



Arizona's
Race
to the Top



What Will It Take to Compete?

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This report was produced with funding from the Bill and Melinda Gates Foundation.

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Arizona's *Race to the Top*

What Will It Take to Compete?

➤ Introduction

The U.S. Department of Education recently published a notice of draft priorities and requirements for applying for *Race to the Top* (RTT) funding — \$4.35 billion in competitive federal grants. Even though it constitutes the smallest piece of education stimulus funding in the American Recovery and Reinvestment Act, *Race to the Top* represents the most significant source of education stimulus funding ever to be awarded to states by competition, with the vast majority of funds awarded by formula to all 50 states and the District of Columbia.¹

While the U.S. Department of Education is under no obligation to spread *Race to the Top* money among all states, that may be what some states expect, since there is so much money available. But we're betting that is not how the race will go. So, what will it take for Arizona to compete?

It is no surprise that one of the four key reform areas laid out in the *Race to the Top* priorities notice is "great teachers and leaders." The premise of this paper is that the core of education reform is human capital. The National Council on Teacher Quality (NCTQ) believes that strategies for cultivating, attracting, and retaining effective teachers must be the centerpiece of any serious education reform effort. Without a focus on human capital — on reshaping and improving the teaching profession itself — we believe that reform-minded policymakers won't get past the starting line.

That said, NCTQ doesn't have a stake in this race. But we think we know something about what it will take for states to be competitive in the *Race to the Top* and what states need to do to make real improvements in the quality of teaching and learning in their schools.

¹ Arizona was approved for a total of \$1.017 billion in State Fiscal Stabilization funds. As of the end of September 2009, a total gross outlay of \$ 531,347,266 had been made to Arizona, with an additional \$211,091,027 obligated to the state [Source: Recovery.gov <http://www.recovery.gov/FAQ/Pages/DLCenter.aspx>]. In addition to the funds dedicated for *Race to the Top*, states also have opportunities to compete for \$650 million for the What Works and Innovation Fund; \$250 million for state data systems; \$200 million for the Teacher Incentive Fund; and \$100 million for Teacher Quality Enhancement.

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Therefore, we think the human capital mandate is more than just one of four key “assurance” areas states must address in their *Race to the Top* applications. We are convinced that designing a “comprehensive and coherent” approach to RTT, as required by the Department — an approach that addresses data infrastructure, teachers, struggling schools, and standards/assessments — cannot be delivered by any state that fails to attend, first and foremost, to human capital. Clearly the strategies we present here concerning human capital require effective data systems to implement. Any well designed human capital strategy will make struggling schools a priority. And certainly an effective workforce cannot deliver results without a common set of rigorous learning standards. But if the “teacher” part of a state’s RTT application is wanting, the race is lost before it starts.

In this paper, we lay out a number of features of *Race to the Top* funding and what states like Arizona should expect from the upcoming competition. We then provide a description of the kind of strategies — including next steps broken down by key actors and back-of-the-envelope cost calculations for implementing such strategies — being promoted both by Department officials as well as the many influential education reform groups that have the Department’s ear.

NCTQ recently prepared white papers for Colorado and Michigan that provided much of the basic advice and information included here.² We issue the same general advice and tips for being competitive in the *Race to the Top*. Indeed, we provide much the same advice we’ll give to any state that asks NCTQ to give our best analysis of the race. In this memo, however, we have tailored, where appropriate, our specific implementation recommendations and cost calculations to the particulars of Arizona’s education system.

Why *Race to the Top* May Follow a Different Path

There has never been a federal funding opportunity like *Race to the Top*, in which states can request a level of funding they identify to do virtually anything. No doubt many states will assume that a lot of the bold early talk coming out of the Department is the customary bluster of a new administration. That’s a gamble for each state to take, one that could be just as easily lost as won. NCTQ believes the Department is serious about only funding real prospects for reform, and that states will be likely to find status quo proposals shut out. Here’s why:

Genuine reformers mapping the course. To begin, U.S. Education Department officials are being uncharacteristically talkative about their expectations for *Race to the Top* funds. That’s unusual for this normally circumspect, even timid, federal agency not known for pushing the envelope when it comes to states’ own policies. At this juncture, Secretary Arne Duncan appears to have no problem making “suggestions” about what he expects to see in states’ proposals and his staff is publicly following suit. In doing so, they are hoping that they can improve the customary quality of proposals. Most of them are fervent education reformers and see this as “a chance in a lifetime,” to quote Duncan. They are invigorated and have resolved that change will truly happen this time around.

It’s true that every new administration wants to begin with a strong showing off the starting line. Perhaps this new group is naïve, but it would be a risk to dismiss their belief in *Race to the Top*’s ability to generate real reform. In fact some of the leadership that Duncan has wooed to the Department was lured there because of the RTT money. They see RTT funds as their consolation prize for having to send \$100 billion of stimulus funds out the door without any real strings attached.

2 See http://www.nctq.org/p/docs/NCTQ_CO_Race_to_the_Top.pdf and http://www.nctq.org/p/publications/docs/nctq_michigan_racetotop.pdf.

Close observers of Department appointees have surely noticed that most of the jobs are not going to state officials. Duncan's senior staff is full of well seasoned education reformers, veterans of organizations like the Education Trust, the Aspen Institute and the Bill and Melinda Gates Foundation. In former roles, many of them have watched along the sidelines, frustrated as states made what they perceived as half-hearted attempts at reform. Rightly or wrongly, many of them feel that states have squandered federal dollars aimed at closing the achievement gap, and this is their opportunity to remedy those disappointments.

In fact, among Duncan's latest appointees is Joanne Weiss, who will be in charge of developing the RTT guidelines and awarding the grants. Weiss is a savvy and serious reformer who previously managed education investments for the New Schools Venture Fund, a group that resides at the core of the education reform movement. Also now at the Department advising Secretary Duncan is Brad Jupp, a leader in the collaborative effort to create a teacher compensation system based on student learning in Denver Public Schools.³

Influential reform community. At this (admittedly early) point, Department officials do not appear all that interested in spreading the \$4 billion in RTT funds around too thinly. They have stated that they are willing to award the funds to as few as six states because it may take that kind of money to successfully tackle difficult education reforms and because the Department is prepared to receive only that many proposals worthy of funding. They're right on both counts, but that doesn't mean that they won't have to withstand tremendous pressure to relax their standards and expectations.

The education reform community is not just strong inside the Department, but it has penetrated Washington, and will exert considerable pressure of its own to ensure that RTT lives up to its potential. The Bill and Melinda Gates Foundation is a formidable powerhouse, extremely well connected politically, that does not hesitate to exercise its muscle on policy. Partnered as it is with other reform minded foundations such as Broad, Carnegie, Joyce and Dell, as well as influential education organizations such as Education Trust, NCTQ, The New Teacher Project and the Center for American Progress, its clout should not be underestimated. Department officials regularly look to these powerful and influential organizations for advice. To date, the Department has sought advice and direct technical support from these organizations, hoping that their involvement will ultimately improve the quality of the proposals states submit.

Human capital at the forefront of reform. The most challenging feature of *Race to the Top* is the law's requirement that states will have done some of the hardest work before even applying. What may be difficult for state officials to get their heads around is that the Department will be looking for evidence that the state has indeed made progress on the four assurances (struggling schools, data infrastructure, teaching, and standards/accountability), not just to keep the spigot running on stimulus dollars, but to ensure that their application for RTT has any chance of funding.

While the Department describes an "absolute" priority for comprehensive reform across four priority areas, there are numerous signals that human capital may set the pace on the RTT course. Therefore, Arizona needs to consider where it stands on the following issues identified in the RTT priorities notice:

- *One of the "State Reform Conditions" — a pre-condition for state RTT proposals — is the extent to which the state provides alternative pathways for teacher and principal certification. Working in its favor, Arizona already has an established alternative certification process that requires candidates to show evidence of above average academic performance and pass a subject-matter test to demonstrate strong content knowledge⁴. While Arizona's Alternative Secondary Path to Certification has some structural weaknesses*

3 For more information about Denver's ProComp initiative, see <http://denverprocomp.dpsk12.org/>.

4 See: <http://www.ade.state.az.us/asd/altpath/> and <http://www.ade.state.az.us/asd/altpath/TeachingInternCertificateStakeholderResponsibilities.pdf>.

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and is only available to candidates who wish to teach in grades 9 to 12 in core academic areas, the existing program demonstrates that Arizona has already put into place a foundation for systemic support of alternate routes.

- *The Department is demanding that states be able differentiate teacher and principal effectiveness based on performance and student growth.* Currently, Arizona does not have systems in place to match teacher and student data in order to link teacher and principal effectiveness with student growth. The Arizona Education Data Warehouse (AEDW) Statewide Longitudinal Data System is a strong step towards building an infrastructure that could allow for assessments of educator effectiveness. But at this time, the system does not have the capacity to support the kinds of value added analyses that are a pre-condition to being considered for RTT funding. Arizona will need to demonstrate that the state is working towards this goal and will, in very short order, be able to evaluate educator effectiveness based on academic achievement.
- *To be eligible for RTT a state must not have any legal, statutory or regulatory barriers to linking student achievement or growth data to teachers for the purposes of teacher evaluation.* Although Arizona does not require instructional effectiveness to be a key criterion of teacher evaluations, it does not appear that the state has any regulatory barriers in place to prevent its consideration as such. Arizona must consider whether the state will adopt policies that require districts to use evidence of student learning as the preponderant criterion of teacher evaluations.
- *In describing “Great Teachers and Leaders” the RTT notice highlights reforms designed to improve teacher evaluations, compensate highly-effective teachers, develop rigorous and transparent procedures for granting tenure and dismissing teachers, ensure the equitable distribution of effective teachers and hold higher education institutions accountable for the effectiveness of teacher preparation programs.* To what extent are these reforms on the agenda of the Governor, the State Board of Education, and key legislators in Arizona — and how willing are stakeholders to rally around such proposals?

Advice at the Starting Line

Governor Brewer, Superintendent Horne, the State Board of Education, state legislators, and other state and local education leaders in Arizona must begin the *Race to the Top* process by selecting the optimal strategies for building a successful proposal. Arizona has tapped its P-20 Coordinating Council to make recommendations to the Governor on what will be included in the state’s RTT application.

This paper presents seven human capital strategies that in our view stand a good chance of being funded, if properly designed. But no matter what strategies a state ultimately selects, be they from our list or another, we offer some general advice:

Apply early. There will be two rounds of RTT funding (see timeline below). In June, *Race to the Top* czar Joanne Weiss told a meeting of governors that states applying in Phase I would enjoy no advantage over those applying in Phase II. We take this to mean that the review standards will be identical, because there are in fact some ways in which applying in the first round offers a clear advantage.

A month ago, we would have advised Arizona to apply early because there is likely to be less competition in the first round. But it is quickly becoming apparent that many states now intend to apply in Phase I. Still, we think states should apply early. Regardless of how many states apply in Phase I or how the Department decides to divide the funds between the two rounds, Phase I applicants, to put it simply, have first dibs. In a discretionary competition where applicants identify their own funding levels, this matters. Second, unsuccessful applicants in Phase I will have the benefit of reviewers’ comments that identify strengths and deficiencies that can be used to hone their

proposal for Phase II. We see several advantages and no real downside to applying in the first round. There is really no reason for Arizona to wait.

There's no such thing as too bold. Bold, tough reforms—the ones that may seem too challenging to pull off—should be the goal. In describing the seven human capital strategies included in this paper, we identified some of the political obstacles and dissenting arguments that will be made against them. We could have identified many more obstacles, because all of the recommended strategies take on politically contentious issues.

We have seen a few states' preliminary thinking premised on qualifying for RTT funds under already existing reform efforts. If these examples are any indication of the broader thinking of states, there is a deep and wide canyon to bridge over the next few months. For example, one state cited as evidence of its strong support for teacher compensation reform a bonus pay program enacted by one of its districts. The bonus program was not paid for by the state but by a grant from the federal Teacher Incentive Fund. Though this is a popular strategy that states like to use when applying for federal money — taking credit for what may be the isolated successes of their own districts — it's unlikely to be the kind of comprehensive reform expected by the current bunch at the Department.

Avoid boutiques, single district experiments, coalitions of the willing. A strong proposal should not feature too many boutique experiments, reforms that involve just a few of the more willing districts while the rest are left alone. A strong proposal should make it clear that whole-state reform is the unambiguous goal and provide the road map for getting all districts on board eventually.

Be cautious about pilots. What about pilots — essentially boutique programs that are meant to be scaled up? It may indeed make sense for a good pilot program to precede large-scale adoption, especially when the reform is as significant as these are meant to be. But states should be aware that their long history of using federal funding for pilots has engendered a good deal of cynicism among the community of education reformers. From their perspective, they have seen too many pilots go no where — turning out to be efforts to avoid genuine reform, not inspire or justify it.

The proposal needs to be very clear about the timetable for reform, from pilot to full scale. The Department intends to monitor whether states meet benchmarks along the way. While it may make sense to launch certain strategies with a set of identified districts to serve as trailblazers, there needs to be clear plan for filling in behind them with additional districts.

States would do well to listen to Secretary Duncan's resolve on this matter, as he has advised states to demonstrate the "political will to fundamentally shake up the way schools are funded and operated." The word "fundamental" here is not just rhetoric, but key.

Expected timeline for RTT funding decisions

August 29, 2009 →	Public comment period on the proposed grant application closed.
November 2009 →	Notice inviting applications expected to be published in the Federal Register.
Jan-Feb 2010 →	Phase 1 applications due.
Mar-Apr 2010 →	Phase 1 grants awarded, winners announced.
June 2010 →	Phase 2 applications due.
September 2010 →	Phase 2 grants awarded, winners announced.

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Take into account a state's lack of on-the-ground knowledge. Most of the human capital reform strategies we present here require a great deal of state coordination and local implementation. In putting together an RTT proposal, it will be impossible for the state to foresee every local issue that will arise in carrying out these strategies. For their part, districts will undoubtedly identify local barriers to effective implementation that must be addressed and/or ways to customize these strategies that can enhance their effectiveness. Arizona should consider building into its proposal a discretionary fund that can be used to address these costs and consider district costs described in this memo when designing a proposal for how local RTT funds would be spent if granted to Arizona.

Large scale reform should impact all dimensions. The Department will be looking for signs that the state understands the importance and inter-relation of the four assurance areas. In fact, this is the only absolute priority identified in the draft notice, meaning that applications that do not include a comprehensive approach to the four areas will not be considered. The Department has made clear that cherry-picking which of the four key reforms to really focus upon (teaching, data infrastructure, struggling schools and standards/accountability) with only lip service to the remainder is unacceptable. Conversely, picking one strategy under the heading of each assurance area is also not likely to be the best way to go. The optimum strategy lies somewhere in the middle: demonstrate bold, systemic reform led by a single assurance, but which requires by its very nature real and substantive integration with the other three assurances.

Human capital strategies can't just be tacked on to a state's RTT proposal. We think that it is the key assurance area for states to demonstrate the bold systemic reform the Department is looking for. Integration of the assurance areas behind a bold set of human capital strategies is the strongest approach to a competitive RTT proposal. Recruiting, training and retaining good teachers and ensuring that they are effective in the classroom will obviously require improved data infrastructure and data collection. The work of good teachers will be best guided by rigorous standards and assessments. And the ultimate impact of effective teachers will be improvements in struggling schools. All of the RTT assurances can be achieved in tandem with a strong teacher-focused human capital driven reform agenda.

RTT is a catalyst. Sure, RTT is going to be a big, one time financial infusion of funds. But if what Arizona proposes in its RTT application isn't reflected consistently in state legislation, budget priorities, and leadership priorities at the state and local levels, the effort will not likely get funded. We already know that federal funds alone can't sustain a comprehensive state reform. According to the National Center for Education Statistics (NCES), only about 11 percent of Arizona's elementary and secondary education revenues come from federal sources — about \$822 out of \$7,338 in annual per pupil expenditures.⁵ State investments into education far outweigh even large federal grants such as RTT. If RTT isn't truly part of a statewide plan, the effort will run off track fast.

Stand out from the pack. Many states are struggling with whether and to what extent they should marry their own proposal to other states' proposals. The concept of a multi-state application initially had more potency than it does now. The Department is now requiring all states to submit their own proposals. In addressing human capital needs, such as the quality of teachers and where they are assigned, a multi-state proposal does not make much sense.

There are important areas of state collaboration though. And the Department has signaled that it likes consortia and efforts to build off existing improvements, particularly in the area of data infrastructure.

5 Sources: "Revenues and percentage distribution of revenues for public elementary and secondary education, by source and state or jurisdiction: Fiscal year 2007" (http://nces.ed.gov/pubs2009/expenditures/tables/table_01.asp) and "Student membership and current expenditures per pupil for public elementary and secondary education, by function, subfunction, and state or jurisdiction: Fiscal year 2007" (http://nces.ed.gov/pubs2009/expenditures/tables/table_03.asp).

It is a positive that Arizona is part of the Common Core State Standards Initiative. The 48 states and the District of Columbia which signed up to participate in that effort are likely to have a leg up over the small few that did not. But that still leaves every state but Alaska and Texas on equal footing in this assurance area when it comes to competing for funds. With so many on board, Arizona should not assume that their participation will significantly increase their chances of RTT funding. On the other hand, there is a real concern that states that have committed to the idea of common standards may get cold feet when it comes to actual adoption. Dropping out could certainly be detrimental to a state's RTT chances.

Fair or not, the past matters. The Department has indicated that how states spent their education stabilization funds is going to impact RTT eligibility. While the Department is pragmatic about the extent to which these funds can realistically drive reform, they want to see that they were spent responsibly and that there was some attention to reform issues.

States that have not used stimulus funds to save teaching jobs, for example, might find it harder to make the case that they should qualify for RTT funds. States that could not be prevented from spending their money to build new schools or fund pension obligations might earn black marks when RTT proposals are considered. For example, in June Secretary Duncan sent a letter to Pennsylvania Governor Ed Rendell expressing his displeasure with a plan to cut the state's education budget despite stimulus funding and indicating that the adoption of this budget would hurt Pennsylvania's chances to receive RTT funding. States that were able to direct some portion of this first round of funding towards the four reform areas identified by priorities (data infrastructure, teacher quality, struggling schools and standards/accountability) may have a leg up.

Pass groundwork legislation and regulation NOW. Based on what Department officials are saying both publicly and privately, they appear to be expecting significant changes to state laws and regulations necessary for carrying out the specific reform strategies. In other words, the Department wants to see some of the groundwork in place when the proposal is submitted, so there is no risk of awarding a state a large grant that has a possibility of going nowhere right from the start.

