup>57</sup>

Despite the flaws in Maryland's current alternative certification policies, alternative certification in Maryland has demonstrated that it can attract teachers for STEM subjects far more effectively than traditional certification. MSDE's most recent Teacher Staffing Report shows that 273 of the 902 alternatively certified teachers hired in Maryland between 2010 and 2012 received

<sup>52</sup> Maryland State Department of Education, "How to Become a Teacher as a Career Changer or Recent College Graduate," Maryland State Department of Education, accessed March 6, 2013, <http://www.marylandpublicschools.org/NR/rdonlyres/6662E011-70C1-44A0-BD5E-693AE1267EC0/33689/HowtoBecomeaTeacher102012.pdf>. Both of these problems could be easily remedied if at no cost to taxpayers if the state simply approved ABCTE, a highly-regarded online alternative certification program that has already been approved by 10 states, and was recommended for implementation in Maryland in 2005 by the Steele Commission report.

<sup>53</sup> "Maryland Teacher Staffing Report, 2010-2012," vii.

<sup>54</sup> "Maryland Teacher Staffing Report, 2012-2014," 44.

<sup>55</sup> Maryland State Department of Education, "Maryland Approved Alternative Teacher Preparation Programs Directory." From 2010-2012, teacher shortages existed in 19 of Maryland's 24 school districts: Allegany County, Anne Arundel County, Baltimore City, Carroll County, Cecil County, Charles County, Dorchester County, Frederick County, Harford County, Howard County, Montgomery County, Prince George's County, Calvert County, Queen Anne's County, St. Mary's County, Talbot County, Washington County, Wicomico County, and Worcester County. Fifteen of these nineteen counties did not hire a single AC teacher from 2010-2012, despite being understaffed: Allegany County, Calvert County, Carroll County, Cecil County, Charles County, Dorchester County, Frederick County, Harford County, Howard County, Queen Anne's County, St. Mary's County, Talbot County, Washington County, Wicomico County, and Worcester County. Of these 15 counties, 14 did not even have an AC program: Allegany County, Calvert County, Carroll County, Cecil County, Charles County, Dorchester County, Frederick County, Harford County, Queen Anne's County, St. Mary's County, Talbot County, Washington County, Wicomico County, and Worcester County. Howard County had an AC program, but did not hire a single person from it from 2010-2012.

<sup>56</sup> "Maryland Teacher Staffing Report," 44.

57 Ibid., 19, 21, 23.

certification in science, math, or special education; of these 273, 201 were hired to teach science, technology, engineering, or math. By way of comparison, Maryland's traditional university-based certification programs produced an estimated 394 candidates to teach math, science, and career/technology/computer science over the same period.<sup>58</sup> The actual number of teaching positions that these candidates filled are likely less than 394, unless every single one of them applied for a public school teaching position in Maryland, every single one was offered a job, and every single one accepted that job. In any case, Maryland's alternative teacher certification programs between 2010 and 2012 produced more than half as many new STEM teachers as the traditional programs produced candidates, despite producing more than 6 times fewer teachers in all subjects over the same period.

### **Alternative Teacher Certification: A Review of the Evidence**

Though research findings are mixed, and research linking teacher certification with student achievement is a relatively new and developing field, an assessment of the research data that exists demonstrates that various alternative certification programs from around the country have successfully filled teaching vacancies by training teachers who perform at least as well as their traditionally certified counterparts.<sup>59</sup>

#### *Teach for America (TFA)*

Teach for America (TFA) is perhaps the best known and most successful alternative certification program in the country. Thirty-four states and the District of Columbia have approved TFA alternative certification, including Maryland, which currently employs TFA teachers in just 3 of its 24 school systems: Prince George's County, Baltimore County, and Baltimore City.<sup>60</sup> Since being founded in 1990, TFA has sought to combat "educational inequality," aiming to close the achievement gap between children from high-income areas and children from low-income areas.<sup>61</sup> TFA itself describes its mission as "provid[ing] an excellent education for kids in low-income communities" who "face the extra challenges of poverty" to "achieve at the highest levels."<sup>62</sup> TFA's leadership believes "that with extra support and high expectations, disadvantaged children can excel academically and gain the kind of education that will give them access to a full range of professional and life options."

58 Ibid., 43, 36, 37. The numbers are estimates because the report included estimated figures for the 2011- 2012 year. Also, the figures noted here compare the number of teaching candidates to the number of those actually holding teaching positions because for some reason that is how MSDE decided to display their data.

59 For one account of dissenting evidence, see: Julian Vasquez Heilig and Su Jin Jez, "Teach for America: A Review of the Evidence," National Education Policy Center, published 2010, accessed March 6, 2013, <http://nepc.colorado.edu/publication/teach-for-america>. [Hereafter Heilig and Jez, "Teach for America: A Review of the Evidence"] As this paper will discuss, however, at least one of this paper's criticisms include either a glaring oversight or outright



dishonesty. See also: Ing and Loeb, “Assessing the Effectiveness of Teachers from Different Pathways: Issues and Results,” 170-9.

60 Teach for America, “Where We Work,” Teach for America, accessed March 7, 2013, <http://www.teachforamerica.org/where-we-work>.; Maryland State Department of Education, “Maryland Approved Alternative Teacher Preparation Programs Directory.” TFA teachers work in Colorado, Hawaii, California, Washington, Nevada, New Mexico, Arizona, Texas, South Dakota, Oklahoma, Minnesota, Louisiana, Arkansas, Missouri, Mississippi, Alabama, Georgia, Florida, Tennessee, Kentucky, Indiana, Michigan, Wisconsin, Ohio, South Carolina, North Carolina, Maryland, Delaware, Pennsylvania, New Jersey, New York, Connecticut, Rhode Island, Massachusetts, and the District of Columbia.

61 Teach for America, “Teach for America 2011 Annual Letter,” Teach for America, accessed March 7, 2013, [http://www.teachforamerica.org/sites/default/files/Annual.Report.FINAL\\_.pdf](http://www.teachforamerica.org/sites/default/files/Annual.Report.FINAL_.pdf), 5. [Hereafter “Teach for America 2011 Annual Letter”]

62 Teach for America, “A Solvable Problem,” Teach for America, accessed March 7, 2013, <http://www.teachforamerica.org/our-mission/a-solvable-problem>.

TFA teachers thus teach in poor performing schools in low-income areas.<sup>63</sup>

TFA places considerable emphasis on attracting diverse, top-tier intellectual talent from top universities, and particularly seeks applicants who have leadership skills, a track record of achievement, are adaptable, have good organizational skills, and have a solid work ethic. In 2011, TFA reported that about 48,000 people applied for about 5100 places in the program, including large numbers of applicants from many of the most prestigious colleges and universities in the country. A total of 18% of Harvard University’s graduating seniors applied to TFA, along with 16% of Duke University’s seniors, 9% of the University of Virginia’s seniors, and 8% of the University of Michigan’s seniors.<sup>64</sup> TFA can thus be highly selective about who they admit to the program. TFA’s 2011 corps had an incoming GPA of 3.6, and represented about 700 colleges and universities.<sup>65</sup> New TFA teachers are required to make a 2-year commitment to the program.

TFA’s teacher training requirements are quite modest. During the summer before starting to teach, new teachers are required to attend a 1-week induction, 5 weeks of teacher training, and a regional orientation.<sup>66</sup> In most locations where TFA teachers work, candidates continue completing training coursework throughout their 2-year commitment.<sup>67</sup> The teacher education coursework and student teaching that TFA requires before candidates enter the classroom is therefore just a fraction of the coursework and student teaching that traditional certification programs require. Yet there is a large and growing body of evidence that TFA teachers have performed just as well, and in many places better, than other more traditionally certified teachers, substantially weakening the argument that relatively onerous teacher certification laws are key to producing good teachers.

- A 2009 study of grades 4-9 conducted by two Louisiana State University professors and published on the National Council on Teacher Quality’s (NCTQ) website states, “Results

are strikingly consistent across content areas. In all areas except for social studies, TFA corps members were statistically significantly more effective than other new teachers. The magnitude and direction of the result in social studies is consistent with the other content areas, but due to greater variability within the social studies domain and a smaller number of observations, the result was not statistically significant...Overall, the data suggest that TFA corps members may be more comparable to experienced certified teachers than new teachers in their effectiveness.”<sup>68</sup> Though lauding the performance of TFA’s teachers, the study also noted “that few of them persist in teaching in Louisiana beyond three years.”<sup>69</sup>

- A 2009 study by the Urban Institute, CALDER, Stanford University, and Duke University explored the effect of TFA teachers on North Carolina high school students, ultimately determining “that secondary school TFA teachers are more effective than the teachers who would otherwise be in the classroom in their stead... Disadvantaged secondary students would be better off with TFA teachers, especially in math and science, than with fully licensed in-field teachers with three or more years of experience.”<sup>70</sup> The authors ultimately estimated that TFA teachers are more effective than traditionally prepared teachers by a degree that is equal to about twice the difference in effectiveness between average first and second-year teachers.<sup>71</sup>
- The Stand for Children Leadership Center, a non-profit, non-partisan children’s advocacy group, reported similar findings in a 2012 white paper, written by the Director of the Center for Education Data & Research at the University of Washington, Bothell.<sup>72</sup> The white paper notes that a review of the research evidence about TFA teachers’ impact on student outcomes “shows pretty consistent evidence that TFA teachers... are, on average, as good as or more effective than other teachers in the same schools.”<sup>73</sup>
- In 2010, the University of North Carolina published a report comparing the performance of teachers with five or fewer years of experience in North Carolina’s public schools based on the certification “portal” that the teachers completed. Researchers found that “the portal that most consistently outperformed UNC undergraduate prepared teachers was Teach for America... Teach for America corps members outperformed UNC undergraduate prepared teachers in five of nine comparisons and perform no differently in the other four comparisons. Their positive effects were concentrated in high school and middle school subjects. Their positive effects on middle school mathematics... translates into an advantage equivalent to approximately half a year of learning.” Despite TFA teachers’ clear excellence, TFA teachers only made up .3% of NC teachers at the time of the study.<sup>74</sup>
- Another recent report, written by a group of scholars from Stanford University, the State University of New York, and the University of Virginia, details how TFA teachers have been more effective than regularly certified and other alternatively certified math teachers in New York City. The researchers wrote, “The analysis in this paper suggests that on average TFA teachers produce student achievement gains in middle school mathematics that exceed those of teachers from other pathways with comparable experience.”<sup>75</sup> Despite the clear advantage of TFA teachers, the authors also acknowledged that “this advantage is largely eliminated once the much higher attrition of TFA teachers is taken into account.”<sup>76</sup>

- The Tennessee State Board of Education's 2010 Teacher Training Report Card revealed that TFA teachers were the most effective new teachers in the state, except for Vanderbilt-educated Math teachers. TFA teachers performed better than even veteran teachers in teaching reading. Researchers based their findings on student test scores.<sup>77</sup> A May 2010 article written by two Stanford University scholars notes that "the accumulated evidence on Teach for America, which is the most studied of all alternative routes, indicates that achievement results for corps members' students either mirror or exceed the results of students whose teachers entered from university-based programs."<sup>78</sup>
- Though assessing test scores is widely regarded as one of the best ways of measuring teacher performance, other measurements of student outcomes can also be useful in assessing teaching performance, including percentages of students who are held back a grade, attend summer school, or are involved in disciplinary incidents or school-reported absenteeism. Though there are only very limited studies that use these measures, a 2008 report written by scholars from Stanford University and the University of California at Riverside explains that the existing information shows no difference between TFA and non-TFA teachers in any of these respects.<sup>79</sup>

Perhaps the best evidence of TFA's track record of excellence is the \$50 million grant that TFA earned from the US Department of Education (DOE) in 2010 as a part of the DOE's "Investing in Innovation" grant competition. To receive a grant, the DOE judged applicant programs on a detailed 105 point scoring rubric. Of a total of \$650 million that the program distributed, the \$50 million that TFA received tied for the biggest single grant that the program distributed. The New York Times (NYT) reported that the DOE invested in TFA as heavily as it did because the DOE "viewed [TFA] as having been proved successful.[sic]"<sup>80</sup>

Despite facing opposition from various teachers' unions around the country, TFA has continued to expand and flourish, producing consistently excellent results in the classroom when measured by student outcomes.<sup>81</sup> A recent op-ed in The New York Times went so far as to call TFA a

63 "Teach for America 2011 Annual Letter," 5.

64 Teach for America, "Enlisting Committed Individuals," Teach for America, accessed March 7, 2013, <http://www.teachforamerica.org/our-mission/enlisting-committed-individuals>.

65 Teach for America, "Who We Look For," Teach for America, accessed March 7, 2013, <https://www.teachforamerica.org/why-teach-for-america/who-we-look-for>; "Teach for America 2011 Annual Letter," 17.

66 Teach for America, "Summer Training," Teach for America, accessed March 7, 2013, <http://www.teachforamerica.org/why-teach-for-america/training-and-support/summer-training>. [Hereafter TFA "Summer Training"]

67 Teach for America, "Teacher Certification," Teach for America, accessed March 7, 2013, <http://www.teachforamerica.org/why-teach-for-america/training-and-support/teacher-certification>. [Hereafter TFA "Teacher Certification"]

68 George H. Noell and Kristin A. Gansle, "Teach for America Teachers' Contribution to Student Achievement in Louisiana in Grades 4-9: 2004-2005 and 2006-2007," National Council on Teacher Quality, published 2009, accessed March 7, 2013, [http://www.nctq.org/docs/TFA\\_Louisiana\\_study.PDF](http://www.nctq.org/docs/TFA_Louisiana_study.PDF), 14-5.

69 Ibid., 15-6.

70 Zeyu Xu, Jane Hannaway, and Colin Taylor, "Making a Difference? The Effects of Teach for America in High School," Urban Institute, published 2009, accessed March 7, 2013, [http://www.urban.org/UploadedPDF/411642\\_Teach\\_America.pdf](http://www.urban.org/UploadedPDF/411642_Teach_America.pdf), 25.

71 Ing and Loeb, "Assessing the Effectiveness of Teachers from Different Pathways: Issues and Results," 172-3.

72 Stand for Children Leadership Center, "What We Stand For: Teachers," Stand for Children Leadership Center, accessed March 7, 2013, <http://standleadershipcenter.org/what-we-stand-teachers>. [Hereafter Stand for Children Leadership Center, "What We Stand For: Teachers"]

73 Dan Goldhaber, "Education Policies and Practices and the Quality of the Teacher Workforce," Stand for Children Leadership Center, published 2012, accessed March 7, 2013, <http://standleadershipcenter.org/sites/standleadershipcenter.org/files/media/WWSF-Teachers.pdf>, 5. [Hereafter Goldhaber, "Education Policies and Practices and the Quality of the Teacher Workforce"]

74 Gary T. Henry, Charles L. Thompson, Kevin C. Bastian, C. Kevin Fortner, David C. Kershaw, Kelly M. Purtell, and Rebecca A. Zulli, "Portal Report: Teacher Preparation and Student Test Scores in North Carolina," Carolina Institute for Public Policy, published 2010, accessed March 7, 2013, [http://publicpolicy.unc.edu/research/Teacher\\_Portal Teacher Preparation and Student Test Scores in North Carolina\\_2.pdf](http://publicpolicy.unc.edu/research/Teacher_Portal Teacher Preparation and Student Test Scores in North Carolina_2.pdf), 11. The document's first appendix explained that this was a massive study, including over 1.6 million test scores, over 900,000 students and 20,000 teachers compiled over the 4-year period between 2004 and 2008.

75 Boyd, *et.al.*, "Recruiting Effective Math Teachers, Evidence from New York City," 25. Curiously, the copy of the report listed at the above URL does not appear to include a date of publication. This is probably because this report is still in the editorial stages. Nevertheless, it is clear that the report was written within no earlier than 2009, as the report references other work that was published as recently as 2009.

76 Ibid.

77 Tennessee State Board of Education and Tennessee Higher Education Commission, "Report Card of the Effectiveness of Teacher Training Programs," State of Tennessee, published 2010, accessed March 7, 2013, [http://www.tn.gov/thec/Divisions/ftt/report\\_card\\_teacher\\_train/2010%20Report%20Card%20on%20the%20Effectiveness%20of%20Teacher%20Training%20Programs.pdf](http://www.tn.gov/thec/Divisions/ftt/report_card_teacher_train/2010%20Report%20Card%20on%20the%20Effectiveness%20of%20Teacher%20Training%20Programs.pdf), 5-6.; Jane

Roberts, “Teach for America recruits produce higher test scores, get better results,” The Commercial Appeal (Memphis, TN), Dec. 3, 2010, accessed March 7, 2013, <http://www.commercialappeal.com/news/2010/dec/03/teaching-program-beating-colleges/>; Teach for America, “What the Research Says,” Teach for America, published 2012, accessed March 7, 2013, [http://www.teachforamerica.org/sites/default/files/Research\\_on\\_Teach\\_For\\_America\\_2012\\_1.pdf](http://www.teachforamerica.org/sites/default/files/Research_on_Teach_For_America_2012_1.pdf).

78 Grossman and Loeb, “Learning from Multiple Routes,” 26.

79 Ing and Loeb, “Assessing the Effectiveness of Teachers from Different Pathways: Issues and Results,” 179-80.

80 Sam Dillon, “Education Department Deals Out Big Awards,” The New York Times (New York, NY), Aug. 5, 2010, accessed March 7, 2013, [http://www.nytimes.com/2010/08/05/education/05grants.html?\\_r=2&](http://www.nytimes.com/2010/08/05/education/05grants.html?_r=2&).

81 Ben Wieder, “Teach for America Alumni Take Aim At State Office, Face Union Opposition,” The Huffington Post, Aug. 27, 2012, accessed March 7, 2013, [http://www.huffingtonpost.com/2012/06/27/teach-for-america-alumni-\\_n\\_1631962.html](http://www.huffingtonpost.com/2012/06/27/teach-for-america-alumni-_n_1631962.html); Washington Policy Center, “Seattle teachers’ union seeks ban on teachers—sees Teach for America as threat to its position in the system,” Washington Policy Center, published March 8, 2012, accessed March 7, 2013, <http://www.washingtonpolicy.org/blog/post/seattle-teachers-union-seeks-ban-teachers%E2%80%94sees-teach-america-threat-its-position-system>. For even more information demonstrating TFA’s effectiveness, visit the following URL: [http://www.teachforamerica.org/sites/default/files/Research\\_on\\_Teach\\_For\\_America\\_2012\\_1.pdf](http://www.teachforamerica.org/sites/default/files/Research_on_Teach_For_America_2012_1.pdf).

“godsend to low-income communities.”<sup>82</sup> TFA is currently looking to expand their presence in Maryland, with a goal of attracting 1000 teachers over 4 years in Baltimore alone.<sup>83</sup> Yet, since TFA teachers in Maryland are awarded only a two-year certification that requires a bevy of additional coursework to renew, Maryland’s certification policies function as disincentives to keeping TFA teachers in the classroom long-term. Maryland law should help remove these disincentives so that we can attract more of these talented, capable people to continue teaching after their 2-year commitment ends.

#### *American Board for Certification of Teacher Excellence (ABCTE)*

The American Board for Certification of Teacher Excellence is another widely used, well-known alternative certification program. ABCTE is, according to a 2007 report prepared by the National Council on Teacher Quality and the Thomas B. Fordham Institute, the closest program that remains to alternative certification as it was originally designed. The report notes, “In 1983, New Jersey created the first alternate route to the classroom. It expedited the entry of well-educated individuals into public schools by hiring them as teachers straight-away, reducing or eliminating ‘theory’ courses from their training, and using experienced teachers to mentor them

during their first year or two on the job. At the end, the candidate either was awarded a full certificate or sought employment elsewhere.”<sup>84</sup>

ABCTE aims to “[address] the need for knowledgeable and dedicated teachers in every classroom” by “offer[ing] a flexible and cost-effective certification program designed for career changers.” Their stated mission reads, “The American Board recruits, prepares, certifies and supports dedicated professionals to improve student achievement through quality teaching.” The ABCTE reports that their program boasts an 85% 3-year retention rate, as opposed to a 67% average 3 year retention rate nationwide. A total of 32% of their candidates are pursuing certification in math or science.<sup>85</sup>

ABCTE certification requires participants simply to pass exams in professional teaching knowledge and content knowledge.<sup>86</sup> ABCTE’s certification process makes only modest demands on prospective teachers’ time and money, thereby circumventing some of the burdensome requirements that can dissuade interested candidates from pursuing teacher certification. In general, ABCTE costs about \$2000, and test prep takes up 6-8 hours per week for about 11 months.<sup>87</sup>

Though there is much less data exploring how ABCTE teachers’ performance compares to traditionally certified teachers, there is evidence that ABCTE teachers perform at least as well as traditionally certified teachers, and sometimes better. In a 2011 report, Georgia State University Economics Professor Tim R. Sass assessed the differences between the performances of traditionally

82 Jessica Amos, “A Godsend to Low-Income Communities,” The New York Times (New York, NY), August 31, 2012, accessed March 7, 2013, <http://www.nytimes.com/roomfordebate/2012/08/30/is-teach-for-america-working/a-godsend-to-low-income-communities>.

83 Teach for America, “Baltimore,” Teach for America, accessed March 7, 2013, <http://www.teachforamerica.org/where-we-work/baltimore>.

84 Walsh and Jacobs, “Alternative Certification Isn’t Alternative,” 8.

85 American Board for Certification of Teacher Excellence, “About ABCTE,” American Board for Certification of Teacher Excellence, accessed March 7, 2013, <http://abcte.org/about-us/>.

86 Sass, “Certification Requirements and Teacher Quality: A Comparison of Alternative Routes to Teaching,” 10.

87 American Board for Certification of Teacher Excellence, “Financial Aid,” American Board for Certification of Teacher Excellence, accessed March 7, 2013, <http://abcte.org/teach/pricing/financial-aid/>; American Board for Certification of Teacher Excellence, “ABCTE Program Checklist,” American Board for Certification of Teacher Excellence, accessed March 7, 2013, <http://www.abcte.org/wp/wp-content/uploads/2012/10/Program-Checklist-print.pdf>.

and alternatively certified teachers in Florida, observing, “Most stark are the differences in the performance of ABCTE teachers relative to traditionally prepared teachers in math. Across a variety of model specifications and test metrics ABCTE teachers outperform their traditionally prepared colleagues by a wide margin – six to eleven percent of a standard deviation. Like previous findings for TFA teachers, the performance of ABCTE teachers is generally equivalent to that of preparation program graduates in promoting achievement in reading.”<sup>88</sup>

The excellence of ABCTE’s teachers compared to traditionally certified teachers in Florida’s schools is further evidence that the relatively heavy requirements that characterize traditional certification are an ineffective means of enhancing the teaching profession’s performance. Of the ten states that accept ABCTE’s certification, most impose modest additional requirements on candidates prior to allowing them to assimilate into their teaching profession fully.<sup>89</sup> Yet Florida imposes no additional requirements—participants are issued a 3 year, non-renewable temporary certificate simply for possessing a Bachelor’s degree and a certificate verifying their completion of ABCTE’s training. Participants can then attain a renewable, 5-year Florida Professional Certificate simply by demonstrating “competence in the classroom.”<sup>90</sup> Another state that accepts ABCTE’s certification is nearby Pennsylvania, which has approved a procedure that partners ABCTE’s coursework with modest additional requirements that the candidate completes after beginning work.<sup>91</sup> The requirements include four mentorship meetings, mentorship assignments and workshops, a few thousand dollars of expenses, and the completion of two graduate courses, which can be taken online. Participants complete the program within one year and receive a full Level I Pennsylvania Teaching Certificate, which is valid for six years.<sup>92</sup>

South Carolina, which boasts a teaching force that was named first in the country in Education Week’s most recent state-by-state rankings, accepts ABCTE certification with even fewer additional requirements than Pennsylvania. Prospective teachers who hold an ABCTE certificate are automatically eligible to teach in South Carolina’s public schools for one year and can continue working for two additional years if the candidate receives positive reviews. Candidates can progress to the full South Carolina Professional certificate simply by completing 3 years of successful teaching and additional testing.<sup>93</sup>

Mississippi also has a relatively easy process for accepting ABCTE certification. Candidates need only pass ABCTE’s certification tests, possess a Bachelor’s degree, pay fees, get a job, have a

<sup>88</sup> Sass, “Certification Requirements and Teacher Quality: A Comparison of Alternative Routes to Teaching,” 20-1.

<sup>89</sup> The ten states are: Florida, Idaho, Mississippi, Missouri, New Hampshire, Oklahoma, Pennsylvania, South Carolina, and Utah.

<sup>90</sup> Florida Department of Education, “Pathways to Full State Certification in Florida,” State of Florida, published 2006, accessed March 7, 2013, <http://www.fldoe.org/edcert/pdf/Pathways.pdf>.

91 American Board for Certification of Teacher Excellence, “How It Works,” American Board for Certification of Teacher Excellence, accessed March 7, 2013, <http://abcte.org/certification/how-it-works/>.

92 Point Park University, “ABCTE Information,” Point Park University, accessed March 7, 2013, <http://www.pointpark.edu/Academics/Schools/SchoolofArtsandSciences/Departments/Education/ABCTE.>; Pennsylvania Department of Education, “American Board (ABCTE),” State of Pennsylvania, accessed March 7, 2013, [http://www.portal.state.pa.us/portal/server.pt/community/other\\_routes\\_to\\_certification/8818/american\\_board\\_\(abcte\)/506779.](http://www.portal.state.pa.us/portal/server.pt/community/other_routes_to_certification/8818/american_board_(abcte)/506779.); American Board for Certification of Teacher Excellence, “How It Works in Pennsylvania,” American Board for Certification of Teacher Excellence, accessed March 7, 2013, <http://abcte.org/certification/how-it-works/how-it-works-in-pennsylvania/>; Requirements for Certification, 229- 230.

93 Requirements for Certification, 238.; Education Week 2013 State Report Cards.

mentor for a year, and complete their choice of 2 graduate courses, a 3-week summer training, and an 8-week online course. Candidates are then fully certified.<sup>94</sup>

Very little evidence exists that seeks to specifically assess how ABCTE teachers compare to teachers who were prepared differently. Yet the evidence that does exist is encouraging for ABCTE. In at least one study, ABCTE teachers performed at least as well and often better than their traditionally certified colleagues. Moreover, with the top-ranking teaching profession in the country, South Carolina’s embrace of ABCTE is especially meaningful. Yet Maryland persists in refusing to accept ABCTE certification in the state, despite the fact that the 2005 Governor’s Commission on Quality Education in Maryland recommended that Maryland embrace ABCTE as a path to certification in Maryland.<sup>95</sup>

### *Nebraska’s Transition to Teaching Program*

Limited evidence also shows that teachers who gained certification through Nebraska’s Transition to Teaching Program have been more effective teachers than their traditionally certified counterparts. An article in the Fall 2011 issue of the Journal of Applied Learning in Higher Education states, “Comparisons of instructional quality along several dimensions show that the Transition to Teaching participants were evaluated as exhibiting slightly higher than average levels of instructional quality across most dimensions compared to traditionally certified teachers. These findings provide further evidence to support the growing interest in alternative teacher certification as a way to generate highly competent teachers.”<sup>96</sup>

To qualify for the program, applicants must have a baccalaureate degree that includes at least 75% of the course requirements for a subject endorsement, pass the Praxis exam, secure from the school system a written request for a transitional certificate and a written mentorship and supervision plan, complete a pre-teaching seminar, and complete 3 six-credit hour online courses over the following 3 semesters.<sup>97</sup>



Since 2003, 242 teachers have become fully certified through the program, and the program boasts an 81% retention rate. The program has been very effective at securing teachers in subjects for which Maryland has teacher shortages, with 24% teaching foreign languages, 19% teaching science, 17% teaching various vocational education, and 10% teaching math.<sup>98</sup>

94 American Board for Certification of Teacher Excellence, “How It Works in Mississippi,” American Board for Certification of Teacher Excellence, accessed March 7, 2013, <http://abcte.org/certification/how-it-works/how-it-works-in-mississippi/>; Requirements for Certification, 150-1.

