Research-Based Options for Education Policymaking

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William Mathis, University of Colorado Boulder

Research-Based Options for Education Policymaking *is a 10-part brief that takes up important policy issues and identifies policies supported by research. Each section focuses on a different issue, and its recommendations for policymakers are based on the latest scholarship.*

At a time of growing national recognition of the need for a policy shift to more successful approaches to school reform, this multi-part brief identifies affirmative, research-based approaches to reform in areas including teacher evaluation, early childhood education, and school choice.

In doing so, the briefs help to describe a forward-looking alternative to the current over-reliance on test-based accountability, privatization and school choice.

Teacher Evaluation

Teachers are important, and policies mandating high-stakes evaluations of teachers are at the forefront of popular school reforms. Today's dominant approach labels teachers as effective or ineffective based in large part on a statistical analysis of students' test-score performance. Teachers judged effective are rewarded, and those found ineffective are sanctioned.

While such *summative* evaluations can be useful, lawmakers should be wary of approaches based in large part on test scores: the error in the measurements is large—which results in many teachers being incorrectly labeled as effective or ineffective;[1] relevant test scores are not available for the students taught by most teachers, given that only certain grade levels and subject areas are tested; and the incentives created by high-stakes use of test scores drive undesirable teaching practices such as curriculum narrowing and teaching to the test.[2]

Summative initiatives should also be balanced with *formative* approaches, which identify strengths and weaknesses of teachers and directly focus on developing and improving their teaching. Measures that de-emphasize test scores are more labor intensive but have far greater potential to enrich instruction and improve education.

Teacher quality is among the most important *within-school* factors affecting student achievement. However, research also suggests that teacher differences account for no more than about 15% of differences in students' test score outcomes.[3] Other school factors such as class size reduction[4] and adequate, focused funding[5] are also research-based ways to improve education. Further, *non-school factors*, which are generally associated with parental education and wealth, are far more important determinants of students' test scores.[6]

Care must be taken in selecting or designing a balanced evaluation system. Given the extensive range of activities, skills, and knowledge involved in teachers' daily work, the system's goals must be clear, explicit and reflect practitioner involvement.[7] Effective teacher evaluation also requires an investment in sufficient numbers of qualified evaluators. Otherwise, the system will likely be irregular, uneven and ineffective.[8]

Many established evaluation systems are available, and some have a strong research base. Among the more widely known approaches are Charlotte Danielson's Framework for Teaching[9] and the Peer Assistance and Review (PAR)[10] approach. Connecticut's Beginning Educator's Support and Training (BEST) system along with the National Board for Professional Teaching Standard's system for advanced teachers are also recognized as

> *All teacher evaluation systems should employ a diverse set of measures to capture the complex nature of the art and science of teaching.*

promising systems for promoting both student learning and professional improvement.[11] Properly preparing teachers is also receiving renewed attention, and Stanford's *edTPA* consortium of 24 states is developing comprehensive assessments of prospective teachers.[12]

Any single measure of teaching or teachers will emphasize one important element at the expense of others.[13] Accordingly, all teacher evaluation systems should employ a diverse set of measures to capture the complex nature of the art and science of teaching.[14] In fact, the wisest choice may be to have two or more *separate* measurement systems within a district, allowing for the possibility of different results—which in turn would provide a check and a caution against relying on only one measurement system.

Key Research Points and Advice for Policymakers

- If the objective is improving educational practice, formative evaluations that guide a teacher's improvement provide greater benefits than summative evaluations.[15]
- If the objective is to improve educational performance, outside-school factors must also be addressed. Teacher evaluation cannot replace or compensate for these much stronger determinants of student learning.[16] The importance of these outside-school

factors should also caution against policies that simplistically attribute student test scores to teachers.

- The results produced by value-added (test-score growth) models alone are highly unstable. They vary from year to year, from classroom to classroom, and from one test to another.[17] Substantial reliance on these models can lead to practical, ethical and legal problems.

- High-stakes evaluations based in substantial part on students' test scores narrow the curriculum by diminishing or pushing out non-tested subjects, knowledge, and skills.[18]

- Teacher evaluation systems necessarily involve trade-offs, and specific design choices are controversial, so it is important to involve all key stakeholders in system design or selection.[19]

- To be successful, schools must invest in their teacher evaluation systems. An adequate number of highly trained evaluators must be available.[20]

- Given the wide variety of teacher roles and the many factors that influence learning that are outside the control of the teacher, a wide variety of measures of teacher effectiveness is also indicated.[21] By diversifying, the weakness of any single measure is offset by the strengths of another.[22]

- High-quality research on existing evaluative programs and tools should inform the design of teacher evaluation systems.[23] States and districts should investigate balanced models such as PAR and the Danielson Framework, closely examine the evidence concerning strengths and weaknesses of each model, and never attach high-stakes consequences to teachers which the evidence cannot validly support.