We don't take this to mean that every rule or regulation related to the proposal must be in place, just the fundamental building blocks. But in some cases this groundwork is a pre-requisite for a state application to even be considered for funding.

Throughout this paper, we lay out what we expect those statutory and regulatory changes to be as they apply to human capital strategies. Our advice should be considered speculative until such time as the Department issues a final RFP and guidance of sufficient specificity. There is a great deal that the initial notice of priorities did not specify.

Arizona would surely benefit from awareness among a number of key legislators that the state legislature has a critical role to play in laying the groundwork and helping to develop a RTT grant proposal. If the state legislature is not prepared to act on critical reform initiatives or is unable to do so successfully, there may be some alternative pathways available. Though there may be instances when there is no way around legislative action, the state should explore all existing authorities, including the State School Board, the Governor's executive authority, and local district authority.

Managing the RTT process. As already discussed, a comprehensive and integrated reform proposal is a must. But Arizona also must take care to ensure that the reform process is not burdened by the structure created to identify and implement the reforms. Too many levels of decision-making or too many players to coordinate can become cumbersome and as challenging to manage as the reform strategies the state seeks to adopt. Managing the process of applying for RTT funds is a balancing act — and cannot itself become an obstacle to

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change. Arizona has already made some important initial steps towards coordinating the process of applying for RTT funds by having the Governor's P-20 Coordinating Council manage the process of making RTT policy recommendations and overseeing the application process.

Arizona has also appointed a Special Advisor to the Governor who is overseeing the state's involvement in RTT. Debra Duvall, former Mesa Schools superintendent, will be working with the Governor's Education Policy Advisor, Karla Phillips, and with P-20 Executive Director Debra Raeder to develop the state's RTT application.⁶ It is important that Duvall (or any other official designated as "in charge") does not have a single other public responsibility.

Forge alliances NOW. Job one in the first stage of this process will be to consider the types of critical partnerships needed to fuel the proposal. Critical partners for nearly all of the strategies described here are the state legislature, the superintendents of Arizona's local school districts, the Arizona Education Association and local teachers' unions, higher education institutions (particularly schools of education), parents, Arizona-based foundation leadership and a myriad of external consultants needed to advise and carry out the work. Forging partnerships in advance of an application isn't just a good idea; it is fundamental, with clear action steps not just agreed to by all the partners but in some cases already done.

Local districts also need to be brought in from the beginning. Given the requirement that 50 percent of *Race to the Top* funds must be sub-granted to local education agencies, a state application that makes only ambiguous reference to the role of its districts or the commitment of its districts to carry out a proposal written entirely by state officials is certain to fail. The application needs to articulate not only how districts have been heavily involved in the planning, but what they have already agreed to do. Do all school districts have to be on board? No. But the mix of districts matters. The Department will no doubt be weighing the lack of total district buy in with evidence that the larger districts and districts with significant populations of poor and minority children are participating.

Teachers' unions need to be brought to the table. The message that change is coming is a constant refrain in the remarks given by the new AFT President, Randi Weingarten, but with the important caveat "with us, not to us." Giving teachers and the organizations that represent them an opportunity to hear and be heard about human capital strategies is important. In truth, some of the changes that the Department is seeking may be difficult for local or state unions to accept. Fundamental changes to tenure, evaluation and compensation, for example, may be rejected on their face. But Arizona is well acquainted with challenging the status quo and tackling reforms despite the opposition of the teacher organizations. Having made good faith efforts to work cooperatively, a state that needs to move forward unilaterally must be prepared and willing to do so.

It is critical for states to keep in mind that there are other stakeholders involved apart from school districts and unions, the two groups with the most at stake, and who are also the most likely to resist or embrace change. These other stakeholders often represent the interests of children and the community, such as civil rights groups, advocacy groups, business leaders, religious organizations, and parents. Arizona also has a wealth of knowledge and talent in the state's higher education system. Their contributions are essential.

While it is essential that Arizona forge alliances and keep important stakeholders apprised of the state's plans, the reality is that much of what NCTQ recommends in this memo will require strong leadership and political will in the face of major opposition from some very important education stakeholders.

6 http://www.azgovernor.gov/dms/upload/PR_080709_RaceToTop.pdf

Let the Race Begin

The bad news: Having made human capital one of its reform pillars, the Department has made clear that it believes all states have considerable work to do on improving teacher quality. **The good news:** Without exception, the state can exert significant influence on virtually every aspect of the teaching profession.

Each year the National Council on Teacher Quality, through our *State Teacher Policy Yearbook*,⁷ closely examines the strengths and weaknesses of every state's teacher policies. Arizona has some relative strengths. But here are some of the areas where improvement is needed:

- **Arizona sets the bar too low for becoming a teacher.** Arizona doesn't do enough to hold teacher preparation institutions accountable for ensuring the quality of the teachers they produce. While the world's highest achieving systems only admit persons in the top third of their class into teaching, here in the United States almost anyone can become a teacher. In Arizona, an aspiring teacher does not have to pass a basic skills test to get into a state-approved education school.⁸ Seventeen states do require such a test as a condition of admission, so making that change should be a priority for Arizona.
- **Arizona needs to improve teacher evaluations.** Arizona does not require instructional effectiveness to be the preponderant criterion for any teacher evaluation. The state has a 3-year probationary period for new teachers, and does not articulate a process or the criteria for granting teachers tenured status — making the probationary period virtually meaningless. When teachers are evaluated, student learning needs to be the preponderant criterion for a teacher's rating, which is required by a handful of states (though often poorly implemented by their districts). As one of 22 states with no role in the evaluation instruments used to assess teacher performance, Arizona ought to consider state developed teacher and principal evaluation instruments in order that the instruments can be properly validated.⁹
- **Arizona needs a stronger data infrastructure regarding human capital.** The evaluations described above require a data system that can be used to provide some evidence of teacher effectiveness. Currently, Arizona does not have such a data system. However, the state is building a longitudinal data warehouse that can provide the state with the capacity to match teacher records with student records — a system that could allow value-added analysis to provide part of the evidence of teacher effectiveness as well as serve as a solid foundation for any effort to adopt performance pay for individual teacher or school performance. Note, however, that the Department is acutely aware that there are 18 states in the country with the current capacity to generate value-added test scores, but that only two of them actually do. To receive RTT funds, it won't be sufficient for Arizona to improve its data infrastructure without also declaring its intended purpose and then setting that purpose in motion.
- **Arizona has no consequences for poor teacher evaluations.** Arizona is commended for requiring that all teachers who receive an unsatisfactory evaluation remedy their performance. However, the state does not address consequences for teachers who receive subsequent or repeated unsatisfactory evaluations. Arizona should strengthen its policy to make teachers who receive two consecutive unsatisfactory evaluations or two within five years to be formally eligible for dismissal.¹⁰

7 See www.nctq.org/stpy

8 Connecticut, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee and West Virginia are among states that require candidates to pass a basic skills test as a condition for admission to a teacher preparation program. These states set a minimum passing score for the test.

9 Today, Florida is the only state that explicitly requires teacher evaluations to be based primarily on evidence of student learning. Florida also offers strong policies that encourage and protect compensation reform.

10 Arizona can look to Pennsylvania for a state that requires annual evaluations of all teachers and provides guidance to districts about the need to place teachers receiving unsatisfactory evaluations on probation. Pennsylvania also requires teachers who do not improve to be formally eligible for dismissal.

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- **Arizona needs to improve its alternate routes into teaching.** Arizona already has an established alternative certification process that requires candidates to show evidence of above average academic performance and pass a subject-matter test to demonstrate strong content knowledge.¹¹ However, there are some weaknesses to Arizona's alternative certification process, namely, that the state does not ensure that its alternate route provides streamlined preparation that meets the immediate needs of new teachers, and that the alternate route is only available to candidates who wish to teach in grades 9 to 12 in core academic areas.
- **Arizona needs to pay for performance rather than for advanced degrees.** Research is clear: there is no tie between advanced teaching degrees and student achievement.¹² Yet in most states and districts, teachers receive an automatic significant increase in salary for earning a master's degree. Arizona should articulate policies that definitively discourage districts from tying compensation to advanced degrees. Although Arizona has pay-for-performance and career ladder programs, and recently began to prohibit school districts and charter schools from adopting policies that give employment retention priority to teachers based on tenure or seniority, the state does not require that teachers demonstrate evidence of effectiveness for licensure advancement. Arizona appears to be spending an additional \$5,410 on average for each teacher with a master's degree, for an annual state-wide expenditure of roughly \$149 million — about \$125 per student per year.¹³ That is a significant chunk of money that could be used to support retention pay for effective teachers and provide differential pay for effective teachers in shortage subject areas or high need schools.

Non-Starters in the Race to the Top

Before offering a menu of human capital strategies, we think it is worthwhile to lay out what we think are non-starters in the *Race to the Top*. We think states should avoid large, professional development initiatives not directly related to an absolutely concrete strategy. Reducing class size is not a comprehensive reform. States should forget about dumping lots of money into technology acquisition for its own sake. Don't bother proposing impressive pilot programs unless there is a real plan to scale up to the state level in short order. In short, skip everything and anything that looks like business as usual. It will hurt your chances in this competition.

11 See: <http://www.ade.state.az.us/asd/altpath/> and <http://www.ade.state.az.us/asd/altpath/TeachingInternCertificateStakeholderResponsibilities.pdf>.

12 See Appendix for research demonstrating the lack of a relationship between advanced teaching degrees and student achievement.

13 Marguerite Roza and Raegan Miller, July 2009, Separation by Degrees, Center for Academic Progress. http://www.americanprogress.org/issues/2009/07/separation_of_degrees.html.

➤ Seven Human Capital Strategies for Arizona to Consider

In the following pages, we outline seven strategies for identifying and improving teacher effectiveness in Arizona. While fundamentally strategies for human capital reform, these strategies also address the other identified reform areas of state data systems, struggling schools and standards and accountability. We discuss their integration throughout.

1. Institute a Performance-Based Management System

The Department views this area as the bedrock of human capital reform. We believe that any proposal that does not address the fundamentals of a strong performance management system — evaluation and tenure — is unlikely to be viewed favorably. Just how important this strategy is to the Department is shown by the proposed eligibility requirement in the draft notice that states must not have any legal obstacles to linking student achievement data to teacher or principal evaluation. The Department is not including this as a priority, but going even further by making it a condition of eligibility. Any proposal that addresses real comprehensive reform in this area is going to be a standout. However, it is also the most politically tough strategy and the one that has the most pre-conditions — work that must be done before the proposal can go in.

2. Provide for the Equitable Distribution of Teachers and Principals

3. Improve Teacher Induction

4. Introduce Compensation Reform

Optimally speaking, any or all of these three strategies should be employed in concert with the performance management strategy (Strategy 1), as no single one may be quite enough to satisfy the Department's requirements for comprehensive reform. However, it is possible that the Department could view a proposal containing one, two or all three of these strategies (2-4) without a link to Strategy 1 as strong.

5. Bolster Teaching in STEM Fields

6. Strengthen Teacher Preparation Including Alternative Certification

7. State-aided adoption of an effective curriculum

Strategies 5 and 6 are certainly on the radar screen of Department officials, but they don't carry the same mandate as Strategies 1 through 4. They represent creative strategies meeting critical needs. They may be more politically viable than the first four strategies, and are perhaps the only choice for a state wanting to access RTT funds that has insurmountable barriers to taking on Strategies 1 through 4. The Department has proposed a competitive priority (i.e., bonus points) for proposals that include an "emphasis on Science, Technology, Engineering and Mathematics (STEM)." Strategy 5 could easily be paired with Strategy 7 to address this priority, provided a math or science curriculum was selected for adoption. While these last few strategies offer a very good way to earn those STEM bonus points, we believe the challenging and comprehensive approaches discussed in the first four strategies will still enjoy the greatest competitive advantage.



➤ STRATEGY 1

INSTITUTE A PERFORMANCE MANAGEMENT SYSTEM

(Teacher Evaluation, Tenure, and Dismissal)

Objectives

Given the tremendous impact teachers have on learning, no strategy a state will take on is likely to have a greater impact on student achievement than one which seeks to maximize teacher and principal performance. A successful performance management system — one that gives educators the tools they need to be effective, supports their development, rewards their accomplishments and holds them accountable for results — is essential to the fundamental goal of all education reform: eliminating achievement gaps and ensuring that all students achieve to their highest potential.

One of the greatest shortcomings of performance management applied in schools across the country (and central to its massive dysfunction) is the system's inability to differentiate instructional competency. If this system can be said to serve anyone at all, it is perhaps teachers in the middle. Much like schools' tendency to "teach to the middle," schools evaluate and compensate to the middle, failing to identify and reward the most talented educators and ignoring educators who struggle. This disregard has disastrous consequences for the health of the teaching profession and for students.

Improving teacher evaluation is the Department's top human capital priority. In fact, it is not even waiting for RTT funding to make sure there is at least some movement in this area. The Department has already announced that beginning with school year 2009-2010, states will have to report the range of teachers' evaluation ratings for every district and school, and whether those ratings are correlated with any measures of student learning. Further, the Department has proposed that a state with any legal or regulatory obstacles to linking student achievement data to teacher and principal evaluations will not be considered eligible for *Race to the Top*. The Department's draft review criteria include "differentiating teacher performance and principal effectiveness based on performance" as an expectation for the human capital assurance.

Department officials are also committed to making it less burdensome to dismiss teachers found to be consistently weak. It's hard to bring higher profile to this issue than President Obama's March 2009 speech in which he stated: "Let me be clear: If a teacher is given a chance, or two chances, or three chances, and still does

Strategy One

not improve, there is no excuse for that person to continue teaching. I reject a system that rewards failure and protects a person from its consequences.”

As the core of its performance management strategy, Arizona should guide the development of a comprehensive teacher evaluation system measuring teacher effectiveness. Some of the evidence should be provided by value-added data that could theoretically be generated through the state’s Arizona Education Data Warehouse (AEDW) Statewide Longitudinal Data System; additional evidence should be provided by other sources of objective student data and classroom observations by peer reviewers. All teachers should receive an annual rating based on the evidence accumulated from these sources, with clearly defined levels used to differentiate teacher performance.

The first order of business is to build a system that is reliable and fair. This consideration must be first and foremost in the minds of state-level leaders, who must decide which pieces of the system will be developed and mandated by the state, and which pieces of the system will be developed at the individual district level. The need for fairness strongly suggests that the state have a role of, at a minimum, providing guidance, models and tools for developing such a system and requiring that any locally developed evaluation systems be validated by the state. The state should be the lead in setting standards for what acceptable teacher performance should be.

By building a system of formal and informal evaluations, local needs, both at the district and school building level, can and still should be accommodated. The informal instrument should allow districts to incorporate local curricula, instructional priorities and professional development initiatives relevant to evaluating individual teacher performance. Even with formal instrument, districts should be able to customize, although it will be the responsibility of both the district and the state to ensure that the validity of the instrument is not compromised by any alterations.

Huge investment will be needed for training. Even the best evaluation system will be crippled by poor implementation and poor training in use of the system. With more than 2,000 K-12 public schools in Arizona’s nearly 600 school districts and charter schools — each of which is treated as a separate school district — training will be a massive undertaking. Together, this public school system employs nearly 109,000 teachers and educates over 1 million students. About half of Arizona’s school districts are individual charter schools. The other more traditionally structured districts have multiple schools overseen by a single administration. To further complicate matters, the majority of Arizona districts are very small. The 10 largest districts account for approximately 1/3 of all schools and students in Arizona. Arizona and its districts will need to provide training to all stakeholders in the use of the evaluation system, and ensure that districts implement both with fidelity. The state will need a specific framework and training tied to inter-rater reliability. The need for training represents an enormous undertaking for the state. It is no less daunting a task than training an army, given the range of personnel involved, including principals, assistant principals, department heads and teams of peer evaluators. But it is an undertaking that could be underwritten with RTT funds and must be central to the state’s reform proposal.

With an evaluation system in place that measures teacher effectiveness, Arizona should also examine its tenure process. At present, nearly all states allow districts to award teachers with permanent contract status, or tenure, virtually automatically, without any process allowing for serious consideration of performance. The state should identify a process for districts to use in awarding tenure that considers data collected and validated through the new and improved evaluation system.

Teachers who do not meet established standards for acceptable performance after receiving appropriate support over a pre-established period of time should not be granted tenure. Further, tenured teachers who fall below established standards for acceptable performance should be eligible for dismissal. An evidence-based system such as this can do much to remedy the current excessive challenges that frequently accompany efforts to terminate poorly performing teachers, while also maintaining reasonable due process protections for teachers who meet the effectiveness standard.

An improved evaluation system will also be crucial to other reform efforts underway or that are under consideration in Arizona. Obviously, such a system would be a stronger foundation for the state's pay for performance and career ladder programs.

None of these reforms will be easy. In fact, any effort to put these reforms in place will be met with unparalleled, vocal opposition. In anticipation of such opposition, Arizona leaders will need to explain the imperatives driving these reforms, looking beyond current constituencies to achieve the necessary momentum. More so than any other strategy described herein, success is dependent on an effective and proactive communication plan. It is a certainty that an organized opposition will be well armed with a plan of its own.

A strong proposal to address this strategy will:

- Create a comprehensive system for measuring, differentiating, and acting on individual teacher performance data.
- Demonstrate that the system is designed to advance the highest performers, develop the middle and deny tenure/dismiss the lowest, absent improvement.
- Identify evidence of student learning as the preponderant criterion of the evaluation instrument
- Set successful implementation of a strong performance management system squarely on the shoulders of school principals.
- Base teacher evaluation ratings to a significant extent on objective student data (not limited to standardized test scores), including sources such as examination of formative assessments, progress in the curriculum, random sampling of student work, observational data of student behavior accumulated through classroom walk-throughs, common exams, etc.
- Provide a data system that generates value-added data for teachers and a protocol for incorporating other objective student data for teachers without value-added data.
- Incorporate the use of peer evaluators for both formal and informal evaluations, to enhance and supplement the quality of the feedback and support, but not to supplant a principal's important responsibility.
- Ensure that the probationary (pre-tenure) period will be of sufficient length in order to accumulate adequate data on performance on which to base a tenure decision.
- Establish a clearly articulated process for making data-based tenure decisions.
- Lay out the obligations of the district and principal to provide support structures for teachers identified as poorly performing and sets a pre-established timeline for how long such support should last.
- Streamline the mechanism for dismissing consistently poor performers without stripping teachers' right of appeal by discarding lengthy legal proceedings and keeping all decisions in the hands of those with educational expertise.
- Lay out a comprehensive communications plan to increase public awareness of problems that need to be solved by means of this new system.