95 The Governor’s Commission on Quality Education in Maryland, “September 2005 Report,” State of Maryland, published 2005, accessed March 7, 2013, [http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/000000/000600/unrestricted/20050867\\_e.pdf](http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/000000/000600/unrestricted/20050867_e.pdf), 14.

96 McCarty and Dietz, “Alternative Teacher Certification: The Case for Transition to Teaching,” 45.

97 McCarty and Dietz, “Alternative Teacher Certification: The Case for Transition to Teaching,” 49-50. Page 50 makes it clear that the three six-credit hour courses can be completed while the applicant is already teaching, a detail that the Nebraska Department of Education’s (NDOE) website is somewhat unclear about. While the NDOE’s website (<http://www.unk.edu/coe.aspx?id=463>) clearly notes that a track is available for applicants who wish to teach while completing the program, the website also notes that some applicants can choose to complete some of the coursework requirements prior to the start of their teaching careers. The confusing part is that another NDOE page (<http://www.unk.edu/coe.aspx?id=59267>) notes that the program includes a student teaching component. Considered together, the information in the article and on the NDOE’s website points to the conclusion that the applicant’s execution of his or her daily teaching duties while completing the online coursework is itself the student teaching component.

98 McCarty and Dietz, “Alternative Teacher Certification: The Case for Transition to Teaching,” 51.

### **Criticisms of Alternative Certification Programs**

Despite a wealth of positive evidence, critics regularly accuse alternative certification of a number of faults. The most common criticism is that alternatively certified teachers do not remain in teaching very long. According to critics, the high attrition of alternatively certified teachers leave students unable to benefit from the increased effectiveness that often comes with teaching experience. Other common criticisms of alternative certification include the charge that alternatively certified teachers do not perform as well as traditionally certified teachers, and the claim that the high attrition of alternatively certified teachers imposes burdensome staff turnover expenses on school districts.

*Teach for America*

As perhaps the highest profile, most widely used, and most successful alternative certification program, critics of alternative certification often choose to specifically criticize Teach for America rather than alternative certification in general.

Perhaps the most common criticism of TFA is that many of their teachers choose to leave the teaching profession at the end of the program's 2-year commitment. Indeed, the President of the Detroit teacher's union in 2009 accused TFA teachers of being "'educational mercenaries' who 'ride in on their white horses and for two years share the virtue of their knowledge as a pit stop on their way to becoming corporate executives.'"<sup>99</sup>

Though criticisms of TFA's attrition rate have some merit, a full assessment of the available data reveals a bevy of relevant information that largely tempers criticisms of TFA's attrition. An August 2012 op-ed published in The New York Times claims that over 80% of TFA teachers move on within 3 years. Yet TFA's 2011 annual report claimed that over 7,000 of their almost 24,000 alumni are still teaching, which means about 30% of their people keep teaching.<sup>100</sup> A 2009 USA Today article about TFA reported almost identical information, noting that 29% of TFA teachers were still in the classroom.<sup>101</sup> USA Today went on to claim that while TFA's 29% retention rate is "a bit lower than the USA's overall teaching force," they noted that "about one-third [of teachers nationwide] quit within the first few years. By the end of five years, recent research shows, nearly half of new teachers leave the profession." While TFA likely does have a higher attrition rate than traditionally certified teachers, it may not be as much higher as critics imply. Though a comparison of precise attrition figures between teachers who completed different certification pathways is unavailable, it is reasonable to estimate that TFA teachers are 15%-25% less likely to remain in teaching than their average colleagues.<sup>102</sup>

Yet this higher attrition rate can be highly misleading for a number of reasons. First, there are a number of important jobs in education other than teaching, including leadership and administrative roles, and work in politics and with non-profits. TFA reported in 2011 that, including both teachers and non-teachers, 64% of their alumni are still working in education.<sup>103</sup> A 2009 USA Today article again concurred with TFA, noting that "about two-thirds remain in education — mostly

<sup>99</sup> Greg Toppo, "Teach for America: Elite corps or costing older teachers jobs?," USA Today, July 29, 2009, accessed March 7, 2013, [http://usatoday30.usatoday.com/news/education/2009-07-29-teach-for-america\\_N.htm](http://usatoday30.usatoday.com/news/education/2009-07-29-teach-for-america_N.htm). [Hereafter Toppo, USA Today]

<sup>100</sup> Julian Vasquez Heilig, "A Glorified Temp Agency," The New York Times (New York, NY), August 31, 2012, accessed March 7, 2013, <http://www.nytimes.com/roomfordebate/2012/08/30/is-teach-for-america-working/teach-for-america-is-a-glorified-temp-agency>.; "Teach for America 2011 Annual Letter," 17.

<sup>101</sup> Toppo, USA Today.

<sup>102</sup> Nearly half of new teachers (50%) leave the profession within the first five years. Also, TFA boasts a 29% retention rate for all teachers, even teachers who completed TFA more than three years ago, giving them more than five years of experience. Though comparing these retention

rates slants the data unfairly against TFA, comparing them still has some value, and the difference between the two figures is 21%. It is therefore reasonable to estimate that TFA teachers are 15%-25% less likely to remain in the profession.

103 “Teach for America 2011 Annual Letter,” 17.

in administrative or political jobs or working with policy or charitable groups,” and stated that 72% of TFA Baltimore teachers were still working in education, including 11 principals.<sup>104</sup>

Second, it may not be fair to compare TFA attrition rates with attrition rates for other teaching paths since TFA generally recruits candidates who, while interested in teaching, were not interested enough in teaching to complete an undergraduate major in education. TFA teachers are thus generally people who would otherwise not be teachers. Indeed, TFA reports that “only about one alumnus in 10 would have considered education” without TFA.<sup>105</sup>

Third, it is important to consider that TFA’s stated mission of solving the achievement gap by placing teachers specifically in low-income areas with low-performing schools means that TFA’s teachers work in some of the worst schools in the country. Since low-income schools tend to have higher than average attrition rates, TFA’s teachers would be expected to have higher than average attrition when compared to the nationwide teaching force.<sup>106</sup> A more effective way of measuring the role of TFA certification on teacher attrition would be to compare the attrition rates of TFA teachers with other teachers in the same schools, or same school districts, as TFA teachers. The TFA’s attrition in those schools may not be worse than the attrition rate of all teachers in TFA schools. Indeed, a 2007 report published by the Educational Research Service assessed TFA retention in Baltimore, concluding, “While most of the TFA teachers tended to leave by the end of year three...Three-year retention rates for TFA were as high as three-year retention rates for certified teachers in the Baltimore City Public School System for three of the four cohorts studied.”<sup>107</sup>

While the findings of a single study cannot necessary be treated as conclusive, the study’s findings, along with the fact that TFA places its teachers in schools that tend to have higher attrition rates, combine to cast serious doubt on the legitimacy of using TFA’s attrition rate to condemn TFA.

Fourth, the candidates that TFA accepts into the program constitute a group that has generally been much more successful at much more competitive colleges and universities than the general public. People with such particularly strong academic credentials—and with undergraduate majors in something other than education—will naturally have a variety of other employment options in a variety of fields. For example, a graduate of Towson University’s elementary education program is qualified to teach elementary school and would also be qualified for any number of different entry-level jobs that require a Bachelor’s degree. However, a person with a Political Science degree from Harvard could become a TFA history teacher or would be an attractive candidate for work as a policy analyst, researcher, or staffer at the local, state, or federal level, or with a non-profit. The higher attrition rate of TFA teachers could thus be a function of the fact that traditional teacher certification programs require coursework that does

not qualify teaching students to do much other than teach, while the strong academic credentials of TFA teachers leave open a number of career paths.

Some critics also question whether TFA teachers actually perform at least as well as traditionally certified teachers, despite the substantial and persuasive body of evidence demonstrating TFA teachers' high performance level. For example, a 2010 report from the Education and Public Interest Center at the University of Colorado (EPIC) and the Education Policy Research Unit at Arizona State University (EPRU) seeks to refute evidence that TFA cites to demonstrate its

104 Toppo, USA Today.

105 Ibid.

106 Kacey Guin, "Chronic Teacher Turnover in Urban Elementary Schools," Education Policy Analysis Archives Vol. 12 no. 42 (2004): 1, accessed March 7, 2013, <http://epaa.asu.edu/ojs/article/view/197/323>.

107 Martha Abele Mac Iver and E. Sidney Vaughn III, "'But How Long Will They Stay?' Alternative Certification and New Teacher Retention in an Urban District," Educational Research Service, published 2007, accessed March 7, 2013, [http://gw.summon.serialssolutions.com/document/show?id=FETCHMERGED-eric\\_primary\\_EJ7956621&s.fvf%5B%5D=ContentType%2CNewspaper+Article%2Ct&s.q=But+How+Long+Will+They+Stay%3F%22+Alternative+Certification+and+New+Teacher+Retention+in+an+Urban+District](http://gw.summon.serialssolutions.com/document/show?id=FETCHMERGED-eric_primary_EJ7956621&s.fvf%5B%5D=ContentType%2CNewspaper+Article%2Ct&s.q=But+How+Long+Will+They+Stay%3F%22+Alternative+Certification+and+New+Teacher+Retention+in+an+Urban+District). [Hereafter Mac Iver and Vaughn III, "'But How Long Will They Stay?' Alternative Certification and New Teacher Retention in an Urban District"]

effectiveness. The report states that studies in New York and Texas demonstrate TFA's ineffectiveness. Though the authors' summary of the evidence they gathered is largely admirable, and the studies they cite that criticize New York and Texas appear legitimate, problems with their critique remain.<sup>108</sup>

In particular, the EPIC/EPRU report's criticism of a 2009 study by the Urban Institute, CALDER, Stanford University, and Duke University (CALDER Study) includes either a glaring oversight or outright dishonesty. The CALDER Study, which is quoted at length above, explored the effect of TFA teachers on North Carolina high school students, finding that TFA teachers were generally more effective than their traditionally certified colleagues. The EPIC/EPRU report correctly notes that a US Department of Education (DOE) review of the CALDER Study expresses concern that the CALDER Study's method of data collection was "somewhat imprecise" and "could lead to misleading results."<sup>109</sup> However, the EPIC/EPRU report neglected to mention that despite their reservations, the DOE nonetheless declared that the CALDER study met the evidentiary standards they require for the study to be included in the DOE's "What Works Clearinghouse."<sup>110</sup>

The EPIC/EPRU report is not the only report that includes negative evidence about the performance of TFA's teachers. A 2008 report written by scholars from Stanford University and

the University of California at Riverside attempts to summarize evidence from several studies, stating that studies of TFA “have tended to find some positive effects of TFA teachers in math performance and little effect or negative effects in English language arts (ELA).”<sup>111</sup>

The same 2008 report criticized TFA on less conventional grounds. While metrics like student test scores are more commonly used to assess teacher performance, measurements of classroom control are also useful for assessing teacher performance. Evidence is limited, since few studies use these measures, but the data that does exist reveals that TFA teachers report higher rates of physical conflict between students and greater interruptions during class to deal with student disruptions.<sup>112</sup> However, these findings should be considered in light of the fact that TFA teachers work in some of the worst schools in the country. Though data comparing the frequency of physical conflict and classroom disruption between high-performing and low-performing schools is unavailable, it is possible—and perhaps even likely—that poorly performing schools have higher rates of physical conflict and classroom disruption than better schools do, regardless of how any teacher was certified.

Another criticism of TFA is that it is expensive for taxpayers and school districts. The 2010 EPIC/EPRU report aptly outlines the multi-faceted financial argument against TFA. First, critics argue that TFA’s high attrition rate causes districts that use their teachers to incur consistently higher administrative costs due to the constant need to recruit and hire new teachers. In addition, much of TFA’s operating budget comes from governmental grants of taxpayer money. Third, TFA typically charges school districts “finder’s fees” for teachers that can total up to \$5000 per teacher.

108 Heilig and Jez, “Teach for America: A Review of the Evidence,” 5-8.

109 U.S. Department of Education, “WWC Quick Review of the Report ‘Making a Difference? The Effects of Teach for America in High School,’” U.S. Department of Education, published 2008, accessed March 7, 2013, [http://ies.ed.gov/ncee/WWC/pdf/quick\\_reviews/tfa\\_071508.pdf](http://ies.ed.gov/ncee/WWC/pdf/quick_reviews/tfa_071508.pdf). [Hereafter U.S. Department of Education, “WWC Quick Review of the Report ‘Making a Difference? The Effects of Teach for America in High School’”]; Heilig and Jez, “Teach for America: A Review of the Evidence,” 7n23-5.

110 U.S. Department of Education, “WWC Quick Review of the Report ‘Making a Difference? The Effects of Teach for America in High School.’” The EPIC/EPRU’s failure to mention that the DOE validated and endorsed the CALDER Study is particularly glaring considering that the DOE’s published review of the CALDER Study announces its endorsement in oversize, bold lettering, reading, “The research described in this report is consistent with WWC evidence standards with reservations.” The DOE’s published review of the CALDER Study is available for public viewing at the URL referenced in this note.

111 Ing and Loeb, “Assessing the Effectiveness of Teachers from Different Pathways: Issues and Results,”<sup>170</sup>.

112 Ibid., 179-80.

While there is no denying that constantly hiring new employees will increase a school's administrative expenses, several observations temper the financial argument against TFA, leaving unanswered questions about the actual financial implications for school districts that employ TFA's teachers. First, there is very little data about the financial impact that working with TFA has on school systems' finances. Even the 2010 EPIC/EPRU report, which itself lodged several financial complaints against TFA, acknowledges that much more research must be done before firm conclusions can be drawn.<sup>113</sup> Second, these financial arguments largely neglect to mention that, as new teachers, TFA teachers typically earn the smallest salaries in most school districts' teaching force, in accordance with teacher pay scales around the country. TFA's moderately higher teacher attrition thus keeps school districts' teacher salary outlays lower than they would be if prior cohorts of TFA teachers remained to progress along the prescribed pay scale. Third, TFA is funded mostly by private donations—only about 30% of its 2011 revenue came from public sources. Fourth, there is some evidence that TFA is an affordable option for school districts: The New York Times recently published an op-ed written by a New York City assistant principal who, while acknowledging that the school system is trying to cut costs, nonetheless claimed that TFA teachers are “cost effective.”<sup>114</sup>

The criticisms against TFA are largely unverified. However, TFA's recruitment and training has been found to be very effective. TFA continues to provide school systems with good teachers by attracting skilled people who may never have considered teaching otherwise.

### **Attrition Among All Alternatively Certified Teachers**

Some critics of alternative certification claim that the retention rate for alternatively certified teachers is high, keeping students from enjoying the benefits of a more experienced teacher. However, a review of the evidence demonstrates that concerns about attrition of alternatively certified teachers are mostly unfounded. Moreover, the subjects that alternatively certified teachers commonly teach may explain the alternatively certified attrition that does exist.

Several studies have found little to no difference in the attrition rates of traditionally and alternatively certified teachers. In a National Center for Education Statistics study of 1,990 public school teachers in their first year in 2007-08, the percentage of teachers who were not teaching after one year was 9.9% regardless of whether the teachers were products of traditional or alternative certification. After 2 years, only 12.2% of alternatively certified teachers were not teaching, while 12.6% of teachers who were traditionally certified were not teaching. In this study, alternatively certified teachers were therefore slightly more likely to stay in the profession than traditionally certified teachers.<sup>115</sup>

A May 2010 report by two Stanford University scholars also found little difference in attrition rates between alternatively and traditionally certified teachers, noting, “In a national sample of teachers, Grissom (2008) found that although the attrition of alternative route teachers is higher than those of teachers from traditional pathways, the differences are relatively small, with 82.3 percent of

<sup>113</sup> Heilig and Jez, “Teach for America: A Review of the Evidence,” 10-2.

114 Malissa Yung-Grubb Mootoo, “If Anything, They Work Too Hard,” The New York Times (New York, NY), Aug. 30, 2012, accessed March 7, 2013, <http://www.nytimes.com/roomfordebate/2012/08/30/is-teach-for-america-working/teach-for-america-teachers-work-too-hard>.

115 National Center for Education Statistics, “Beginning Teacher Attrition and Mobility: Results From the First Through Third Waves of the 2007-08 Beginning Teacher Longitudinal Study,” National Center for Education Statistics, accessed March 7, 2013, <http://nces.ed.gov/pubs2011/2011318/findings.asp>; National Center for Education Statistics, “Table 2. Percentage distribution of 2007–08 beginning public school teachers, by teacher status and selected 2007–08 teacher and school characteristics: 2008–09 and 2009–10,” National Center for Education Statistics, accessed March 7, 2013, [http://nces.ed.gov/pubs2011/2011318/tables/table\\_02.asp?referrer=report](http://nces.ed.gov/pubs2011/2011318/tables/table_02.asp?referrer=report).

alternative route teachers and 85.6 percent of teachers from university-based programs remaining in their schools over a one-year period.”<sup>116</sup>

A 2007 Educational Research Service study revealed similar information about teacher attrition in Baltimore, stating, ““During the first two years after their hiring date, teachers in alternative certification programs were notably more likely to remain with the system than either certified teachers or conditionally certified teachers not involved in programs. While most of the TFA teachers tended to leave by the end of year three, teachers in other alternative certification programs remained with the system at higher rates than regularly certified teachers through years four and five.”<sup>117</sup>

MSDE’s two most recent Teacher Staffing Reports offer particularly persuasive evidence that concerns about the attrition rates of alternatively certified teachers are unfounded. Both the 2010-2012 report and the 2012-2014 report make the identical claim that Maryland’s alternatively certified teachers “are remaining in teaching at levels comparable to Maryland’s Professional Development School-prepared teachers.”<sup>118</sup>

To the extent that attrition among alternatively certified teachers is a problem, the report of Governor O’Malley’s 2009 STEM Task Force offers one potential explanation: attrition among math and science teachers, regardless of certification pathway, is higher than for any other subjects. The report claimed, “The retention of mathematics and science teachers is an even greater problem than recruitment. According to national data analysis, annual turnover of mathematics teachers (16.4%) is the highest of all content areas; the rate for science teachers (15.6%) is second highest.”<sup>119</sup> Since alternative certification often consists of large numbers of science and math teachers, it may be that attrition of alternatively certified teachers may have more to do with the subjects they teach than the method of their certification.

### **Advantages of Alternative Certification Programs**

There is a large and growing body of evidence that supports the claim that alternatively certified teachers benefit school districts that employ them in a variety of ways. Alternatively certified teachers: 1) perform at least as well in the classroom, and sometimes better, than traditionally

certified teachers, especially over the long-term, 2) help increase the diversity of the teaching force by attracting higher percentages of men and racial minorities to the profession, 3) diminish the use of emergency certification, 4) expand the pool of individuals interested in becoming teachers, and 5) help close the gap between the qualifications of teachers in high-income areas and the qualifications of teachers in low-income areas.

Numerous studies have reported at least comparable classroom performance between traditionally certified teachers and teachers who were certified through TFA or ABCTE. Additional studies report similar findings for alternatively certified teachers in general. In 2011, scholars at the University of North Carolina submitted a report to a scholarly journal comparing the performance of teachers with five or fewer years of experience in North Carolina's public schools based on the certification "portal" the teachers had completed. Classifying six portals as traditional and five as alternative, the report found that alternatively certified teachers performed at least as well, or better

116 Grossman and Loeb, "Learning from Multiple Routes," 26.

117 Mac Iver and Vaughn III, "'But How Long Will They Stay?' Alternative Certification and New Teacher Retention in an Urban District."

118 "Maryland Teacher Staffing Report, 2010-2012," 44; "Maryland Teacher Staffing Report, 2012-2014," 29.

119 Governor's STEM Task Force, "'Investing in STEM to Secure Maryland's Future,'" State of Maryland, published 2009, accessed March 6, 2013, 9-10.

than, traditionally certified teachers in 8 of 11 comparisons.<sup>120</sup> In his 2011 study of alternatively certified teacher performance in Florida, Georgia State University Economics Professor Tim R. Sass similarly concluded that by removing barriers to entering the teaching profession alternative certification "can produce teachers that are as productive, or even more productive, than traditionally prepared teachers."<sup>121</sup>

In addition, a 2009 report written by scholars from Stanford University, The State University of New York, and the University of Virginia supports the positive influence of alternatively certified teachers on student achievement over the long term.<sup>122</sup> The report explored the relationship between methods of teacher certification and elementary school student achievement in New York City, ultimately emphasizing, "Learning that is grounded in the practice of teaching—such as that proxied by the capstone project, studying curricula, and oversight of student teaching—is associated positively with student achievement gains in the 1st year, and content learning—as proxied by disciplinary coursework requirements—is associated positively with learning in the 2nd year."<sup>123</sup> While acknowledging that they cannot be sure why pedagogical coursework appears more valuable in the first year and content knowledge appears more valuable in the second year, the authors proposed a very reasonable explanation, noting that "practice in the day-to-day work of teaching may facilitate teachers' transition into the classroom during their 1st year, a typically challenging time. Content knowledge is likely important for



teaching but may not distinguish more and less effective teachers until the 2nd year, when teachers are more comfortable with the basic practices of teaching.”<sup>124</sup>

Regardless of why pedagogical knowledge is important in the first year and becomes less important than content knowledge by year two, the report makes the crucial observation that “teachers with stronger preparation in day-to-day issues are relatively more effective in their 1st year, whereas those with stronger content knowledge are able to make use of that knowledge by their 2nd year,” and are presumably able to continue making use of their content knowledge.<sup>125</sup> The report’s findings thus reveal that after the first year, teachers who have greater content knowledge are in a better position to lead students to better outcomes over remainder of a teaching career. Since alternative certification exists to attract content experts to teaching, and traditional certification generally requires more pedagogical coursework than subject-based coursework, the report effectively concludes that, on the average, alternatively certified teachers will produce better student outcomes than traditionally certified teachers over the long term. The report tempers its own findings by emphasizing that their field of study is still in its infancy and by noting that the relatively demanding alternative certification requirements in New York State mean that the alternatively certified teachers they assessed in their study still completed significant teaching coursework. Yet the

120 Gary T. Henry, Charles L. Thompson, Kevin C. Bastian, C. Kevin Fortner, David C. Kershaw, Kelly M. Purtell, and Rebecca A. Zulli, “Does teacher preparation affect student achievement?,” Syracuse University, published 2011, accessed March 7, 2013, [http://www.maxwell.syr.edu/uploadedFiles/cpr/events/cpr\\_seminar\\_series/Henry\\_paper.pdf](http://www.maxwell.syr.edu/uploadedFiles/cpr/events/cpr_seminar_series/Henry_paper.pdf), 2, 27. Appendix Table 1 of this study reveals that this was a massive study, involving 1.6 million test scores, 939K students, and almost 20K teachers. The manuscript that the authors submitted to the journal appears to be an edited version of a report they released the previous summer, which is cited above and can be found at the following URL: [http://publicpolicy.unc.edu/research/Teacher Portals Teacher Preparation and Student Test Scores in North Carolina\\_2.pdf](http://publicpolicy.unc.edu/research/Teacher%20Portals%20Teacher%20Preparation%20and%20Student%20Test%20Scores%20in%20North%20Carolina_2.pdf).

121 Sass, “Certification Requirements and Teacher Quality: A Comparison of Alternative Routes to Teaching,” 21.

122 Boyd et. al., “Teacher Preparation and Student Achievement,” 416. The authors explain on page 433 that they have, in their calculations, tried to control for differences in candidates, to eliminate distortions that might be caused by some programs being better at attracting better candidates.

123 Ibid., 434.

124 Ibid.

125 Ibid., 435.

authors nonetheless conclude that their findings are “an initial indication that preservice preparation can influence teacher effectiveness, at least the effectiveness of 1st- and 2nd-year

teachers,” and emphasize that their “results do not support the hypothesis that greater opportunities to learn how students learn influence student achievement among 1st-year or 2nd-year teachers.”<sup>126</sup> The report thus questions the value of the pedagogical coursework that is the focus of most traditional certification programs and provides evidence supporting the value of an emphasis on content knowledge that characterizes most alternative certification programs.

Other research has pointed to alternative certification’s value in special education as well. An article published in a 2011 edition of the peer-reviewed Journal of the National Association for Alternative Certification dealt with first year special education teachers in Ohio. The authors found that both regular and alternatively certified teachers were adequately prepared to deal with special education populations. Though the study was small and relatively limited, measuring just GPA and standardized test scores and including only 33 teachers in one state, the study still represents an important step toward demonstrating that alternative certification can help train effective special education teachers, an area of long-term shortage in Maryland.<sup>127</sup>

Limited evidence also demonstrates that alternative certification can replace emergency certification. A 2010 article written by two Stanford University scholars explains that, for example, “from 2000 to 2004, the number of teachers in New York City entering from alternative certification grew from essentially zero to more than 2,800, largely replacing the emergency certified teachers, whose numbers dropped from 3,886 to 607.”<sup>128</sup> While more research is needed to continue assessing the impact that alternative certification has on the presence of emergency certified teachers in classrooms, the evidence that does exist suggests that alternative certification can help students avoid having a teacher who is only in a classroom because the school district failed to find anyone who was qualified.

Maryland, as well as much of the country, has long suffered shortages of male and minority teachers. Diversity in the teaching force is important because people with different backgrounds bring unique perspectives to teaching that serve to enrich our children’s education. Moreover, as TFA explains in its 2011 annual report, teachers “who share the backgrounds of the kids and families [they are] working with” are “critical to building trust and forging collaboration,” and “can be uniquely influential role models for young people in our communities.”<sup>129</sup>

A growing body of evidence shows that alternative certification is a highly effective method of increasing diversity in the teaching force. A 2010 article written by Stanford University scholars notes, “In our survey of teacher candidates in New York City, we found that 30 percent of Teach for America candidates and 31 percent of [New York City] Teaching Fellows candidates were male, compared with 22 percent in traditional education graduate programs and 7 percent in traditional undergraduate programs. Similarly, 58 percent of Teach for America candidates and 56 percent of NYC Teaching Fellows were white, compared with 67 and 63 percent of candidates from traditional graduate and undergraduate programs, respectively.”<sup>130</sup> In addition, The National Center for Education Information’s 2005 Profile of Alternative Route Teachers reported, “The alternatively certified teacher population has more males, more minorities and more older people than the population of teachers who obtain certification via the traditional route...Nearly one-third (32 percent) of entrants into teaching via alternate routes are nonwhite compared to 11 percent of the

126 Ibid., 436; 435.

127 Judy Carol Alhamisi, "Comparison of Alternative and Traditional Teacher Preparation Programs for First Year Special Education Teachers in Northwest Ohio," *Journal of the National Association for Alternative Certification* Vol. 6 no.1 (2011): 13, <http://jnaac.com/index.php/test/article/view/4/3>.

128 Grossman and Loeb, "Learning from Multiple Routes," 22.

129 "Teach for America 2011 Annual Letter," 9-10.

130 Grossman and Loeb, "Learning from Multiple Routes," 25.

current teaching force."<sup>131</sup> A 2006 study of South Carolina's Program for Alternative Certification for Educators concurred, finding that "'alternative certification in South Carolina is attracting more diverse age populations, males, and minorities and this diverse audience is performing the same as their traditionally trained counterparts.'"<sup>132</sup> Similarly, The National Center for Education Information's 2011 Profile of Teachers in the US, which was compiled using the survey responses of American public school teachers, stated, "While only 18 percent of white teachers entered teaching through alternative routes, more than half (53 percent) of Hispanic teachers, four out of 10 (39 percent) of Black teachers and one-fourth (24 percent) of teachers from all other races entered teaching through alternative routes to college campus-based teacher education programs." The same report also commented on the important role that alternative certification plays in attracting men to the teaching profession noting, "While men constitute only 16 percent of all public school teachers, one-third of them (32 percent) – compared with 22 percent of women –entered teaching through an alternative route to traditional college campus-based teacher education route."<sup>133</sup> Still another report, prepared in 2009 for the US Department of Education, explored the details of randomly selected traditional and alternative certification programs for elementary school teachers, and observed that alternative certification programs are 25% to 30% less white, 20% to 25% more black, slightly more male, and substantially more likely to have children of their own.<sup>134</sup> In sum, there can be no doubt that alternative certification has a proven track record of strengthening teaching forces throughout the country by attracting teaching candidates with more diverse backgrounds.

Ideally, both high and low income areas would have teachers whose knowledge and qualifications to teach were approximately equal. Unfortunately that is not always the case. However, limited evidence supports the claim that alternative certification can help close the qualification gap between teachers in high-income areas and teachers in low-income areas. A 2008 article in the *Journal of Policy Analysis and Management* stated, "The gap between the qualifications of New York City teachers in high-poverty schools and low-poverty schools has narrowed substantially since 2000. For example, in 2000, teachers in the highest-poverty decile of schools had math SAT scores that on average were 43 points lower than their counterparts in the lowest-poverty decile of schools. By 2005 this gap had narrowed to 23 points. The same general pattern held for other teacher qualifications such as the failure rate on the Liberal Arts and Sciences (LAST) teacher certification exam, the percentage of teachers who attended a 'least competitive' undergraduate college, and verbal SAT scores. Most of the gap-narrowing resulted

from changes in the characteristics of newly hired teachers, rather than from differences in quit and transfer rates between high and low-poverty schools. The gap-narrowing associated with new hires has been driven largely by the elimination of newly hired uncertified teachers coupled with an influx of teachers with strong academic backgrounds from alternative certification programs and, to a lesser extent, traditional teacher preparation programs. Only 5 percent of newly hired Teaching Fellows and TFA teachers in 2003 failed the LAST exam on their first attempt, while 16.2 percent of newly hired traditional teachers failed the LAST exam, and fully 32.5 percent of uncertified teachers failed the LAST exam. In 2005, 43 percent of all new teachers in the quartile of schools with the poorest students were Teaching Fellows or TFA teachers. The improvements in teacher qualifications, especially among the poorest

131 National Center for Education Information, “Profile of Alternate Route Teachers,” National Center for Education Information, accessed March 7, 2013, <http://www.ncei.com/part.html>. [Hereafter National Center for Education Information, “Profile of Alternate Route Teachers”]

132 C. Emily Feistritzer and Charlene K. Haar, “Research on Alternate Routes,” National Center for Education Information, accessed March 7, 2013, <http://www.teach-now.org/RESEARCH%20ABOUT%20ALTERNATE%20ROUTES.pdf>, 35. [Hereafter Feistritzer and Haar, “Research on Alternate Routes”]

133 C. Emily Feistritzer, “Profile of Teachers in the U.S. 2011,” National Center for Education Information, 23.

134 Constantine, et. al., “An Evaluation of Teachers Trained Through Different Routes to Certification,” xxvii.

schools, appear to have resulted in improved student achievement.”<sup>135</sup> Though more research is required to validate this study’s findings, the results point to the value of alternative certification in increasing the equality of teacher qualifications between richer and poorer areas.

Research findings also demonstrate that the availability of alternative routes to certification increases the number of people who are interested in becoming teachers—a critical finding in a time of widespread teacher shortages. A 2010 article written by two Stanford University researchers observes that removing barriers to entry to the teaching profession has “substantially expanded the pool of individuals interested in becoming teachers.”<sup>136</sup> The National Center for Education Information’s concurs, noting in their 2005 Profile of Alternative Route Teachers, “Nearly half (47 percent) of those entering teaching through alternate routes say they would not have become a teacher if an alternate route to certification had not been available.”<sup>137</sup> In his 2011 study of alternatively certified teacher performance in Florida, Georgia State University Economics Professor Tim R. Sass found that by removing barriers to entering the teaching profession, alternative certification “would appear to be an efficient mechanism for increasing the supply of teachers.”<sup>138</sup>

Research findings on alternative certification are not unanimous, particularly as they relate to comparisons with traditional certification. One study comparing traditionally and alternatively certified teachers in New Hampshire found that principals rated traditionally certified teachers

better in terms of instructional planning and instructional skill.<sup>139</sup> With a greater background in the theory and practice of teaching, traditionally certified teachers predictably show greater ability in instructional planning and skill. There is great value in that. But there is also great value in alternative certification's ability to produce teachers who perform at least as well as traditionally certified teachers, increase the diversity of the teaching force by attracting higher percentages of men and racial minorities to the profession, diminish the use of emergency certification, expand the pool of individuals who are interested in becoming teachers, and help close the gap between the qualifications of teachers in high-income areas and the qualifications of teachers in low-income areas. Alternative certification is thus more than just a means of addressing Maryland's ongoing teacher shortages—it is also a positive addition to our State's public school teaching resources in a variety of ways.

### **The Belief that Teacher Certification Law is Not Particularly Important**

There is also a large body of evidence that argues that differences in types of teacher certification have little or no impact on student outcomes. Since one of the main purposes of traditional certification is to provide training that will enhance the quality of the teaching force, such findings call into question whether traditional certification's generally more intense requirements are worthwhile.

A 2009 report prepared for the US Department of Education offers perhaps the most persuasive argument that there are few, if any, meaningful differences in teacher performance that

135 Donald Boyd, Hamilton Lankford, Susanna Loeb, Jonah Rockoff, and James Wyckoff, "The Narrowing Gap in New York City Teacher Qualifications and Its Implications for Student Achievement in High-Poverty Schools," *Journal of Policy Analysis and Management* Vol. 27 no. 4 (2008): 815, accessed March 7, 2013, <http://cepa.stanford.edu/sites/default/files/Narrowing.pdf>.

136 S. Loeb and J. Myung, "Economic Approaches to Teacher Recruitment and Retention," Center for Education Policy Analysis at Stanford University, published 2010, accessed March 7, 2013, [http://cepa.stanford.edu/sites/default/files/loeb%20Cmyung\\_Economic%20Approaches%20to%20Teacher%20Recruitment%20and%20Retention.pdf](http://cepa.stanford.edu/sites/default/files/loeb%20Cmyung_Economic%20Approaches%20to%20Teacher%20Recruitment%20and%20Retention.pdf), 475.

137 National Center for Education Information, "Profile of Alternate Route Teachers."

138 Sass, "Certification Requirements and Teacher Quality: A Comparison of Alternative Routes to Teaching," 21.

139 Ing and Loeb, "Assessing the Effectiveness of Teachers from Different Pathways: Issues and Results," 180. 31

can be traced to specific certification paths or requirements. The report explored the details of randomly selected traditional and alternative certification programs for elementary school teachers, concluding, "Students of AC [alternatively certified] teachers did not perform

statistically differently from students of TC [traditionally certified] teachers... This study found no benefit, on average, to student achievement from placing an AC teacher in the classroom when the alternative was a TC teacher, but there was no evidence of harm, either. In addition, the experimental and nonexperimental findings together indicate that although individual teachers appear to have an effect on students' achievement, we could not identify what it is about a teacher that affects student achievement. Variation in student achievement was not strongly linked to the teachers' chosen preparation route or to other measured teacher characteristics.”<sup>140</sup>

Not only did the report find that there was no statistically significant difference in the average performance of alternatively certified teachers when compared with traditionally certified teachers, it also concluded that there was no evidence that alternative certification programs that required more hours of instruction trained more effective teachers than programs that required fewer hours of instruction. The difference in required instruction time between various certification pathways is quite vast but unnecessary.<sup>141</sup> To render their comparisons more useful, researchers chose to split both the traditional and alternative programs they were assessing into “high coursework” and “low coursework” subgroups.

In comparing the demands of low-coursework traditional and alternative certification programs, the data revealed that “AC [alternatively certified] teachers from low-coursework programs were required to complete, on average, about one-quarter of the total hours of instruction overall as their TC [traditionally certified] counterparts (179 hours versus 671 hours). In addition, they were required to complete less coursework in all subject areas of interest. For example, their programs required about one-fifth the instruction in reading/language arts pedagogy (26 versus 121 hours), less than one-fourth in math pedagogy (9 versus 41 hours), and less than half in classroom management (24 versus 54 hours). All the differences were statistically significant.”<sup>142</sup>

In comparing the demands of high-coursework traditional and alternative certification programs, the data revealed that “AC teachers from high-coursework programs were required to complete, on average, less instruction than their TC counterparts, 432 hours versus 607 hours, a difference that was statistically significant. They were required to complete less coursework in two topics of interest (student assessment and child development), with the differences statistically significant. However, their programs required more instruction in classroom management (49 versus 39 hours), a difference that was statistically significant. There was no statistically significant

<sup>140</sup> Constantine, et. al., “An Evaluation of Teachers Trained Through Different Routes to Certification,” xxviii- xxx. This result is particularly noteworthy considering that the study purposely excluded alternative certification programs that have highly selective entrance requirements, like TFA, as they explained on pages xix and xx.

<sup>141</sup> Ibid., 50-2. Page 27 of the report also explains that the total numbers of hours of instruction are hours of real time, not credit hours. The authors assume 3 hours of instruction every week for 15 weeks, for a total of 45 hours of instruction for one 3-credit college course. The authors of the report are frustratingly vague on the specific method they used to determine which TC coursework counted toward their calculations of total instruction hours and which did not, saying

only that their figures were reported to them by TC program directors (37). Most universities require students to complete a series of introductory courses regardless of the student's chosen path of study. Though these courses are required of TC students, it would be misleading to include these courses in an assessment of teacher certification requirements. Fortunately, there is evidence that the program directors did not include the hours of instruction required by general course requirements in their study. Most bachelor's degrees require a total of 120 credits, which translates to 1,800 hours of instruction. Since not even the study's most labor-intensive examples approach this figure, it is clear that the hours of instruction that the report mentions do not include general introductory courses which most colleges require.

142 Ibid., 41.

difference in the amount of math pedagogy instruction (43 versus 41)."<sup>143</sup> Even though the training requirements of some programs thus exceeded the requirements of other programs by up to several hundred hours, the report could not link the additional preparation time to any meaningful differences in teacher performance. The report concluded not just that "there was no statistically significant difference in performance between students of AC teachers and those of TC teachers," but also that "there is no evidence that AC programs with greater coursework requirements produce more effective teachers." Moreover, the report concluded that "there was no statistically significant relationship between student test scores and the content of the teacher's training, including the number of required hours of math pedagogy, reading/language arts pedagogy, or fieldwork. Similarly, there was no evidence of a statistically positive relationship between majoring in education and student achievement."<sup>144</sup> The Department of Education later reviewed the study to determine whether to include it in their "What Works Clearinghouse," and decided that the study did meet their evidentiary standards.<sup>145</sup>

Similarly, a 2010 National Research Council report that covered six years of research and included twenty-five scholars and university professors from around the country concluded that there was little evidence that any particular approach to teacher certification was preferable to any another approach in terms of leading to the best student outcomes.<sup>146</sup>

The Stand for Children Leadership Center, a non-profit, non-partisan children's advocacy group, reported similar findings in a 2012 white paper, written by the Director of the Center for Education Data & Research at the University of Washington, Bothell.<sup>147</sup> The white paper asserts that an assessment of standard and alternative pathways to teaching shows "little relationship between the amount, or content, of teacher training coursework and student achievement."<sup>148</sup> The paper states that since "researchers have found that variations in effectiveness among teachers who followed the same pathway far exceed differences in average effectiveness of teachers from different pathways", the research data points to the conclusion "that the current system of qualifying teachers is not terribly predictive of effectiveness in the classroom."<sup>149</sup> The report concludes that "state-regulated licensure systems do not, in general, appear to be an effective means of screening for teacher quality."<sup>150</sup>

A 2006 report prepared for the American Education Finance Association (AEFA) by several scholars from Stanford University and the State University of New York also observes little

difference between student outcomes from traditionally prepared teachers and alternatively certified teachers. Though noting that “compared to teachers who completed a university based teacher education program, teachers with reduced coursework prior to entry often provide smaller initial gains in both mathematics and English language arts,” the authors state that “most differences disappear as the cohort matures, and many of the differences are not large in magnitude, typically 2 to 5 percent of a

143 Ibid.

144 Ibid., xviii-xix.

145 U.S. Department of Education, “WWC Quick Review of the Report ‘An Evaluation of Teachers Trained Through Different Routes to Certification,’” U.S. Department of Education, published 2009, accessed March 7, 2013, [http://ies.ed.gov/ncee/WWC/pdf/quick\\_reviews/altcert\\_072809.pdf](http://ies.ed.gov/ncee/WWC/pdf/quick_reviews/altcert_072809.pdf).

146 Committee on the Study of Teacher Preparation Programs in the United States, “Preparing Teachers: Building Evidence for Sound Policy,” National Academy of Sciences, published 2010, accessed March 7, 2013, [http://www.nap.edu/openbook.php?record\\_id=12882&page=62](http://www.nap.edu/openbook.php?record_id=12882&page=62), 62-3.; Debra Viadero, “Panel Finds No Favorite in Teacher Prep Pathways,” Education Week, accessed March 7, 2013, <http://www.edweek.org/ew/articles/2010/04/29/31teachered.h29.html>.

147 Stand for Children Leadership Center, “What We Stand For: Teachers.”

148 Goldhaber, “Education Policies and Practices and the Quality of the Teacher Workforce,” 4-5.

149 Ibid., 5.

150 Ibid., 15.

standard deviation.”<sup>151</sup> Like the white paper published by the Stand for Children Leadership Center, the AEFA’s report notes that “the variation in effectiveness within pathways is far greater than the average differences between pathways.”<sup>152</sup> The finding that there are only small, temporary differences between the performance of alternatively certified teachers and traditionally certified teachers, coupled with the observation that performance differences within pathways exceed average performance differences between pathways, support the argument that the manner of certification, whether traditional or alternative, is not a meaningful variable in predicting teacher performance.

A May 2010 article written by two Stanford University scholars also notes that “the variation in teacher effectiveness across teachers who went through the same pathways is larger than the average differences in teacher effectiveness between pathways. In other words, both alternative and university based programs have more and less effective teachers. This variation suggests that the existence of alternative routes into teaching alone, even highly selective alternative routes, cannot ensure high quality teaching and learning, particularly in high-poverty schools.”<sup>153</sup>



Indeed, even selective traditional programs can similarly not ensure positive outcomes. This report's findings thus also support the argument that the manner of certification, whether traditional or alternative, is not a meaningful variable in predicting teacher performance.

Another recent report, written by a group of scholars from Stanford University, the State University of New York, and the University of Virginia similarly observes that “within pathways programs vary in their effectiveness,” and notes that “this suggests that the policy discussion about teacher preparation should be focused on the features of programs and pathways that contribute most powerfully to successful teachers and not whether one pathway outperforms another. Given variation within pathways, policymakers are well advised to invest in the development of programs that draw on the most promising features of the more successful existing programs”<sup>154</sup> This report thus states that there is little meaningful difference between certification pathways, and policymakers would be better served to focus on other characteristics that more strongly correlate with teacher success.

A 2008 report written by scholars from Stanford University and the University of California at Riverside echoes findings that demonstrate little difference in teacher performance between certification pathways. The authors note that some studies have found “little difference in teacher effectiveness across pathways,” generally state that overall differences between pathways are not large, and mentions that other studies have found no difference between traditional and early-entry teachers in student-teacher interaction, or lesson components.<sup>155</sup> The authors even note that the evidence is mixed about whether being certified at all—either traditionally or alternatively—has much impact on student outcomes.<sup>156</sup>

A review of evidence from South Carolina, whose teaching profession was ranked number one in Education Week's most recent state-by-state rankings, also shows no difference in the performance of traditionally and alternatively certified teachers. A 2006 study comparing second- year teachers from South Carolina's Program of Alternative Certification for Educators (PACE) with traditionally certified teachers included almost 1000 teachers from 47 of South Carolina's 85 districts,

<sup>151</sup> Donald Boyd, Pamela Grossman, Hamilton Lankford, Susanna Loeb, James Wyckoff, “How Changes in Entry Requirements Alter the Teacher Workforce and Affect Student Achievement,” Center for Education Policy Analysis at Stanford University, published 2006, accessed March 7, 2013, <http://cepa.stanford.edu/sites/default/files/Reducing%20Entry%20Requirements%20EPF%202006.pdf>, 176.

<sup>152</sup> Ibid.

<sup>153</sup> Grossman and Loeb, “Learning from Multiple Routes,” 26.

<sup>154</sup> Boyd, *et.al.*, “Recruiting Effective Math Teachers, Evidence from New York City,” 25.

<sup>155</sup> Ing and Loeb, “Assessing the Effectiveness of Teachers from Different Pathways: Issues and Results,”<sup>160,176, 177, 180.</sup>

156 Ibid., 177.

and found that alternatively certified teachers were “performing the same as their traditionally trained counterparts,” with no “significant difference between any of the mean scores for the individual performance dimensions.”<sup>157</sup>

The evidence is overwhelming: there is no meaningful difference in the professional performance of traditionally and alternatively certified teachers. Given our critical teacher shortages, the fast-track nature of alternative certification, and the fact that such teachers perform the same as their traditionally certified counterparts, Maryland owes it to its children to address its policies and practices on the use of alternative teacher certification.

The educational and training requirements of traditional teacher certification are designed to enhance the quality of the teaching force. However, as study after study has found, such involved requirements have overwhelmingly failed to produce any observable effect on teacher performance.

The evidence leads to the conclusion that to strengthen its teaching force, Maryland should ease certification requirements that serve as barriers and disincentives to entering the teaching force and fully embrace the less intense requirements that characterize alternative certification. This will allow Maryland to attract greater numbers of candidates interested in teaching and get them into the classrooms more quickly, thereby helping address Maryland’s long-term teacher shortages. Less onerous certification requirements will also remove the disincentives that currently exist for smart, talented people who have a variety of career options.

### **Comparison of Maryland’s Alternative Certification Programs with Some Other States<sup>158</sup>**

Since the Maryland State Department of Education must approve alternative certification programs in Maryland, comparing programs in Maryland with programs in other states allows a useful assessment of the practical outcomes of the Maryland’s alternative certification policies. There is a tremendous variation between alternative certification programs. Indeed, a 2009 report prepared for the US Department of Education observed that required instruction time in randomly selected alternative certification programs ranged from 75 hours to 795 hours, for an average of 296 hours and a median of 252.5 hours.<sup>159</sup>

<sup>157</sup> Feistritzer and Haar, “Research on Alternate Routes,” 35.; Education Week 2013 State Report Cards.

<sup>158</sup> Arkansas and South Carolina were selected as comparison states due to the fact that those two states held Education Week’s top two teacher profession rankings in their most recent state-by-state analysis. A group of remaining comparison states were selected at random. Of these randomly selected states, the states that had requirements that were relatively easy to determine and understand were included, while states with requirements that were particularly difficult to determine or understand were left out. The author thought it important to include states whose requirements were relatively straightforward since this report is intended for a general audience. It is possible that aiming to include information that was easy to determine could result in a

selection bias towards states that have less onerous requirements, as it may be true that less onerous requirements are easier to understand and determine than more onerous requirements, which may be more detailed. Whether a methodological bias actually exists, however, is unclear since it is certainly possible for onerous certifications to be simple—indeed, it is not difficult to understand that Maryland’s student teaching requirement is 8 weeks longer than South Carolina’s. Regardless of whether the bias exists, the main point remains true, namely that the initial evidence presented here demonstrates that alternative certified teachers in Maryland generally endure more burdensome requirements than alternatively certified teachers do in a variety of other states.

159 Constantine, et. al., “An Evaluation of Teachers Trained Through Different Routes to Certification,” xxiii, 27, 35. Page 27 of the report also explains that the total numbers of hours of instruction are hours of real time, not credit hours. The authors assume 3 hours of instruction every week for 15 weeks, for a total of 45 hours of instruction for one 3-credit college course. Footnote 39 on page 27 of the report explains that the number of hours reported above includes all of the coursework that AC teachers are required to complete to finish their AC programs, including coursework that the teachers must complete after becoming the teacher of record for their classes.

Alternatively certified teachers in Maryland begin teaching with a Resident Teacher Certificate (RTC), which is good for 2 years and is non-renewable. To begin teaching, candidates must have a Bachelor’s degree, qualifying standardized test scores, have completed an internship and pre-employment training that includes 90 hours of study and instruction in teaching reading, and be enrolled in a Maryland-approved alternate preparation program. Teachers holding an RTC are eligible for the Standard Professional Certificate upon the completion of their approved alternative program, provided the teacher has received positive evaluations and subject to additional standardized testing.<sup>160</sup>

## **Maryland Examples**

Just two alternative certification programs comprise over 76% of the alternatively certified teachers hired in Maryland between 2010 and 2012: Teach for America and the Baltimore City Teaching Residency.<sup>161</sup> New TFA teachers are required to attend a 1-week induction, 5 weeks of teacher training, and a regional orientation.<sup>162</sup> TFA teachers in Maryland also continue completing training coursework during their 2-year commitment to the program.<sup>163</sup> TFA-Baltimore teachers’ additional training requirements consist of 13-18 graduate credits completed at Johns Hopkins University.<sup>164</sup> TFA-Baltimore teachers are awarded a full certification at the conclusion of the 2-year commitment and training program, provided the teachers have positive evaluations and qualifying standardized test scores.<sup>165</sup> While most of Maryland’s TFA teachers teach in Baltimore City or County, a small minority also work in Prince George’s County, which has a similar procedure for leading its TFA teachers to full certification.<sup>166</sup>

160 Requirements for Certification, 125-6.; Maryland State Department of Education, “Divisions,” Maryland State Department of Education, accessed March 7, 2013, [http://www.marylandpublicschools.org/MSDE/divisions/certification/certification\\_branch/testing\\_information/testing\\_info\\_general](http://www.marylandpublicschools.org/MSDE/divisions/certification/certification_branch/testing_information/testing_info_general).

161 Maryland Teacher Staffing Report, 2012-2014,” 44.

162 TFA “Summer Training.”

163 TFA “Teacher Certification.”

164 Johns Hopkins University School of Education, “Teach for America Partnership Program,” Johns Hopkins University School of Education, accessed March 7, 2013, <https://squirrel.adobeconnect.com/a751959191/p11yj1ykovh/?launcher=false&fcsContent=true&pbMode=normal>. See 6:30 into the presentation. Though this is not a Johns Hopkins URL, a link at the bottom of a Johns Hopkins webpage leads to this presentation. The URL for that Hopkins webpage is: <http://education.jhu.edu/Academics/masters/MSES/>. About 70% of TFA-Baltimore teachers choose to use the required training coursework towards the completion of a Master’s degree in the two-year period, as explained at this website: Teach for America, “Regional Cost Calculator,” Teach for America, accessed March 7, 2013, <http://www.teachforamerica.org/where-we-work/baltimore/expenses-and-certification>.

165 Requirements for Certification, 126.

166 While it is clear that training for TFA teachers in Prince George’s County is similar to the training in Baltimore—each goes through the same introductory training, and then completes additional training over 2 years leading to full certification—discovering precise details about Prince George’s County’s TFA teachers was very difficult. TFA teachers in Prince George’s County reportedly complete monthly professional development training, but information about additional requirements remains unclear. Laura E. Lee, “Teach for America teachers get cutting-edge training,” The Sentinel (Montgomery County, MD), Aug. 18, 2010, accessed March 7, 2013, <http://www.thesentinel.com/pgs/news/Teach-for-America-workshops>; Teach for America, “Regional Cost Calculator,” Teach for America, accessed March 7, 2013, <http://www.teachforamerica.org/where-we-work/dc-region/expenses-and-certification>. The Maryland State Department of Education’s overview of the TFA-Prince George’s Country program reads, “Once they become teachers of record, the teachers receive intensive and ongoing support and professional development throughout their two-year employment while on the Resident Teacher Certificate. This support includes classroom observations; individualized feedback; targeted, concrete resources; reflective, data-driven consultations with supervisors; and content-specific learning groups designed by Teach For America.” Maryland State Department of Education, “Maryland Approved Alternative Teacher Preparation Programs Directory.”

In sum, TFA teachers in Maryland are required to complete 325 hours of pre-service training, followed by additional training over the first two years of teaching that the Maryland State Department of Education has described as “intensive...[including] classroom observations; individualized feedback; targeted, concrete resources; reflective, data-driven consultations with supervisors; and content-specific learning groups designed by Teach For America.”<sup>167</sup> TFA teacher training in Maryland therefore substantially exceeds the 296 hour average and the 252.5 hour median that characterized randomly selected alternative certification programs in 2009.

The Baltimore City Teaching Residency describes itself as “a highly selective program that trains accomplished professionals and recent college graduates to become effective teachers in traditionally underserved Baltimore schools.” The program “seek[s] candidates who want to bring their knowledge, experience, and records of achievement to the classrooms where their leadership is needed most.”<sup>168</sup> The program is indeed selective, admitting just 11% of applicants in 2012, but requires applicants to have just a 2.75 undergraduate GPA to qualify.<sup>169</sup>

Accepted candidates complete rigorous training prior to entering the classroom. BCTR’s website explains, “Candidates accepted into the program begin their commitment by completing a concentrated period of independent study prior to participating in an intensive six-week training institute using a curriculum focused on improving outcomes in schools where students lag several grade levels behind. This period is followed by additional independent study to further prepare for teaching in the fall...During the six-week summer program, Residents will participate in training activities five days a week from approximately 8:00 a.m. to 7:00 p.m. daily.”<sup>170</sup> Despite the long hours and heavy workload of the summer training, BCTR teachers do not draw an income during the summer training period. Instead, BCTR teachers pay a hefty sum to participate in the training— \$6100 for regular teachers, and \$7600 for special education teachers.<sup>171</sup>

Training continues even after candidates begin teaching. BCTR teachers undergo two different courses of study while already teaching.<sup>172</sup> One of the courses deals with literacy training, teaching BCTR teachers skills that in many cases are completely unrelated to the subject the candidate is teaching. The literacy training consists of either 13 or 18 2.5-hour long sessions depending on whether the teacher is teaching elementary school students or adolescent students.<sup>173</sup> The simultaneously required Teaching for Results training consists of 18 3-hour sessions for all teachers, involving one meeting every other week. Special Education teachers complete an additional year of 18 3-hour sessions.

<sup>167</sup> Maryland State Department of Education, “Maryland Approved Alternative Teacher Preparation Programs Directory,” Maryland State Department of Education, published 2011, accessed March 7, 2013, <http://www.tttmaryland.org/pdf/MAAPPDirectoryUpdatedMay2011.pdf>.

<sup>168</sup> Baltimore City Teaching Residency, “Program Overview,” Baltimore City Teaching Residency, accessed March 7, 2013, <http://bcteachingresidency.ttrack.org/AboutUs/ProgramOverview.aspx>.