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A strong performance management proposal will avoid:

- Putting too much priority on developing new evaluation instruments and not enough priority on how principals will be held accountable for conducting high quality evaluations.
- Maintaining a binary system of evaluation. (i.e., a system with only two possible ratings, such as satisfactory or unsatisfactory).
- Defining student learning or teacher performance so loosely that it is of little use for accountability purposes.
- Making only ambiguous connections to the critical data infrastructure needed to drive this system.

Steps Arizona can take *prior* to submission to show the preconditions for reform and improve its chances of RTT success:

Governor/Legislature:

Require student performance as evaluation criterion. Set in statute the requirement that evidence of student learning must be the preponderant criterion for any teacher evaluation, ensuring that a teacher cannot qualify for a passing rating on the basis of non-instructional factors.

Define effective teachers. Include in statute a definition of effective teachers (and teacher ineffectiveness) that bases such a definition on relatively improving or declining academic performance of a teacher's students over an identified period of time.

Require the development of a statewide evaluation instrument. At present, Arizona does not prescribe a particular evaluation instrument but requires local school districts to formulate their own comprehensive evaluation instruments according to a list of several basic elements — however Arizona does not require instructional effectiveness to be the preponderant criterion of any teacher evaluation.¹⁴ Arizona should require the Arizona Department of Education to develop a teacher and school evaluation instrument and mandate that evidence of student learning must be the preponderant criterion of any teacher evaluation, ensuring that a teacher cannot qualify for a passing rating on the basis of non-instructional factors. A weaker, and more expensive, alternative would be to require districts to develop such an instrument that would be subject to a costly validation by the state.

Require tenure based on effectiveness. Arizona should also set in statute a requirement that tenure only be awarded on the basis of teacher effectiveness, with multiple measures used that must include some objective evidence of student learning. As of now, there is no indication that at the conclusion of the three-year probationary period for new teachers any additional process evaluating cumulative evidence of teacher effectiveness is required for tenure.¹⁵ The state should identify a process, such as a hearing, that local districts would be required to administer, where the cumulative evidence of teacher effectiveness would be considered for each teacher and a determination made of whether to award tenure. Teacher effectiveness in the classroom, rather than the completion of a number of years of experience, should be the preponderant criterion in tenure decisions.

¹⁴ Arizona Revised Statutes 15-537 <http://www.azleg.state.az.us/ars/15/00537.htm>

¹⁵ Arizona Revised Statute 15-537(c)

Steps Arizona can outline as part of the state's proposal to improve its chances of RTT success:

State Board of Education:

Require common formal evaluation instrument. As an alternative to legislative action, if possible, the State Board should set in regulation that all districts and schools in the state use a state-developed or state-adopted common formal evaluation instrument which measures teacher effectiveness. If the State Board has the authority to require this, it may be an easier route to follow.

Governor:

Direct Attorney General to prepare a legal analysis re: current due process procedures. Direct the state's attorney general to prepare a legal analysis of the Arizona Statutes regarding the process for terminating teachers identifying and clarifying the appropriate due process rights that should be accorded to a tenured teacher found to perform below standards, distinct from the due process rights of a tenured teacher facing license revocation for felony or morality violations. At present, Arizona does not distinguish its due process rights for teachers dismissed for ineffective performance from those facing license revocation for dereliction of duties, or felony and/or morality violations. Specifically, the process is the same regardless of the grounds for cancellation, which include "immoral or unprofessional conduct." Thus, all tenured teachers who are terminated have the opportunity to appeal multiple times, regardless of cause.¹⁶

While teachers should have due process for any termination, it is important to separate loss of employment for poor performance from issues with farther reaching consequences that could permanently impact a teacher's right to practice. Teachers eligible for termination on the basis of poor performance should not be afforded the protracted protections that typically accompany career-threatening licensure revocations.

Legislature/State Board of Education:

Revise due process procedures. Since current Arizona statute does not distinguish between dismissal of teachers for poor performance versus dismissal due to criminal misconduct or violation of school code, the state should consider amending due process legislation to create a more streamlined due process to accompany teachers dismissed for poor performance from the more protracted rights violations of school code or crimes.

Extend probationary period. It is important for districts to accumulate sufficient evidence of teacher performance and student learning to make reasoned tenure decisions. Arizona should consider extending the minimum probationary period for tenure from three to five years, arguing it gives teachers more time to demonstrate effectiveness. Alternatively, the state could permit eligible teachers to request a delayed tenure review, extending the probationary period one additional year on a more case-by-case basis so that another year's evidence of effectiveness could be collected.

However, the state is likely to find as much resistance to extending tenure as to proposing changes to the tenure process to make tenure a meaningful decision. The most important issue (to the state and the Department) is ensuring that ineffective teachers are not awarded tenure. Therefore, the key issue to be resolved in Arizona is how the state will use its probationary period effectively to identify good teachers and weed out weak teachers.

¹⁶ Arizona Revised Statutes, 15-543, -539

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The state may decide that extending the probationary period is not worth the fight at this stage. An alternative may be to set in statute that a probationary teacher is not *automatically* eligible for tenure after three years of teaching. Principals, however, should not have the right to delay a teacher's the tenure review (essentially depriving teachers of a change in status that should lead to a major bump in salary) but can recommend to a teacher that s/he elect to delay.

Arizona Department of Education:

Create performance management arm. Based on the findings of the impact study, establish a performance management arm of the state agency to develop, implement and oversee training of the state's performance management system. The office would be headed by an associate commissioner. Its personnel would be devoted to evaluation development and training (both formal and informal) and tenure. The office would also have IT personnel charged with overseeing data infrastructure needs of implementing a performance-based system, servicing the new performance management functions and developing state monitoring of data.

Develop statewide formal evaluation instrument. Looking to existing evaluation instruments with a strong focus on student learning, adopt or develop, then validate a formal state evaluation instrument(s). Noteworthy evaluation instruments on which to base an Arizona instrument would be available from the District of Columbia Public Schools, Teach For America, North Star Academy, National Board for Professional Teaching Standards, YES Preparatory and as described in Jon Saphier's *The Skillful Teacher* (heavily influencing the system used in Montgomery County School District in Maryland).

Structure the chosen instrument to give districts some ability to incorporate local curricula and tailor to specific grades or subjects. Do not overburden principals with instruments that take too long to complete; any instrument that takes longer than two hours of a principal's time is too burdensome. Do not develop the instrument "by committee"; instead charge a single individual or organization to develop the instrument, building in a review and vetting process by teachers and districts.

If the state puts the requirement on local districts (rather than on itself) to develop the formal evaluation instruments, the state still ought to develop a model that would be validated, as an option for local districts to adopt.

In addition to developing and implementing this system, working with district teams, develop the content alternatives and framework for an informal evaluation system as well as the technologies that districts might use to facilitate data collection from such evaluations. These informal systems would be premised on frequent classroom walk-throughs by principals or teams of teachers of 5 to 10 minutes in length, and possibly would possibly make use of wireless technology to facilitate quick observations. The instrument must be flexible enough to allow individual districts or intermediate school districts to decide the content, but the Arizona Department of Education would coordinate, making the process more efficient.

Develop online training modules. Develop two-part online training module for formal evaluations: 1) Part 1 illustrates teachers in action in the classroom and how they would be evaluated so that teachers can get a sense of what they're aiming for in their own practice. An assessment would be included to ensure that teachers have actually viewed them; 2) Modules for evaluators in the second part demonstrate how to do an evaluation with examples drawn from teachers in action in the classroom. The training modules could be housed on the state's IDEAL website.

Develop a tenure toolkit. New York City provides its principals with a tenure toolkit to help them decide if tenure should be awarded. Develop a similar tenure toolkit to help principals make a responsible recommendation on tenure. Design a model system for making tenure decisions that delineates a tenure hearing, with the district presenting evidence before a review board justifying tenure, giving the teacher an opportunity to present, and includes including a recommendation from the school principal. Train tenure review teams from all over the state for three days each summer, with a test at end of training and a one-day follow up mid-year.

Develop a policy/process for tenure hearings. Arizona also should identify a specific process that local controlling boards will use, such as a hearing, where the cumulative evidence of teacher effectiveness would be considered for each teacher and a determination made whether or not to award tenure.

Collect and report teacher quality data. Regularly collect and report to Governor and the public key data from the performance management system, modeled in part after Maryland's StateStat system.¹⁷ Some of the data that should be reported are aggregate evaluation ratings for teachers by district and by school correlated with student achievement results; a tracking mechanism and timeline describing where teachers who have been rated unsatisfactory are along on the continuum; number of eligible teachers granted tenure, not granted tenure; and correlation of principal recommendations with tenure decisions. These data should be reported on school and district report cards as well as to the Governor.

Local Education Agencies:

The district-level strategies described below may, in some cases, be an alternative to state-level actions. In other cases, the local strategies are in support of the strategies described above.

Develop formal evaluation instrument. While it is not impossible for the formal performance-based evaluation system to be developed at the district level, NCTQ strongly recommends this as a state-led strategy. If necessary for districts to take the lead on developing their own instruments, such instruments must be validated by the state and the state should provide models for instruments local districts could adopt. If undertaken as a locally-driven process, the validation process will be very costly.

Create local performance management arms. Much of the work of implementing such a system will be locally-based. Whether or not the state takes a hands-on approach to evaluation development and implementation, it will be appropriate for many of the state's individual districts to hire and/or shift personnel to create a performance management arm — similar to the position at the state level — to develop, implement and provide support for local implementation and training on the state's performance management system.

Customize evaluation instruments. Arizona's local districts will play a critical role in identifying valid and reliable sources of student learning for each grade and subject area beyond standardized tests and incorporating local curricula, instructional priorities and professional development initiatives into the evaluation framework. The state should validate and approve any changes to formal instrument. Teams of teachers and principals would assemble to customize formal and informal evaluations to district curriculum, grades, subjects; teachers would be nominated by their principals. Superintendents would name principals.

17 See <http://www.statestat.maryland.gov/>

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Training and orientation on informal evaluation. Under the assumption that the state will develop, validate and provide training resources for formal evaluation instruments, there is an important front line role for local districts to develop and provide the training on informal evaluation instrument to principals, assistant principals, department heads, and peer leaders. Districts would also provide orientation to teachers in the new informal and formal evaluation processes.

Recruit peer evaluators. Individual districts will take the lead in recruiting individuals to serve as peer evaluators, for the purpose of supplementing principal evaluations within a school for both formal and informal evaluations. Particular attention would be paid to providing peer evaluators with particular subject matter expertise to schools where principals may feel inadequate to the task (e.g. secondary math instruction).¹⁸

Create tenure review teams. Tenure is an important milestone and awarding it to teachers should be afforded the respect it deserves. The local entities charged with making tenure decisions should revisit tenure review process and ensure that teams consisting of effective teachers and administrators in each district conduct tenure reviews. Districts will need to implement a process that requires an objective review of the evidence, as well as recommendations for or against tenure made by the principal and/or district representatives and an opportunity for the eligible teacher to present evidence on his or her own behalf. Tenure review teams can be formed by recruiting retired teachers and paying a healthy hourly rate to great teachers to conduct tenure hearings, after school, Saturdays, school breaks and summertime. Train eligible teachers, principals on new tenure process. Teacher's principal presents evidence and makes recommendation to committee. Use existing staff development days to provide training. Make the review process transparent. Establish a reasonable appeals process for a teacher denied tenure based on performance.

Provide intervention for low-performing teachers. Set in district board policy a meaningful support system and a clearly defined process for intervention to take place when a tenured teacher is rated unsatisfactory. While Arizona sets a time frame within which teachers must remedy their performance, there needs to be a clearly defined remediation process. For example, districts might establish a 90-day remediation process. The process would provide a one-on-one mentor for ten hours a week for a period not to exceed 30 days. At the 30-day mark, the principal would decide if 1) sufficient progress had been made to warrant ending the mentor help or 2) additional/different help is still needed, extending some form of the mentoring through another 60 days. At the end of 90 days, if insufficient improvement has been made, dismissal proceedings must begin.

Hold principals accountable for their evaluations. Hold principals accountable, by validating their ratings within the evaluation system. Use independent third party peer evaluators with content and grade expertise to evaluate randomly-selected teachers. The goal would be to have enough third party evaluators in a district or region to evaluate 10 percent of the teaching force the first year, 15 percent of the teaching force the second year, and 25 percent of the teaching force the third year. After three years, the team would be deployed more randomly.

To ensure that principals identify a range of skill on their staffs, require them to annually report to the district those teachers they consider to be in the top 15 percent and those teachers in the bottom percent. As the district gains confidence in the fairness and accuracy of these evaluations over time, and the evaluation system matures,

¹⁸ Schools need to build the schedules and staffing that permit peer support as part of the normal day-to-day activities of staff. Much of the peer-to-peer work that needs doing in a school should occur within the regular team support system. Some evaluation functions can be completed by assistant principals and department heads. Arizona can employ the use of peer evaluators for the purpose of relieving some of the burden on principals and improving the quality of evaluations by having multi-party feedback. They need to be recruited from outside the school(s) where they will be assigned in order to maintain objectivity. Peers should be chosen by a committee that includes the union and district leadership. The peer reviewer can take on the role of independent evaluator for underperforming tenured teachers, in order to buttress or refute a principal's rating.

develop strategies to reward the best (see Strategy 4, Compensation) and support and, if necessary, dismiss the weakest. Align results with student achievement results and compare the two in discussions with principals.

Make data reports to state and public. It will be Arizona’s local districts that will need to generate the appropriate data on evaluation, tenure and dismissal at the district level that will be used to hold principals accountable to the district and feed data to a “StateStat” system to help the Governor and State Superintendent of Instruction to hold districts accountable.

STRATEGY 1: Costs and Timelines

Steps	Explanation/Timeframe	Costs	Level of Reform
Hire an independent consultant to study management and staffing changes required by performance management system.	2-3 months	\$100,000	State
Evaluate state programs such as Career Ladders that use peer reviewers to assess teacher effectiveness	6 months	\$200,000	State
Develop formal evaluation instruments.	Noteworthy evaluation instruments on which to base an Arizona instrument would be available from the District of Columbia Public Schools, Teach For America, North Star Academy, National Board for Professional Teaching Standards, YES Preparatory and as described in Jon Saphier’s The Skillful Teacher (heavily influencing the system used in Montgomery County School District in Maryland). 6 months	\$200,000	State If State required local districts to develop, State would need to provide models and validate locally-developed instruments.
Hire an independent consultant to develop and validate the business requirements of the new evaluation and performance management system (content, indicators and metrics, with validation process).	4-5 months	\$400,000	State
Develop the technical requirements (report generation, navigability of reports) of the formal evaluation system.	9 months	\$700,000 to \$1.9 million	State

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Steps	Explanation/Timeframe	Costs	Level of Reform
Develop the content alternatives and framework for an informal evaluation system as well as the technologies that districts might use to facilitate data collection from such evaluations.	9 months	\$2million	State/Districts
Provide training modules for school leaders and peer evaluators on conducting formal observations. Incorporate training into principal certification training.	Year 1: 15 regional training sessions through County Educational Service Agencies, 6 months Year 2: 10-15 regional training sessions through County Educational Service Agencies, 6 months \$3 million x 2 years	\$6 million	State/Districts
Provide funds to 4-5 districts that are effective training providers to provide their own evaluation training.	\$300,000 x 5 Districts x 2 years 6 months	\$3 million	State/District
Develop two-part online training module on formal evaluations for teachers and principals.	Part 1 illustrates teachers in action in the classroom and how they would be evaluated so that teachers can get a sense of what they're aiming for in their own practice. Part 2 demonstrates to principal how to do an evaluation with examples drawn from teachers in action in the classroom. 9 months	\$1 million	State Implementation of training by Districts.
Develop data tracking systems that integrate and facilitate both the informal and formal evaluation systems.	7 to 9 months	\$600,000	State
Develop a tenure toolkit that integrates value-added data and other objective evidence of student learning.	9 months	\$700,000	State
Incorporate teacher evaluation data into public reporting system.	Assuming that the AEDW will provide the appropriate data for an evaluative public reporting system, and that the funds have already been outlaid and/or committed to this process, no additional funding should be necessary.		State
Launch public engagement campaign.	Throughout reform process.	\$10 million	State

Steps	Explanation/Timeframe	Costs	Level of Reform
Customize formal evaluations.	Team members would work 30 hours @ \$50/hour, 2 representatives for each of the state's 25 largest districts, ¹⁹ and 1 representative for each additional school/charter in the state.	Approximately \$2 million	Districts/ Charter Schools
Statewide meeting to review local customization efforts.	Statewide meeting to share results of district customization and best ideas with teams from each district and charter school.	\$250,000	State/Districts/ Charter Schools
Finalize customized evaluation instruments.	Teams working under \$5,000 stipend per member submit to local school boards draft of formal and informal instruments for all grade levels, subject areas.	\$6.6 million	Districts
Provide local training on evaluation process — principals, teachers, district staff.	Training on evaluations. Dedicated district personnel needed. Online and on-site training.	\$20 million	Districts/ Charter Schools
Hire peer evaluators to review new teachers.	Dedicated district and charter school personnel needed, cost TBD. Use existing professional development days. Paying peer evaluators \$80,000 per annum (including benefits), they can conduct 3 evaluations per day, 160 days a year for a total of 480 teachers per year. If all first and second year teachers were evaluated at least once by a peer evaluator, the cost to the state (with estimate of 10,000 teachers in first 2 years of teaching) would be \$3 million, with additional funding needed to supervise the program.	\$1.6 million plus funds to supervise	Districts/ Charter Schools

19 Arizona's 10 largest districts account for approximately 1/3 of the total Arizona public school population.

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Steps	Explanation/Timeframe	Costs	Level of Reform
District intervention program for low-performing teachers.	<p>A possible 90-day intervention strategy would initially provide ten hours per week of intensive mentoring to help the struggling teacher to improve. 4 weeks, 10 hours per week @ \$30/hour= \$1,200 per teacher.</p> <p>Estimate 25% of the teachers then taken off the plan; 75% remain on, receiving help on average for 4 hours per week, 8 weeks, @ \$30/hour.</p> <p>With state teaching force of 109,000 assume about 5% or 5,000 eligible teachers @ \$1,200= \$6 million.</p> <p>75% of the 5,000 eligible is 3750 teachers x \$960= \$3.6 million District or charter school staff to run the program.</p>	Estimated \$9.6 million per year	Districts
Third party evaluators to validate principal evaluations of teachers.	<p>Evaluators paid \$300/evaluation. With a workforce of 109,000 teachers:</p> <p>Evaluating 10 percent, or 10,900 teachers, would cost \$3.2 million (Year 1); 15 percent, or 16,350 teachers, would cost \$4.9 million (year 2); evaluating 25%, or 27,250 of those teachers, would cost \$8.2 million (year 3).</p>	\$15.5 million over three years	Districts/ Charter Schools
Establish tenure review teams.	<p>Average cost of a tenure hearing \$375.</p> <p>Estimated number of teachers currently in 4th year of teaching, 4300.</p>	\$1.5 million	Districts
Local data management.	Assuming the state builds a longitudinal data warehouse that has customizable reports, the cost would be minimal to districts to do the business requirements for the reports. ²⁰	\$50,000	Districts

²⁰ A system using wireless technology would be needed if one of the components of the model was classroom observational data. The costs may far outweigh the benefits of something like this and it might be best to consider the wisdom of such a move after all other features are in place.