<sup>169</sup> Baltimore City Teaching Residency, “Who We Want,” Baltimore City Teaching Residency, accessed March 7, 2013, <http://bcteachingresidency.ttrack.org/AboutUs/WhoWeWant.aspx>.

<sup>170</sup> Baltimore City Teaching Residency, “Pre-Service Training,” Baltimore City Teaching Residency, accessed March 7, 2013, <http://bcteachingresidency.ttrack.org/YourTeachingCareer/TrainingInstitute.aspx>.

<sup>171</sup> Baltimore City Teaching Residency, “FAQ,” Baltimore City Teaching Residency, accessed March 7, 2013, <http://bcteachingresidency.ttrack.org/FAQ.aspx>. These sums cover the candidate

for the pre-service training and the training that continues during the school year.  
<http://bcteachingresidency.ttrack.org/YourTeachingCareer/TNTPAcademy.aspx>

172 Baltimore City Teaching Residency, “TNTP Academy,” Baltimore City Teaching Residency, accessed March 7, 2013,  
<http://bcteachingresidency.ttrack.org/YourTeachingCareer/TNTPAcademy.aspx>; Baltimore City Teaching Residency, “A Focus on Literacy Instruction,” Baltimore City Teaching Residency, accessed March 7, 2013,  
<http://bcteachingresidency.ttrack.org/YourTeachingCareer/LiteracyCoursework.aspx>.

173 Baltimore City Teaching Residency, “A Focus on Literacy Instruction,” Baltimore City Teaching Residency, accessed March 7, 2013,  
<http://bcteachingresidency.ttrack.org/YourTeachingCareer/LiteracyCoursework.aspx>.

Since the RTC is only valid for two years and is non-renewable, BCTR teachers must therefore complete a bevy of coursework at great expense just to keep their jobs as teachers in a city that has a teacher shortage. Despite the additional expense of the ongoing training, BCTR teachers are forced to abide by the same salary structure as their colleagues.<sup>174</sup> BCTR teachers gain full certification after 2 years, provided they have positive evaluations and are able to satisfy standardized testing requirements.<sup>175</sup>

In sum, BCTR participants spend an indeterminate amount of time involved in independent study and as a part of an internship, and train for between 300 and 330 unpaid hours over the summer prior to starting work. They spend an additional 32.5 – 45 hours during the school year completing literacy training that is not relevant to the areas of greatest need in the Baltimore school system (math, science, technology, etc.), and dedicate another 54 hours to completing additional training during the school year. Not including independent study time or internship training, BCTR’s training totals between 386.5 and 429 hours of training just during the first year, well in excess of the 296 hour average and the 252.5 hour median that characterized randomly selected alternative certification programs in 2009. Participating in the program comes at a cost of either \$6100 or \$7600 for new teachers working in difficult and sometimes unsafe areas for modest pay.

In 2007, the National Council on Teacher Quality published a report that summed up the purpose of alternative certification: to streamline a process of allowing talented, subject matter experts to teach without imposing onerous requirements on them.<sup>176</sup> BCTR’s intense requirements thus miss the point of alternative certification.

## **Mississippi**

A number of alternative certification paths in Mississippi place far more reasonable demands on teaching candidates. Mississippi accepts ABCTE certification with a simple, straightforward procedure that leads to full certification. Prospective teachers need only have a Bachelor’s degree, pass ABCTE’s exams, pay their fees, and acquire a teaching position. Candidates are mentored for a year, and complete their choice of 2 graduate courses, a 3-week summer training course, or an 8- week online course, culminating with full certification.<sup>177</sup> The Teach

Mississippi Institute uses a similar procedure, requiring candidates to have a Bachelor's degree and passing scores on standardized tests. Candidates are awarded a full teaching certificate after being mentored for 1 year and completing an 8-week training course, which can be done online.<sup>178</sup> The Mississippi Master of Arts in Teaching is another similar program, requiring candidates to hold a Bachelor's degree and to pass standardized tests. Candidates can begin teaching upon completion of 2 graduate courses, which yields a 3-year non-renewable certificate. The 3-year certification changes to a 5-year full teaching certificate with the completion of 1 year of teaching and six graduate credit hours, at least part of which can be satisfied by the year of teaching.<sup>179</sup> Candidates do not have to actually complete the

174 Baltimore City Teaching Residency, "Your Teaching Position," Baltimore City Teaching Residency, accessed March 7, 2013, <http://bcteachingresidency.ttrack.org/YourTeachingCareer/YourTeachingPosition.aspx>.

175 Requirements for Certification, 126.

176 Walsh and Jacobs, "Alternative Certification Isn't Alternative," 7.

177 American Board for Certification of Teacher Excellence, "How It Works in Mississippi," American Board for Certification of Teacher Excellence, accessed March 7, 2013, <http://abcte.org/certification/how-it-works/how-it-works-in-mississippi/>; Requirements for Certification, 150-1.

178 Mississippi Department of Education, "Teach Mississippi Institute," Mississippi Department of Education, accessed March 7, 2013, [http://www.mde.k12.ms.us/docs/educator-licensure/teach-mississippi-institute-\(tmi\).pdf?sfvrsn=0](http://www.mde.k12.ms.us/docs/educator-licensure/teach-mississippi-institute-(tmi).pdf?sfvrsn=0); Requirements for Certification, 150.

179 Mississippi Department of Education, "Master of Arts in Teaching," Mississippi Department of Education, accessed March 7, 2013, <http://www.mde.k12.ms.us/docs/school-improvement-library/master-of-art-in-teaching.pdf?sfvrsn=0>; Mississippi Department of Education, "Educator Licensure," Mississippi Department of Education, accessed March 7, 2013, <http://www.mde.k12.ms.us/educator-licensure/alternate-route-programs>.

Master's Degree to gain certification through the Master of Arts in Teaching program. The Mississippi Alternate Path to Quality Teachers is another similar program, requiring a Bachelor's degree, qualifying scores on standardized tests, and an undergraduate GPA of either 2.0 or 2.75, depending how long ago the candidate completed undergraduate work. Candidates then complete a 90-hour training course at a community college to gain an initial 1-year certificate. This can be turned into a full teaching certificate with 1 year of mentoring on the job and the completion of 1 Saturday per month training session for 9 months. The total cost of the training is about \$2000.<sup>180</sup> Alternative certification in Mississippi thus places far less intense demands on alternative certification candidates than alternative certification in Maryland generally does.

## Florida

Several alternative certification routes in Florida also place very reasonable demands on prospective teachers. These alternative certification options also do not require the completion of traditional university education courses while teaching, leaving new teachers with more time to adjust to the demands of their new careers.<sup>181</sup>

Throughout Florida, local school districts have the right to run their own alternative certification programs at the district level. To gain certification through this District Alternative Certification option, candidates must hold a Bachelor's degree, pass a general knowledge exam, a professional education exam, and a subject certification exam, and complete a training program.<sup>182</sup> Training programs vary somewhat between districts but are usually web-based and typically include "an initial assessment of skills, an individualized training plan, mentoring, a training curriculum that targets a set of 'accomplished teacher practices' and summative assessment that documents mastery of the practices."<sup>183</sup> Candidates complete the training program while already working in a Florida school district.<sup>184</sup> Training varies in length for different districts and even different candidates—the threshold for completing training appears to be determined on a case-by-case basis.<sup>185</sup> Those who complete the district training program and pass the exams receive a Florida Professional Certificate, which is valid for 5 years and is renewable.<sup>186</sup>

<sup>180</sup> Mississippi Community College Foundation, "Mississippi Alternate Path to Quality Teachers Training Institute Application," Northwest Mississippi Community College, accessed March 7, 2013, [http://www.northwestms.edu/careercenter/pdfs/Alt\\_Path\\_to\\_Quality\\_Teachers\\_Trng\\_Inst\\_Appln.pdf](http://www.northwestms.edu/careercenter/pdfs/Alt_Path_to_Quality_Teachers_Trng_Inst_Appln.pdf); Mississippi Department of Education, "Mississippi Alternate Path to Quality Teachers," Mississippi Department of Education, accessed March 7, 2013, [http://www.mde.k12.ms.us/docs/school-improvement-library/ms-alternate-path-to-quality-teachers-\(mapqt\).pdf?sfvrsn=0](http://www.mde.k12.ms.us/docs/school-improvement-library/ms-alternate-path-to-quality-teachers-(mapqt).pdf?sfvrsn=0); Mississippi Community College Foundation, "MAPQT," Mississippi Community College Foundation, accessed March 7, 2013, <http://mccfms.org/mapqt>.

<sup>181</sup> Sass, "Certification Requirements and Teacher Quality: A Comparison of Alternative Routes to Teaching," 20.

<sup>182</sup> Florida Department of Education, "Pathways to a Professional Certificate in Florida," Florida Department of Education, accessed March 7, 2013, <http://www.fldoe.org/edcert/pdf/Profoptions.pdf>; Florida Department of Education, "Certificate Types and Requirements," Florida Department of Education, accessed March 7, 2013, [http://www.fldoe.org/edcert/cert\\_types.asp](http://www.fldoe.org/edcert/cert_types.asp).

<sup>183</sup> Sass, "Certification Requirements and Teacher Quality: A Comparison of Alternative Routes to Teaching," 9-10.

<sup>184</sup> Florida Department of Education, "Program Overview," Florida Department of Education, accessed March 7, 2013, <https://www.altcertflorida.org/programoverview.htm>.



185 TeachingCertification.com, “Alternative teaching Certification in Florida,” TeachingCertification.com, accessed March 7, 2013, <http://www.teaching-certification.com/teaching/florida-alternative-teaching-certification.html>.

186 Florida Department of Education, “Pathways to a Professional Certificate in Florida,” Florida Department of Education, accessed March 7, 2013, <http://www.fldoe.org/edcert/pdf/Profoptions.pdf>.; Florida Department of Education, “Certificate Types and Requirements,” Florida Department of Education, accessed March 7, 2013, [http://www.fldoe.org/edcert/cert\\_types.asp](http://www.fldoe.org/edcert/cert_types.asp).

Another option for alternative certification in Florida is the Educator Preparation Institute (EPI). Open to anyone with a Bachelor’s degree, EPI requirements can typically be met with the completion of seven courses at a community college and limited field experience. Coursework includes in-person meetings and online instruction. Applicants can gain the 5-year, renewable Florida Professional Certificate by completing the program and passing the three Florida certification exams.<sup>187</sup>

Florida’s ABCTE procedure is even easier—participants are issued a 3-year, non-renewable temporary certificate simply for having possessing a Bachelor’s degree and a certificate verifying their completion of ABCTE’s training. Participants can then attain a renewable, 5-year Florida Professional Certificate simply by demonstrating “competence in the classroom.”<sup>188</sup>

Florida also offers a full Florida Professional Certificate to anyone who has taught full-time at a community college or university for two semesters, provided that the applicant is able to pass the state’s subject certification exam. These former college professors are exempted from the General and Professional Examinations.<sup>189</sup>

While none of these options require participants to complete education coursework while working full-time as a teacher, Florida’s policies do still allow for that option. Anyone with a Bachelor’s degree that either majored in a selected content area or can pass a Florida Subject Area Examination can be awarded a temporary, non-renewable teaching certificate that is valid for 3 years. Participants then have 3 years to complete one of the alternative pathways.<sup>190</sup>

The wide variety of alternative certification programs that Florida has embraced makes it somewhat difficult to compare each state’s alternative certification status quo to the other. The requirements of Florida’s district preparation programs and Educator Preparation Institute are similar to certification requirements of Maryland’s two primary alternative certification programs. Yet the requirements of Florida’s ABCTE procedure and Professional Certificate are far easier than anything Maryland offers. It is therefore fair to conclude that Florida’s alternative certification requirements are generally less intense than Maryland’s.

It is worth noting that limited research into the performance of teachers produced by Florida’s alternative certification programs reveals mixed findings, with some programs producing more successful teachers than traditional certification, and others producing less successful teachers. A 2011 report written by a Georgia State University Economics Professor Tim R. Sass compared traditional and alternative certification programs in Florida, observing, “The value added of

district- alternative certification teachers is generally on par with that of recent Florida teacher preparation program graduates. In contrast, the value-added scores of EPI completers are often three to four percent of a standard deviation below those of traditionally prepared teachers. Most stark are the differences in the performance of ABCTE teachers relative to traditionally prepared teachers in math.

187 Sass, “Certification Requirements and Teacher Quality: A Comparison of Alternative Routes to Teaching,” 10; Florida Department of Education, “Pathways to a Professional Certificate in Florida,” Florida Department of Education, accessed March 7, 2013, <http://www.fldoe.org/edcert/pdf/Profoptions.pdf>.

188 Florida Department of Education, “Pathways to Full State Certification in Florida,” Florida Department of Education, accessed March 7, 2013, <http://www.fldoe.org/edcert/pdf/Pathways.pdf>.

189 Florida Department of Education, “Pathways to a Professional Certificate in Florida,” Florida Department of Education, accessed March 7, 2013, <http://www.fldoe.org/edcert/pdf/Profoptions.pdf>; Sass, “Certification Requirements and Teacher Quality: A Comparison of Alternative Routes to Teaching,” 10.

190 Florida Department of Education, “Pathways to Full State Certification in Florida,” Florida Department of Education, accessed March 7, 2013, <http://www.fldoe.org/edcert/pdf/Pathways.pdf>; Florida Department of Education, “Certificate Types and Requirements,” Florida Department of Education, accessed March 7, 2013, [http://www.fldoe.org/edcert/cert\\_types.asp](http://www.fldoe.org/edcert/cert_types.asp).

Across a variety of model specifications and test metrics ABCTE teachers outperform their traditionally prepared colleagues by a wide margin – six to eleven percent of a standard deviation. Like previous findings for TFA teachers, the performance of ABCTE teachers is generally equivalent to that of preparation program graduates in promoting achievement in reading.”<sup>191</sup> On the whole, it is fair to say that alternative certification in Florida generally produces teachers who are just as effective as traditional certification.

## **South Carolina**

The most recent Education Week state-by-state rankings placed South Carolina’s teaching profession as the best in the country.

Prospective teachers who hold an ABCTE certificate are automatically eligible to teach in South Carolina’s public schools for one year, and can continue working for two additional years if the candidate receives positive reviews. Candidates can progress to the full Professional certificate simply by completing 3 years of successful teaching and additional testing.<sup>192</sup>

South Carolina also maintains a Program of Alternative Certification for Educators (PACE). To be eligible for the program, candidates need only have a Bachelor’s degree, a passing score on a subject matter exam, an acceptable background check, and either a Master’s degree or 2 years of

full time work experience.<sup>193</sup> Candidates begin teaching after completing 10 days of training.<sup>194</sup> The PACE certificate is valid for up to three years while candidates complete the requirements to progress to the full Professional Certification, which includes the completion of three years of teaching with successful evaluations, the completion of a mentoring program, the completion of 3 continuing education college courses, passing scores on 2 additional standardized tests, and the completion of an additional 16 days of training during weekends and the summer over two years.<sup>195</sup>

Like Florida's alternative certification requirements, South Carolina's alternative certification requirements render a comparison with Maryland difficult. South Carolina's PACE program appears similar, or perhaps slightly less intense, than the requirements that most alternatively certified teachers face in Maryland. Yet there is no doubt that South Carolina's ABCTE program is much less onerous than anything that is available in Maryland. It is therefore fair to conclude that South Carolina's alternative certification requirements are moderately less intense than Maryland's.

## **Arkansas**

The most recent Education Week state-by-state rankings named Arkansas's teaching profession second best in the country.<sup>196</sup>

The Arkansas Professional Pathway to Educator Licensure is one of Arkansas's alternative certification programs. To qualify, candidates must have a Bachelor's degree with at least a 2.5 GPA, pass background checks, and pass certain standardized tests that vary based on the candidate's teaching assignment. Certain subjects also require candidates to have completed 3 college credits of Arkansas history, and/or 6 college credits of instruction in teaching reading. Candidates complete 15 days of training during the summer before their first year, and again before their second year.

<sup>191</sup> Sass, "Certification Requirements and Teacher Quality: A Comparison of Alternative Routes to Teaching," 20-1.

<sup>192</sup> Requirements for Certification, 238.

<sup>193</sup> South Carolina Department of Education, "South Carolina Educator Certification Manual," South Carolina Department of Education, published 2012, accessed March 7, 2013, <http://ed.sc.gov/agency/act/se/ec/cert/certpdf/teachercertificationmanual.pdf>, 83-4. [Hereafter South Carolina Department of Education, "South Carolina Educator Certification Manual"]

<sup>194</sup> South Carolina Department of Education, "PACE Training," South Carolina Department of Education, accessed March 7, 2013, <http://www.ed.sc.gov/agency/programs-services/193/PACETraining.cfm>.

<sup>195</sup> Ibid.; South Carolina Department of Education, "South Carolina Educator Certification Manual," 79-85.

196 Education Week 2013 State Report Cards.

Candidates also have one Saturday training session per month for the first two years. The program also includes mentorship for the new teachers. The program costs \$1200 per year, for a total cost of \$2400.<sup>197</sup> Participants receive a full Arkansas Standard Teaching License at the conclusion of the program, provided that participants also complete the 60 hours of continuing education that is required for all Arkansas teachers to retain their certification.<sup>198</sup>

Arkansas also offers a Provisional Professional Teaching License, which aims to attract experienced professionals with subject matter expertise to teach in Arkansas's public schools either full-time or part-time. To qualify, candidates need to possess a Bachelor's degree, at least 3 years of professional experience in the content area of the class to be taught, pass certain standardized testing requirements, pass a background check, and have 2 letters of recommendation. Participants must complete 30 hours of training in pedagogy within 1 year of receiving their Provisional License. Participants gain the full Arkansas Standard Teaching License after 3 years of teaching with positive evaluations, provided that participants also complete the 60 hours of continuing education that is required for all Arkansas teachers to retain their certification.<sup>199</sup> In sum, there is little doubt that Arkansas's alternative certification requirements are less intense than Maryland's.

While more research is needed to see how the demands of Maryland's most commonly used alternative certification programs compare with all other states' programs, initial evidence strongly indicates that alternative certification in Maryland is significantly more onerous than in most other states—including states whose teaching professions rank higher than Maryland's. In particular, the initial evidence indicates that Maryland's coursework demands of teachers who are transitioning into teaching are relatively intense, effectively deterring potential candidates from entering the teaching profession and contributing to Maryland's long term teacher shortages.

### **Comparison of Maryland's Traditional Certification Laws with Some Other States<sup>200</sup>**

<sup>197</sup> Arkansas Department of Education, "Arkansas Professional Pathway to Educator Licensure," Arkansas Department of Education, accessed March 7, 2013, [http://www.teacharkansas.org/non-trad-lic-program%202010.html#Program\\_Description](http://www.teacharkansas.org/non-trad-lic-program%202010.html#Program_Description).

<sup>198</sup> Arkansas Department of Education, "Routes to Educator Licensure," Arkansas Department of Education, accessed March 7, 2013, <http://www.arkansased.org/divisions/human-resources-educator-effectiveness-and-licensure/educator-licensure-unit/routes-to-educator-licensure>. [Hereafter Arkansas Department of Education, "Routes to Educator Licensure"]; Arkansas Department of Education, "Arkansas Department of Education Rules Governing Educator Licensure," Arkansas Department of Education, accessed March 7, 2013, [http://www.arkansased.org/public/userfiles/HR\\_and\\_Educator\\_Effectiveness/HR\\_Educator\\_Licensure/Rules\\_for\\_Ed\\_Licensure\\_with\\_Emergency\\_Licensure\\_Rules.pdf](http://www.arkansased.org/public/userfiles/HR_and_Educator_Effectiveness/HR_Educator_Licensure/Rules_for_Ed_Licensure_with_Emergency_Licensure_Rules.pdf), 34-5. [Hereafter "Arkansas Department of Education Rules Governing Educator Licensure"]

199 Arkansas Department of Education, “Routes to Educator Licensure.”; Arkansas Department of Education, “Arkansas Department of Education Rules Governing Educator Licensure,” Arkansas Department of Education, accessed March 7, 2013, [http://www.arkansased.org/public/userfiles/HR\\_and\\_Educator\\_Effectiveness/HR\\_Educator\\_Licensure/Rules\\_for\\_Ed\\_Licensure\\_with\\_Emergency\\_Licensure\\_Rules.pdf](http://www.arkansased.org/public/userfiles/HR_and_Educator_Effectiveness/HR_Educator_Licensure/Rules_for_Ed_Licensure_with_Emergency_Licensure_Rules.pdf), 34-5.

200 Arkansas and South Carolina were selected as comparison states due to the fact that those two states held Education Week’s top two teacher profession rankings in their most recent state-by-state analysis. A group of remaining comparison states were selected at random. Of these randomly selected states, the states that had requirements that were relatively easy to determine and understand were included, while states with requirements that were particularly difficult to determine or understand were left out. The author thought it important to include states whose requirements were relatively straightforward since this report is intended for a general audience. It is possible that aiming to include information that was easy to determine could result in a selection bias towards states that have less onerous requirements as it may be true that less onerous requirements are easier to understand and determine than more onerous requirements, which may be more detailed. Whether a methodological bias actually exists, however, is unclear since it is certainly possible for onerous certifications to be simple—indeed, it is not difficult to understand that Maryland’s student teaching requirement is 8 weeks longer than South Carolina’s. Regardless of whether the bias exists, the main point remains true, namely that the initial evidence presented here demonstrates that Maryland’s traditional certification requirements are more burdensome than a number of other states’.

## **Maryland**

An overwhelming body of research clearly indicates that certification requirements have little, if any, impact on teacher performance. With that in mind, and with Maryland’s traditional certification laws a demonstrated failure, a comparison of Maryland’s traditional certification laws with those of other states is a useful way of assessing how Maryland can become more competitive in the national market for teachers, with a goal of ending its short and long-term teacher shortages.<sup>201</sup>

To attain traditional certification as an elementary or secondary school teacher in Maryland, candidates are required to complete a Bachelor’s degree that includes 27 credit hours of education courses, including 12 hours of coursework in reading instruction for elementary school teachers, and 6 hours for secondary school teachers. State law also requires candidates to complete a 100-day teaching internship over the course of two semesters, regardless of whether candidates are pursuing traditional certification in an undergraduate or graduate program.<sup>202</sup> Applicants must also achieve acceptable standardized test scores.<sup>203</sup> Once gaining the initial certification, candidates are then required to complete 6 semester hours of acceptable continuing education credit within 5 years, ultimately leading to the required completion of a Master’s degree within 10 years.<sup>204</sup>

Maryland’s traditional certification laws have a number of obvious deficiencies. Maryland law would require even a subject-matter expert who has a bachelor’s degree and is interested in teaching to go back to school and complete the specific extra coursework requirements, unless

the expert pursued an alternative certification program, which most of Maryland's school districts do not hire new teachers from. The required reading instruction coursework forces even someone seeking to teach an STEM subject at the high school level to learn how to teach others to read, despite the fact that the demands of teaching a STEM subject would never require teaching anyone to read. The requirement to complete a Master's degree within 10 years remains despite the fact that a Maryland

201 For the purposes of this section, "traditional certification" refers to each state's existing protocol for teaching candidates to complete a state-approved teacher education program with a Bachelor's degree at an in- state college or university. It is important to make this distinction because some states, including Maryland and Maine, offer what might be called "Alternative Traditional Certification," whereby teaching candidates can gain certification not by completing a teacher preparation program, but by having completing certain prescribed coursework on an ad hoc basis independently.

202 University of Maryland, Baltimore County, "UMBC Master of Arts in Teaching," University of Maryland, Baltimore County, accessed March 6, 2013, [http://www.umbc.edu/education/programs/12\\_Months\\_SEC\\_MAT/index.php](http://www.umbc.edu/education/programs/12_Months_SEC_MAT/index.php); Washington College, "Teacher Certification," Washington College, accessed March 6, 2013, <http://www.washcoll.edu/departments/education/teachercertification.php>.

203 Requirements for Certification, 123-5.; COMAR 13A.12.02.06, available at <http://www.dsd.state.md.us/comar/getfile.aspx?file=13a.12.02.06.htm> ; COMAR 13A.12.02.04, available at <http://www.dsd.state.md.us/comar/getfile.aspx?file=13a.12.02.04.htm> ; COMAR 13A.12.01.05, available at <http://www.dsd.state.md.us/comar/getfile.aspx?file=13a.12.01.05.htm>; COMAR 13A.12.02, available at [http://www.dsd.state.md.us/comar/SubtitleSearch.aspx?search=13A.12.02.\\*](http://www.dsd.state.md.us/comar/SubtitleSearch.aspx?search=13A.12.02.*); Maryland State Department of Education, "FAQ," Maryland State Department of Education, accessed March 6, 2013, [http://www.marylandpublicschools.org/MSDE/divisions/certification/certification\\_branch/faq](http://www.marylandpublicschools.org/MSDE/divisions/certification/certification_branch/faq).; Calvert Institute for Policy Research, "Maryland's Protective Tariff Against Teachers."

204 Bernard J. Sadusky to Members of the State Board of Education, January 24, 2012, "Presentation of the Final Report of the Reconfiguration of the Current Certification Structure and Summary of PSTEB Deliberations," Maryland Association of Boards of Education, accessed March 6, 2013, <http://www.mabe.org/wp-content/uploads/2012/02/PSTEBCertReconfigReport2012.pdf>.; Requirements for Certification, 123-5.

Department of Education work group reported in 2011 that "the preponderance of educational research conducted over the last 50 years" demonstrates that advanced degrees do not help teachers to be more effective. MSDE reported that "on the average," Master's degrees in education for a teacher bear no direct relation to student achievement.<sup>205</sup>

Maryland law thus requires a specific number of education credits, specific work in reading instruction, standardized testing, a lengthy student teaching assignment, and the completion of six credits of continuing education within 5 years and a Master's degree within 10 years.

## **South Carolina**

With the top-ranked teaching profession in the country, according to the most recent Education Week state-by-state rankings, it is useful to compare Maryland's traditional certification policies with South Carolina's. To qualify for an Initial Certificate through traditional certification, applicants must complete a State Department of Education approved Bachelor's or Master's degree program, pass a background check, and complete standardized testing requirements.<sup>206</sup> To gain approval from the State Board of Education, teacher preparation programs must secure accreditation from the National Council for Accreditation of Teacher Education, which does not impose specific coursework requirements on programs seeking approval.<sup>207</sup> The State Board of Education's regulations require candidates pursuing traditional certification to complete 12 weeks of student teaching.<sup>208</sup> Moving from the Initial Certificate to the Professional Certificate is automatic after 3 years, provided the application has had positive evaluations.<sup>209</sup> To renew the 5-year Professional Certificate, candidates are required to complete 120 state-approved renewal credits, with every graduate course taken satisfying 60 credits.<sup>210</sup>

Unlike Maryland, South Carolina does not specifically require candidates seeking traditional certification to complete a specific number of education credits, or training in reading instruction. South Carolina's required student teaching tenure is 8 weeks shorter than Maryland's. Like Maryland, candidates in South Carolina are required to complete standardized testing requirements and 6 credits of continuing education coursework every 5 years, but unlike Maryland, teachers in South Carolina are not required to complete a Master's degree within 10 years. Maryland's traditional certification policies, as prescribed by state law and regulations, are therefore substantially more demanding than South Carolina's.

<sup>205</sup> Bernard J. Sadusky to Members of the State Board of Education, January 24, 2012, "Presentation of the Final Report of the Reconfiguration of the Current Certification Structure and Summary of PSTEB Deliberations," Maryland Association of Boards of Education, accessed March 6, 2013, <http://www.mabe.org/wp-content/uploads/2012/02/PSTEBCertReconfigReport2012.pdf>.

<sup>206</sup> South Carolina Department of Education, "South Carolina Educator Certification Manual," 13-15.

<sup>207</sup> South Carolina Department of Education, "Policy Guidelines for South Carolina Educator Preparation Units," South Carolina Department of Education, published 2006, accessed March 7, 2013, <http://www.scteachers.org/educate/edpdf/boardpolicy.pdf>, iii. [Hereafter South Carolina Department of Education, "Policy Guidelines for South Carolina Educator Preparation Units"]; <http://www.ncate.org/Standards/NCATEUnitStandards/FAQAboutStandards/tabid/406/Default.aspx#faq2>

208 South Carolina Department of Education, “Policy Guidelines for South Carolina Educator Preparation Units,” 2.

209 South Carolina Department of Education, “Initial to Professional Procedure,” South Carolina Department of Education, accessed March 7, 2013, <http://ed.sc.gov/agency/se/Educator-Certification-Recruitment-and-Preparation/Certification/Initialtoprofess.cfm>.

210 South Carolina Department of Education, “Recertification,” South Carolina Department of Education, accessed March 7, 2013, <http://ed.sc.gov/agency/se/Educator-Certification-Recruitment-and-Preparation/Certification/Recertification.cfm>. There are also several credential classifications for the Professional Certificate: Bachelor’s degree, Bachelor’s degree plus 18 hours, Master’s degree, and Master’s degree plus 30 hours. Though this clear progression of teacher qualification exists, there is no evidence that the state requires teachers to progress along this path. On this point, see also: South Carolina Department of Education, “South Carolina Educator Certification Manual,” 18-9.

## **Arkansas**

With the second-ranked teaching profession in the country, according to the most recent Education Week state-by-state rankings, it is useful to compare Maryland’s traditional certification policies with Arkansas’s. To qualify for an Initial Teaching License through traditional certification, candidates first need to complete an accredited teacher preparation program and have a Bachelor’s degree. Teacher preparation programs are required to gain accreditation from the Council for the Accreditation of Educator Preparation, which does not require specific coursework for its approval.<sup>211</sup> Candidates also need to pass 3 standardized tests, have a favorable background check, and complete 12 weeks of student teaching.<sup>212</sup> Candidates for certain subjects must also complete a course in Arkansas history, and are sometimes also required to complete coursework in reading instruction. The Initial License is valid for 1-3 years, is non-renewable, and requires participants to complete an induction program, which involves mentorship and the completion of another standardized test. Upon completion of the induction program, candidates are awarded the full Standard License, which is valid for 5 years and is renewable.<sup>213</sup> To renew the Standard License, teachers need to complete 60 clock hours of professional development every year, with teachers receiving 6 hours of credit for every Professional Development day that is built into the school calendar. Professional development credit also includes professional development work during the school day, time spent training to teach Advanced Placement courses, and 15 hours for every relevant 3 credit college course completed.<sup>214</sup>

Unlike Maryland, Arkansas does not specifically require candidates seeking traditional certification to complete a specific number of education credits, or training in reading instruction. The completion of a single course in Arkansas history is the only specific course Arkansas requires, and it does not require it of all teaching candidates. Arkansas’s required student teaching tenure is 8 weeks shorter than Maryland’s. Though Arkansas’s standardized testing and continuing education requirements are similar to Maryland’s, teachers in Arkansas are not required to complete a Master’s degree within 10 years of entering the profession. Like South Carolina, Arkansas’s procedures for traditionally certifying and retaining teachers are thus



substantially less burdensome than Maryland's. Yet Educating Week ranked both South Carolina's and Arkansas's teaching professions higher than Maryland's in their most recent state-by-state rankings, providing strong

211 Arkansas Department of Education, "Routes to Educator Licensure.," Council for the Accreditation of Educator Preparation, "CAEP Standards for Accreditation or Educator Preparation," Council for the Accreditation of Educator Preparation, accessed March 7, 2013, <http://caepnet.org/accreditation-options/standards/>.

212 Arkansas Department of Education, "Protocol for the Review and Approval of Programs of Study Leading to Educator Licensure or Endorsement in Arkansas," Arkansas Department of Education, accessed March 7, 2013, [http://www.arkansased.org/public/userfiles/HR\\_and\\_Educator\\_Effectiveness/Educator\\_Prep/Protocol\\_for\\_Approving\\_Ed\\_Prep\\_Programs\\_Revised\\_4-1-101.pdf](http://www.arkansased.org/public/userfiles/HR_and_Educator_Effectiveness/Educator_Prep/Protocol_for_Approving_Ed_Prep_Programs_Revised_4-1-101.pdf), 8.

213 Arkansas Department of Education, "Rules Covering Initial, Standard/Advanced Level and Provisional Teacher Licensure," Arkansas Department of Education, published 2010, accessed March 7, 2013, [http://www.arkansased.org/public/userfiles/Legal/Legal-Current%20Rules/ade\\_261\\_teacher\\_licensure\\_0710\\_current.pdf](http://www.arkansased.org/public/userfiles/Legal/Legal-Current%20Rules/ade_261_teacher_licensure_0710_current.pdf), 3-9.

214 Arkansas Department of Education, "Rules Governing Professional Development," Arkansas Department of Education, published 2012, accessed March 7, 2013, [http://www.arkansased.org/public/userfiles/HR\\_and\\_Educator\\_Effectiveness/HR\\_Educator\\_Licensure/ADE\\_Professional\\_Development\\_Rules\\_-\\_April\\_2012.pdf](http://www.arkansased.org/public/userfiles/HR_and_Educator_Effectiveness/HR_Educator_Licensure/ADE_Professional_Development_Rules_-_April_2012.pdf), 2-5.

evidence that Maryland's relatively intense requirements are not producing better teaching profession than states with less intense requirements.<sup>215</sup>

## **Wyoming**

Wyoming provides another interesting example of how some other states structure their traditional certification requirements. Candidates must complete an accredited teacher education program from a college or university. The education program is valid if accredited by any one of eleven different accrediting organizations. The program must include some student teaching, but there is no evidence that the state specifies how much student teaching candidates must complete. Candidates must also secure their education program's recommendation for licensure, complete a background check, complete standardized testing requirements, and demonstrate knowledge of US and Wyoming constitutions.<sup>216</sup> To remain certified, teachers need only complete 5 credits of college or state-approved workshop credits every 5 years.<sup>217</sup> It is thus substantially easier to become a teacher in Wyoming, and to remain a teacher in Wyoming, than it is in Maryland.

## **Maine**

To be traditionally certified in Maine candidates must complete a bachelor's degree and a state-approved teacher education program. To gain state-approval, teacher education programs must be accredited by any one of at least seven accrediting bodies.<sup>218</sup> Though all teaching candidates

must complete at least one course in “teaching exceptional students in the regular classroom,” Maine does not require any additional specific coursework.<sup>219</sup> Candidates must also secure passing scores on standardized tests, and complete 15 weeks of student teaching.<sup>220</sup> After 2 years, the Provisional Certificate can become a full Professional Certificate, which is valid for 5 years and is renewable, with the completion of 6 credit hours of approved study and a recommendation.<sup>221</sup>

Though Maine and Maryland maintain similar standardized testing and basic recertification requirements, Maine requires that traditional certification candidates complete far fewer specific courses than Maryland does. Maine also requires 5 fewer weeks of student teaching than Maryland, and does not require teachers to earn a Master’s degree within 10 years of certification. Maine’s traditional certification requirements are therefore substantially less burdensome than Maryland’s.

215 To be sure, Education Week’s state-by-state rankings are an imperfect metric for assessing teaching performance. Yet the rankings are meaningful nonetheless, both because Education Week is a respected publication, and because Maryland’s leadership frequently cites the rankings when attempting to demonstrate the State’s excellence in education. This study continually cites the Education Week rankings in an effort to address Maryland’s teaching force on Maryland’s leadership’s own terms.

216 Wyoming Professional Teaching Standards Board, “Wyoming Licensure Requirements,” Wyoming Professional Teaching Standards Board, accessed March 7, 2013, <http://ptsb.state.wy.us/Licensure/BecomingLicensed/tabid/65/Default.aspx>; Wyoming Professional Teaching Standards Board, “How do I know for sure if the program I completed or want to take is accredited?,” Wyoming Professional Teaching Standards Board, accessed March 7, 2013, <http://ptsb.state.wy.us/EducationResources/ApprovedUniversityPrograms/RegionalAccreditingBodies/tabid/120/Default.aspx>.

217 Requirements for Certification, 288-91.; Wyoming Professional Teaching Standards Board, “Wyoming Educator Renewal,” Wyoming Professional Teaching Standards Board, accessed March 7, 2013, <http://ptsb.state.wy.us/LinkClick.aspx?fileticket=mXYduE8FLk8%3d&tabid=94>.

218 State of Maine, “Rule Chapters for the Department of Education,” State of Maine, accessed March 7, 2013, <http://www.maine.gov/sos/cec/rules/05/chaps05.htm>. [Hereafter State of Maine, “Rule Chapters for the Department of Education”] See Chapter 115, Part 1, Page 14.

219 Ibid. See Chapter 115, Part 2, Page 8.

220 Requirements for Certification, 119 – 120.; State of Maine, “Rule Chapters for the Department of Education.” See Chapter 13, Page 1.; Maine Revised Statutes, Title 20-A, Part 6, Chapter 502, available at the following URL: <http://www.mainelegislature.org/legis/statutes/20-a/title20-Asec13012.html>.

221 Requirements for Certification, 120.; State of Maine, “Rule Chapters for the Department of Education.” See Chapter 115, Part 1, Page 16-7.

While much more research is needed to evaluate Maryland’s teacher certification requirements in comparison with other states, initial evidence strongly indicates that Maryland’s traditional certification process is particularly onerous— more onerous than even states whose teaching professions rank higher than Maryland’s. Though Maryland’s requirements for a Bachelor’s degree, passing scores on standardized tests, and recertification appear consistent with what other states require, none of the other four states included in this initial survey require teachers to complete a Master’s degree within 10 years of initial certification. Also, compared to other states, Maryland’s 20-week student teaching requirement is particularly intense. As of 2006, only 3 states required more than 15 full weeks of student teaching before achieving teacher certification in a traditional program. Twenty-one states required between 10 and 15 weeks, 5 required less than 10 weeks, 10 required one semester, and 5 states do not require any student teaching. Maryland’s 20- week requirement therefore exceeds most other states by a substantial margin.<sup>222</sup> Since people respond to incentives, and to disincentives, there is little doubt that Maryland’s burdensome certification requirements have made a significant contribution to the state’s long-term teacher shortages.

## **Conclusion**

Maryland’s public schools consistently suffer from shortages of qualified, knowledgeable teachers, especially in science, math, technology, foreign language, special education, and English for Speakers of Other Languages. They also suffer from broad geographical teacher shortages as well as shortages of male and minority teachers. The shortages have been largely caused by Maryland’s particularly burdensome traditional teacher certification policies that are barriers and disincentives to entering the teaching profession. These ongoing shortages have been exacerbated by Maryland’s failure to embrace alternative certification pathways, which have played a key role in preventing teacher shortages all over the country. The argument that alternative certification should be discouraged because the educational and training requirements of traditional certification enhance the quality of the teaching force is clearly false. Study after study has found that such involved requirements have overwhelmingly failed to produce any observable effect on teacher performance.

In fact, many studies have reported that alternatively certified teachers outperform their traditionally certified counterparts.

Without a policy change, Maryland’s public schools will continue to suffer from shortages of qualified teachers in critical subjects, geographical teacher shortages, and shortages of male and minority teachers. Yet Maryland can make substantial progress toward resolving their shortage of public school teachers by altering and curtailing state-mandated certification requirements. Also, Maryland should emulate other states that have had positive results in teacher performance, staffing and diversity by more actively employing alternative certification pathways.

222 Susanna Loeb, Luke C. Miller, and Katherine O. Strunk, “The State Role in Teacher Professional Development and Education Throughout Teachers’ Careers,” Center for Education

Policy Analysis at Stanford University, published 2009, accessed March 7, 2013, <http://cepa.stanford.edu/sites/default/files/the%20state%20role%20in%20teacher%20professional%20development.pdf>, 217, 217n4.; Calvert Institute for Policy Research, “Maryland’s Protective Tariff Against Teachers.”

## **Appendix: Career, Technology, and Computer Science Teachers in Maryland**

In 2009, a Governor’s Task Force on Science, Technology, Engineering, and Mathematics (STEM) observed, “In a global economy, America’s competitive edge depends in large measure on how well our schools prepare tomorrow’s workforce...Maryland’s economy is dependent on a workforce with strong technology skills.”<sup>223</sup> The Task Force ultimately concluded, “If we are to educate our citizens for the jobs of the future, we need to offer the quality of education that... introduce them to exciting career possibilities...and draw on talented workforce mentors who are willing to share their experiences.”<sup>224</sup> Considering the clear importance of career, technology, and computer science training in today’s economy and society, a brief assessment of Maryland’s performance in producing teachers for these crucial subjects is warranted.

For over a decade, Maryland’s public schools have consistently suffered from shortages of career, technology, and computer science teachers. Each of the seven available Maryland Teacher Staffing Reports published since 2001 declare a “critical shortage” of career and technology teachers, and each of the nine reports available since 1997 declare a “critical shortage” of computer science teachers.

As this report has explained, Maryland can make substantial progress towards solving its long-term teaching shortages by easing traditional certification requirements and embracing alternative certification. This is particularly true for career, technology, and computer science education—areas of study for which Maryland’s traditional certification pathways have consistently failed to meet state’s public school staffing needs.

The 23 colleges and universities that produce traditionally certified teachers in Maryland generated only 13 career, technology, and computer science teaching candidates in 2010-2011, the most recent year for which data was available. Of these 13 candidates, 10 were Business Education teachers, one taught Agriculture, one taught Technology Education, and one taught Computer Science. Maryland’s traditional certification programs did not produce a single teacher of Data Processing, Family & Consumer Sciences, Health Occupations, Marketing Education, or Trades and Industry in 2010- 2011.<sup>225</sup>

These most recent figures constitute the latest installment in a pattern of failures on the part of Maryland’s traditional certification outlets to provide the state with more than a few career, technology, and computer science teachers each year. Indeed, Maryland’s traditional certification outlets produced a total of just 15 career, technology, and computer science teaching candidates in 2008-2009, just 16 in 2006-2007, just 13 in 2004-2005, 11 in 2002-2003, and 13 in 2001-2002, and did not produce a single Health Occupations or Trades & Industry teaching candidate in any of the six most recent years for which MSDE figures are available.

The table below reveals that even if Maryland’s public schools hired every career, technology, and computer science teaching candidate produced by Maryland’s traditional certification outlets in Maryland in each year of the past decade for which data is available, in-state traditional certification would still account for a decade-long, statewide average of only about 12% of inexperienced, new hires for these subjects. Put differently—for every one career, technology, and computer science teaching candidate produced by in-state traditional certification, the State’s public schools hired at least seven similarly inexperienced teachers of the same subjects from other training avenues. Traditional certification of career, technology, and computer science teachers in Maryland is thus failing by a factor of seven.

223 Governor’s STEM Task Force, ”Investing in STEM to Secure Maryland’s Future,” State of Maryland, published 2009, accessed March 6, 2013, 2.

224 Ibid., 29.

225 “Maryland Teacher Staffing Report, 2012-2014,” 35-6.

*Number of Maryland-prepared Traditionally Certified (TC) Career, Technology, and Computer Science (C, T, & CS) Teachers by Year, As Percentage of Total New C, T, & CS Hires*

Year	Number of C,T, & CS Traditionally Certified Teaching Candidates Produced in MD	Total Number of Inexperienced New C,T, & CS Teachers Hired in MD Public Schools	Maximum Possible % of Inexperienced New C,T, & CS Teachers Produced by TC in MD
2010-2011	13	102	12.7%
2008-2009	15	92 <sup>226</sup>	16.3%
2006-2007	16	135 <sup>227</sup>	11.9%
2004-2005	13	170 <sup>228</sup>	7.6%
2002-2003	11	105	10.5%
2001-2002	13	114 <sup>229</sup>	11.4%

Sources: Maryland Teacher Staffing Reports<sup>230</sup>

In its own publications, Maryland’s government has already acknowledged that solving its shortages of career, technology and computer science teachers will require that the usual certification requirements be adjusted and that the state more fully embrace alternative certification. Taking note of Maryland’s consistent, long-term teacher shortages in a number of areas, including career, technology, and computer science, the 2008 report of The Maryland Teacher Shortage Task Force observed, “Attracting undergraduates majoring in high-demand content areas and attracting career-changers, especially in high-demand areas, are part of building a quality teacher corps. But career-changers need routes to the classroom that cost relatively little in terms of money or time, and graduates in high-demand fields typically have appealing and varied career options, with higher salaries, outside education. Consequently, *recruiting well requires skillful marketing but also program flexibility, multiple options, and incentives.*[emphasis added]”<sup>231</sup>

Nonpartisan state publications have also acknowledged that alternative certification can help Maryland solve its shortage of career, technology, and computer science teachers. The Governor's 2009 Task Force on STEM, subjects which are closely related to and incorporate coursework in career preparation, technology, and computer science, stated that to help attract enough teachers to solve Maryland's STEM teacher shortage, "Maryland must ... expand access to Maryland's alternative preparation programs for STEM career-changers and retirees."<sup>232</sup> Moreover, MSDE noted in 2012 that "one of the goals of [alternative certification in Maryland] is to increase the number if teachers in shortage areas," which includes career, technology, and computer science, and stated that alternative certification "has been very successful in Maryland."<sup>233</sup> In 2010, MSDE explained that alternative certification "has assisted the local school systems to hire highly qualified teachers in content areas of critical need," including "the recurring shortage areas of computer science...and

226 Numbers included in the report are from 2009-2010.

227 Numbers included in the report are from the beginning of the 2007-08 school year through October 2007.

228 Numbers included in the report are from the beginning of the 2005-06 school year through October 2005.

229 Numbers included in the report are from the beginning of the 2002-03 school year through October 2002.

230 "Maryland Teacher Staffing Report, 2012-2014," 11, 36.; "Maryland Teacher Staffing Report, 2010-2012," 51, 22.; "Maryland Teacher Staffing Report, 2008-2010," 56, 28.; "Maryland Teacher Staffing Report, 2006- 2008," 47, 21.; "Maryland Teacher Staffing Report, 2004-2006," 44, 20.; "Maryland Teacher Staffing Report, 2003-2005," 43, 21.

231 "Maryland Teacher Shortage Task Force Report," 2-3.

232 Governor's STEM Task Force, "Investing in STEM to Secure Maryland's Future," State of Maryland, published 2009, accessed March 6, 2013, 11.

233 "Maryland Teacher Staffing Report, 2012-2014," 42-3.

technology education."<sup>234</sup> Yet despite alternative certification's success in helping find Career, Technology, and Computer Science teachers and the state's own urging to expand the use of alternative certification for these subjects, most of Maryland's school systems do not even have an alternative certification program, as explained in the report above.

As Maryland's STEM Task Force and Teacher Shortage Task Force have both acknowledged, career-changers represent a valuable pool of possible teaching candidates for subjects that Maryland has shortages of, including career education, technology, and computer science. Yet, as the main report demonstrates, Maryland's relatively onerous traditional and alternative

certification pathways function as disincentives to anyone considering entering the teaching profession, including career- changers.

Unlike Maryland, at least two states have already implemented special teacher certification procedures that aim to attract career-changers to teaching by easing their path to entering the profession. The two states—Arkansas and South Carolina— both possess teaching professions that Education Week ranked higher than Maryland’s in their most recent state-by-state rankings. South Carolina’s program specifically aims to smooth the process to certification for career and technology education career-changers. To begin teaching under South Carolina’s career and technology alternative certification program, candidates need only prove that they spent at least 12 months working full-time in the certificate area in which they seek certification, provide two professional references, have a high school diploma, and secure a full-time or part-time teaching position. Career- changers then have up five years to satisfy standardized testing requirements, secure the necessary positive evaluations, and complete 18 days of training and 6 credit hours of continuing education before being awarded a full South Carolina Professional Certificate.<sup>235</sup>

Arkansas also aims to attract experienced professionals with subject matter expertise to teach in Arkansas’s public schools either full-time or part-time by offering a Provisional Professional Teaching License. To qualify, candidates need to possess a Bachelor’s degree, at least 3 years of professional experience in the content area of the class to be taught, pass certain standardized testing requirements, pass a background check, and have 2 letters of recommendation. Participants must complete 30 hours of training in pedagogy within 1 year of receiving their Provisional License. Participants gain the full Arkansas Standard Teaching License after 3 years of teaching with positive evaluations, provided that participants also complete the 60 hours of continuing education that is required for all Arkansas teachers to retain their certification.<sup>236</sup> Maryland should move toward addressing its shortage of career, technology, and computer science teachers by emulating Arkansas and South Carolina and enacting teacher certification policies that consciously seek to attract career- changers to the teaching profession. To be competitive, productive members of society, it is imperative that Maryland’s public schools provide students with a solid background in career, technology, and computer science education. Yet for over a decade, the state’s public schools have done students a disservice by failing to provide enough teachers to train students in these crucial subjects. Moving forward, Maryland can make substantial progress toward addressing its career, technology, and computer science teaching shortage by easing traditional certification requirements and increasing their reliance on alternative certification. In doing this, the State will remove disincentives the entering the profession and attract more teaching candidates.

234 “Maryland Teacher Staffing Report, 2010-2012,” 58; 56.

235 South Carolina Department of Education, “South Carolina Educator Certification Manual,” 91-5.; South Carolina Department of Education, “South Carolina Career & Technology Education Work-Based Certification Checklist,” South Carolina Department of Education, accessed March 28, 2013, <http://ed.sc.gov/agency/se/Educator-Certification/documents/Certificationchecklist.pdf>, 1-4.

236 Arkansas Department of Education, "Routes to Educator Licensure."; "Arkansas Department of Education Rules Governing Educator Licensure," 34-5.

## **Bibliography**

Alhamisi, Judy Carol. "Comparison of Alternative and Traditional Teacher Preparation Programs for First Year Special Education Teachers in Northwest Ohio." *Journal of the National Association for Alternative Certification* Vol. 6 no.1 (2011): 13-25.

<http://jnaac.com/index.php/test/article/view/4/3>.

American Board for Certification of Teacher Excellence. "ABCTE Program Checklist."

American Board for Certification of Teacher Excellence. Accessed March 7, 2013.

<http://www.abcte.org/wp/wp-content/uploads/2012/10/Program-Checklist-print.pdf>.

American Board for Certification of Teacher Excellence. "About ABCTE." American Board for Certification of Teacher Excellence. Accessed March 7, 2013. <http://abcte.org/about-us/>.

American Board for Certification of Teacher Excellence. "Financial Aid." American Board for Certification of Teacher Excellence. Accessed March 7, 2013.

<http://abcte.org/teach/pricing/financial-aid/>.

American Board for Certification of Teacher Excellence. "How It Works." American Board for Certification of Teacher Excellence. Accessed March 7, 2013. <http://abcte.org/certification/how-it-works/>.

American Board for Certification of Teacher Excellence. "How It Works in Mississippi."

American Board for Certification of Teacher Excellence. Accessed March 7, 2013.

<http://abcte.org/certification/how-it-works/how-it-works-in-mississippi/>.

American Board for Certification of Teacher Excellence. "How It Works in Pennsylvania."

American Board for Certification of Teacher Excellence. Accessed March 7, 2013.

<http://abcte.org/certification/how-it-works/how-it-works-in-pennsylvania/>.

Amos, Jessica. "A Godsend to Low-Income Communities." *The New York Times* (New York, NY), August 31, 2012. Accessed March 7, 2013.

<http://www.nytimes.com/roomfordebate/2012/08/30/is-teach-for-america-working/a-godsend-to-low-income-communities>.

Arkansas Department of Education. "Arkansas Department of Education Rules Governing Educator Licensure." Arkansas Department of Education. Accessed March 7, 2013.

[http://www.arkansased.org/public/userfiles/HR\\_and\\_Educator\\_Effectiveness/HR\\_Educator\\_Licensure/Rules\\_for\\_Ed\\_Licensure\\_with\\_Emergency\\_Licensure\\_Rules.pdf](http://www.arkansased.org/public/userfiles/HR_and_Educator_Effectiveness/HR_Educator_Licensure/Rules_for_Ed_Licensure_with_Emergency_Licensure_Rules.pdf).

Arkansas Department of Education. "Arkansas Professional Pathway to Educator Licensure."

Arkansas Department of Education. Accessed March 7, 2013.

[http://www.teacharkansas.org/non-trad-lic-program%202010.html#Program\\_Description](http://www.teacharkansas.org/non-trad-lic-program%202010.html#Program_Description).

Arkansas Department of Education. "Protocol for the Review and Approval of Programs of Study Leading to Educator Licensure or Endorsement in Arkansas." Arkansas Department of Education. Accessed March 7, 2013. [http://www.arkansased.org/public/userfiles/HR\\_and\\_Educator\\_Effectiveness/Educator\\_Prep/Protocol\\_for\\_Approving\\_Ed\\_Prep\\_Programs\\_Revised\\_4-1-101.pdf](http://www.arkansased.org/public/userfiles/HR_and_Educator_Effectiveness/Educator_Prep/Protocol_for_Approving_Ed_Prep_Programs_Revised_4-1-101.pdf).

Arkansas Department of Education. "Routes to Educator Licensure." Arkansas Department of Education. Accessed March 7, 2013. <http://www.arkansased.org/divisions/human-resources-educator-effectiveness-and-licensure/educator-licensure-unit/routes-to-educator-licensure>.

Arkansas Department of Education. "Rules Covering Initial, Standard/Advanced Level and



Provisional Teacher Licensure.” Arkansas Department of Education. Published 2010. Accessed March 7, 2013. [http://www.arkansased.org/public/userfiles/Legal/Legal-Current%20Rules/ade\\_261\\_teacher\\_licensure\\_0710\\_current.pdf](http://www.arkansased.org/public/userfiles/Legal/Legal-Current%20Rules/ade_261_teacher_licensure_0710_current.pdf).

Arkansas Department of Education. “Rules Governing Professional Development.” Arkansas Department of Education. Published 2012. Accessed March 7, 2013. [http://www.arkansased.org/public/userfiles/HR\\_and\\_Educator\\_Effectiveness/HR\\_Educator\\_Licensure/ADE\\_Professional\\_Development\\_Rules\\_-\\_April\\_2012.pdf](http://www.arkansased.org/public/userfiles/HR_and_Educator_Effectiveness/HR_Educator_Licensure/ADE_Professional_Development_Rules_-_April_2012.pdf).

Baltimore City Teaching Residency. “A Focus on Literacy Instruction.” Baltimore City Teaching Residency. Accessed March 7, 2013. <http://bcteachingresidency.ttrack.org/YourTeachingCareer/LiteracyCoursework.aspx>.

Baltimore City Teaching Residency. “FAQ.” Baltimore City Teaching Residency. Accessed March 7, 2013. <http://bcteachingresidency.ttrack.org/FAQ.aspx>.

Baltimore City Teaching Residency. “Pre-Service Training.” Baltimore City Teaching Residency. Accessed March 7, 2013. <http://bcteachingresidency.ttrack.org/YourTeachingCareer/TrainingInstitute.aspx>.

Baltimore City Teaching Residency. “Program Overview.” Baltimore City Teaching Residency. Accessed March 7, 2013. <http://bcteachingresidency.ttrack.org/AboutUs/ProgramOverview.aspx>.