How This Strategy Connects to Other RTT Reform Areas

With performance-based teacher evaluation as the centerpiece of a RTT proposal, there are clear connections to all of the Department's identified assurance areas. Identifying effective and ineffective teachers is a critical strategy for turning around low-performing schools. Arizona could ramp up the intensity and speed for launching new evaluations — and new intensive teacher intervention programs — at its struggling schools. The state data system required for performance-based evaluation is an integral component of the evaluation system, providing some of the objective evidence of teacher performance for annual ratings and tenure decisions. Finally, the evaluation system provides a concrete mechanism for assessing whether teachers are teaching to the state's identified standards and teachers' students are meeting state performance standards.

Likely Obstacles

Arizona can expect some intense opposition to this strategy proposal. Below we acknowledge the major protests and how leaders should frame their responses.

- Teachers may have a legitimate concern that standardized test scores are not a fair reflection of their individual performance.
 - *The evaluation system allows for the use of objective evidence of student learning beyond standardized test scores.*
- It is not in unions' interest to make it easier to fire teachers.
 - *An evaluation system that incorporates objective evidence of student learning and which uses multiple rating systems makes it less defensible to keep ineffective teachers on the rolls.*
- Principals may complain that they do not have enough time to evaluate/observe all teachers multiple times each year.
 - *An evaluation system that truly differentiates among different levels of teacher performance should provide opportunities for even high-performing teachers to further develop their knowledge and skills. However, districts may find the objective data piece sufficient for evaluating their 10-15% of highest performing teachers and eliminate the classroom observation component.*
- Teachers will likely feel that changing tenure takes away protections to which they are entitled.
 - *The state is not trying to do away with tenure, but rather to make it meaningful. Tenured teachers will still be entitled to more due process rights than probationary teachers. However, effectiveness will now be the criteria for going from probationary to professional status.*
- Teachers will doubt the fairness of the tenure hearing.
 - *Having the state develop the model for the hearing will help to address concerns about how local districts will carry it out. There will be a mechanism for legitimate appeal.*



➤ STRATEGY 2

PROVIDE FOR THE EQUITABLE DISTRIBUTION OF TEACHERS AND PRINCIPALS

Objectives

Schools serving children living in poverty are more apt to employ teachers with lower qualifications than schools serving more affluent children. In other words, students in need of the most qualified teachers are often shortchanged, at least as measured by teacher credentials. These workforce disparities are the repercussion of teachers' right to choose where they work, both within a district and among neighboring districts in a state. Without encroaching on this right, there is much that states can do to reward and incent teachers to make different choices. States can also do much more to reward and incent districts that help teachers make different choices, and even sanction those that do not.

In truth, few states have shown much interest in telling their districts they need to assign teachers differently, despite language in No Child Left Behind designed to rectify inequities. Some of states' reluctance to act may be rightly based on a concern that forced measures may only engender ill will among teachers; even so, there has been a remarkable absence of experimentation and creative solutions to addressing an issue that is central to closing achievement gaps and that also speaks to our most fundamental tenets of fair play.

The strategies presented here are predicated on our belief that there are many effective teachers who would work in high needs schools but do not — and not because the children in those schools are poor or of a different race or ethnicity. Effective teachers want to work where they can be successful and too often high needs schools are not such places. They also do not want to be perceived as working in last resort jobs, where no one would work if good enough to work elsewhere. Cash bonuses, even when quite significant, are simply not enough to overcome a teacher's fair and proper desire to be effective and to be viewed as effective.

The first step toward addressing the distribution of teachers is to bring transparency to the issue. Arizona should develop an index for quantifying important teacher credentials found to correlate with student achievement. This index should reflect such factors as teacher verbal ability, performance on licensing tests, certification status, academic background, and experience. These school-level data should be reported to the public annually using a system that is easily understood. This index would allow the state to track inequities among school districts, within a school district and even within individual schools.

Among school districts, the state can broker agreements to ease salary discrepancies between more and less affluent districts. Further, the state can use the data from its evaluation system (see Strategy 1) to identify its most effective teachers and establish a Governor's Teacher Corps deploying the best teachers to places where they are needed most.

A comprehensive equitable distribution plan should also address how teachers are assigned across the schools in a particular district as well as within individual schools. The Arizona legislature should adopt a mutual consent policy for all districts in the state, ending a practice that forces principals to take teachers who have lost their assignment in another school, regardless of their fit. So districts can manage such a policy without fiscal hardship, the legislature needs to set a limit on how much time teachers can receive their salaries without having an assignment.

Attention must also be focused on principal quality, as poor leadership is often the reason teachers elect to leave a school.

To combat inequities within a single school, the state should offer incentives to effective teachers to teach classes with high numbers of high needs students, in lieu of teaching the advanced or AP classes.

Much of the senior staff at the Department was openly frustrated by states' tepid response to and the Bush Administration's weak oversight of the equitable distribution provisions in No Child Left Behind. There is also recognition that this problem cannot be addressed by nibbling around its edges. RTT provides an opportunity for major financial support for bold approaches. The Department's draft review criteria include "ensuring equitable distribution of effective teachers and principals" as an expectation for the human capital assurance.

Features of a strong proposal in this area will:

- Include annual reporting of school-level teacher effectiveness data.
- Move on state policies that help to level the playing field for higher needs districts in attracting and retaining effective teachers, such as genuine alternate route programs and interstate portability agreements.²¹
- Develop a teacher corps to place the state's most effective teachers in high needs classes as an intra-district loan or as state employees.
- Emphasize the importance of school leadership and collegial working environments in helping to drive more equitable distribution of teachers.

A strong equitable distribution proposal should avoid:

- Reliance on financial incentives as the main lever for the equitable distribution of teachers.

Steps Arizona can take *prior* to submission to show the preconditions for reform and improve its chances of RTT success:

Governor/Legislature:

Require annual reports of teacher distribution data. Comprehensive reporting may be the state's most important role for ensuring the equitable distribution of teachers among schools, and Arizona currently does not report school-level data that supports the equitable distribution of teacher talent. Arizona does report on

²¹ We describe in our State Teacher Policy Yearbook, 2007 and 2008 those alternate route and portability policies which impede district ability to attract teachers; see www.nctq.org/stpy.

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the percentage of teachers on emergency credentials and the percentage of highly qualified teachers as well as compares the average percentage of highly qualified teachers in high poverty and low poverty schools within each district, but these data are only reported at the district, and not the school level.²²

Arizona needs to mandate that districts must annually report additional school-level data related to teacher distribution. Arizona should consider expanding its data collection to include school level reporting on the ratio of novice teachers to full school staff; annual turnover rate; and teacher absenteeism rate — until a comprehensive index (see below) can be developed.

Arizona Department of Education:

Include teacher distribution data on school report cards. Incorporate teacher distribution data into state, district and school report cards published annually.

Steps Arizona can outline as part of the state's proposal to improve its chances of RTT success:

Legislature:

Create a statewide mutual consent policy. To facilitate districts' ability to equitably distribute teachers, set in statute a statewide mutual consent policy for all districts. Such a policy would require agreement by both the teacher and the principal on assignment to a particular school, eliminating forced placement by the district, or placement in any job by virtue of seniority alone. A state law would always trump local contract provisions. If the legislature cannot pass requirements essentially invalidating current contracts, the statute could apply only to new teachers, grandfathering any current teachers.

Furthermore, Arizona should set in statute that districts are not liable for longer than one year for salary and benefits for any teacher who has been excessed from a teaching position and is unable to secure a new teaching assignment within one year. This challenges the errant notion that the purpose of tenure is to guarantee a job when its true purpose is to provide due process. Further, the security of a full year's salary without a teaching assignment is a benefit not found in any other profession.

An alternative to legislative action is a district by district approach described below.

Governor/Arizona Department of Education:

Establish a Governor's Teacher Corps. Arizona should build on its experience with the Governor's Master Teacher Program to establish, in close cooperation with ADE, a Teacher Corps that deploys the state's highest performing teachers to high needs districts and schools. While this relatively small corps will not eliminate widespread distribution issues, it serves several important functions: (1) It makes working in a high needs school a prestigious assignment, one to which teachers may even aspire; (2) It creates a go-to pool of effective teachers that the state can deploy to places where they are needed most; and (3) It has the potential to create a network of alumni newly committed to the challenges of high need placements.

²² Arizona State Report Card 2007 to 2008 (<http://www.ade.state.az.us/srcs/statereportcards/StateReportCard07-08.pdf>); Arizona District Report Card (<http://www10.ade.az.gov/ReportCard/DistrictDetails.aspx?id=4258&ReportLevel=2>).

Teachers would be identified based on value-added data, and would commit to teach as part of the Governor's Teacher Corps for two years. The state would make up any difference in the teacher's salary between their original district and their Corps assignment, and also provide a \$25,000 (for example) supplement, paid directly from the state so as not to be subject to collective bargaining provisions concerning compensation. While cash incentives do not appear to be an effective recruitment strategies for high needs schools, in this case the significant supplement adds to the prestige factor that comes with being designated by the Governor, is considerably more than teachers would ever expect to receive in a bonus, and rewards these effective teachers for taking on more challenging assignments.

A quandary for districts and states wanting to secure a commitment from teachers to serve a certain number of years is finding a method of remuneration that protects the school from a teacher's early departure. Some districts in Arizona have benefited from the Rodel Teacher Initiative, where the Rodel Foundation buys savings bonds in the names of teachers. If the teacher completes a three-year commitment, s/he is given the savings bond. If the teacher does not complete the commitment, the program returns the bonds to the US Treasury and given a refund in the amount of the original purchase. This is a promising practice that Arizona can highlight in its application and consider expanding as part of its RTT proposal.

Use the bully pulpit. Serve as the bully pulpit on equity and the need to consider student needs before adult needs in staffing schools. Make it clear that this is not a matter of raiding suburban schools for urban ones but of honoring the service-orientation of many teachers already in urban districts, prospective teachers and adventurous teachers who might be seeking a change. Employ public interest to combat teacher resistance to mutual consent and end of pay/benefits after one year of being unassigned to school.

Arizona Department of Education:

Collect and publish data. In addition to including teacher distribution data on school and district report cards, employ a data accountability system, similar to Maryland's "StateStat" in which data related to principal quality and teacher distribution is collected at the local level and reported at the state level, for the Governor's review. Some factors of interest would be principal assignment, teacher distribution within schools, across all schools, school districts; if various strategies had any impact.

Develop an index that measures the qualifications of a school's teachers. This index should look at more than years of experience and should avoid factors that have not been shown to correlate with student achievement. A good example of a strong index is the academic capital index developed by the Illinois Education Research Council,²³ incorporating teachers' undergraduate institution's average SAT or ACT scores; the percentage of teachers failing basic skills licensure test at least once; the percentage of teachers on emergency credentials; average selectivity of teachers' undergraduate colleges; and the percentage of new teachers. As these factors are complicated, the state should install a system that translates these factors into something more easily understood, such as a color coded matrix indicating a high or low score for a school.

Impose mutual consent. An alternative to legislative changes regarding contracts is for the state to take the lead in a district-by-district rather than statewide approach. Echoing a recent move by the commissioner of education in Rhode Island, the Arizona Superintendent of Education may have the authority to issue a directive imposing mutual consent, nullifying districts' contractual provisions in districts where there are schools

23 See White, Bradford R.; Presley, Jennifer and DeAngelis, Karen J. Leveling Up: Narrowing the Teacher Academic Capital Gap in Illinois. Illinois Education Research Council: IERC 2008-1 <http://ierc.siu.edu/documents/IERC2008-1.pdf>.

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that have missed federal and state benchmarks. This alternative would mean that the state could only impose nullification of mutual consent in those selected districts. Further, the federal or state authority we cite here has not been argued before any judicial body — but there may well be such a case going before a Rhode Island court—so it is not possible to say if a challenge is likely to hold up.

Develop a principal performance matrix. Develop and validate a principal performance matrix to encourage districts to make data-driven decisions about principal assignment. Indicators showing if a school principal exceeded, met or did worse on student achievement measures of comparable schools in the district would only be reported after the principal has been assigned to a school for three years. Other indicators would include annual turnover rate of teachers in the school relative to other comparable schools in the district,²⁴ distribution of evaluation ratings of teachers serving under the principal each year and staff absentee rates relative to other schools in the district. As part of its Wallace grant, ADE drafted a framework for principal evaluation. This work, plus the Circle of Honor—a recognition program for principals—could be used as the foundation of the principal performance matrix.

Ensure a high-quality principal pool. Contract with an outside independent group to assess how the state can ensure it has a high quality principal pool. Require the consultants to interview those at the front line of this battle, including the Broad Foundation and New Leaders for New Schools. Analysis should include systems for principal evaluation and accountability, as well as identifying roadblocks, including state laws and regulations, which may prevent the state from attracting and keeping talented principals. Implement recommendations for improved evaluation and accountability and to remove roadblocks, adopt wholesale reform or permit waivers from contract provisions for selected districts or schools.

Help lift salary caps. Organize an inter-district agreement, with all signing districts agreeing to lift any salary caps currently imposed on experienced teachers who come to teach in a district from another district if they are willing to teach in a struggling school. These salary caps discourage talented teachers from moving from one district to another. Districts will raise their overall compensation liability to the extent they make use of this.

Local Education Agencies:

If state level action fails, negotiate for mutual consent at the individual district level. In the event that state level and legislative action described above is unsuccessful, some local school boards may be able to bargain for mutual consent, eliminating the practice of forced placement by the district; seniority placement and bumping rights. Bargain a one-year time limit to district's obligation to provide an excessed teacher full salary and benefits. If a district is not forcing principals to take any teacher assigned to them, but giving them a choice, the district may end up having a certain number of teachers who are earning salary/benefits but not teaching. As described above, the state could provide a cushion for this purpose, having a fund available from which districts can draw.

Recruit new school leaders. Identify and recruit new school leaders, either new to the system or transfer from district schools. Pay a bonus to principals that take on these challenging assignments. Where the quality of school leadership is not an issue, but high turnover of administrators is, consider the burdens being placed on principals working in challenging settings. In addition, districts should consider adding positions to schools — such as business managers — to relieve principals of excessive bureaucratic demands on their time — or adding principal or master teacher positions whose roles are specifically focused on evaluating and improving teacher quality.

²⁴ It is not necessarily the case that staff turnover is low in schools that are well run, at least initially. Good principals often have to make a lot of staffing changes in the first few years. The index would need to accommodate those dimensions.

Provide additional pay for high-quality teachers to teach standard classes. Target inequitable distribution within schools by making pay differentials available in order to get the most effective teachers already assigned to the school to teach standard/non-advanced classes. Develop a process whereby principals must demonstrate how assignments are made and hold principals accountable for the effectiveness of teaching (as measured by value-added data) in non-advanced classes compared to advanced classes. Reallocate Title I and Title II funds or use funds from ending master’s degrees incentives to fully fund these incentives within four years.

STRATEGY 2: Costs and Timelines

Steps	Explanation/Timeframe	Costs	Level of Reform
Incorporate teacher evaluation data into public reporting system.	Provided that the AEDW will provide the data for an evaluative public reporting system, and that the funds have already been outlaid and/or committed to this process, no additional funding should be necessary.		State Districts collect and report data.
Adopt teacher qualification index.	Since much of the data needed for any index is not available, the state has to generate a new data set. It would only cost around \$200,000 from an IT perspective to develop the dataset, but it may take a number of the LEAs many months to get the data together.	\$200,000	State with support for local data collection.
	To adopt the Illinois index (an advantage since it has been validated) state should build in support for local data collection.	\$1 million	
Develop Arizona teacher qualification index.	For Arizona to develop its own teacher qualifications index from scratch, it needs to be able to test and retest the various cocktails of elements in its longitudinal data system.	\$250,000	State

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Steps	Explanation/Timeframe	Costs	Level of Reform
Create Governor's Teacher Corps.	<p>Teacher Corps estimate is \$34 million per year for approximately 400 teachers.²⁵</p> <p>Compensation of approximately \$85,000 (average teacher salary in Arizona plus 25% benefits and \$25,000 supplement/stipend).</p> <p>Year One (slow start): \$16 million Year Two: \$34 million Year Three: \$16 million Year Four: \$0</p> <p>Reallocate Title I funds to fully fund these positions within four years. The number of schools and level of funding for this step should be adjusted to reflect a realistic assessment of how many talented leaders can be recruited.</p>	\$66 million	State
Provide cushion for unassigned teachers.	<p>There is likely to be a certain percentage of teachers for whom the evidence suggests it is simply inappropriate that they be placed in a classroom. The state could provide districts with a cushion to keep these individuals out of the classroom.</p> <p>Year One: \$6 million Year Two: \$6 million Year Three: \$3 million²⁶ (These costs will be phased out as evaluation system described in Strategy 1 becomes the mechanism for identifying and dismissing ineffective teachers.)</p>	\$15 million	State
Develop principal performance matrix.	<p>While ADE would coordinate this effort, all of the work would have to take place at the district level. State cost is validating the index. Local cost is data collection.</p>	\$150,000	State/District

25 RTT funds would be an excellent way to launch this Teachers Corps, but the state will need a plan to sustain it. Title I School Improvement Funds — significantly increased for just such innovative strategies — would be an excellent fit. The state may need to seek a waiver from the Department to hold funds at the state level for the benefit of the high needs districts receiving Corps teachers; in the absence of a waiver a system would need to be developed whereby receiving districts pay the state in order to participate.

26 New York City has 1,000 unassigned teachers out of a teaching force of 70,000 at a cost to the system of 20 million per year. Many of the 1,000 teachers have been unassigned for years, as the district does not have a provision ending salary and benefits after one year. Arizona's teaching force is approximately 109,000.