Baltimore City Teaching Residency. “TNTP Academy.” Baltimore City Teaching Residency. Accessed March 7, 2013. <http://bcteachingresidency.ttrack.org/YourTeachingCareer/TNTPAcademy.aspx>.

Baltimore City Teaching Residency. “Who We Want.” Baltimore City Teaching Residency. Accessed March 7, 2013. <http://bcteachingresidency.ttrack.org/AboutUs/WhoWeWant.aspx>.

Baltimore City Teaching Residency. “Your Teaching Position.” Baltimore City Teaching Residency. Accessed March 7, 2013. <http://bcteachingresidency.ttrack.org/YourTeachingCareer/YourTeachingPosition.aspx>.

Boyd, Donald, Hamilton Lankford, Susanna Loeb, Jonah Rockoff, and James Wyckoff. “The Narrowing Gap in New York City Teacher Qualifications and Its Implications for Student Achievement in High-Poverty Schools.” *Journal of Policy Analysis and Management* Vol. 27 no. 4 (2008): 793-818. Accessed March 7, 2013 <http://cepa.stanford.edu/sites/default/files/Narrowing.pdf>.

Boyd, Donald, Pamela Grossman, Hamilton Lankford, Susanna Loeb, James Wyckoff. “How Changes in Entry Requirements Alter the Teacher Workforce and Affect Student Achievement.” Center for Education Policy Analysis at Stanford University. Published 2006. Accessed March 7, 2013. <http://cepa.stanford.edu/sites/default/files/Reducing%20Entry%20Requirements%20EPF%202006.pdf>.

Boyd, Donald J., Pamela L. Grossman, Hamilton Lankford, Susanna Loeb, and James Wyckoff. “Teacher Preparation and Student Achievement.” *Educational Evaluation and Policy Analysis* Vol. 31, no. 4 (2009): 416-440. Accessed March 6, 2013. <http://cepa.stanford.edu/sites/default/files/Preparation%20and%20Achievement.pdf>.

Boyd, Donald, Pamela Grossman, Hamilton Lankford, Susanna Loeb, Matthew Ronfeldt, and James Wyckoff. “Recruiting Effective Math Teachers, Evidence from New York City.” Center for Education Policy Analysis at Stanford University. Accessed March 6, 2013. <http://cepa.stanford.edu/sites/default/files/NYC%20Math%20Teachers%20AERJ%20revision.pdf>.

Calvert Institute for Policy Research. "Maryland's Protective Tariff Against Teachers." Calvert Institute for Policy Research. Published 2012. Accessed March 6, 2013.

[http://www.calvertinstitute.org/?post\\_type=post&p=1191](http://www.calvertinstitute.org/?post_type=post&p=1191).

Center for Education and Policy Analysis at Stanford University. "Assessing the Effectiveness of Teachers from Different Pathways: Issues and Results." Center for Education Policy Analysis at Stanford University. Accessed March 7, 2013. <http://cepa.stanford.edu/content/assessing-effectiveness-teachers-different-pathways-issues-and-results>.

COMAR 13A.12.01.05

COMAR 13A.12.02

COMAR 13A.12.02.04

COMAR 13A.12.02.06

Committee on the Study of Teacher Preparation Programs in the United States. "Preparing Teachers: Building Evidence for Sound Policy." National Academy of Sciences. Published 2010. Accessed March 7, 2013. [http://www.nap.edu/openbook.php?record\\_id=12882&page=62](http://www.nap.edu/openbook.php?record_id=12882&page=62).

Constantine, Jill, Daniel Player, Tim Silva, Kristin Hallgren, Mary Grider, and John Deke. "An Evaluation of Teachers Trained Through Different Routes to Certification." Institute of Education Sciences. Published 2009. Accessed March 6, 2013.

<http://www.eric.ed.gov/PDFS/ED504313.pdf>.

Council for the Accreditation of Educator Preparation. "CAEP Standards for Accreditation or Educator Preparation." Council for the Accreditation of Educator Preparation. Accessed March 7, 2013. <http://caepnet.org/accreditation-options/standards/>.

Dillon, Sam. "Education Department Deals Out Big Awards." The New York Times (New York, NY), Aug. 5, 2010. Accessed March 7, 2013.

[http://www.nytimes.com/2010/08/05/education/05grants.html?\\_r=2&](http://www.nytimes.com/2010/08/05/education/05grants.html?_r=2&).

Education Week. "State Report Cards." Education Week. Published 2013. Accessed March 6, 2013. [http://www.edweek.org/ew/qc/2013/state\\_report\\_cards.html](http://www.edweek.org/ew/qc/2013/state_report_cards.html).

Feistritzer, C. Emily and Charlene K. Haar. "Research on Alternate Routes." National Center for Education Information. Accessed March 7, 2013. <http://www.teach-now.org/RESEARCH%20ABOUT%20ALTERNATE%20ROUTES.pdf>.

Feistritzer, C. Emily. "Profile of Teachers in the U.S. 2011." National Center for Education Information. Published 2011. Accessed March 6, 2013.

[http://www.ncei.com/Profile\\_Teachers\\_US\\_2011.pdf](http://www.ncei.com/Profile_Teachers_US_2011.pdf).

Florida Department of Education. "Certificate Types and Requirements." Florida Department of Education. Accessed March 7, 2013. [http://www.fldoe.org/edcert/cert\\_types.asp](http://www.fldoe.org/edcert/cert_types.asp).

Florida Department of Education. "Pathways to Full State Certification in Florida." State of Florida. Published 2006. Accessed March 7, 2013.

<http://www.fldoe.org/edcert/pdf/Pathways.pdf>.

Florida Department of Education. "Pathways to a Professional Certificate in Florida." Florida Department of Education. Accessed March 7, 2013.

<http://www.fldoe.org/edcert/pdf/Profoptions.pdf>.

Florida Department of Education. "Program Overview." Florida Department of Education. Accessed March 7, 2013. <https://www.altcertflorida.org/programoverview.htm>.

Goldhaber, Dan. "Education Policies and Practices and the Quality of the Teacher Workforce." Stand for Children Leadership Center. Published 2012. Accessed March 7, 2013.

<http://standleadershipcenter.org/sites/standleadershipcenter.org/files/media/WWSF-Teachers.pdf>.

Governor's Commission on Quality Education in Maryland, The. "September 2005 Report." State of Maryland. Published 2005. Accessed March 7, 2013.

<http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/000000/000600/unrestricted/20050867e.pdf>.

Governor's STEM Task Force. "Investing in STEM to Secure Maryland's Future." State of Maryland. Published 2009. Accessed March 6, 2013.

[http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/012000/012098/unrestricted/20090986e.pdf#xml=http://127.0.0.1/taxis/search/pdfhi.txt?query=%22Maryland+Teacher+Staffing+Report%22&pr=msa\\_coll&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&rlead=500&rdepth=0&sufs=0&order=r&mode=&opts=adv&cq=&sr=-1&id=4e2705e22b](http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/012000/012098/unrestricted/20090986e.pdf#xml=http://127.0.0.1/taxis/search/pdfhi.txt?query=%22Maryland+Teacher+Staffing+Report%22&pr=msa_coll&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&rlead=500&rdepth=0&sufs=0&order=r&mode=&opts=adv&cq=&sr=-1&id=4e2705e22b).

Grossman, Pam and Susanna Loeb. "Learning from Multiple Routes." Educational Leadership (May 2010): 22-27. Accessed March 6, 2013. [http://cepa.stanford.edu/sites/default/files/grossman%20loeb\\_Learning%20From%20Multiple%20Routes.pdf](http://cepa.stanford.edu/sites/default/files/grossman%20loeb_Learning%20From%20Multiple%20Routes.pdf).

Guin, Kacey. "Chronic Teacher Turnover in Urban Elementary Schools." Education Policy Analysis Archives Vol. 12 no. 42 (2004): 1-30. Accessed March 7, 2013.

<http://epaa.asu.edu/ojs/article/view/197/323>.

Heilig, Julian Vasquez. "A Glorified Temp Agency." The New York Times (New York, NY), August 31, 2012. Accessed March 7, 2013,

<http://www.nytimes.com/roomfordebate/2012/08/30/is-teach-for-america-working/teach-for-america-is-a-glorified-temp-agency>.

Heilig, Julian Vasquez and Su Jin Jez. "Teach for America: A Review of the Evidence." National Education Policy Center. Published 2010. Accessed March 6, 2013.

<http://nepc.colorado.edu/publication/teach-for-america>.

Henry, Gary T., Charles L. Thompson, Kevin C. Bastian, C. Kevin Fortner, David C. Kershaw, Kelly M. Purtell, and Rebecca A. Zulli. "Does teacher preparation affect student achievement?." Syracuse University. Published 2011. Accessed March 7, 2013. [http://www.maxwell.syr.edu/uploadedFiles/cpr/events/cpr\\_seminar\\_series/Henry\\_paper.pdf](http://www.maxwell.syr.edu/uploadedFiles/cpr/events/cpr_seminar_series/Henry_paper.pdf).

Henry, Gary T., Charles L. Thompson, Kevin C. Bastian, C. Kevin Fortner, David C. Kershaw, Kelly M. Purtell, and Rebecca A. Zulli. "Portal Report: Teacher Preparation and Student Test Scores in North Carolina." Carolina Institute for Public Policy. Published 2010. Accessed March 7, 2013. [http://publicpolicy.unc.edu/research/Teacher\\_Portals\\_Teacher\\_Preparation\\_and\\_Student\\_Test\\_Scores\\_in\\_North\\_Carolina\\_2.pdf](http://publicpolicy.unc.edu/research/Teacher_Portals_Teacher_Preparation_and_Student_Test_Scores_in_North_Carolina_2.pdf).

Ing, Marsha and Susanna Loeb. "Assessing the Effectiveness of Teachers from Different Pathways: Issues and Results." Center for Education Policy Analysis at Stanford University. Accessed March 6, 2013. <http://cepa.stanford.edu/sites/default/files/Assessingtheeffectivenessofteachersloebbassok.pdf>.

Johns Hopkins University School of Education. "Teach for America Partnership Program."

Johns Hopkins University School of Education. Accessed March 7, 2013.

[https://squirrel.adobeconnect.com/\\_a751959191/p11yj1ykovh/?launcher=false&fcsContent=true&pbMode=normal](https://squirrel.adobeconnect.com/_a751959191/p11yj1ykovh/?launcher=false&fcsContent=true&pbMode=normal).

Kane, Thomas J., Amy L. Wooten, Eric S. Taylor, and John H. Tyler. "Evaluating Teacher Effectiveness." Center for Education Policy Analysis at Stanford University. Published 2011. Accessed March 6, 2013. <http://cepa.stanford.edu/content/evaluating-teacher-effectiveness>.

Kaye, Elizabeth A., Ed. Requirements for Certification. Chicago: The University of Chicago Press, 2012.

Lee, Laura E. "Teach for America teachers get cutting-edge training." The Sentinel (Montgomery County, MD), Aug. 18, 2010. Accessed March 7, 2013. <http://www.thesentinel.com/pgs/news/Teach-for-America-workshops>.

Libit, Howard. "State's shortage of teachers to worsen, school board says." The Baltimore Sun (Baltimore, MD), Sept. 27, 2000. Accessed March 7, 2013. [http://articles.baltimoresun.com/2000-09-27/news/0009270104\\_1\\_teachers-school-systems-school-year](http://articles.baltimoresun.com/2000-09-27/news/0009270104_1_teachers-school-systems-school-year).

Loeb, S. and J. Myung. "Economic Approaches to Teacher Recruitment and Retention." Center for Education Policy Analysis at Stanford University. Published 2010. Accessed March 7, 2013. [http://cepa.stanford.edu/sites/default/files/loeb%20Cmyung\\_Economic%20Approaches%20to%20Teacher%20Recruitment%20and%20Retention.pdf](http://cepa.stanford.edu/sites/default/files/loeb%20Cmyung_Economic%20Approaches%20to%20Teacher%20Recruitment%20and%20Retention.pdf).

Loeb, Susanna, Luke C. Miller, and Katherine O. Strunk. "The State Role in Teacher Professional Development and Education Throughout Teachers' Careers." Center for Education Policy Analysis at Stanford University. Published 2009. Accessed March 7, 2013. <http://cepa.stanford.edu/sites/default/files/the%20state%20role%20in%20teacher%20professional%20development.pdf>.

Mac Iver, Martha Abele and E. Sidney Vaughn III. "'But How Long Will They Stay?' Alternative Certification and New Teacher Retention in an Urban District." Educational Research Service. Published 2007. Accessed March 7, 2013. [http://gw.summon.serialssolutions.com/document/show?id=FETCHMERGEDeric\\_primary\\_EJ7956621&s.fvf%5B%5D=ContentType%20Newspaper+Article%20Ct&s.q=But+How+Long+Will+They+Stay%3F%22+Alternative+Certification+and+New+Teacher+Retention+in+an+Urban+District](http://gw.summon.serialssolutions.com/document/show?id=FETCHMERGEDeric_primary_EJ7956621&s.fvf%5B%5D=ContentType%20Newspaper+Article%20Ct&s.q=But+How+Long+Will+They+Stay%3F%22+Alternative+Certification+and+New+Teacher+Retention+in+an+Urban+District).

Maine Revised Statutes, Title 20-A, Part 6, Chapter 502.

Maryland General Assembly. "HB 1031 Fiscal Note." Department of Legislative Services. Published 2002. Accessed March 7, 2013. <http://www.docstoc.com/docs/129090881/Fiscal-Note-Document>.

[http://www.marylandpublicschools.org/MSDE/divisions/certification/certification\\_branch/testing\\_information/testing\\_info\\_general](http://www.marylandpublicschools.org/MSDE/divisions/certification/certification_branch/testing_information/testing_info_general).

Maryland State Department of Education. "FAQ." Maryland State Department of Education. Accessed March 6, 2013. [http://www.marylandpublicschools.org/MSDE/divisions/certification/certification\\_branch/faq](http://www.marylandpublicschools.org/MSDE/divisions/certification/certification_branch/faq).

Maryland State Department of Education. "How to Become a Teacher as a Career Changer or Recent College Graduate." Maryland State Department of Education. Accessed March 6, 2013. <http://www.marylandpublicschools.org/NR/rdonlyres/6662E011-70C1-44A0-BD5E-693AE1267EC0/33689/HowtoBecomeaTeacher102012.pdf>.

Maryland State Department of Education, "Maryland Approved Alternative Teacher Preparation Programs Directory." Maryland State Department of Education. Published 2011. Accessed March 7, 2013. <http://www.tttmaryland.org/pdf/MAAPPDirectoryUpdatedMay2011.pdf>.

Maryland State Department of Education. "Maryland Approved Alternative Teacher Preparation Programs Directory." Maryland State Department of Education. Published 2012. Accessed March 6, 2013. <http://www.marylandpublicschools.org/NR/rdonlyres/6662E011-70C1-44A0-BD5E-693AE1267EC0/33881/MAAPPDirectoryUpdatedOctober222012.pdf>.

Maryland State Department of Education. Maryland Teacher Staffing Report, 1997-1999. Baltimore: Maryland State Department of Education, 1997.

Maryland State Department of Education. "Maryland Teacher Staffing Report, 2003-2005." Maryland State Department of Education. Published 2003. Accessed March 7, 2013. <http://www.msde.state.md.us/paab/pdf/Staffing2002-04.pdf>.

Maryland State Department of Education. "Divisions." Maryland State Department of Education. Accessed March 7, 2013.

Maryland State Department of Education. "Maryland Teacher Staffing Report, 2004-2006." Maryland State Department of Education. Published 2004. Accessed March 7, 2013. <http://cdm16064.contentdm.oclc.org/cdm/singleitem/collection/p266901coll7/id/1812/rec/10>.

Maryland State Department of Education. "Maryland Teacher Staffing Report, 2006-2008." Maryland State Department of Education. Published 2006. Accessed March 7, 2013. <http://www.marylandpublicschools.org/NR/rdonlyres/9976F033-036D-49D1-9D13-A3EA68FADAD9/11225/TeacherStaffing20062008final.pdf>.

Maryland State Department of Education. "Maryland Teacher Staffing Report, 2008-2010." Maryland State Department of Education. Published 2008. Accessed March 7, 2013. <http://www.marylandpublicschools.org/NR/rdonlyres/F7D49A8D-E9D0-4C49-9DE6-3A878BC9F1F4/18393/MarylandTeacherStaffingReport20082011.pdf>.

Maryland State Department of Education. "Maryland Teacher Staffing Report, 2010-2012." Maryland State Publications Depository & Distribution Program. Published 2010. Accessed March 6, 2013. <http://mdstatedocs.slrc.info/cdm/singleitem/collection/mdgov/id/82/rec/12>.

Maryland State Department of Education. "Maryland Teacher Staffing Report, 2012-2014." Maryland State Department of Education. Published 2012. Accessed March 5, 2013. <http://www.marylandpublicschools.org/NR/rdonlyres/F3F5D904-0F5E-4FC7-87CE-464FC17DABB5/33624/MarylandTeacherReport20122014.pdf>.

Maryland State Department of Education. "News Release: National Publication Places State's System at the Head of Class for Fifth Straight Year." Maryland State Department of Education. Published 2013. Accessed March 6, 2013. [http://marylandpublicschools.org/MSDE/pressrelease\\_details/2013\\_01\\_10.htm](http://marylandpublicschools.org/MSDE/pressrelease_details/2013_01_10.htm).

Maryland Teacher Shortage Task Force. "Maryland Teacher Shortage Task Force Report." Maryland State Archives. Published 2008. Accessed March 6, 2013. [http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/011000/011024/unrestricted/20080492e.pdf#xml=http://127.0.0.1/taxis/search/pdfhi.txt?query=%22Maryland+Teacher+Staffing+Report%22&pr=ecpclo\\_coll&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&rlead=500&rdepth=0&sufs=0&order=r&mode=&opts=adv&cq=&sr=-1&id=4a0486b77c](http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/011000/011024/unrestricted/20080492e.pdf#xml=http://127.0.0.1/taxis/search/pdfhi.txt?query=%22Maryland+Teacher+Staffing+Report%22&pr=ecpclo_coll&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&rlead=500&rdepth=0&sufs=0&order=r&mode=&opts=adv&cq=&sr=-1&id=4a0486b77c).

McCarty, Wendy L. and Demaris Dietz. "Alternative Teacher Certification: The Case for Transition to Teaching." *Journal of Applied Learning in Higher Education* Vol. 3 (2011): 45-57. Accessed March 6, 2013. [http://www.missouriwestern.edu/appliedlearning/journalvol3/JALHE\\_Vol\\_3\\_McCarty\\_45-58.pdf](http://www.missouriwestern.edu/appliedlearning/journalvol3/JALHE_Vol_3_McCarty_45-58.pdf).

Mississippi Community College Foundation. "MAPQT." Mississippi Community College Foundation. Accessed March 7, 2013. <http://mccfms.org/mapqt>.

Mississippi Community College Foundation. "Mississippi Alternate Path to Quality Teachers Training Institute Application." Northwest Mississippi Community College. Accessed March 7, 2013. [http://www.northwestms.edu/careercenter/pdfs/Alt\\_Path\\_to\\_Quality\\_Teachers\\_Trng\\_Inst\\_Appln.pdf](http://www.northwestms.edu/careercenter/pdfs/Alt_Path_to_Quality_Teachers_Trng_Inst_Appln.pdf).

Mississippi Department of Education. "Educator Licensure." Mississippi Department of Education. Accessed March 7, 2013. [http://www.mde.k12.ms.us/educator-licensure/alternate-route\\_programs](http://www.mde.k12.ms.us/educator-licensure/alternate-route_programs).

Mississippi Department of Education. "Master of Arts in Teaching." Mississippi Department of Education. Accessed March 7, 2013. <http://www.mde.k12.ms.us/docs/school-improvement-library/master-of-art-in-teaching.pdf?sfvrsn=0>.

Mississippi Department of Education. "Mississippi Alternate Path to Quality Teachers."

Mississippi Department of Education. Accessed March 7, 2013.

[http://www.mde.k12.ms.us/docs/school-improvement-library/ms-alternate-path-to-quality-teachers-\(mapqt\).pdf?sfvrsn=0](http://www.mde.k12.ms.us/docs/school-improvement-library/ms-alternate-path-to-quality-teachers-(mapqt).pdf?sfvrsn=0).

Mississippi Department of Education. "Teach Mississippi Institute." Mississippi Department of Education. Accessed March 7, 2013. [http://www.mde.k12.ms.us/docs/educator-licensure/teach-mississippi-institute-\(tmi\).pdf?sfvrsn=0](http://www.mde.k12.ms.us/docs/educator-licensure/teach-mississippi-institute-(tmi).pdf?sfvrsn=0).

Mootoo, Malissa Yung-Grubb. "If Anything, They Work Too Hard." The New York Times (New York, NY), Aug. 30, 2012. Accessed March 7, 2013.

<http://www.nytimes.com/roomfordebate/2012/08/30/is-teach-for-america-working/teach-for-america-teachers-work-too-hard>.

National Academy of Education. "Improving Teacher Quality and Distribution." National Academy of Education. Published 2009. Accessed March 6, 2013.

<http://cepa.stanford.edu/sites/default/files/NAE%20Teacher%20Quality.pdf>.

National Association for Alternative Certification. "Quality Indicators for Non-traditional Teacher Preparation Programs." National Association for Alternative Certification. Accessed March 6, 2013. <http://www.alt-teachercert.org/QI%20overview.pdf>.

National Center for Alternative Certification. "Introduction and Overview." National Center for Alternative Certification. Published 2010. Accessed March 6, 2013. <http://www.teach-now.org/intro.cfm>.

National Center for Education Information. "Profile of Alternate Route Teachers." National Center for Education Information. Accessed March 7, 2013. <http://www.ncei.com/part.html>.

National Center for Education Statistics. "Beginning Teacher Attrition and Mobility: Results From the First Through Third Waves of the 2007-08 Beginning Teacher Longitudinal Study."

National Center for Education Statistics. Accessed March 7, 2013.

<http://nces.ed.gov/pubs2011/2011318/findings.asp>.

National Center for Education Statistics. "Table H120. Percentage of grade 9 through 12 public school teachers who entered teaching through alternative certification, percentage who were 'highly qualified,' and percentage distribution of teachers' type of certification, by school type and main teaching assignment: 2008." National Center for Education Statistics. Accessed March 6, 2013. <http://nces.ed.gov/surveys/ctes/tables/h120.asp>.

National Center for Education Statistics. "Table 2. Percentage distribution of 2007-08 beginning public school teachers, by teacher status and selected 2007-08 teacher and school characteristics: 2008-09 and 2009-10." National Center for Education Statistics. Accessed March 7, 2013. [http://nces.ed.gov/pubs2011/2011318/tables/table\\_02.asp?referrer=report](http://nces.ed.gov/pubs2011/2011318/tables/table_02.asp?referrer=report).

National Council on Teacher Quality. "2011 State Teacher Policy Yearbook: Maryland."

National Council on Teacher Quality. Published 2011. Accessed March 6, 2013.

[http://www.nctq.org/stpy11/reports/stpy11\\_maryland\\_report.pdf](http://www.nctq.org/stpy11/reports/stpy11_maryland_report.pdf).

Noell, George H. and Kristin A. Gansle. "Teach for America Teachers' Contribution to Student Achievement in Louisiana in Grades 4-9: 2004-2005 and 2006-2007." National Council on

Teacher Quality. Published 2009. Accessed March 7, 2013. [http://www.nctq.org/docs/TFA\\_Louisiana\\_study.PDF](http://www.nctq.org/docs/TFA_Louisiana_study.PDF).

Pennsylvania Department of Education. "American Board (ABCTE)." State of Pennsylvania. Accessed March 7, 2013. [http://www.portal.state.pa.us/portal/server.pt/community/other\\_routes\\_to\\_certification/8818/american\\_board\\_\(abcte\)/506779](http://www.portal.state.pa.us/portal/server.pt/community/other_routes_to_certification/8818/american_board_(abcte)/506779).

Point Park University. "ABCTE Information." Point Park University. Accessed March 7, 2013. <http://www.pointpark.edu/Academics/Schools/SchoolofArtsandSciences/Departments/Education/ABCTE>.

Roberts, Jane. "Teach for America recruits produce higher test scores, get better results." The Commercial Appeal (Memphis, TN), Dec. 3, 2010. Accessed March 7, 2013. <http://www.commercialappeal.com/news/2010/dec/03/teaching-program-beating-colleges/>.

Sadusky, Bernard J., to Members of the State Board of Education. January 24, 2012. "Presentation of the Final Report of the Reconfiguration of the Current Certification Structure and Summary of PSTEB Deliberations." Maryland Association of Boards of Education. Accessed March 6, 2013. <http://www.mabe.org/wpcontent/uploads/2012/02/PSTEBCertReconfigReport2012.pdf>.

Sass, Tim R. "Certification Requirements and Teacher Quality: A Comparison of Alternative Routes to Teaching." Learning Front. Published 2011. Accessed March 6, 2013. [http://www.learningfront.com/Media/Alternative\\_Certification\\_and\\_Teacher\\_Quality\\_11.pdf](http://www.learningfront.com/Media/Alternative_Certification_and_Teacher_Quality_11.pdf).

Stand for Children Leadership Center. "What We Stand For: Teachers." Stand for Children Leadership Center. Accessed March 7, 2013. <http://standleadershipcenter.org/what-we-stand-teachers>.

Stand for Children Leadership Center. "What We Stand For: STEM." Stand for Children Leadership Center. Accessed March 6, 2013. <http://standleadershipcenter.org/what-we-stand-STEM>.

South Carolina Department of Education. "Initial to Professional Procedure." South Carolina Department of Education. Accessed March 7, 2013. <http://ed.sc.gov/agency/se/Educator-Certification-Recruitment-and-Preparation/Certification/Initialtoprofess.cfm>.

South Carolina Department of Education. "PACE Training." South Carolina Department of Education. Accessed March 7, 2013. <http://www.ed.sc.gov/agency/programs-services/193/PACETraining.cfm>.

South Carolina Department of Education. "Policy Guidelines for South Carolina Educator Preparation Units." South Carolina Department of Education. Published 2006. Accessed March 7, 2013. <http://www.scteachers.org/educate/edpdf/boardpolicy.pdf>.

South Carolina Department of Education. "Recertification." South Carolina Department of Education. Accessed March 7, 2013. <http://ed.sc.gov/agency/se/Educator-Certification-Recruitment-and-Preparation/Certification/Recertification.cfm>.

South Carolina Department of Education. "South Carolina Career & Technology Education Work- Based Certification Checklist." South Carolina Department of Education. Accessed March 28, 2013. <http://ed.sc.gov/agency/se/EducatorCertification/documents/Certificationchecklist.pdf>.

South Carolina Department of Education. "South Carolina Educator Certification Manual." South Carolina Department of Education. Published 2012. Accessed March 7, 2013. <http://ed.sc.gov/agency/act/se/ec/cert/certpdf/teachercertificationmanual.pdf>.

State of Maine. "Rule Chapters for the Department of Education." State of Maine. Accessed March 7, 2013. <http://www.maine.gov/sos/cec/rules/05/chaps05.htm>.

TeachingCertification.com. "Alternative teaching Certification in Florida." TeachingCertification.com. Accessed March 7, 2013. <http://www.teaching-certification.com/teaching/florida-alternative-teaching-certification.html>.

Teach for America. "A Solvable Problem." Teach for America. Accessed March 7, 2013. <http://www.teachforamerica.org/our-mission/a-solvable-problem>.

Teach for America. "Baltimore." Teach for America. Accessed March 7, 2013. <http://www.teachforamerica.org/where-we-work/baltimore>.

Teach for America. "Enlisting Committed Individuals." Teach for America. Accessed March 7, 2013. <http://www.teachforamerica.org/our-mission/enlisting-committed-individuals>.

Teach for America. "Regional Cost Calculator." Teach for America. Accessed March 7, 2013. <http://www.teachforamerica.org/where-we-work/baltimore/expenses-and-certification>.

Teach for America. "Regional Cost Calculator." Teach for America. Accessed March 7, 2013. <http://www.teachforamerica.org/where-we-work/dc-region/expenses-and-certification>.

Teach for America. "Summer Training." Teach for America. Accessed March 7, 2013. <http://www.teachforamerica.org/why-teach-for-america/training-and-support/summer-training>.

Teach for America. "Teach for America 2011 Annual Letter." Teach for America. Accessed March 7, 2013. <http://www.teachforamerica.org/sites/default/files/Annual.Report.FINAL.pdf>.

Teach for America. "Teacher Certification." Teach for America. Accessed March 7, 2013. <http://www.teachforamerica.org/why-teach-for-america/training-and-support/teacher-certification>.

Teach for America. "What the Research Says." Teach for America. Published 2012. Accessed March 7, 2013. [http://www.teachforamerica.org/sites/default/files/Research\\_on\\_Teach\\_For\\_America\\_2012\\_1.pdf](http://www.teachforamerica.org/sites/default/files/Research_on_Teach_For_America_2012_1.pdf).

Teach for America. "Where We Work." Teach for America. Accessed March 7, 2013. <http://www.teachforamerica.org/where-we-work>.

Teach for America. "Who We Look For." Teach for America. Accessed March 7, 2013. <https://www.teachforamerica.org/why-teach-for-america/who-we-look-for>.

Tennessee State Board of Education and Tennessee Higher Education Commission. "Report Card of the Effectiveness of Teacher Training Programs." State of Tennessee. Published 2010. Accessed March 7, 2013. [http://www.tn.gov/thec/Divisions/ftt/report\\_card\\_teacher\\_train/2010%20Report%20Card%20on%20the%20Effectiveness%20of%20Teacher%20Training%20Programs.pdf](http://www.tn.gov/thec/Divisions/ftt/report_card_teacher_train/2010%20Report%20Card%20on%20the%20Effectiveness%20of%20Teacher%20Training%20Programs.pdf).

Toppo, Greg. "Teach for America: Elite corps or costing older teachers jobs?." USA Today, July 29, 2009. Accessed March 7, 2013. [http://usatoday30.usatoday.com/news/education/2009-07-29-teach-for-america\\_N.htm](http://usatoday30.usatoday.com/news/education/2009-07-29-teach-for-america_N.htm).

Towson University. "Undergraduate Catalog, 2012-2013." Towson University. Accessed March 6, 2013. [http://www.towson.edu/main/academics/ugrad/documents/UGcatalog\\_2012-13.pdf](http://www.towson.edu/main/academics/ugrad/documents/UGcatalog_2012-13.pdf).

University of Maryland, Baltimore County. "UMBC Master of Arts in Teaching." University of Maryland, Baltimore County. Accessed March 6, 2013. [http://www.umbc.edu/education/programs/12\\_Months\\_SEC\\_MAT/index.php](http://www.umbc.edu/education/programs/12_Months_SEC_MAT/index.php).

University of Maryland. "Curriculum and Instruction- Elementary Education (EDCI)." University of Maryland. Accessed March 6, 2013. <http://www.umd.edu/catalog/index.cfm/show/content.section/c/1/ss/2622/s/242>.

University of Maryland. "General Education Courses." University of Maryland. Accessed March 6, 2013. <http://www.sis.umd.edu/bin/soc?crs=gened&term=201301>.

University of Maryland. "Human Development/Institute for Child Study (EDHD)." University of



Maryland. Accessed March 6, 2013.

<http://www.umd.edu/catalog/index.cfm/show/content.section/c/1/ss/2624/s/151>.

University of Maryland. "Undergraduate Catalog." University of Maryland. Accessed March 6, 2013. <http://ia701206.us.archive.org/19/items/UndergraduateCatalogUniversityOfMarylandCollegePark2012-2013/2012-2013UndergraduateCatalogForArchives.pdf>.

U.S. Department of Education. "WWC Quick Review of the Report 'An Evaluation of Teachers Trained Through Different Routes to Certification.'" U.S. Department of Education. Published 2009. Accessed March 7, 2013.

[http://ies.ed.gov/ncee/WWC/pdf/quick\\_reviews/altcert\\_072809.pdf](http://ies.ed.gov/ncee/WWC/pdf/quick_reviews/altcert_072809.pdf).

U.S. Department of Education. "WWC Quick Review of the Report 'Making a Difference? The Effects of Teach for America in High School.'" U.S. Department of Education. Published 2008. Accessed March 7, 2013. [http://ies.ed.gov/ncee/WWC/pdf/quick\\_reviews/tfa\\_071508.pdf](http://ies.ed.gov/ncee/WWC/pdf/quick_reviews/tfa_071508.pdf).

Viadero, Debra. "Panel Finds No Favorite in Teacher Prep Pathways." Education Week.

Accessed March 7, 2013. <http://www.edweek.org/ew/articles/2010/04/29/31teachered.h29.html>.

Washington College. "Teacher Certification." Washington College. Accessed March 6, 2013.

<http://www.washcoll.edu/departments/education/teachercertification.php>.

Washington Policy Center. "Seattle teachers' union seeks ban on teachers—sees Teach for America as threat to its position in the system." Washington Policy Center. Published March 8, 2012. Accessed March 7, 2013. <http://www.washingtonpolicy.org/blog/post/seattle-teachers-union-seeks-ban-teachers%E2%80%94sees-teach-america-threat-its-position-system>.

Wieder, Ben. "Teach for America Alumni Take Aim At State Office, Face Union Opposition." The Huffington Post, Aug. 27, 2012. Accessed March 7, 2013.

[http://www.huffingtonpost.com/2012/06/27/teach-for-america-alumni- n\\_1631962.html](http://www.huffingtonpost.com/2012/06/27/teach-for-america-alumni- n_1631962.html).

Wyoming Professional Teaching Standards Board. "Wyoming Educator Renewal." Wyoming Professional Teaching Standards Board. Accessed March 7, 2013.

<http://ptsb.state.wy.us/LinkClick.aspx?fileticket=mXYduE8FLk8%3d&tabid=94>.

Wyoming Professional Teaching Standards Board. "How do I know for sure if the program I completed or want to take is accredited?." Wyoming Professional Teaching Standards Board. Accessed March 7, 2013.

<http://ptsb.state.wy.us/EducationResources/Approved>

[UniversityPrograms/RegionalAccreditingBodies/tabid/120/Default.aspx](http://ptsb.state.wy.us/EducationResources/ApprovedUniversityPrograms/RegionalAccreditingBodies/tabid/120/Default.aspx).

Wyoming Professional Teaching Standards Board. "Wyoming Licensure Requirements."

Wyoming Professional Teaching Standards Board. Accessed March 7, 2013.

<http://ptsb.state.wy.us/Licensure/BecomingLicensed/tabid/65/Default.aspx>.

Xu, Zeyu, Jane Hannaway, and Colin Taylor. "Making a Difference? The Effects of Teach for America in High School." Urban Institute. Published 2009. Accessed March 7, 2013.

[http://www.urban.org/UploadedPDF/411642\\_Teach\\_America.pdf](http://www.urban.org/UploadedPDF/411642_Teach_America.pdf).

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## High School Science and Mathematics in Maryland: A Discussion

August 1st, 2003

MR. GEORGE LIEBMANN (moderator):

Roughly 10 of 35 respondents to Calvert's survey of public college science and math professors referred in one way or another to the problem of recruiting and retaining qualified high school science teachers. The other comments were also very interesting. It is rather commonly put forth as part of an agenda for the improvement of science education that what is needed in the high schools are more and better computers.

The number of commentators who made that suggestion in our survey was zero. Indeed there are six of the commentators who expressed the view that the principal shortage in high school science classes was not of computers but of number two pencils. They decried the excessive use of calculators in high school science. There were four commentators who observed that the relevancy of science needed to be made clearer to their classes. There were four who observed that they were less concerned with the adequacy, or even the fact of instruction in calculus, than with the inadequate preparation of high school students in algebra, and even basic algebra. There were three, all writing about Baltimore City, who decried the practice of social promotion.

There were a scattering of other suggestions that there be more mandatory years of science, that discipline in the high schools be improved, that there be uniform or objective standards for science education. That there be even greater or less use of standardized tests. That high school science teachers should have some para professionals to help them with grading examinations. That there be more written exercises and drills in high school science. That physics be a mandated course. That the preparation of high school science teachers be improved; instead of emphasis being placed on education courses, that more emphasis be placed on subject matter.

There was also a further suggestion that purely research programs are inadequate preparation for high school science teachers. There were a couple of respondents who urged a sort of Master of Arts or Master of Science in Teaching program. It is a fact that in most of the counties in the state, and indeed in most of the public schools throughout this country, there is no extra pay for teachers in the scarce disciplines. The result of this is set forth in Maryland in a very objective way, not by any centrist or conservative think-tank, but in the statistics published each year by the State Department of Education, in the annual report on the Christa McAuliffe scholarships, which requires the Department of Education to set forth each year the estimated supply of teachers in each discipline and the estimated demand for teachers in each discipline. What those reports have revealed, year after year, is the dramatic shortage of qualified applicants to be science teachers in the Maryland schools.

The staffing projections for the year 2002-2003, for example, show that there is need for 64 new teachers of Physics in Maryland high schools. The projected staffing pool is a pool of 31. There is need for 97 new teachers of Chemistry, the projected pool is 64. There is need for 50 new teachers of Computer Science, the projected staffing pool is 17.

A similar situation exists with respect to certain types of special education. There is need for 114 teachers of the severely handicapped, the estimated staffing pool is 8. There is need for 16 teachers of the blind, the estimated staffing pool is 3. The reason in each instance is the same. These disciplines require extra study, extra time for study, fewer people study them, and those that do study them can command greater rewards in other places than in our public school systems.

By contrast, there are disciplines where there is not nearly so much pressure when it comes to hiring. For example, there is need for 2538 teachers of elementary education, the projected staffing pool is 3587. There is need for 613 early childhood teachers, the projected staffing pool is 858. In social science and history, there is at least an even balance of available teachers and the required number of teachers. In mathematics and the physical sciences, chemistry and physics, there is a shortage year after year after year. The reason little or nothing is done about this is the phenomenon of the single salary schedule in teachers union contracts.

I did a study some years ago of the twenty-four teachers union contracts in Maryland. At that time, there were only three contracts which on their face allowed the school boards to give extra pay to teachers in scarce disciplines. The most specific provision was and is in Talbot county which allows ten additional years of seniority credit to teachers of scarce disciplines. That is a worthwhile difference of twelve or thirteen thousand dollars a year. The common response to this problem on the part of the Department of Education, the Governor, and others has taken the

form simply of proposals to give small scholarships to graduating seniors, or sometimes undergraduates in Maryland colleges who are willing to commit to two or three years of science teaching.

The scholarships, as an incentive, are of rather dubious value because the sad truth is that once people commence teaching, they begin to accumulate children and mortgages. If they are not being paid as well as they can be paid in other disciplines, they tend to fall out of the system. There is much more that can be said about that subject, but I think it is appropriately said by persons with greater experience in these matters than I.

We have here today three speakers: Dr. Donald Langenburg, who is a professor of physics and the former Chancellor of the University of Maryland System; Dr. John Toll, another professor of physics and former Chancellor of the University of Maryland at College Park, current President of Washington College, Chestertown; and Mr. Peter Martin, Chief Executive Officer of Provident Bank and the Chairman of the Greater Baltimore Education Committee, which undertook a study of this and related problems several years ago and who will address this problem from the perspective of business and industry.

DR. DONALD LANGENBURG: . The Calvert Institute report that you have before you paints a pretty visible picture. It's a picture that is buttressed by a host of recent reports which describes a national situation. In one of them, by an organization called BEST, or Building Engineering and Science Talent, the question was asked, "Is the United States developing the human capital to remain the World's most productive economy while at the same time meeting a formidable new national security threat". The answer was a resounding no. We are not. The title of the report was "The Quiet Crisis".

In my opinion it really is a crisis. Unfortunately it has been all too quiet on the public scene. It doesn't mean that a great many education leaders, some political leaders, and business leaders have not noted it and have not begun to attack the problem in one way or another. But the fact is that it's not generally recognized as a serious problem that really must be dealt with. You might wonder why if some folks have been trying to deal with it, why we haven't already solved the problem? In my opinion, the simple answer is that its origins are so deeply rooted in our societal circumstances and attitudes that we have thus far failed to summon the political courage and will to do what needs to be done.

Let me start with a couple of facts about high school math and science, in particular. We do not, in this country, generally demand that all students have intensive and extensive exposure to math and science all the way from elementary school through high school and on into college. Nor do we demand that all students meet the high standards of performance in math and science at every step of the way. As you heard from George, there is a serious, well documented, persistent and long-time shortage of fully qualified math and science teachers, especially at the high school level. As a result, a shockingly high proportion of the teachers who teach those subjects to students, are not really qualified to teach them. That proportion may be a quarter or a third across the nation in all schools and it probably constitutes the majority of teachers in schools serving poor and minority students. As I wrote in a recent Sun op-ed piece, you can't really expect our students to learn what they are not taught or are taught poorly.

So that brings the focus to the point that I think is the key point, the critical point here. That is teachers. We've got to have more and better teachers. To do that, in my impression or in my view, we've got to change our attitudes towards teachers. We tend to think of teachers as indistinguishable inter-changeable cogs in our school machinery.

That attitude is evident when we assign a teacher to teach science in high school who isn't fully qualified to do that. One teacher is just like another, any teacher will do. That attitude is evident in the fact that there is no established hierarchy of status and rank for teachers in our schools. A brand new college graduate just beginning a teaching career — her first year in the classroom is called, what? A teacher. After thirty-five years of distinguished service that person retires and is called, what? A teacher. Even teachers themselves seem to share this attitude. That they are indistinguishable and inter-changeable.

As witness the fact that their organizations very often take the position that all teachers should be paid alike with the only significant basis for higher salary being advancing age. I think it's self-evidently true that a teacher is not a teacher, is not a teacher. Like the practitioners of any other trade, they vary greatly in capacity and capability and special skills. We need to acknowledge and recognize that. Some of you may have bristled a little bit when I said "trade" and not "profession". That was deliberate. I think it was intended to focus our attention on a very important fact. We do not now treat teachers like true professionals. To do so would require that we do three things: provide working environments suitable to professionals; pay them like professionals and demand they behave and perform like professionals.

Each one of those merits an essay of its own but let me just make a few remarks about each one of them. Work environments. Professionals generally work in work environments in which they can focus on performing the complex and challenging functions for which they were educated and trained. Others provide necessary ancillary support services. If you were to visit the University of Maryland Hospital cafeteria, for example, just up the street, you would not find a professor of medicine on duty as cafeteria monitor. Teachers, however, are generally expected to do it all. Including such things, sometimes, as purchasing and personally paying for basic school supplies. Most people would agree that teachers ought to be paid more. Beyond the end of that simple sentence lies a vast wasteland of disagreement about ways and means.

My take on that issue is this; let me start with the observation made in this report that the starting salaries of high school math and science teachers are about half the starting teachers in non-teaching positions open to them. Chemistry graduates, for example, from the University of Maryland, College Park, looking out at the world might say "Gee, I really would like to teach this subject, I love it. Here's the starting salary. Or I can get a low-level starting job for Du Pont and I'll get twice as much". It's hardly a mystery why there is a shortage of high school math and science teachers. So let's think a little bit together about a salary model that I used to think about that could deal with that discrepancy and might solve some other problems as well. Let's suppose, in this model, that the starting salaries for science teachers in high school are roughly comparable with what they could get in the business world. Which is to say about twice what they now get in teaching. These are teachers in high demand and short supply. They're not the only ones, there are other as George mentioned. Special education teachers, teachers with special skills aimed at specially disadvantaged students. They ought to be in the same boat.

Lets suppose their salaries starting and beyond were about twice what they are now. Suppose you agree that in low demand, high supply areas for teachers that are just barely adequate for their jobs really ought not to be getting paid twice what they are now. They ought to be getting paid about what they are now. So this leads to a salary model in which at any given stage of seniority, we have teachers in our schools whose salaries are aimed to about a factor of two. From something like they now are, to about twice that. Or roughly speaking, teachers salaries, on average, are about 50% higher than they now are. Several years ago I described that model to a Baltimore business man who said "That's wonderful. That would be great, but we can't afford it". I didn't know what it would cost. So I went and did a typical business back-of-the-envelope estimate of what it would cost. The result was this. Nationally that model would take about one hundred billion dollars. That is a big number. It's a lot of money. But it's only six tenths of one percent of the gross domestic product. It's roughly equivalent to a five or six percent increase in health care costs. Which is to say, we could afford it. We could afford it rather easily if only we had the political will and intestinal fortitude to do it. Where would the money come from? I think the answer is perfectly obvious. Read my lips. Raise tax revenues.

This is not a problem we can address with Bingo games and bake sales. It's a problem requiring a substantial, not an exorbitant, but a substantially increased investment in our schools. We simply have got to pony up and do it. Now we all know that doing that is politically impossible. It can't be done. But about eighteen months ago, the Gallup organization did a national poll in which they asked relevant questions. What they found is that the majority of those polls, a substantial majority, would support tax increases for the purpose of increasing teachers salaries if the teachers were held accountable for the performance of their students.

Here in Maryland you might say what would it cost us to adopt that model? Well, based on the fact that we have about 2% of the national population it would cost us about 2% of 100billion dollars, or about 2 billion dollars. Again, that is a lot of money, but Maryland has two major advantages. First, many of our political leaders are already committed to support the recommendations of the Thornton Commission, which calls for substantially increased state support for our schools. 1.3 billion dollars. If our local jurisdictions would come up with some counterpart funds on their own, we can do it. We could do it, if only we chose to do it.

If we were to do that, our teacher shortages in high demand areas and our problems in retaining the very best teachers we have probably would disappear, as would our problem with under-qualified teachers. We could attract the best teachers nationwide. Indeed a recent New York Times article suggested that New York City has just done that, within a year. New York City received a dictum from the state regents in the state of New York saying no more unqualified teachers in your most demanding schools. You can't hire them. You've got to hire only qualified teachers. Guess what? They sucked it up. They substantially increased salaries and the shortage of qualified teachers in New York City disappeared practically overnight.

The last factor: teacher performance.

The people's responses to that Gallup poll put their fingers on a quid pro quo that I think is essential for building political support for paying teachers better. It's also a crucial element of training teachers like professionals. Teachers should not be told exactly what to do every day. Or

how to do it. But like other professionals they ought to have substantial flexibility in what they do. At the same time they should be held strictly accountable for the results of their work. In my view there is only one indicator that really matters. That is the gains in performance that students make under a teacher's tutelage. Not the performance, the gains.

What does the teacher do to increment the performance of his or her students? How would we do that? I won't go into it in any great detail, but we'll simply say that data systems are now in existence in many states, Tennessee, for example, that would allow the assessment of the performance of teachers by looking at how their students gain in performance over time and class to class. It can be done. The new federal elementary and secondary education act which mandates testing annually for students in grades three through ten, I think, would provide the data that would make it possible to do that. Indeed one jurisdiction in Tennessee, Chattanooga, is currently basing teachers salaries on that specific performance measure. One last plea, we habitually address problems like these by puttering around the edges. This one, I think, we've got to get at its roots. That is going to take substantial human and financial resources, as well as more determination and courage than our leaders typically display. But I think for our nation there is no alternative. The consequences of not doing so are too horrible to contemplate.

MR. PETER MARTIN: I'll do the best I can to present the business perspective. I am Chairman of Provident Bank and Chairman of the GBC Education Committee. The question might arise, why do I care about the subject? From a personal point of view, I do care about it because good public schools, and a strong mother I might add, have allowed me, as well as many other Americans, to live the American dream. I fervently support good public schools. I also still have one child of student age and five grandchildren already. I can only subsidize so many private school tuitions despite achieving the American dream.

Second is citizenship. Good public schools, or good schools in general, are essential to maintain our democracy and our social system. I believe that good schools, good education, are a big part of the answer for economic development and solving many of the social problems that we deal with in our times.

Thirdly, let me continue by describing my business perspective. I am Chairman of a five billion dollar bank, five billion in assets, headquartered in Baltimore, doing business in Maryland and Northern Virginia. We have 1700 employees and over 100 branches. Our employees consistently give Provident good grades as an employer. What differentiates Provident? We make loans, we take deposits, we offer investments, we offer cash management, and we offer the same products as every other financial institution. So what differentiates Provident, and we are very successful, is the people and the training of the people. If I were to tell you that we have 40% turnover, you'd say how can a good employer have 40% turnover? How can you function with that rate of turnover? We'll tell you that the general turnover rate for banks is 50 – 55%. That is largely because banks tend to be a first employer or early employer for a lot of people who are at the entry level.

If you would examine a typical bank, you would find a very stable base of employees who have been employed for 3 – 35 years, and you would find a segment which would include tellers and some operational areas where employees learn how to do a job, and how to be employed. After

which some stay and others move on for many reasons such as pressure of the job, inability to do the job, hold-ups, which is an increasing problem for us, or opportunities for advancement. This obviously exacerbates our training needs.

I mention that we have 1700 employees. During 2002 we have had 75 course offerings, which offered 837 sessions to 8500 participants. Obviously many employees take multiple courses. That is a challenge for us as a business. Provident has processed 2,435 applications for CSR or teller in 2002. 1,351 failed the basic assessment. We hired 142, we have a future interest in another 40, and we are presently interviewing 158. We have already completed a screening and interview process before training. Almost without exception, every training class has several people who need some fundamental math refresher. This is provided in extra sessions beyond what I mentioned. What do we mean by fundamentals? I asked my training folks and they listed basic money counting; counting by fives and tens; understanding of basic math; multiplication, division, adding, subtracting; requirements for understanding the basic concepts of debit and credit. They also lack recognition math competencies. This is not calculating in one's head, but understanding enough about basic math to see an answer pop up on a calculator and recognize it must be wrong because of the number of decimals, the actual size of the answer, big or small. This tips off the person that they must have keyed in the wrong numbers, hit a wrong function button, or transposed numbers. Again, it doesn't mean they calculated the answer to the decimal in their head, but that they recognize an obviously incorrect answer. They need that capability for loss prevention, settling, giving correct change.

Third area, basic algebra. This is a basic factor in sales and service. We see specific problems with practical application of understanding loan to value. If you are dealing with a customer you have to know what the value of the asset is that you are lending against and the percentage of the loan you are going to make against that asset. A lot of folks really struggle with this basic concept. Percentages, practical application, discussing amortization schedules, compounding annual rate versus annual yield, which seems to be a difficult concept.

These are basic math functions that one might presume high school students to be able to calculate, but our folks often find instructors in the role of basic math teachers instead of being able to assume certain basic math competencies. Beyond that we often find an inability to do math without a calculator and a lack of fundamental reasoning and problem solving skills in some of our entry-level employees that solid math and science grounding might provide. Again an example is loan to value calculation, which is pretty simple.

By coincidence on Saturday I do have an 11 year old sixth grader, and I was helping him with his study for a math test. These are the concepts that were in his homework for what he was studying for. I have to tell you, he was pretty good at doing it with a pencil and paper. I was pleased to see that he didn't know how to do it with a calculator. His test was going to be with a calculator so I was teaching him how to use a calculator.

Now go to the Calvert report. 35% of secondary level math classes are taught by someone lacking even a minor in math or a math related field. 49% in high poverty schools, 70% in high poverty, high minority schools. 66% of the departing science and math teachers cite poor pay. If you have not read the report, I suggest that you do read it. Assuming its accuracy, it paints a clear



picture of a shortage of math and science teachers as compared to other disciplines, as well as the attractive alternatives for candidates in the private sector. It also repeats the usual comparisons of US high schoolers' math and science performance compared to other countries. Not a great picture.

Back to the candidate's capabilities in terms of being able to tell if a number is reasonable, even if these numbers are off by 25%, it's still an ugly picture. This brings me to a point. Certainly well intended people can have different points of view. I believe in free markets operating within a system of democratic capitalism. Others may have equally strong beliefs in more controlled markets. Often things reach a point, however, where a clear consensus emerges that a situation is so egregious that it demands action. A dramatic example is obviously September 11, 2001. It's less dramatic but I believe that that given the scarceness of science and math teachers and the poor preparation demonstrated by many of our high school graduates, a very serious situation confronts our economy and our society. It is in the interest of public education that a consensus should emerge that more market driven compensation is essential within our public school system.

DR. JOHN TOLL: The Calvert Report gives top priority to the fact that we must do much more in the recruitment, training and merit awards for outstanding science and math teachers. I would totally agree with that. I think there is a shortage; the shortage is going to get worse unless we do something about it. There are many able teachers now in the schools but many of them are going to retire. Particularly, we recognize that many of them are going to leave and that we have to now really recruit hard to see that their places are filled. It's a shortage that I think will actually get worse unless we do something dramatic about it.

I would agree it's not only enough to recruit the teachers but we must keep them there, to make their positions desirable and to help them with additional training and support as they're trying to improve. The National Science Foundation and others have many programs to try to help improve teaching. They've been fine programs in many ways. But again, totally inadequate to the scale that we need. We are not reaching nearly enough of the teachers. With the turnover rates that have been mentioned, we have to do a great deal to make these training programs more important. Secondly, in recruiting teachers, I think we have to allow for multiple pathways.

People will enter the profession in many different ways. Some people will come already well prepared with scientific training. Maybe they are retiring from a scientific career. Maybe they've been in industry and decide that they really like to teach. That is what they'd most like to do. We should make it possible for people to come in unconventional ways. I agree they need some training but some quick training given in an early stage will allow them to enter by alternate pathways.

If we're to meet this shortage, we have to be imaginative in finding many different ways of attracting talent. Most of all we must look for talent. People who are good as teachers. People who understand science and know how to convey it to the students. That can be tested rather quickly. See how good they are in conveying it and being understood by others. Where someone needs help they can be given help and you can see whether or not they make the product. I think the emphasis should be put on letting people qualify in whatever way they can to meet the proper

standards. I think the only way we're going to meet this shortage is if we look at a variety of different pathways.

I also agree that a major issue is the issue of pay. Anyone who is qualified to be a science teacher can get much higher salaries, rather than entering as a science teacher, by going direct into industry or some other production. I admit that compensation as a science teacher provides stability in the career, as long as you do a reasonably good job you know you've got assurance there. Opportunities for a steady career which means some people will prefer it over a chancier career, perhaps. On the whole, we've got to be more competitive with salary than at the present time. To base salary on merit, is a very good idea. We have to work hard to enhance pay. There are various ways of doing it.

What has been true is that school systems through union agreements or otherwise simply are unable to vary pay. Perhaps you can compensate by additional pay in the summertime, when science teachers are getting additional training or doing additional work. You can find other ways to enhance the salaries. Some of that has already been done. I think we should look at any way we can to break this particular obstacle because certainly getting good science teachers is most important. I have a friend that wrote a paper and he sent it to me recently. Its title is "It's the teacher, stupid". That is, what we need to get really good teaching in the schools is to concentrate much more on the competence of the teachers and their qualifications. That should be our major most important goal and one we should attack right away.