Steps	Explanation/Timeframe	Costs	Level of Reform
Examine quality of principal pool.	Contract with an outside independent group to assess and make recommendations for how the state can ensure it has a high quality principal pool.	\$50,000	State
Recruit new school leaders to serve in high-need schools. ²⁷	<p>Pay \$10,000 to 15,000 to principals that is pensionable and \$5,000 to 10,000 to assistant principals. Begin with 69 schools identified as failing or not meeting expectations under the Arizona accountability system for 2009 and expand to schools failing to make AYP under Title I.</p> <p>Year One (slow start): \$2 million Year Two: \$4 million Year Three: \$4 million Year Four: \$0</p> <p>Reallocate Title I funds to fully fund these stipends within four years.</p>	Up to \$10 million	State/Districts
Add positions to schools that relieve principals of excessive demands on their time and allow a focus on teaching and instruction.	<p>Approximately 25 percent of schools (about 500 schools), compensation of \$75,000.</p> <p>Year One: \$32.5 million Year Two: \$32.5 million Year Three: \$32.5 million Year Four: \$0</p> <p>Reallocate Title I funds to fully fund these positions within four years.</p> <p>The number of schools and level of funding for this step should be adjusted to reflect a realistic assessment of how many talented leaders can be recruited.</p>	\$97.5 million	Districts

27 The findings from the assessment of principal turnover and contract with outside party to identify school leaders must inform this action. Principal recruitment is only actionable to the extent that a set of effective school leaders can be identified. The numbers presented above reflect a best-case scenario, based on identified needs. However, placing less than stellar leaders in challenging schools to fulfill this step is not a wise use of funds. The actual number of principals/assistant principals funded here should reflect a realistic assessment of how many talented leaders can be recruited.

Strategy Two

Steps	Explanation/Timeframe	Costs	Level of Reform
Provide additional pay for effective teachers to teach standard/non-advanced classes.	Two positions per school, stipend of \$2000 in high schools in the state not making AYP (assume approximately 100 schools)=\$400,000. Some staff oversight of program. TOTAL Year One: \$400,000 Year Two: \$400,000 Year Three: \$400,000 Year Four: \$0 For high estimate calculate for all high schools in the state.	\$1.2 million	District

How This Strategy Connects to Other RTT Reform Areas

This strategy has a very clear connection to the Department's struggling schools assurance area by focusing directly on one of the greatest challenges of struggling schools: improving teacher quality. The strategy also addresses the enduring problem of highest needs students having the least effective teachers.

A strong effort to examine and address the distribution of high-quality teachers obviously requires a robust data infrastructure — both in tracking teacher effectiveness (See Strategy 1) and in tracking teacher assignment. A successful RTT proposal will use state data and evaluation systems to identify effective teachers and make this a central factor in teacher assignment.

Finally, helping all students achieve and reach Arizona's standards will require that more of the state's high-need and low-performing students have access to high-quality teachers. The whole point of a comprehensive human capital reform plan is to provide students with the teachers they need to succeed in school.

Likely Obstacles

Arizona can expect major opposition by teacher organizations.

- Teachers' unions will resist any mutual consent provision that proposes to end salary and benefits for excessed teachers
 - *The taxpayers should not support teachers who are not teaching. As evidenced by the collapse of the auto industry, the era of contracts assuring workers compensation whether or not they work is over.*
- Differential pay schemes may be perceived as open to abuse, favoritism and/or undermining teamwork.
 - *Careful accountability processes to review both the structure and implementation of differential pay plans will be critical.*



➤ STRATEGY 3

IMPROVE TEACHER INDUCTION

Objectives

It goes without saying that if teachers left teacher preparation institutions better prepared (see Strategy 6) providing induction programs would be less critical to state reform efforts. Arizona has implemented some teacher induction strategies — such as the Governor’s Master Teacher Program — but does not require a mentoring program or any other induction support for its new teachers. Arizona must ensure that new teachers are provided with meaningful support and require induction strategies that can be successfully implemented, even in poorly managed schools, such as intensive mentoring, seminars appropriate to grade level or subject area and/or frequent release time to observe other teachers. In addition to simply requiring mentoring the state must address the structural elements that cause many new teachers to struggle.

Arizona’s Governor’s Master Teacher Program places accomplished teachers with five or more years of experience in qualifying schools to help with teacher retention. Under this initiative, master teachers must commit to at least half-time mentoring duties for three years and agree to mentor 15 new teachers with less than two years experience. To qualify, a site must meet at least two following criteria: 60% or higher poverty, 25% or higher new teacher turnover, any middle or high school, or labeled as underperforming. While there is great promise in this program, it fails to meet two important criteria: 1) it does not apply to all new teachers, and 2) it does not significantly alleviate the responsibilities placed upon new teachers.

The core of the induction system should be reducing the amount of time new teachers are alone and solely responsible in the classroom, achievable in one of two ways: 1) the full-time, or nearly full-time, assignment of a coach in the first weeks of school, and 2) a reduced teaching load during the first semester, if not for the whole first year.

In addition to reducing the stress and burden on new teachers, a successful induction program can help mitigate the negative impact first-year teachers have on student achievement. Research has shown that first year teachers produce significantly lower academic gains than other teachers. Reducing the amount of time new teachers are the only teacher in the classroom should ameliorate this unfortunate effect.

Strategy Three

We think a human capital strategy focused on real efforts to improve teacher induction is of medium importance to the U.S. Department of Education. Efforts to improve teacher induction are met with some cynicism from education reformers. However, the need to provide support to new teachers is well established, and new, creative approaches to addressing this troubling problem are likely to get a welcome reception.

Features of a strong proposal in this area:

- Include strategies that provide new teachers with more intensive support from the start, reduce teaching load, diminish early stress.
- Include strategies that can help a new teacher survive, even thrive, in spite of indifferent colleagues.
- Include strategies that place new teachers with highly effective peers.²⁸

A strong induction proposal should avoid:

- Commitment to implement standard induction strategies already in wide use.
- Strategies that depend on strong and supportive school leadership to be implemented successfully.

Steps Arizona can take *prior* to submission to show the preconditions for reform and improve its chances of RTT success:

State Board of Education:

Evaluate current induction programs. The state should plan a thorough program/policy evaluation to assess the effectiveness the Governor's Master Teacher Program to identify areas of strength as well as those that need improvement.

Mandate that new teacher mentors are effective teachers themselves. ADE should implement a policy aimed at recruiting new teacher mentors who themselves are effective teachers, as indicated by the state's evaluation system (Strategy 1). The state could expand the pool of mentor teachers by contracting with retired effective teachers as well as offering the job as a professional development assignment to current highly-effective teachers.

Steps Arizona can outline *as part of the state's proposal* to improve its chances of RTT success:

Arizona Department of Education:

Design a model statewide induction program. Based on an evaluation of induction programs in the state, design, coordinate, and provide support to districts on new induction strategies. Redirect existing staff or establish new positions for this purpose. Revise school code to include more specificity on mentoring requirements as needed — in particular, by specifying the qualifications/ effectiveness required of mentors.

28 See the August 2009 Teacher Quality Bulletin from NCTQ at <http://www.nctq.org/p/tqb/viewBulletin.jsp?bulletinId=0&volume=latest> which features new research showing that teachers perform better when the quality of their peers improves. The authors found that newer teachers are the most sensitive to changes in peer quality. The more colleagues in the school building with more than one year of experience, the more likely it is that a new teacher can produce greater student gains.

Local Education Agencies:

Hire coaches. In districts with significant poverty and in low performing schools, place a coach for 80 percent of class time in every new teacher’s classroom for the first 2 to 8 weeks of school, which could be adjusted depending on the poverty level of the district. Districts could contract with retiring/retired effective teachers to support this service, helping the new teacher set up critical routines for success and establish classroom management. The coach/teacher relationship could continue through the school year on an informal basis or at the financial discretion of the district. The greatest benefit of this strategy may not even be increased teacher retention and success but a reduction in the adverse impact of first-year teachers on student achievement gains. Statistically the worst gains students make are under first year teachers.

Reduce teaching load. Reduce the teaching load of first-year teachers in a subset of high poverty schools. This strategy both reduces significant stress on new teachers, but it is also the strategy most likely to significantly reduce the adverse impact that first-year teachers have on student achievement gains. It would require 1.5 positions (if a new teacher would only be assigned to half a load) for each new position required. Ideally the district would not fill the .5 position with another new teacher but would present it as an option for teachers wanting a half time load for a year. A modified version of this would put the .5 position in the classroom for just the first semester.

STRATEGY 3: Costs and Timelines

Steps	Explanation/Timeframe	Costs	Level of Reform
Conduct evaluation of Arizona induction programs.	Contract with evaluator to evaluate local programs, identify and disseminate best practices, and make policy recommendations to the state.	\$1 million	State
Hire coaches to be in the classroom for the first 2-8 weeks of school with new teachers.	<p>There are approximately 5,400 teachers with less than one year experience in Arizona. If we assume that 50% had previous teaching experience, if Arizona is like other states, that leaves 2,700 teachers in need of intensive mentoring.</p> <p>Each coach would work 24 hours a week @ \$50/hour for \$1,200 per week x 8 weeks.</p> <p>If focused only on high need schools, a rough estimate is that about 270 first-year teachers were hired to work in the state’s lowest performing schools.</p> <p>Each coach would work 24 hours a week @ \$50/hour for \$1,200 per week x 8 weeks.</p> <p>\$2.6 million</p>	Up to \$26 million	Districts

Strategy Three

Steps	Explanation/Timeframe	Costs	Level of Reform
Reduce teaching load for new teachers.	Reduce new teacher load by .5 for approximately 10% of 2,700 teachers. Average salary in Arizona: \$47,000 Supplement of .5 position would be average salary in district, not average starting, with 25% benefits=approximately \$60,000. .5=approximately \$30,000 Modified version (one semester)=\$4 million/per year. Excluding cost of identifying teachers to serve .5 positions.	\$8.1 million	Districts

How This Strategy Connects to Other RTT Reform Areas

Efforts to improve teacher induction will disproportionately benefit struggling schools, which typically have greater teacher turnover and more new teachers in any given year. As with the other strategies in this memo, a high-quality data infrastructure that can be used to examine the effectiveness of teachers is key. Without the evaluation and data system described in Strategy 1, the pairing of new teachers with mentors and coaches does not happen with any attention to whether those providing assistance to new teachers are themselves effective teachers. Finally, this strategy is relevant to the standards and accountability assurance area by helping to remedy overrepresentation of first-year teachers (with their generally low student achievement gains) in accountability measures of low performing schools.

Likely Obstacles

These strategies require a major investment in teachers and may be resisted by many education stakeholders, not in principle, but for practical reasons.

- The high price tag of these strategies may be difficult to sustain
 - *Structural changes to teacher preparation (especially the student teaching experience) would mitigate the need for these strategies.*



➤ STRATEGY 4

INTRODUCE COMPENSATION REFORM

Objective

Like all states and districts, Arizona and its districts needs to move away from lockstep salary schedules towards a system that differentiates salary on a number of factors including teacher effectiveness, the relative difficulty of a school setting and the demand for teachers with particular skills or knowledge. We argue that differential pay is not only fairer to teachers, but better for teacher quality, transforming a system of pay that is indifferent to educational goals into a highly strategic force for realizing greater educational equity and higher student achievement.

If Arizona's districts were to eliminate compensation schemes which we know do not contribute to a teacher's effectiveness, notably the differential pay given to teachers to obtain advanced degrees, substantial funding will be available to compensate teachers on other measures, providing the sustained funding needed after *Race to the Top* funds are spent.

Tying salary scales to seniority implies that experience automatically equals quality in instruction. Arizona appears to be spending an additional \$5,410 on average for each teacher with a master's degree, for an annual state-wide expenditure of roughly \$149 million — about \$125 per student per year.²⁹

Arizona currently gives local districts the authority for pay scales, eliminating barriers such as state salary schedules and other regulations that control how districts pay teachers. The state allows the local governing board to “employ and fix the salaries and benefits of employees necessary for the succeeding year.”³⁰

Working to Arizona's advantage, the state has two pay-for-performance programs. Twenty-eight school districts in Arizona receive career ladder funding. The Career Ladder program provides teachers with the opportunities for advancement based on “improved or advanced teaching skills, evidence of pupil academic progress and higher level instructional responsibilities,” rather than experience or education.³¹ In addition, each public school in

29 Marguerite Roza and Raegan Miller, July 2009, Separation by Degrees, Center for Academic Progress.

http://www.americanprogress.org/issues/2009/07/separation_of_degrees.html

30 Arizona Revised Statutes 15-502(a) (<http://www.azleg.state.az.us/ars/15/00502.htm>)

31 Provisions of the Arizona Career Ladder Law (http://www.ade.az.gov/asd/CareerLadder/Provisions_of_CL_Law_and_Code.pdf).

Strategy Four

Arizona participates in the Arizona1 performance-based compensation system. Funding for this program comes from a voter initiative that passed in 2000 which resulted in a 5% increase in sales tax.

The state's implicit stance on not tying compensation to advanced degrees should be made explicit, thereby ensuring the highest steps on the pay scales are not determined solely by seniority.

Department officials are enthusiastic about compensation reform, but their view is tempered by concerns about the limited knowledge base about how best to widely implement a different system of compensation and the potential danger of committing federal funds to teachers' salaries. Nevertheless, the Department is looking to seed experimentation, as evidenced by the \$200 million available for Teacher Incentive Fund (TIF) grants in stimulus funds and the almost \$500 million requested by the Administration for TIF for FY 2010.

Features of a strong compensation reform proposal:

- Emphasize freeing up existing allocations to redirect compensation, notably, eliminating pay differentials for advanced degrees, which research has clearly established as contributing little no value to teacher effectiveness (see Appendix summarizing research findings on advanced degrees);
- Remove obstacles to teacher and principal hiring that indirectly restrict teacher compensation, notably intrastate salary portability, along with credential restrictions for both principals and teachers.
- Introduce alternatives and innovations to existing pay experiments.

A strong compensation reform proposal should avoid:

- Adding resources without looking for reallocations and efficiencies that can be realized from the current system.

Steps Arizona can take *prior* to submission to show the preconditions for reform and improve its chances of RTT success:

Governor/Legislature/State Board of Education:

Discourage districts from paying for advanced degrees. Articulate policies that definitively discourage districts from tying compensation to advanced degrees as well as assuming that teachers with the most experience are the most effective. The highest steps on the teacher pay scale are not determined solely by seniority. The state should also encourage districts to compensate new teachers with relevant prior work experience such as starting such teachers at a more advanced step on the pay scale.

Arizona needs to continue to move forward with its already existing programs recognizing performance pay and connecting it to student achievement (e.g., Career Ladder and Arizona 1). These programs allows local districts the flexibility to define criteria by which it is awarded and enabling all teachers to participate, not just those with students who take standardized tests.

Set in statute a requirement that additional employment opportunities that arise for teachers should be decided on the basis of merit, not seniority. A number of teacher contracts contain a rule that those opportunities, such as summer school and expanded learning time, must be decided on the basis of seniority, meaning that schools may not be able to hire the most effective teachers.

Steps Arizona can outline as part of the state's proposal to improve its chances of RTT success:

Governor/Arizona Department of Education:

Broker portability agreements. Broker an agreement among districts on portability to allow teachers or principals to move from one district to another without encountering a pay cap — provided a school wishes to hire the individual.

Create Governor's Teacher Corps. Establish a Teacher Corps that deploys the state's highest performing teachers to high needs districts and schools. While this relatively small corps will not eliminate widespread distribution issues, it serves several important functions: (1) It makes working in a high needs school a prestigious assignment, one to which teachers may even aspire; (2) It creates a go-to pool of effective teachers that the state can deploy to places where they are needed most; and (3) It has the potential, much like Teach For America, to create a network of alumni newly committed to the challenges of high need placements.

As noted in the Strategy 2, teachers would be identified based on value-added data, and would commit to teach as part of the Governor's Teacher Corps for two years. The state would make up any difference in the teacher's salary between their original district and their Corps assignment, and also provide a \$25,000 (for example) supplement, paid directly from the state so as not to be subject to collective bargaining provisions concerning compensation. While cash incentives do not appear to be an effective recruitment strategies for high needs schools, in this case the significant supplement adds to the prestige factor that comes with being designated by the Governor, is considerably more than teachers would ever expect to receive in a bonus, and rewards these effective teachers for taking on more challenging assignments.

Build on pension reform. This is an important ingredient to achieving a more equitable balance in teacher compensation for teachers at the front end of the profession. Pension reform may be the most politically difficult reform for a state to take on, often because the debate quickly gets reduced to the advantages of defined benefits plans versus defined contribution. The issues and the solutions are actually far more complex than this simplistic argument suggests.

Arizona already has a great deal of ground covered with respect to pension reform, in that the system is currently sustainable, the state offers a supplementary defined contribution investment plan, relatively early vestment for participants, provides an employer match that increases on a sliding scale with years of service. However, there are a number of areas that still need to be addressed.³² The state would be well advised to begin with a comprehensive study of the state's pension system, under a charge of providing a pathway for the following reforms:

- Ameliorating any practices that may lead to operating the pension system with excessive unfunded liabilities or inappropriately long amortization periods. According to the most recent valuations available,³³ while not ideal, Arizona's pension system is financially sustainable according to actuarial benchmarks. The system is 83.3 percent funded and has a 30-year amortization period. This means it would take the state 30 years to pay off its unfunded liabilities. It is important that the state maintains this sustainable system.³⁴

32 http://www.azasrs.gov/web/pdf/Getting_Ready_To_Retire_Brochure.pdf; http://www.azasrs.gov/web/pdf/fact_sheets/Defined_Benefit_Plan.pdf

33 June 30, 2007

34 www.publicfundsurvey.org, http://www.azasrs.gov/web/pdf/2008_CAFR.pdf

Strategy Four

- Setting reasonable district and teacher contribution rates. While Arizona's pension system may be sustainable, the state still commits excessive resources towards its teachers' retirement system. The current employer and employee contribution rate of 9.45 percent each are too high, in light of the fact that local districts and teachers must also contribute 6.2 percent to Social Security. While these rates allow the state to pay off liabilities within 30 years, it does so at great cost, precluding Arizona from spending those funds on other more immediate means to retain talented teachers.³⁵
- Providing teachers an option of a fully portable pension system as their primary pension plan, either through a defined contribution plan or a defined benefit plan that is formatted similar to a cash balance plan. Arizona currently does not offer a fully portable pension plan. The only mandatory plan available to a teacher is a defined benefit plan. However, teachers in Arizona also participate in Social Security, so they must contribute to the state's defined benefit plan in addition to their Social Security contributions.

On the upside, the Arizona State Retirement System (ASRS) recently created the ASRS Supplemental Retirement Savings Plan (SRSP). The SRSP is optional and allows teachers to contribute income before taxes to investment portfolios. Also, employers must choose to join the SRSP, so participation by all local districts is not guaranteed.