I think we also need to consider curriculum change. That is something that comes more slowly. You can't just go in and change the curriculum of the school system overnight. But we have made changes in the past. The National Science Foundation and others supported efforts to improve the curricula in each of the science fields. I think they've done a good job but we need to do much more. I think we should be willing to consider new approaches to the teaching of science. I strongly recommend it. For example, at present virtually all high school students take biology first. They take a year of biology and then forget it. Then they take a year of chemistry and then forget it. Then they take a year of physics. What happens in the process is that students drop out. So very few of them get to the end and actually take the physics course. Science, like anything else, is something you learn and forget. Learn and forget, learn and forget, until finally you decide it would be easier if you remembered. We are like that, all human beings. We have to learn things again and again I think it's important that we try to do all we can to help students get the necessary repetition. Beginning with simple concepts and then gradually extending their reach. It would be good if in the teaching of science we had a more unified approach, tried in many schools. I personally would think that you ought to begin at least in the seventh grade with teaching serious science and then gradually bring them up in a unified approach, level by level, teaching all of the sciences together and how they interconnect and increasing the complexity as strength of the students grows and as their general understanding of complexity grows.

That is the way they learn other subjects. For example, English writing they learn in class after class, learning the mistakes they make and gradually perfecting it year after year. We should approach our math and science courses in the same way. I think that would be highly desirable. I think another thing we should realize is that with computers now we have the ability to individualize learning to a much greater extent than ever before. That is wonderful.

We could always do it with individual tutors but now we can do it in a more economic way. You can give students some tutoring, but you can let students adjust the learning they do as they need, and get the repetition they need in order to master a subject. I think we should increasingly add curricula that allow variations in learning. Students who can quickly master a subject have enough repetition to be sure they've mastered it well, but then can move on quickly to other subjects and to more advanced levels. We should encourage that in every way, though it takes more flexibility to do this.

How do we explore these curriculum changes? I think one way to do it is to have schools that are willing to start an experiment, or willing to try it. In particular there have been some schools that do that and they mention in the Calvert Report schools like the Bronx High School of Science which has been a kind of a model for a new approach to teaching science. There, of course, they are highly selective in the students that get to go there. The result is those students do get a marvelous preparation and a high percentage of them go on to important careers. They take advantage of the education they've had. I think we should be willing to think about such variations within schools and among schools to allow for this greater variety of preparations. There are some schools now, we call them charter schools, which are independent as they're started out. They can invent their own curricula. Granted they have to perform on statewide tests or regional-wide tests for the school district, but so long as they perform they're allowed to approach it in whatever way they find best. I think that is great. They are an important innovation interesting new methods of teaching, new methods of presenting subjects.

I hope that that will allow us to look at more logical ways of organizing math and science curricula together, feeding them one to another. I'd also like to make a point that students remember things if they really get excited. If they're fun, if they're games. Teach it in a way that makes it fun, makes it a game. Of course, this is done in many ways in science programs. We have our national science competitions that students enter presenting science exhibits. They don't have to compete just in sports. It's good to have competition in the academic fields in a way that makes it enjoyable, makes it exciting. I think we should do that in any way we can.

Both math and science should offer many different levels of competition and make it fun for students, with science fairs, with other activities. Students will remember if they get excited about a subject. Much more than if they just learn it as a duty. It is very important to make the teaching exciting and the learning exciting for every student. I also think one of the biggest challenges for our society is its growing inequality. That is shown particularly in the inner cities where generally the population is poor, there are greater problems, and the families have less strong commitments to the school. As a result students just don't learn as well.

So teachers find it more difficult to teach in the inner city, they are often paid less or not more, at least, than in the suburbs. They have a more difficult task. The cities, as was mentioned earlier, have a particular difficulty in getting qualified teachers. The majority of the science teachers will not have even the minimum of necessary education to teach the subject. I think we've got to work hard to do something to make the schools in the inner cities better. They must become a priority. We must try to make it a more equal society in every way we can. In the state of Maryland, for example, we give more state aid to a district which has less of a tax base for students.

We all have to work together to make the environment of the inner city like that of the rest of our society. It's one of the biggest domestic challenges that we have as a society. We should concentrate on it in every way we can. I'm glad that the Calvert Institute is joining with others to make clear that we must give a priority to the teaching of math and science. I think if we all work together, we can make a real change. I look forward to the discussion of the individual points.

MR. LIEBMANN: It is our hope that this would not become yet another academic exercise or an addition to the many volumes of reports that are referred to by some of our speakers, and also referred to in our report. This is, as we all know, a gubernatorial election year. It was and is our hope to get both gubernatorial candidates to declare themselves on this problem. Both, as I understand it, have in some measure declared themselves. I recall approximately a year ago that Lt. Governor Townsend expressed concern about the inadequate compensation of science and math teachers. I also note that Congressman Ehrlich has spoken of the need for a Thornton Two to infuse a qualitative element into the large amounts of funds that are proposed to be distributed by the Thornton report.

I should observe, (this is partly a reflection on costs which Dr. Langenburg referred to), that the numbers with respect to high school science and math taken by themselves are not quite as awe inspiring as the numbers that Dr. Langenburg mentioned. There are approximately 50,000 public school teachers in this state serving a population of approximately 1,000,000. Of those 50,000, on my back-of-the-envelope calculation, perhaps 12 or 13,000 teach the three upper grades. Of those 12 or 13,000, perhaps 5,000 are teachers of science and mathematics. A \$10,000 increase beyond the normal salary scale for those teachers would equal approximately \$50,000,000 a year. If one were to add to that similar increases for the narrow categories of special education teachers that are underpaid, you would be looking at perhaps \$70,000,000 a year, which is a relevantly small part of the additional state money that is proposed by the Thornton Report to be distributed to the subdivisions. I think the conclusions that one may draw from this are obvious.

If ever there was a time to more adequately compensate science and math teachers, it is now when the state is proposing to greatly increase aid to public education and is in the position to condition portions of that aid on this problem at long last being addressed. I may be correct in that I invited both campaigns to send someone to speak here. Both campaigns have had some trouble with the logistics of that. I believe a young lady in back is here to represent the Townsend campaign. If you'd like to come forward and say a few words, I'll turn this over to you.

MS. COLLEEN MAHONEY: I just returned, last weekend, to my alma mater, which is Smith College. They have selected several schools in Harlem and they are bringing young women up every summer to Smith College to actually use their facilities there to increase their math and science capabilities. It's those types of partnerships that are actually very interesting and creative and I hope that we can do more over the next few years.

The Lt. Governor talks about the importance of recruitment and retention. She also had an experience that I'm sure is not foreign to many of you in this room. Last year a constituent contacted her who wanted to teach in the Baltimore City public school system, had a Ph.D. and was unable to teach because the undergraduate degree was at a foreign university and they were

missing one piece of the normal parameters of what they expected of a teacher. It wasn't an issue that impacted science and math.

Actually, if I remember correctly it was an English language, some type of English "thing". This was the barrier to why this person could not teach in the Baltimore City public schools. Yet, it was something that seemed like it should be such a no-brainer. Here's a qualified individual, there is a need, let's make it work. But there are inordinate problems in making that happen. I think that we are very interested in what types of new responses we can start over the next few years. We also have had several interesting conversations with businesses here in Maryland. The nursing shortage, for example, which is one piece of the science curriculum. The University of Maryland Medical system and what they are doing. They are working with one particular high school here in Baltimore City to— actually a middle school — to identify children early to make sure they get the science and math education that they need so that when they get to high school they know where they are going, they have a direction and they can see that math and science is a career that actually could mean something to them.

PROF. DENNY GULICK (Department of Mathematics, University of Maryland, College Park): I want to mention just two things. One is on the mathematics side and the other is for the teachers. I'm especially nervous about the teaching side because I have a son who is now teaching in an inner city school in San Francisco, teaching mathematics, quite by accident. He says that this will be his last year because he spends 80 to 100 dollars a week on his school. In addition to the salary, as was mentioned briefly by Dr. Langenburg, there also are the working hours. The working hours, one is not paid very much per hour for teaching mathematics and grading 150 papers. We, in college, don't have the kind of problem and maybe we work 80 hours a week but we kind of like everything we do, so it's a little different story. I believe that Texas has now set aside some money for help in grading mathematics papers in the schools. I'm not talking about tests, I'm talking about homework because as it's been mentioned here, right at this podium, of course homework is necessary to learning.

As for mathematics, there of us in my department tried to address issues that we find with the students that come to us. In particular we found that the algebra skills for those who are going to be taking calculus, and there are a lot of students taking calculus every year, there are about 2,000 a year, the algebra skills and understanding is way down. It's gone down more or less precipitously for the last 10 or 15 years. We know because we've been teaching there for more than 3 decades. We wish that the schools would be able to resist the prodding by parents that the students leapfrog ahead from topic to topic and actually learn topics before they move on.

Finally, there was a mention of calculator use. We also do find an overuse of calculators to the detriment of really understanding the processes. What we need from our students— they need to own the subject matter. They need to own English. They need to own some historical facts. They need to own mathematics, which means more than memory work. It also means understanding at the same time. I use this quite a bit now, the notion of owning the subject. That is the curriculum side I'd like to address.

PROF. LASZLO TAKACS (Department of Physics, University of Maryland, Baltimore County): Especially, I very much agree with the problem of getting good teachers and retaining

them. My special perspective to this matter is that I came to this country years ago from Hungary. I was an adult in two countries. I was very closely working with education back there and I try to work somewhat in high school education and also college. I'm teaching college students here. What are the differences?

I started studying physics, that is my subject. just like any other Hungarian child would and continued studying physics to the end of high school. Not just a special emphasis on physics, but chemistry and biology also through all this period. It was a very much different kind of studying. Rather than getting a big dose of usually biology first, then chemistry, then the basic foundation of physics, there was a repetition many times, once in middle school, once in high school.

The most important concepts came up in many ways. The educational system is set up differently here, so this probably won't work. But I very strongly believe that some kind of general science education would be very important. Some integrated high school science education. Where physics, chemistry and biology are integrated into one system.

The other thing I wish to emphasize is the student perspective. There is really not enough appreciation of excellent students, as far as I can see. Students that excel in science will excel in mathematics. You can hear about students who are big, strong, tall, fast, who create in athletics. You don't hear about students who do math better than most. You don't hear about students who excel in physics and chemistry. You don't see posters at the front of the school that show that these are our prides. X,Y, won the chemistry competition nationally, the math competition .

There really aren't all that many competitions like that.

The way I grew up there was a system of say, math or physics competitions on every level. School level, provincial level, national level. They very much respected the students who excelled

We do have some science competitions, science fairs. I have to say they are almost childish compared to the international system of competitions in mathematics, physics, chemistry. The US team does okay, but there is no system below that. The US team is selected in a random way from difficult special high schools. I tried to be involved in it several years ago and it just didn't work.

I think that on the student level, we need more appreciation of excellent students. Any subject but especially science and mathematics would be very helpful. That could also trickle down to the teachers who could use those excellent students to contribute to retaining the best in teachers and identifying the best in teachers.

MR. LIEBMANN: We will have a brief period of interchange among members of the panel addressed to the subject of where the state should go from here and how it should get there.

DR. LANGENBURG: It is inevitable that the Principal gets more than any of the teachers. In any school system you normally have a hierarchy of pay. The higher your position, the more the pay. That is not true in universities. I used to be the Chancellor of the University system. There

was a person who got more salary than I did. There was a dean in his place who got more salary than he did. There were professors who got more salary than the dean. We pay salaries according to what we think is required to get the right person for each position. There are many examples where the highest pays go to professors, rather than to others. We've got to get the idea of merit determining salary much more into the schools and not tying them to administrative salaries. On the question of federal funding, this nation decided long ago that the federal government should not bear a significant part of the responsibility for public education at any level. We do not have a ministry of education. We have a department of education that has been a little bit controversial politically from time to time. There are signs that it is beginning to take a little more aggressive role in responding to some of the problems that we have been talking about today. But the fact is, education remains a state and local responsibility.

I think most Americans are not inclined to seek revolutionary change in that. I was a member of the Thornton Commission. It was charged to examine the state's contribution to the funding of K-12 or pre-K through 12 schools and to examine its adequacy. The constitution of the state of Maryland requires that the state provide, I've forgotten the precise term, but an adequate education to all of its citizens, or ensure that this is done. That is about the only explicit requirement in the constitution. The constitution doesn't require the state of Maryland to build roads, or run police departments, or much of anything else. It does require it to ensure that all its citizens have an adequate education. So the Thornton Commission was asked to look at the state part of the funding formula and to make recommendations. It did so and its conclusion was that at over some period of years, I think it said 5 years, the state ought to be putting in about a billion three more than it now is. Different jurisdictions, different counties, support their schools at different levels. In part, that is because different counties have the economic ability to do so and other counties don't. Yet, in part, it is because some counties may have the ability but they won't.

I can assure you that Montgomery county is not at the top of the list of counties that make huge investments in education in Maryland relative to its economic capability. I do have to say based on an awful lot of data that I've looked at, that Montgomery county is a very wealthy county. It does a good job of funding its schools, but nevertheless, I think it's very clear that we, as a state, have a responsibility to make sure that every student in the state, whatever maybe the county of his or her residence, gets a good education.

As a personal comment I would say that it's just as likely that the person who is going to win a Nobel prize for discovering the cure for cancer, if there is a cure, and there probably isn't, is currently in a public school in Baltimore City or Caroline County, as it is that they're in Montgomery county. We've got to make sure that in order for us to have a vital society and a strong economy, we've really got to educate everybody.

DR. TOLL: This is a very difficult problem. One is the politics of the various counties. We are paying for our education, why can't you pay for yours? On the other hand, in my comments I said I believe that a good education system does more than just educate the kids. It solves a lot of social problems and it provides a lot of economic development for the state as a whole. So to some degree, and I think an extensive degree, it's an investment.

Baltimore can't afford to put as much money, it just doesn't have the money, in its education system as Montgomery. The other part of that is what everybody has mentioned which is the accountability. I think a big part of this problem is that everybody recognizes the difficulty. Everybody recognizes the need to do something about it. But there is a feeling that a lot of the money gets wasted. The accountability part, which Don was very thorough on, is an integral part of these financing schemes and a solution to the problem. You shouldn't be able to pour money into Baltimore city education without measuring the incremental benefits that that teacher and those funds are going to get. I firmly think the accountability is very important.

DR. LANGENBURG: I think for you to be convinced that the Thornton Commission is right, you have to be convinced that the proposal they're making is fair. I think we all understand that those who are more wealthy would expect to pay a greater proportion of the tax dollars needed to support our society than those who are poor. The only question is in making those adjustments, you have to feel that there is some sensible rationale so that indeed Montgomery county is not being overtaxed relative to others.

That takes a careful explanation. It's an especially wealthy county so it knows it has to carry a heavy burden. We've been gradually distributing the burden in this state so that other parts of the state are helping to carry the poorest areas like the city. I think it's inevitable that that happens, but I agree at every stage we have to show good use is being made of the funds and that it's a fair system. It must be carefully spelled out in the legislative process.

I just wanted to make one more comment about Montgomery county. You may or may not have read that the University System of Maryland has recently been awarded a \$7,500,000 grant from the National Science Foundation which calls for us, , I'm speaking about us here because I'm co-principal investigator on that grant, to work in partnership with Montgomery county public schools to substantially elevate the level of high school science teaching. Not math teaching, but science teaching.

Over the next 5 years, we, and we in this case includes a significant number of professors like the two professors here from UMBC and from College Park, who work with freshmen in elementary courses to form mutual learning communities with their counterparts, we will over 5 years include every single high school math teacher in Montgomery county.

The result, we hope, is going to be substantially improved science teaching both in the Montgomery county high schools and in our universities. It's going to be a challenge. We are delighted to have Montgomery county working with us because in many ways it is representative of the national challenges we all face. Montgomery county is traditionally viewed from elsewhere in this state as populated by mainly rich people who own big cars and some horses and send their kids to Ivy League schools.

The fact is Montgomery county is increasingly diverse, economically, socio-economically, racially, ethnically and the lot. It's got some challenges. We have new high school assessments coming up for all of our high school students. Montgomery county recently gave all of its high school biology students a kind of pre-assessment test. It was awake-up call because half of them



flunked. There is a lot of work to be done in Montgomery county and we are delighted to be working with the county to do some of that work.

MR, LIEBMANN: Let me ask the panel a question which I think is a practical and pertinent one. The coming session of the General Assembly is going to have before it the first stage of implementation of the Thornton recommendations. If nature is left to take its course, the money will be made available to the local school boards. The local school boards will negotiate contracts with their teachers unions. Those union contracts, if the past is any guide, will be single salary schedule contracts. The net result of the extra money will be what the net result of the extra money has been since teachers unions became influential beginning in the early 1960's, namely that the extra money tends to be spent to increase the number of teachers and to reduce class size rather than to bolster qualitative improvements in the teaching force. The question I would put is is that an accurate assessment in this circumstance? If so, what should be done about it? What conditions should the legislature place on the additional funds that are about to be appropriated?

DR. LANGENBURG: The Thornton Commission, as I noted, was asked only to look at the adequacy of state funding. It was not charged with looking at how those funds were to be spent or what conditions might be imposed. Certainly he who pays the piper likes to call the tune but there is considerable sentiment it seems to me for not asking the state to dictate in great detail how those monies were to be spent but rather to leave those decisions where most people believe they belong, at the local jurisdiction level. Having said that, I think holding the schools accountable, their leadership accountable, their teachers accountable for performance, is critically important. I would suggest that the place to look for the mechanisms that would allow us to do that is not on the input level. That is to say not by directing the schools to take these state funds and do that with it. But rather where there is a broad consensus developing, it should be placed. That is at the results level.

To put it over simplistically, let the schools, I would say let individual schools, I would even say let individual teachers do it however they want to do it. Judge them and hold them accountable for what happens to their students. We are increasingly developing more and more adequate means to do that. The Feds are now requiring us to test students in every grade. We are going to have an awful lot of information about the progress that each individual student is making through each individual class, each individual teacher and each individual school. We need to use that to hold the schools accountable for their results.

I think some very positive things have been happening for some time. In the state, Nancy Grasmick has been the main motivator of measuring, and I'm talking K-12 now, of measuring results and pushing measurement which has gotten a lot of publicity and a lot of spotlight on the problems in the schools. Nevertheless, depending on who you ask, you have anywhere between 75 and 85% drop-out rate in the neighborhood high schools in the city of Baltimore. That is intolerable.

The Bush administration's bill, the bill passed in conjunction with Congress, includes measuring and holding accountable. That is not going to solve things this year or next year, but I don't think

that is going to stop. If you talk about voucher systems, which I know is a terrible word and everyone gets upset about it, folks support it more in the inner cities than in the suburbs.

That is because parents, contrary to conventional wisdom, in the inner city are very concerned about their children getting a good education. They know they are not getting a good education. I think there are a lot of forces. The problem is so big it seems you are working against the tide here. To some degree you are. There are progress on the achievement tests. I think this is going to accumulate and increase and there will be a demand for results. I think that the forces of reform are on the offensive here. The forces of the status quo are on the defensive. Unfortunately there will be a lot of kids lost in the period before the reforms take place. Lost educationally, I mean, there is not all gloom on the horizon.

DR. TOLL: Nancy Grasmick has been a leader in progress but the particular method she was using has had to be changed to meet the new federal requirements so she's had to throw out her old tests and there will have to be a whole new set developed. Which I hope will be done fairly rapidly.

In other words, competition to do really well is a good incentive to improve the schools.

MR. LIEBMANN: Once again, I am struck by the contrast between the reform strategy here and that which has recently been pursued by both Conservative and Labor governments in England. In England you have had some of the things you have had here. You have had league tables and accountability tests. What you have also had is a determination to decentralize responsibility to the level of the individual school. You have also had the national government mandating various forms of extra pay and merit pay out of recognition that the political force of the unions has been such that they have tended to dominate the local education authorities. I do think that people are overly casual about the wise use of Thornton money, accountability testing or not, given the commitment of the unions to the single salary schedule.

I think frankly, they need to be hit over the head with a plank. The only person who can hit them over the head with a plank is the incoming governor, whoever he or she may be.

DR. LANGENBURG: I just wanted to comment about the situation in the UK. One more thing should be said. If you look at the international comparisons that you referred to earlier, George, in which typically American elementary school students do pretty well compared with their counterparts in a couple of dozen other developed nations, they steadily lose ground through middle school and high school and come out pretty close to the bottom by the time they graduate from high school. Fifteen years ago the Brits looked a lot like us.

It is interesting what the effects of the reforms, first in the Thatcher government, and continued through the present government have actually done. Britain has leap-frogged us. Its advances have been just extraordinary. We ought to look very carefully at what they have managed to do as we undertake our own reform efforts. Thornton has been passed but it hasn't been funded. I would presume that as the funding becomes an issue that the measurement and accountability would be part of that funding. I would think that the hours of the week and so forth pale before the conditions of the teaching in the inner city in terms of the parental interest, the actually

dangerous conditions for teachers and I know one of the things we've supported is Teach for America's students or graduates in the inner city system. They've done very well and I think we are up to 140 now. Those teachers, Teach for America is a program where students from very good schools who are not necessarily trained as teachers are hired and commit for two years in the city school system. They have an opportunity to get their masters.

They're assigned now in groups to give each other support which is necessary in some of these schools because things have been done a certain way for a long time. Regardless of the money, how much money does it take to — or is there enough money to make someone teach in a school that they are uncomfortable or afraid in. That is a big challenge.

I don't know how much money is enough either but when New York responded to the mandate that it stop hiring unqualified, uncertified teachers in its schools, they solved that problem with, I think, about \$5,000 a teacher. They started attracting teachers from the suburbs to the inner city. To get back to the larger question, I think if you think about any true profession you will find that it is structured, and the work environment is structured, so that those who are charged with the responsibility for the demanding, complex, central function for which an enormous amount of training in education is required, pretty much get to focus on that function. They are provided with help from other sources to take care of ancillary functions. Teaching is just about the only profession that I can think of where this isn't the case. It's got to start being the case. I don't know exactly how that ought to be approached but it seems to me there needs to be teachers assistants or teacher aides in much larger numbers in the schools. Somehow or other we've got to take the serious responsibility for major disciplinary questions out of the teachers' hands. We shouldn't have the teachers doing monitoring in the cafeteria at lunch time. They ought to be free to do the really hard part of their task, which is teaching.

Teaching is one of the most challenging, one of the hardest things there is to do. Most ordinary human beings simply can't do it. We have dedicated people who not only can do it but want to do it. They're in the schools and they need a lot more help than they are getting.

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Jacob A. Stein

# CHARACTER AND REPUTATION

**T**here was a time when what is called character testimony was a good defense in a criminal case. Three or four witnesses testifying to the reputation of the defendant for truthfulness and honesty together with a rousing closing argument could bring in an acquittal. Such closing arguments picked up on the court's instruction that character testimony standing alone may create a reasonable doubt as to the defendant's guilt.

Here is the way the argument goes:

The court will instruct you that evidence of good character may, standing alone, create a reasonable doubt, a reasonable doubt that requires you to acquit the defendant. Ladies and Gentlemen of the jury, in some cases there is no other defense against prosecution witnesses who give perjured testimony. You have heard the character witnesses testify that my client is

an honorable and good man. His good character, established week by week, month by month, year by year, repels the allegation he suddenly repudiated a lifetime of honesty and became a criminal.

Although the witnesses were called character witnesses, they were in fact reputation witnesses whose testimony was restricted to what they knew of the general reputation of the defendant. The defendant's true character—what it really was—remained known only to the defendant. Mark Twain made the point when he said if a man's reputation was to meet on the street the man's true character, they would not recognize each other.

Despite the common-law restriction that a character witness was permitted only to say what others thought of the defendant (not what the witness himself thought of the defendant), a resourceful witness would always find a way to convey his own wonderful feelings about the defendant.

Theodore Roosevelt was such a witness. Roosevelt once appeared as a character witness for a prominent Washington banker charged with a felony related to bank records. Frank Hogan of Hogan & Hartson represented the banker. The trial took place in what is now called the old United States District Court Building at Fifth Street and Indiana Avenue.

In speeches made years later, Frank Hogan fondly recalled that when Teddy Roosevelt entered the courtroom everyone stood up. Then Roosevelt took over and gave in colorful language his own personal view that the defendant, although a banker, was a saint, all in violation of the applicable rules of evidence.

Then Roosevelt looked at the judge and said: "And by the way, Judge, I knew I had met you somewhere. I appointed you

because of your civic righteousness, because of your interest in the poor of this city, on my committee to clean out the slums. That's what I did, and you were one of the best men on the committee I ever had. I know, Gentlemen of the jury, you are glad to hear that about your judge. I knew I recognized him."

When Roosevelt left the courtroom he passed in front of the jury on his way out. He said, "Goodbye, Gentlemen of the jury. I always like to appear before a jury of my fellow citizens, for you are rendering a public service. You are rendering a really great public service, just as much as the judge there. You are here to do justice. That's why you are here—and I know you are going to do it, I know you are going to do it." The jury did the right thing and Frank Hogan got his acquittal.

There is a school of thought that contends that a character witness who has had an opportunity to observe the defendant when off-guard, such as an employee of the defendant who saw him in good times and bad over a long period of time, has more credibility than a so-called face card witness.

There are a number of reasons why character testimony does not have the impact it once did. Firstly, a defendant nowadays often does not testify in his own behalf. The defendant is told by counsel that if he takes the stand and he is convicted, he may have substantially increased his sentence because the judge has reason to believe that the defendant lied under oath. Therefore, stay off the stand. Character testimony concerning the defendant's reputation for truthfulness and honesty is out of place when the defendant does not testify.

Another reason is that trials have changed. The prosecutor has evidentiary resources unavailable years ago. He has witnesses who have been granted immunity and who know more about the

character of the defendant than any character witness the defendant may call.

The third reason and perhaps the most important is that the general view of human nature has changed. In early novels, the hero was all good and the villain was all bad. Charles Dickens's novels demonstrate the point. His main characters are either wonderfully wonderful or as bad as bad can be.

Gradually fictional characters changed. The hero is not all virtue and the villain is not all vice. We have changed also. We no longer believe in unflawed goodness. Somerset Maugham, the novelist, and a sophisticated observer of human nature, had this to say: "Selfishness and kindness, idealism and sensuality, vanity, shyness, disinterestedness, courage, laziness, nervousness, obstinacy, and diffidence, they can all exist in a single person and form a plausible harmony."

Juries carry with them to the jury box this general skepticism. They know people who are generally good and who then decide to steal from their employer. They read of such cases every day in the papers and see them on TV every evening. Therefore jurors are more skeptical of character testimony than they were when life was simpler.

If we needed any additional corroboration, we are getting it from the historians who eagerly tell us that even the Founding Fathers—Washington, Adams, Jefferson, and Hamilton—had their bad days as well as their good days.



Jacob Stein took part in the Bar Library Lecture Series on January 21, 2009 with a presentation on "Perjury, False Statements & Obstruction of Justice." Generous with his time, Mr. Stein was generous in other ways as well as indicated by the language in the preface to the third volume of *Legal Spectator* from which the following was taken. Mr. Stein wrote "This book is not copyrighted. Its contents may be reproduced without the express permission of, but with acknowledgement to, the author. Take what you want and as much as you want." The works featured in the *Legal Spectator*, originally appeared in the *Washington Lawyer*, the *American Scholar*, the *Times Literary Supplement*, the *Wilson Quarterly*, and the ABA Litigation Section's publication. I want to thank Bar Library Board of Director Henry R. Lord for his time and efforts in reviewing the writings of Mr. Stein for inclusion in the *Advance Sheet*.