- Ensuring that teachers are vested no later than the third year of employment. In Arizona, teachers do not vest in the defined benefit plan until year 5. Vested teachers with five years of experience who do not want to receive monthly payments at retirement age are allowed to withdraw their contributions and a 25 percent employer match, plus interest. The amount of employer match increases by 15 percent for each year of additional service, reaching 100 percent at 10 years of service. While ideally teachers would be entitled to their full employer contribution at time of vesting, Arizona's scale is moving in the right direction.
- Allowing teachers in a defined benefit plan to purchase time for unlimited previous teaching experience at the time of employment, as well as time for all official leaves of absence, such as maternity and paternity leave. Arizona's plan allows teachers to purchase unlimited time for prior out-of-state teaching experience. This is a great advantage to any teacher with experience transferring into Arizona's system. The state's plan also allows for the purchase of approved leave up to one year per leave as long as the teacher returns to work and the employer "certifies that the leave was in the best interest of the employer."
- Offering the option in a defined benefit plan of a lump-sum rollover to a personal retirement account upon employment termination, which would include teacher contributions and all accrued interest at a fair interest rate. Also, for withdrawals from either defined benefit or defined contribution plans, funds contributed by the employer would be included.
- Setting a neutral formula for determining pension benefits, regardless of years worked (eliminating any multiplier that increases with years of service or longevity bonuses.) Currently, Arizona's pension plan does not utilize a constant benefit multiplier.
- Preserving incentives for teachers to continue working until conventional retirement ages, basing eligibility for retirement benefits on age, not years of service.

Give effective teachers opportunities to earn more. Find the most effective teachers and give them opportunities to make more money by giving them the opportunity to implement programs like Expanded Learning Time. A number of teacher contracts contain a rule that those opportunities, such as summer school and expanded

35 www.publicfundsurvey.org, http://www.azasrs.gov/web/pdf/2008_CAFR.pdf

learning time, must be decided on the basis of seniority, meaning that schools may not be able to hire the most effective teachers. Then, with the school districts as partners, adopt an Expanded Learning Time model (such as is in place in Massachusetts) and give effective teachers the option of participating.³⁶

Arizona Department of Education:

Develop model pay options. Contract with a consulting firm to develop salary-based performance pay options for districts to consider under the newly revised evaluation system (Strategy 1), moving away from the stipends, bonuses, “winning the lottery” approaches to permanent salary adjustments provided to effective teachers. This must be a well thought out step before compensation strategies are implemented.

Reward principals who have a higher quality index rating. Strategy 2 describes a principal performance matrix that the state would develop to help determine principal quality. The state should provide additional pay to principals who serve in high needs schools and who score higher on this matrix.

Local Education Agencies:

Differentiate pay. Based on the results of the model compensation study described above, provide a higher salary to teachers who consistently earn the highest ratings, provided the evaluation system has been reformed. For example, the district might award a certain number of “chaired” positions paying \$100,000 or more per year to the most effective teachers in the system (five to ten years or more of sustained, highly effective performance). Chairs would be limited (even less than one per school perhaps), with a rigorous selection process used to fill them. As another example, a district might award the third grade teachers in a particular school for consistently strong performance in mathematics over three years by moving them up two steps on the salary schedule—not by providing a bonus. For example, a teacher who consistently prepares her class in an AP subject to earn 3’s, 4’s and 5’s might be eligible.

While RTT funds could be used for start up, state and local funds could be invested to generate an endowment to support this initiative once sufficient data are accumulated to select chairs. Arizona might also consider revamping its Arizona1 compensation program.

The funding for such a program should be revenue neutral, no more and no less than the savings realized from defunding pay differentials for advanced degrees.

Allow for merit-based opportunities. Absent a statewide strategy, where relevant, establish an amendment to the teacher contract that says offering additional employment opportunities such as summer school should be decided on the basis of merit, not seniority. Where possible, districts could take on the implementation of programs like Expanded Learning Time and give effective teachers the option of participating.

Reward high-performing principals. Absent a statewide strategy, reward principals who have a higher quality index rating. Strategy 2 describes a principal performance matrix that the state would develop to help determine principal quality. A local district would provide additional pay to principals who serve in their high needs schools and who score higher on this matrix.

36 For more information on expanded learning time, see <http://www.mass2020.org/>.

Strategy Four

STRATEGY 4: Costs and Timelines

Steps	Explanation/Timeframe	Costs	Level of Reform
Develop model pay schedules.	Hire external consultants.	\$250,000	State District as alternative if no statewide strategy
Create Governor's Teacher Corps.	<p>Teacher Corps estimate is \$34 million per year for approximately 400 teachers.</p> <p>Compensation of \$85,000</p> <p>Year One (slow start): \$16 million Year Two: \$34 million Year Three: \$16 million Year Four: \$0</p> <p>Reallocate Title I funds to fully fund these positions within four years. The number of schools and level of funding for this step should be adjusted to reflect a realistic assessment of how many leaders can be recruited.</p>	\$66 million	State
Provide additional earning opportunities for effective teachers.	<p>Expanded Learning Time (ELT) costs are generally between \$1,000-\$1,500 per child for 30 percent more learning time. The KIPP schools calculate that their longer day/week/year costs \$1,500 per child. The Massachusetts programs vary between districts, but the state provides \$1,300 per child. Assume \$2500 compensation for teachers.</p> <p>For 69 failing schools (@500 students each) schools in the last three stages of NCLB school improvement.</p>	\$36 million	States and/or districts
Reward principals.	There are about 200 schools identified as in need of improvement in Arizona. A reward system targeting 15 percent of those principals would mean that 30 principals in the state would be eligible for a \$25,000 reward. The eligibility and/or size of reward could be adjusted up or down.	\$750,000	State or districts

Steps	Explanation/Timeframe	Costs	Level of Reform
Differentiate pay by selecting highly-effective teacher “chairs.”	<p>While RTT funds could be used for start up, state and local funds could be invested to generate an endowment to support this initiative once sufficient data are accumulated to select chairs.</p> <p>\$25,000 - \$100,000 per multiple-school district.</p> <p>The funding for such a program should be revenue neutral, no more and no less than the savings realized from defunding pay differentials for advanced degrees.</p>	\$50,000 per teacher	State or districts

How This Strategy Connects to Other RTT Reform Areas

This strategy ties into the Department’s assurance areas by addressing struggling schools and standards/accountability. First, it directly targets compensation incentives at struggling schools. Second, it rewards teachers for achieving high standards by helping students do the same. As with all of the other strategies in this memo, data infrastructure is essential. A new compensation system is absolutely dependent on a performance-based evaluation system, which is in itself dependent, for its operation, on a good data system.

Likely Obstacles

Arizona already has experience with the challenges related to implementing compensation reform. The state can build on the experience of its current pay for performance model to consider a statewide option.

- There will be extreme opposition to moving away from the traditional salary schedule
 - *The salary schedule is based on variables that do not correlate well with teacher effectiveness. Further, the protections against gender, racial and other forms of discrimination that formed the original purpose for the uniform salary schedule are now accorded all individuals under civil rights legislation.*
- There will be concerns about fairness
 - *All aspects of this strategy will need to be validated, and transparency in decision making is essential.*



➤ STRATEGY 5

BOLSTER TEACHING IN STEM FIELDS

Objectives

For RTT, it won't be enough to simply describe how Arizona is spending its \$3.75 million Math and Science Partnership grant. To make a strong case to the Department, Arizona should develop a coherent state strategy to address the difficulty school districts face in attracting and retaining sufficient numbers of qualified STEM (Science, Technology, Engineering and Mathematics) teachers. The state's strategy should tackle this issue from many different angles, recognizing that there is not going to be any single source of great teachers for teaching these subjects, with the need particularly acute in the areas of mathematics and physical science. Multiple pathways are needed for qualified individuals to enter the profession, and multiple strategies are needed to keep them.

A comprehensive strategy begins with the preparation of teachers entering STEM fields, including elementary teacher candidates, who — although often overlooked in the STEM discussion — bear the daunting responsibility of providing young students with the necessary foundational knowledge. Arizona must also ensure that its minimum qualifications for licensure are sufficient for building a workforce capable of delivering world-class curricula in STEM fields.

Arizona should also work to remove any regulatory barriers that may discourage qualified individuals from teaching and attend to factors that contribute to teacher attrition. A clear barrier is language in local teacher contracts blocking districts from offering competitive salaries to teachers who have highly marketable knowledge and skills. Compensation reform that bases salaries on teacher knowledge, skills and performance, and thus allows some teachers to earn more than others, is imperative.

Arizona should also look at promising STEM curriculum strategies (see also Strategy 7). For example, Arizona's own Rodel Foundation has the MAC-Ro program — the Math Achievement Club — which has a track record of improved math achievement in high-poverty, low-performing schools in Arizona. Now used in 155 schools in nine counties and with 22 business partners, the Rodel Foundation has a waiting list of interested Arizona schools.³⁷

³⁷ See <http://www.rodelfoundationaz.org/mac-ro/mac-ro.aspx> for more information on the MAC-Ro program.

The shortage of qualified STEM teachers is symptomatic of a broader problem in the teaching profession: that there is too little interest in the importance of high academic standards for building professional prestige and that the profession remains an unattractive choice for many individuals with strong academic backgrounds. Individuals interested and capable of pursuing relatively demanding academic pursuits, including but not limited to science and mathematics, are simply put off by a lack of academic rigor found in most teacher preparation programs. The solution to this problem is to raise the standards and rigor of teacher preparation so that talented students find its study challenging and rewarding.

This strategy is of high importance to the U.S. Department of Education. It figures prominently in the notice for *Race to the Top*. Business leaders and some influential foundations, most recently Carnegie, have been quite vocal on the importance of this issue. It is also of particular interest to education reformers, in no small part because the focus on STEM shortages and its connection to global competitiveness provides leverage to initiate reforms that will help the teaching profession at large.

Features of a strong proposal:

- Commitment to adopt common mathematics standards and assessments
- Commitment to improve curriculum across the state, aligned with new standards and assessments as well as global benchmarks
- Some element of differentiated compensation to attract STEM secondary teachers
- Improvements to available alternate routes to ensure the immediate needs of prospective STEM teachers are met when they enter the classroom
- Plans to improve the quality and appeal of undergraduate teacher preparation, including ensuring that education coursework is neither unlimited nor pitched at a low level or rigor
- Use of international benchmarks, such as TIMSS, to evaluate and report to the public on the state's progress

A strong proposal should avoid:

- Launching or expanding small-scale boutique programs designed to encourage individuals to consider STEM teaching.
- A strategy that depends solely on teacher preparation programs to address pipeline problems.
- A strategy that suggests STEM teachers can be attracted and retained by money alone and ignores the many other factors and deterrents at play.

Steps Arizona can take *prior* to submission to show the preconditions for reform and improve its chances of RTT success:

State Board of Education/Arizona Department of Education:

Raise standards by making basic skills an entry requirement. Arizona should require all teacher applicants to pass a basic skills test with the cut score set by the state as a condition of admission into an approved teacher preparation program.³⁸

38 http://www.aepa.nesinc.com/AZ11_requirements.asp

Strategy Five

Arizona should then adopt an incremental plan that eventually replaces all basic skills tests used for licensure with tests that evaluate the proficiency of elementary teachers up through Algebra II and secondary teachers up through precalculus. Identify necessary benchmarks that would allow students to move towards the standard within five years.

Ensure the quality of state licensing exams. Arizona should ensuring that the state's licensing exams have replaced basic skills tests used for licensure with tests that evaluate the proficiency of elementary teachers up through Algebra II and secondary teachers up through precalculus.

Allow licensing waiver for teachers of advanced STEM courses. The State Board of Education could approve a waiver of certification requirements to allow part-time instructors to be hired solely to teach advanced STEM courses, such as AP chemistry or AP calculus, without being certified.

Governor/Legislature:

Focus alternate route legislation on STEM support. Ensure that new alternative route legislation or state plan encourages the use of alternative certification by STEM and other prospective teachers by allowing candidates without a subject-area major to demonstrate content knowledge through a test and by allowing routes that would attract career changers and teaching candidates with math and science expertise. The state should pay particular attention to ensuring that alternate route teachers are provided with sufficient induction support. Effective strategies include practice teaching prior to starting to teach in the classroom, intensive mentoring with full classroom support in the first few weeks or month of school, a reduced teaching load, and relief time to allow new teachers to observe experienced teachers during each school day. Arizona should also ensure that coursework that is required of alternate route teachers meets the immediate needs of new teachers. Appropriate courses include grade-level or subject-level seminars, methodology in the content area, classroom management and assessment.

Steps Arizona can outline as part of the state's proposal to improve its chances of RTT success:

State Board of Education/Arizona Department of Education:

Raise math and science standards. Raise standards for what elementary teachers need to know in mathematics and science, making their undergraduate preparation in mathematics sufficiently broad and relevant and their coverage of relevant science topics comprehensive.³⁹ Conduct annual audits of the required coursework at Arizona's approved teacher preparation programs to ensure that elementary teachers are getting the intended mathematics and science coursework. Hold programs accountable for requiring the coursework to receive program approval. Provide approved teacher preparation programs with model syllabi to explicitly lay out expectations for courses.⁴⁰

39 See NCTQ report, Tackling the STEM Crisis at: http://www.nctq.org/p/publications/docs/nctq_nmsi_stem_initiative_20090603041649.pdf.

40 Louisiana State mathematics professor Scott Baldrige has an exemplary elementary preparation program in mathematics. NCTQ posts his syllabi on our website at www.nctq.org. The Core Knowledge Foundation provides similarly strong syllabi for science courses on its website, <http://coreknowledge.org/CK/resrcs/syllabusdl.htm>.

Currently, Arizona does not specify any coursework requirements regarding mathematics content. Although the state's subject-matter test content specifications require some knowledge of algebra, geometry and data analysis, Arizona should require teacher preparation programs to provide mathematics content that is specifically geared to the needs of elementary teachers. This includes coursework in foundations, algebra and geometry, with some statistics. Arizona should also test requisite mathematics content with a rigorous assessment tool that provides a mathematics cut score, which could also be utilized to allow candidates to test out of coursework requirements. Teacher candidates who do not possess minimum mathematics knowledge should not be eligible for licensure.

Review math and science curricula. Contract with national experts (from outside the state) such as Achieve or prominent university scholars with experience in K-12 standards (e.g. Stan Metzenberg, Roger Howe, Stephen Wilson, George Andrews, Martha Schwartz, William Schmidt) to review the quality of various mathematics and science curricula and texts used in Arizona districts. Measure their rigor against international counterparts. After receiving results of curriculum study, support districts that want to make modifications, wholesale changes to mathematics and science curricula. *Race to the Top* funds could be used to supplement districts' need to buy new textbooks and professional development.

Tap into UTeach and the Adjunct Teacher Initiative as a pipeline for STEM teachers. NAUTeach is an undergraduate certification program at Northern Arizona University for secondary science and mathematics teachers modeled after the highly-successful UTeach program designed at the University of Texas at Austin. Through this program, students earn a Bachelor of Science in Education (BSEd) degree through the College of Engineering and Natural Sciences (CENS) in Biology, Chemistry, Earth Science, General Science, Mathematics, Physical Science, or Physics.⁴¹

The Adjunct Teacher Initiative (ATI) develops partnerships between school districts and the private sector to assist math and science teachers. The business participants have degrees in mathematics, biology, chemistry, or physics. Adjunct teachers tutor students one on one, assist small groups of students and collaborate with mentors to teach lessons in their classes. This process is also used to recruit employees within two years of retirement into the intern teaching program. The initial process includes: participation in Discover Teaching Pre-Service training that assists them in preparation for entering the classroom, obtaining a fingerprint clearance card, and obtaining a substitute certificate.

Approve ABCTE. Nine states have approved American Board for Certification of Teaching Excellence (ABCTE) as an alternative pathway into teaching for secondary math and science teachers. Arizona should consider including ABCTE as an approved alternate route in the state. The ABCTE mathematics and science tests are more rigorous than most licensing tests and can be used to confer highly qualified status on part time instructors.⁴²

Provide easy access to STEM coursework on-line. As part of the state's proposed non-traditional route option, solicit providers of an online training program to recertify teachers or career changers in a STEM field. Publicize availability of program.

41 See <http://www.uteach-institute.org/> for more information.

42 See <http://www.abcte.org/teach>

Strategy Five

Governor:

Refine Governor's Teacher Corps. In cooperation with ADE, refine the Teacher Corp idea described in both Strategies 2 and 4, as needed, to focus on STEM. The Governor would name a Teacher STEM Corps each year with highly talented elementary mathematics and STEM teachers who would agree to go to work in high need schools.⁴³ In return they would receive their home district salary, a \$25,000 annual stipend from the state and a housing allowance from the district.

The corps members would train other teachers in the district, modeling lessons and coaching teachers. Elementary corps members would only teach mathematics, again modeling and coaching other elementary teachers in mathematics. Further, these teachers could be assigned one or two student teachers who would work with them every day over a full year. The student teachers in turn would qualify for a savings bond of \$6,000 if they agreed and then fulfilled a commitment to work in the district for three years. One caveat: It is unlikely that there would be student teachers in secondary STEM available for such a program.

Local Education Agencies:

Identify skilled prospects in the community. Work with the state and local chambers of commerce to identify those employees who have been or will be laid off and who have the special skills to teach STEM in the schools.⁴⁴

Strengthen local math curriculum. It's relatively easy to make the case that American math curricula are seriously lacking compared to international counterparts. For this reason we recommend putting in place an implementation strategy that will ensure that prospective teachers (college-bound high school students) master Algebra II. This strategy is likely to involve a wholesale change in mathematics curriculum, a substantial professional development effort and a series of formative assessments.

One possibility for a rigorous math curriculum, also discussed in Strategy 7, is Singapore's approach to elementary mathematics. It first came to the attention of U.S. educators in 1997 with the release of the results of the Third International Mathematics and Science Study (TIMSS). Singapore's fourth and eighth grade students placed first in mathematics, well ahead of students in the U.S. and other Western countries, and that performance has stayed strong. While countries such as Japan and Korea have also done well in international testing, Singapore is the only Asian country where English is the medium of instruction for all state-approved schools in grades K-12, meaning that their curriculum is written in English.

Partner with local colleges. Establish partnerships with local universities and colleges to recruit graduate students to provide advanced coursework on a part-time basis in mathematics and science. Have the graduate students take the ABCTE test to fulfill highly qualified certification status.

Provide strong in-service training. Work with local colleges and universities to develop strong in-service math and science professional development that is systematic, focused on content and taught by knowledgeable professionals. Vermont and Massachusetts, for example, offer high quality professional development to teachers in STEM fields. For teachers in more rural areas, the University of Nebraska has an initiative for middle school master teachers that consists of a high-tech, instructor-intensive distance learning program during the school year sandwiched between 2 credit-bearing residential summer sessions that also pay the teacher a stipend. Arizona could tap into its County Educational Service Agencies to provide such training — especially in rural areas.

⁴³ It would be a mistake to structure the program to make it hard for younger teachers to be unable to be named to the corps, given that younger teachers are more likely to make a temporary move of this nature.

⁴⁴ One such model is EnCorps in California., <http://www.encorpsteachers.com>.

Differentiate pay for STEM teachers. Start STEM teachers at a higher step on the salary schedule if they have relevant prior work experience. Give full time secondary mathematics and science teachers a salary differential. Adjust differential to reflect shortages, such as paying a higher differential to physics teachers than more readily available biology teachers.

STRATEGY 5: Costs and Timelines

Steps	Explanation/Timeframe	Costs	Level of Reform
Create STEM Governor’s Teacher Corps.	<p>Teacher Corps estimate is \$16 million per year for 200 STEM teachers.⁴⁵</p> <p>Compensation of \$85,000</p> <p>Year One (slow start): \$8 million Year Two: \$16 million Year Three: \$8 million Year Four: \$0</p> <p>Reallocate Title I funds to fully fund these positions within four years. The number of schools and level of funding for this step should be adjusted to reflect a realistic assessment of how many talented leaders can be recruited.</p>	\$32 million	State
Review math and science curricula in Arizona.	Contract with third party to examine Arizona curricula and make recommendations. Make sure the consultants include math and science scholars teaching at the university level with extensive interest in K-12.	Up to \$150 million	District

⁴⁵ RTT funds would be an excellent way to launch this Teachers Corps, but the state will need a plan to sustain it. Title I School Improvement Funds — significantly increased for just such innovative strategies — would be an excellent fit. The state may need to seek a waiver from the Department to hold funds at the state level for the benefit of the high needs districts receiving Corps teachers; in the absence of a waiver a system would need to be developed whereby receiving districts pay the state in order to participate.

Strategy Five

Steps	Explanation/Timeframe	Costs	Level of Reform
Differentiate pay for STEM teachers.	Assume approximately 15,000 eligible math and science teachers in state with differential of \$3,000 to \$10,000 depending upon if the teacher is also in working in a high needs school. <i>Race to the Top</i> can be used to provide the necessary funds to meet the needs over 3 years but ultimately the district would have to pay these differentials using available revenue from eliminating master's degree incentives.	\$2 million	State/higher education institutions
Provide high-quality in service for math and science teachers that is systematic, focused on content and taught by knowledgeable professionals.	Estimate the per teacher cost ranging from \$1,800 to \$3,600. Average \$2700 *15,000 teachers.	Up to \$40 million	State/districts

How This Strategy Connects to Other RTT Reform Areas

This strategy has a strong tie to turning around low-performing schools since high-needs schools often have the most difficult time recruiting and retaining STEM teachers. Most of the incentives discussed throughout this memo can be targeted to struggling schools. This strategy also highlights the importance of data infrastructure with regard to math and science student performance and comparisons that can be made to international benchmarks.

Likely Obstacles

Arizona will face some predictable protests to these policies and initiatives. But STEM-related reforms are a special priority for RTT and states would be well advised to attend to this specific area of human capital.

- Basic skills tests reduce minority access to profession.
 - *The most successful educational systems in the world, and those that do the best job providing all children with a good education, set high standards for admission into the profession, only taking the upper third of college graduates. These tests assess middle-school level skills.*
- This violates local control of curriculum.
 - *Provided a district can show that its curriculum meets world-class standards, it retains full choice over curriculum.*



➤ STRATEGY 6

STRENGTHEN TEACHER PREPARATION INCLUDING ALTERNATIVE CERTIFICATION

Objectives

In spite of countless studies looking at the value of teacher education, we have only been able to learn (apparently) that no single method of teacher preparation yields more effective teachers than another. With the development of value-added methodologies, a new micro tool is at states' disposal, allowing teacher performance to be traced from the classroom back to the individual institutions where teachers were trained, elucidating patterns of quality and performance.

Over the last few years that NCTQ has examined state policies in the area of teacher preparation, and found that Arizona has some deficiencies in the area of assessing the quality of teacher preparation provided by the approved education schools in the state. Arizona relies on some objective, meaningful data to measure the performance of teacher preparation programs. The state bases its program approval on program evaluations, which include follow-up studies of graduates. However, beyond that, Arizona sets a low bar, only requiring teacher preparation programs to show that at least 75 percent of their graduates from the prior two years passed on their first attempt the professional knowledge portion of the state's licensing test, the Arizona Teacher Proficiency Assessment.⁴⁶

Furthermore, Arizona does not set a high bar for entry into teacher preparation programs, or specify rigorous coursework for prospective teachers. Arizona does not require aspiring teachers to pass a basic skills test as a criterion for admission to a teacher preparation program, instead delaying the requirement until teacher candidates are ready to apply for licensure. Overall, Arizona, requires neither a broad liberal arts education or deep subject matter knowledge in reading or mathematics. Arizona relies heavily on its standards for teacher preparation programs as well as testing requirements for the subject-matter knowledge rather than specifying any coursework requirements for teacher candidates. Arizona does not require specific subject-matter courses for elementary education majors,⁴⁷ does not require that that teacher preparation programs

⁴⁶ Arizona Administrative Code R7-2-604; Title II Report (<https://title2.ed.gov/title2dr/LowPerforming.asp>)

⁴⁷ Arizona Administrative Code, AAC R7-2-602, -604, -608; Teaching Certificate Requirements (<http://www.ade.state.az.us/certification/requirements/TeachingCerts>); <http://www.aepa.nesinc.com>

Strategy Six

for elementary teacher candidates address the science of reading, specify any coursework requirements regarding mathematics content, or ensure that middle school teachers are sufficiently prepared to teach appropriate grade-level content.⁴⁸

To address these issues, and prepare for a successful RTT application, the state should expand its use of performance data, including ensuring that programs are reporting pass rates for individuals entering student teaching, not program completers.

Arizona should consider collecting more specific objective data to create a more comprehensive index of program performance. NCTQ recommends the utilization of average raw scores of graduates on licensing tests (including basic skills, subject matter and professional knowledge tests); satisfaction ratings (by school principals and teacher supervisors) of programs' student teachers, using a standardized form to permit program comparison; academic achievement gains of graduates' students averaged over the first three years of teaching; and five-year retention rates of graduates in the teaching profession. To hold these programs accountable, the state should then establish the minimum standard of performance for each of these categories of data, including raising the minimum pass rate on its licensing test. Programs that do not meet the standard, after due process, should be shut down.

Finally, Arizona should post an annual report card on its website that details the data it collects and the criteria used for program approval. This report card should also identify the programs that fail to meet these criteria and cite the reasons they failed.

Regarding alternate routes, it is important to reiterate again here that a state's effort to make alternative routes available is a pre-requisite to RTT consideration. Arizona has already established alternate pathways to entering the profession and has partnered with national programs to innovatively recruit and train teachers to work in the public school system. As of September 2009, Arizona public schools employed 803 alternate route teachers in 139 districts. Although there are some weaknesses to Arizona's alternate pathways that should be addressed sooner, rather than later, the state is not starting from scratch and has met many of the prerequisites for a successful RTT application.

Arizona needs to offer a highly structured, well-supervised induction program for all alternate route candidates. Effective strategies include practice teaching prior to starting to teach in the classroom, intensive mentoring with full classroom support in the first few weeks or month of school, and/or a reduced teaching load, and relief time to allow new teachers to observe experienced teachers during each school day.

The state should also encourage a diversity of providers, allowing school districts and nonprofit organizations to operate programs in addition to institutions of higher education. Lastly, the state must put any proposed alternate route programs, both for teachers and principals, on an even playing field with traditional programs, in terms of the regulatory framework that govern them.

We perceive this strategy as medium importance to the U.S. Department of Education — with the caveat that

48 Arizona Administrative Code, AAC R7-2-602, -608 (<http://www.aepa.nesinc.com>); Arizona Administrative Code, Title 7, R7-2-607, -608, -609, -613(N) (http://www.aepa.nesinc.com/AZ_viewFW_opener.aspl). <http://www.ade.state.az.us/certification/requirements/TeachingCerts/RequirementsforElementaryCertificate.pdf>; "No Common Denominator: The Preparation of Elementary Teachers in Mathematics by America's Education Schools," NCTQ, June 2008 (http://www.nctq.org/p/publications/docs/nctq_ttmath_full_report.pdf).

having alternative route options is also a prerequisite for RTT funding. Like many reformers, Department officials hold a skeptical view of the quality of most traditional teacher preparation programs and their prospects for improvement. However, the Department has identified “reporting the effectiveness of teacher and principal preparation programs” as an expectation for the human capital assurance. Thus, while this strategy as a whole may be lower in terms of priority, states pursuing other strategies would be wise to incorporate the accountability action steps described below. Specifically, the connection of student achievement data to teachers and principals included in Strategies 1 and 2 can be extended to also link this information to preparation programs.

The Department is notably less skeptical about the promise of alternate routes to certification, as evidenced by their singling out the quality of alternate routes as the State Reform Conditions criterion for this area. Removing regulatory impediments and expanding these programs is clearly on their reform agenda.

A proposal that accommodates the strong interest in alternate routes while also displaying a serious intention to hold education schools more accountable and improve overall quality is likely to be well received.

A strong teacher preparation proposal will:

- Make admission into teacher preparation more selective
- Include new and improved licensure tests
- Provide better reading and math preparation for prospective elementary teachers
- Promise improved clinical experiences
- Incorporate an accountability system for education schools and alternate providers based on outcomes and results
- Create or expand high quality alternative certification routes

A strong teacher preparation proposal should avoid:

- Standards for holding education schools accountable that focus primarily on inputs and/or that cannot be uniformly measured
- Reforms that require a lot of buy-in from the teacher education community
- Reliance merely on the presence of Teach For America in the state as evidence of the state’s commitment to teacher quality or alternate routes.

Steps Arizona can take *prior* to submission to show the preconditions for reform and improve its chances of RTT success:

State Board of Education:

Improve and build on alternate route program track record. Arizona already has an established alternative certification process that requires candidates to show evidence of above average academic performance and pass a subject-matter test to demonstrate strong content knowledge.⁴⁹ Through Arizona’s Alternative Secondary Path to Certification program, candidates may work under the Teaching Intern certificate as they pursue certification in secondary core academic areas. Candidates are required to have a minimum GPA of 3.0 to demonstrate prior academic performance. Candidates are further required to have a major or 24 content area hours of coursework in the subject they plan to teach and to and pass the Arizona Educator Proficiency Assessment AEPA Subject Knowledge exam. The subject knowledge test cannot be used to test out of the coursework requirements.

⁴⁹ See: <http://www.ade.state.az.us/asd/altpath/> and <http://www.ade.state.az.us/asd/altpath/TeachingInternCertificateStakeholderResponsibilities.pdf>

Strategy Six

According to Arizona's Equity Plan Update from January 2009, in addition to the Alternative Pathway and "Grow Your Own" program, ADE designed "Discover Teaching,"⁵⁰ a pre-service training that provides participants with information about the teaching profession and the tools and strategies needed to participate in the Teaching Intern Program. Candidates explore teaching as a profession, strategies for teaching 21st Century students and are exposed to pre-requisite knowledge and skills necessary for success in the classroom.

While there are some weaknesses to Arizona's alternative certification process, namely, that the state does not ensure that its alternate route provides streamlined preparation that meets the immediate needs of new teachers, and that the alternate route is only available to candidates who wish to teach in grades 9 to 12 in core academic areas, the already existing program demonstrates that the state has already put into place a foundation for systemic support of alternative pathways.

Arizona should eliminate subject area and grade level restrictions on its alternate route. The state should allow new teachers to work across all grades, subjects and geographic areas.

The state also should continue working with partners such as Teach for America and The New Teacher Project to improve and expand upon ways in which teachers are prepared and recruited in Arizona.

Raise standards by making basic skills an entry requirement. ADE should require all teacher applicants to pass a basic skills test (or SAT/ACT equivalent) with the cut score set by the state as a condition of admission into an approved teacher preparation program. Basic skills tests measure minimum competency — standards too low to leave to teacher preparation programs to be left leeway to set at varying levels. Teacher preparation institutions that do not sufficiently screen candidates may end of investing considerable resources in individuals who may not pass licensing tests.

Explore ABCTE. Nine states have approved American Board for Certification of Teaching Excellence (ABCTE) as an alternative pathway. Arizona should consider including ABCTE as an alternative route in its proposed alternative certification legislation.

Strip irrelevant regulatory requirements for principals to participate in an approved principal preparation program. There is no evidence that these programs make principals prepare principals and they have been widely criticized for their content.⁵¹ The money expended to obtain these doctorates could be better used in an apprenticeship program for aspiring principals.

Steps Arizona can outline as part of the state's proposal to improve its chances of RTT success:

Adopt a stand-alone, high quality reading test for elementary teachers.. Follow the lead of states such as Massachusetts, Virginia, and Connecticut. Arizona's current standards for elementary school teachers in reading do not ensure that teacher preparation programs are teaching the science of reading. The state currently does not require teachers to demonstrate mastery of the science of reading through a licensure exam.

50 <http://www.ade.az.gov/onlineregistration/calendar/RenderCalendar.asp>

51 Arthur Levine (2005) Educating School Leaders. <http://www.edschools.org/pdf/Final313.pdf>; Frederick Hess (2007) Learning to Lead, American Enterprise Institute <http://www.aei.org/paper/22534>.

Provide model syllabi to preparation programs to deliver the reading content needed to do well on a new reading test. There is no need to develop these from scratch. A number of well respected programs across the country, including Texas A&M, University of Texas/Austin, and Florida State University would likely be honored to provide theirs.

Tap into UTeach as a pipeline for STEM teachers. NAUteach is an undergraduate certification program at Northern Arizona University for secondary science and mathematics teachers modeled after the highly-successful UTeach program designed at the University of Texas at Austin. Through this program, students earn a Bachelor of Science in Education (BSEd) Degree through the College of Engineering and Natural Sciences (CENS) in Biology, Chemistry, Earth Science, General Science, Mathematics, Physical Science, or Physics.⁵²

Adopt ABCTE. Nine states have approved American Board for Certification of Teaching Excellence (ABCTE) as an alternative pathway. Arizona should consider including ABCTE as an alternate route in its proposed alternative certification legislation.

Develop meaningful accountability measures evaluating preparation programs.⁵³ The state should use meaningful, objective data, including ensuring that programs are reporting pass rates for individuals entering student teaching, not program completers, for the former is now the requirement under the 2008 reauthorization of the Higher Education Act. It is also a method that will not mask the number of individuals the program was unable to properly prepare. Additionally, Arizona should consider collecting specific objective data to create a more comprehensive index of program performance. NCTQ recommends the utilization of academic achievement gains of graduates' students averaged over the first three years of teaching and five-year retention rates of graduates in the teaching profession.

Develop a viable 'escape chute' for teacher candidates deemed unqualified for teaching. If each program required all prospective elementary teachers to complete a subject-area minor, an individual who failed at student teaching could still earn a college degree in relatively short order. One of the reasons programs may be reluctant to fail anyone in their student teaching course is the absence of such an option. This would also have the added benefit of having prospective elementary teachers take some advanced college level coursework in a content area.

Require that student teacher/cooperating teacher arrangements include more assurances of mutual effectiveness. While teacher preparation programs must set high standards for cooperating teachers and work with districts to recruit and reward effective ones, districts need to have more latitude in managing student teachers, with authority to decide when/how much to allow student to teach and to recommend that student teachers fail.

⁵² See <http://www.uteach-institute.org/> for more information.

⁵³ For example, pass rates on state licensing tests of teacher candidates who entered student teaching (rather than just pass rates of program completers, an indicator that is virtually meaningless when the tests are required for program completion); average raw scores on licensing tests; satisfaction ratings of programs' student teachers; evaluation results from first and /or second year of teaching; academic achievement gains of graduates' students, and retention rates of graduates.

STRATEGY 6: Costs and Timelines

Steps	Explanation/Timeframe	Costs	Level of Reform
Enhance accountability system for state’s teacher preparation programs.	<p>Identify the data elements needed and add to database. Develop data extraction protocol for the programs to use to send the state the data. Project management, technology, programmers, public relations, and training estimated at \$250,000.</p> <p>Generating the reports based on the results estimated at \$60,000 per year, assuming the state already has a reporting engine in its data warehouse (see Strategy 1). Estimate one database administrator employed at ADE, \$90,000 a year.</p> <p>\$300,000 annual report cards.</p>	\$700,000	State

How This Strategy Connects to Other RTT Reform Areas

Like all of the strategies in this memo, improving the quality of the teacher pipeline disproportionately benefits struggling schools since they utilize the most new teachers and too often wind up with the weakest teachers. In this strategy, the data infrastructure focus is value-added data that can be tied back to and drive improvement at the institutions preparing teachers. Accountability for teacher preparation programs has been sorely lacking; this strategy promotes the use of objective evidence to assess program quality. Teacher preparation programs are held accountable for the quality of the teachers they produce based on data that includes the achievement of teachers’ students.

Likely Obstacles

Arizona will face arguments against raising standards for teacher preparation programs.

- Districts won’t be able to survive with a smaller applicant pool in the interim if standards are raised. Before we start narrowing the pool, we need to significantly raise earning potential to be competitive with other professions
 - *The shortage argument is a status quo argument. If short-term shortages do result from these changes, they can be dealt with on a case-by-case basis through financial or other incentives, many of which are described in this paper.*
- Raising standards will negatively impact minority recruitment into the profession
 - *The perpetuating circle that currently exists — whereby poorly skilled and prepared teachers educate the students that will become the poorly skilled and prepared teachers of the next generation — must be broken.*

- There will be real difficulty in recruiting effective teachers to host student teachers
 - *Districts must accept responsibility — and see the benefit to themselves — for helping to prepare new teachers.*
- There will be reluctance/resistance to improving reading and math preparation for elementary teachers
 - *Higher education must keep apace with research-based evidence about how student learn and how teachers should teach. Districts pay the price when they receive teachers ill-prepared to teach this basic, essential subject-matter.*



➤ STRATEGY 7

STATE-WIDE ADOPTION OF AN EFFECTIVE CURRICULUM

Objectives

Almost all states have decided that a set of common learning standards makes sense. The days of 50 distinct sets of standards directing instruction towards 50 different goal posts appear to be waning. However, what many educators and policymakers may not yet appreciate is that standards provide only one critical piece of a comprehensive strategy for higher student achievement.

Students achieve when not one but four elements are in place:

- **STANDARDS** which organize student learning: what needs to be learned and when it should be learned, no matter where students attend school.
- **CURRICULUM** which delivers a level of practical, daily detail to the standards needed by the teacher, which presents sound instructional strategies that work, and which provides the blueprint needed to ensure that all children regardless of background can meet the standards.
- **TEACHERS** capable of delivering the curriculum, adjusting it to meet the needs of students, deciding if and when additional tools such as technology are needed.
- **ASSESSMENT**, both formative and summative, to serve as a yardstick of progress.

Take one of these four elements away, and achievement will suffer. Nevertheless, curriculum has been troublingly absent in conversations about education reform as well as ignored in the indifferent approach some educators take to curricula adoptions. The policy discussion on reform appears to have leapfrogged over curriculum, going straight from standards to teacher quality.

Though we recognize the irony in this statement, given that we are the National Council on Teacher Quality, the current emphasis on human capital and effective teachers has unfortunately and unnecessarily been at the expense of an equally urgent emphasis on the importance of good curriculum. A progressive state looking to come out well ahead of others in *Race to the Top* can gain considerable advantage with recognition of this imbalance and make such a case to the U.S. Department of Education in its *Race to the Top* application.

Do states then need to adopt a state-wide curriculum? No. It's well known that such a suggestion would not be generally well received by local school officials and certainly not in a state such as Arizona with a passionate protection of the "local control" principle. What we recommend here is not a state adoption of a curriculum but an agreement entered into by a district consortium in the state, which shares an interest in adopting a world-class curriculum and recognizes the efficiencies of doing so on a large scale.

We pointedly do not recommend that the Arizona Department of Education coordinate this curriculum adoption. Instead, the strategy outlined here provides for the creation of a non-governmental, non-profit organization charged with ensuring a successful adoption.

Curriculum is a slippery slope for the U.S. Department of Education, as federal law explicitly prohibits the Department from interfering with state and local curriculum selection. This does not mean, though, that the Department cannot and should not fund projects that seek to address this missing piece of the puzzle. The benefits of a district consortium to build upon the strengths of common standards is a case that can be easily made.

Singapore Mathematics

The strategy outlined here is in elementary mathematics, but a state could also address the implementation of a strong reading curriculum. The elementary math curriculum we explore here is the Singapore Math Method.

It's relatively easy to make the case that American math curricula are seriously lacking compared to international counterparts. Overall performance by U.S. students is lackluster on international tests.

Singapore's approach to elementary mathematics education first came to the attention of U.S. educators in 1997 with the release of the results of the Third International Mathematics and Science Study (TIMSS). Singapore's fourth and eighth grade students placed first in mathematics, well ahead of students in the U.S. and other Western countries, and that performance has stayed strong. The Singapore system was lauded for providing "textbooks [that] build deep understanding of mathematical concepts while traditional U.S. textbooks rarely get beyond definitions and formulas."⁵⁴ While countries such as Japan and Korea have also done well in international testing, Singapore is the only Asian country where English is the medium of instruction for all state-approved schools in grades K-12, meaning that their curriculum is written in English.

Singapore's curriculum offers another advantage to states like Arizona with large numbers of English Language Learners. Only 20 percent of the students who come to school in Singapore can speak English, the language of schooling. Because of that dynamic, the curriculum is sensitive to the limited understanding of non-English speaking students.

Would it be premature for a state to commit to the Singapore curriculum given the inevitability of common standards? We do not believe so. The common standards are being benchmarked against international standards and Singapore consistently performs first, second or third on international assessments. The desirable characteristics consistently mentioned for the common standards (e.g. fewer topics in each grade) are the elements already present in the Singapore curriculum. If this is a concern, however, a state could choose to wait until the second application period to provide enough time to review the actual standards when they are released and vetted. We would go so far as to say that if the standards were in conflict with the Singapore curriculum, a state ought to consider opting out of the new standards.

Strategy Seven

Features of a strong statewide curriculum adoption proposal include:

- A consortium that includes a significant number of districts, particularly districts with sizeable poverty populations (for example, a combination of districts that results in at least 50 percent of students in the state participating)
- Data demonstrating the value of the selected curriculum in improving student performance
- A strong teacher training component, not just in how to use the texts, but how to raise teacher knowledge and skills
- Use of online professional development

A strong statewide curriculum adoption proposal will avoid:

- Bastardization of the curriculum. By this we mean trying to incorporate it into existing instructional frameworks or marginalizing it because such things as state standardized testing for students or professional development for teachers have not been modified to conform to and support the new curriculum.

Steps Arizona can take *prior to submission* to show the preconditions for reform and improve its chances of RTT success:

Arizona Department of Education:

Create a consortium. Invite all districts to a meeting at which presentations are made on effective curricula suitable for the elementary grades. Districts vote on which curricula they would support as part of a consortium. Districts not liking the choices would not have to join the consortium. Set up the structure of a non-profit organization charged with leading the district consortium. Invite all teacher preparation programs to join the consortium. Those joining would agree to have their math educators trained in the curriculum and develop new courses for teachers providing direct training in the curriculum.⁵⁵

The non-profit consortium would then be responsible for developing a cadre of teacher trainers, ratio of 1:200 at each grade level, with stipends to trainers and teachers for the first two years of implementation covered by the consortium and assumed by the district after that point. The consortium would also develop a roll-out plan for curriculum adoption, one grade in each of six successive years, starting with grade 1 in the first year.

Commission on Higher Education:

Allow Singapore math training. Alter regulations to allow aspiring elementary teachers to achieve certification by completing 200-hour Singapore training and to allow licensed teachers to fulfill continuing certification requirements by completing the same course.

Local Education Agencies:

Sign on to and participate in curriculum consortium agreement. Included would be a financial commitment to participate in the consortium, contributing dollars normally going to elementary math curriculum, in exchange for services. With the state department of education coordinating, help select an executive director of the consortium. Districts will need to coordinate with the consortium to regarding materials, producing a smooth roll-out from one year to the next, and monitoring and certifying that elementary teachers receive necessary training.

⁵⁵ This write-up hypothesizes that the districts would pick Singapore Math. Obviously another choice might be made.

STRATEGY 7: Costs and Timelines

Steps	Explanation/Timeframe	Costs	Level of Reform
Set up non-profit consortium of districts pursuing Singapore Math curriculum	For estimates here we presume 50 percent of the districts in the state would participate, educating 75 percent of the students.	\$1.5 million	State
Provide Singapore math training.	Estimating that half of the state's education schools agree to join the consortium, each faculty member would receive a \$500/day stipend to participate in 10-day training over each of two summers. They would then visit elementary schools for half a day, once every week for 25 weeks over two years, talking and learning from teachers about implementation, receiving either a stipend or a "buy-out" from a course.	\$2 million	Consortium
Create a summer training institute for the trainers with stringent entrance requirements.	Cost for teacher trainers: \$24,000 Total cost: 12 trainers at \$24,000/yr. for two years: \$600,000.	\$600,000	Consortium
	Training costs.	\$6 million	
Develop the software for a 200-hour online teacher training program tailored to each grade level.	Cost per grade level for software development: \$1 million. Total software development cost: \$6 million. Cost for teacher stipends: \$3,000/teacher. Total cost: 5000 teachers (over 2 years) at \$3,000 each: \$15 million.	\$22 million	Consortium
Purchase instructional materials for any of the state's education schools that adopt preparation programs that prepare teachers to use Singapore Math.	Cost per student: \$50.	TBD	Consortium

Strategy Seven

Steps	Explanation/Timeframe	Costs	Level of Reform
Purchase all instructional materials.	Cost of student and teacher materials including consumable materials necessary for a six-year, grade-by-grade roll-out: textbooks, teacher's guides, classroom assessments, workbooks and home instructional guides.	\$28 million	Consortium
Monitor progress and conduct a transparent evaluation of the effects that adoption of Singapore Math has on student and teacher performance in Arizona.	Hire an independent research organization.	\$2 million	Consortium

How This Strategy Connects to Other Reform Areas

The Singapore math curriculum is relevant to turning around low-performing schools because it has recently demonstrated its capacity to improve the performance of disadvantaged students. In addition, it was designed to be especially friendly to English-language learners. Its school-wide implementation will lever other organizational improvements in struggling schools as it creates incentives for more cooperation in instructional planning among staff.

By adopting internationally benchmarked K-12 math standards, adopting an aligned internationally acclaimed curriculum, and creating instruments for evaluating student performance, Arizona will meet the gold standard for accountability systems.

Likely Obstacles

The resistance to curriculum changes will largely revolve around local control of such decisions. This is why it is important for districts to retain their authority but be given the information and tools to make decisions based on the best knowledge we have about what works.

- Districts exercising their prerogative to make curriculum decisions.
 - *Evidence abounds as to the effectiveness of this curriculum. District participation has nothing to do with loss of decision making authority and everything to do with the adoption of a curriculum that will produce high levels of math achievement.*
- Some math educators believe that Singapore entails too much teacher-guided instruction.
 - *The program's emphasis on explicit instruction yields the world's highest performing student in math.*
- Resistance to a "foreign" curriculum.
 - *The TIMMS data show our current achievement levels compared to other nations.*

➤ CONCLUSION

As we explained at the outset of this memo, we think the human capital mandate is more than just one of four key “assurance” areas states must address in their *Race to the Top* applications. We are convinced that designing a “comprehensive and coherent” approach to RTT, as required by the Department — an approach that addresses data infrastructure, teachers, struggling schools, and standards/assessments — cannot be delivered by a State that fails to attend to some of the difficult and controversial human capital issues discussed in this memo.

Armed with the human capital strategies discussed in this memo, we offer a final summary of our best strategic advice on producing a successful RTT proposal:

1. Make sure your chosen strategy or strategies address all four reform areas (data infrastructure, human capital, struggling schools, standards/accountability). It’s fine if one area stands out, but the strategy needs to have an impact on all four. We have no doubt that a proposal focused on human capital strategies will do just that.
2. Apply in the first phase if at all possible. This will require a massive effort over the next 2-3 months.
3. Get needed foundational regulatory and statutory work done before the proposal goes in.
4. Work with the legislature. However, if it does not have the votes to deliver critical reform initiatives, look for alternative paths for the Governor to take actions unilaterally.
5. Cherry-picking where in the state to implement a strategy won’t work; whole-state reform is the unambiguous goal. Even if a strategy needs to begin as a pilot or be phased in, a state’s RTT proposal must lay out the full scale plan — not leave full implementation to a TBD date down the road.
6. Involve district leadership from the start. In Arizona, teacher evaluation processes and pay schedules are locally determined. Making some of the changes suggested in this memo depend on the Governor’s use of the partnerships and the bully pulpit to inspire action. At the same time, there are significant activities that the Governor and the Arizona Department of Education can take on to instigate changes and provide models for local action — developing a teacher and principal evaluation system, developing model pay schedules based on performance — and other tools that can save districts time and funding to adopt rather than develop themselves.
7. Recruit critical partnerships to advocate for the reforms. Even though belts are tight right now, Arizona has a wealth of foundation, academic, research, business and community resources that the state can tap into to garner a shared vision and support for these human capital strategies. The art of it is to cultivate critical partnerships without getting dragged down by too much.
8. Work with unions. Don’t do this “to them” but “with them.” However, if agreement cannot be reached, be prepared to act ultimately without their full support. It is clear in this paper that the union will be a major source of opposition to a number of the strategies presented here.
9. When identifying outside consultants, bring in change agents and reformers, not groups or individuals identified with the status quo. And put someone in charge of pulling off a successful proposal, someone who doesn’t have a single other public responsibility. This suggests that it may make most sense for an external party with a clear vision of the Governor’s goals — not an Arizona Department of Education or other state staffer — to organize the RTT proposal process. Dividing up responsibilities across ADE offices or staff without a point person with a big picture vision could lead to a RTT proposal that is disjointed and disorganized.
10. An honest assessment of the state’s strengths and weaknesses is more likely to be well received than a defense of the status quo.

➤ Appendix

The Impact of Teachers' Advanced Degrees on Student Learning

Metin Ozdemir, Ph.D., & Wendy Stevenson, Ph.D. UMBC

An extensive review of the studies published in peer-reviewed journals, books, and reports was conducted. For the purpose of literature search, we relied on multiple data bases including ERIC, EBSCOHOST, PsychInfo, and PsychLit. In addition, we carefully reviewed the reference sections of each article and chapter to locate additional sources. We also used online search engines such as Google and Yahoo search to locate updated publication lists and resumes of researchers who frequently publish in this field.

For the current meta-analysis, 17 studies (102 unique estimates) were selected as they have provided statistical estimates which allowed us to calculate effect sizes and re-compute the p-values for the meta-analysis.

All studies included in the meta-analysis were focusing on testing the effect of teachers' advanced degree (a degree beyond bachelor's degree) on student achievement measured as grade, gains in grade over one or two years, scores on standardized tests, and gains in standardized tests over one or two years. Teachers' advanced degree included M.A. degree, M.A. + some additional coursework, and Ph.D. Student achievement variables included achievement in math, reading, and science areas

Out of 102 statistical tests that were examined, 64.7 % (n = 66) of the estimates indicated that teachers advanced degrees did not have any significant impact on student achievement. On the other hand, 25.5% (n = 26) indicated a negative effect, and 9.8% (n = 10) suggested a positive effect of teachers' advanced degree on student achievement.

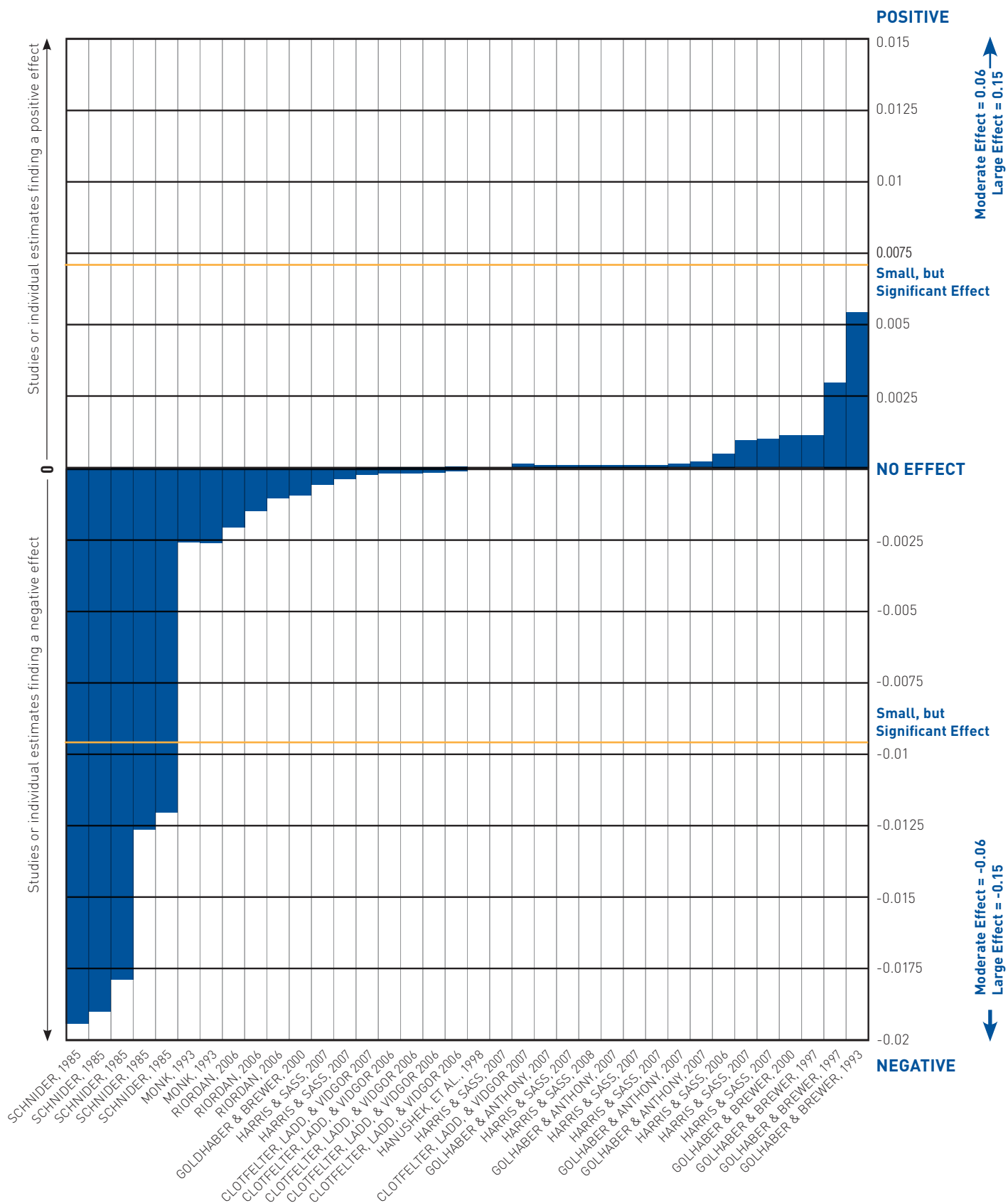
It is important to note that all 10 of the estimates suggesting positive effect ($p < .05$) of teachers' advanced degree on student learning were with analyses conducted on 6th and 12th grade students' math achievement. On the other hand, 23 negative effects ($p < .05$) were reported by studies focusing on achievement in Kindergarten or 5th grade achievement in math and reading, and the other three were on 10th and 12th grade achievement. Studies which reported significance level at $p < .10$ were not considered as reporting significant effect.

The studies examined in this meta-analysis had varied sample sizes. The minimum sample size was 199 whereas the maximum was over 1.7 million. Further analysis showed that there was no association between sample size and the direction of findings.

The average effect size estimate of all the 102 statistical tests was very low (.0012), which suggests that the impact of having advanced degree on student achievement is low. The highest effect size was .019, suggesting small effect.

One major concern regarding the studies reviewed in the current meta-analysis was that most studies to date did not identify the type of advanced degree they examined. In the current study, we identified only two studies (e.g., Goldhaber & Brewer, 1997; 2000) which examined the effect of subject-specific advanced degree on student learning. Specifically, Goldhaber & Brewer (1997) examined the effect of M.A. in math on grade 10 math test scores. They reported a positive effect of teachers' M.A. degree in math on math test scores. Similarly, Goldhaber & Brewer (2000) reported positive effect of M.A. in math on math test scores of 12th grade students. Of note, both studies reported low effect sizes.

The impact of teachers' advanced degrees on student learning



Appendix

It is possible that categorizing different types of graduate degrees under a single category of “advanced degree” resulted in biased estimates of the impact of teachers’ graduate training on student achievement. Future studies should examine the impact of subject-specific degrees on student achievement in the respective disciplines so that the findings would improve our understanding of the value of teachers’ advanced degree in improving student learning. Given this major limitation of the literature, the findings of current meta-analysis should be interpreted with caution.



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