Common Core State Standards

The Common Core State Standards (CCSS) have ardent supporters and strong critics.[24] The actual effect of the CCSS, however, will depend much less on the standards themselves than on how they are used. Two factors are particularly crucial. The first is whether states invest in the necessary curricular and instructional resources and supports, and the second concerns the nature and use of CCSS assessments developed by the two national testing consortia.

The movement toward nationwide curriculum standards began in 2009 and has been led by the National Governors' Association and the Council of Chief State School Officers, accompanied by the Gates Foundation's fiscal support. The CCSS goal is to assure a high-level "internationally competitive" set of standards, help teachers organize their lessons, and assure educational continuity for mobile students.[25] A claimed advantage is that an economy of scale is created (particularly for corporations supplying professional development, instructional materials, and standardized testing).[26] Another claimed benefit

is the facilitation of comparisons among states, although such information is already provided by the National Assessment of Educational Progress (NAEP).

Since the CCSS has not been implemented, many questions cannot be definitively answered. Yet, there are informative lessons from related research. There is, for example, no evidence that states within the U.S. score higher or lower on the NAEP based on the rigor of their state standards.[27] Similarly, international test data show no pronounced test-score advantage on the basis of the presence or absence of national standards.[28] Further, the wave of high-stakes testing associated with No Child Left Behind (NCLB) has resulted in the "dumbing down" and narrowing of the curriculum.[29]

Owing to the historically limited educational role of the federal government, those behind the CCSS have taken care to avoid having the effort characterized as "national standards" or a "national curriculum."[30] Four states (Alaska, Nebraska, Texas, and Virginia) have, as of October of 2012, declined to participate, and Minnesota has agreed to adopt CCSS in only one subject area. (Five currently participating states are considering legislation to slow down implementation[31]). But that refusal has come at a cost. For a state to be eligible for federal Race to the Top or NCLB waivers, for example, it must adopt "college and career ready standards."[32] Nevertheless, in many minds, curriculum and standards are a state responsibility, and the CCSS represents federal over-reach.[33]

Since the 1994 passage of the *Goals 2000* legislation, state standards have been increasingly linked to large-scale assessments of those standards. With NCLB, high-stakes consequences were attached to the test scores. As a predictable consequence, the assessments have driven curriculum and instruction much more than the state standards themselves. It is now again predictable that the nature and use of the CCSS assessments will largely determine the impact of CCSS. Two national assessment consortia (the Smarter Balanced Assessment Consortium and the Partnership for Assessment of Readiness for College and Careers) are developing computer-based testing for a scheduled implementation in 2014-15.[34] Among the unresolved issues are:

1) the amount and impact of testing time required for the new assessments;

2) whether the results have enough validity and precision to justify high-stakes applications currently being eyed by lawmakers (e.g., evaluation of principals and teachers);

3) the ability of the two consortia to sustain the effort given the current fiscal needs and available resources;

4) whether the assessment systems will be ready on time; and

5) most important, whether the tests will create incentives for teaching a rich, engaging, comprehensive curriculum.[35]

A paramount issue is whether, given the current status of federal and state budgets, there will be the political will to provide schools and students the professional support and learning resources necessary for the effort to be successful.

As the absence or presence of rigorous or national standards says nothing about equity, educational quality, or the provision of adequate educational services, there is no reason to expect CCSS or any other standards initiative to be an effective educational reform *by itself*.[36]

Key Research Points and Advice for Policymakers

- The adoption of a set of standards and assessments, by themselves, is unlikely to improve learning, increase test scores, or close the achievement gap.[37]
- For schools and districts with weak or non-existent curriculum articulation, the CCSS may adequately serve as a basic curriculum.[38]
- The assessment consortia are currently focused on mathematics and English/language arts. Schools, districts, and states must take proactive steps to protect other vital purposes of education such as citizenship, the arts, and maximizing individual talents – as well as the sciences and social sciences. As test-based penalties have increased, the instructional attention given to non-tested areas has decreased.[39]
- Educators and policymakers need to be aware of the significant costs in instructional materials, training and computerized testing platforms the CCSS requires.[40] It is unlikely the federal or state governments will adequately cover these costs. For the CCSS to be meaningful depends directly on whether it is adequately supported.
- The nation's "international economic competitiveness" is unlikely to be affected by the presence or absence of national standards.[41]
- Children learn when they are provided with high-quality and equitable educational opportunities. Investing in ways that enhance these opportunities shows the greater promise for addressing the nation's education problems.

Preschool Education

Publicly supported, high-quality preschool education is among the most successful and well-documented of education reforms. Four out of every five states provide preschool in some format or for some students,[42] and nearly 75% of four year olds and just over half of three year olds have some form of preschool experience, ranging from day-care to high-quality educational programs.[43] However, in inflation adjusted dollars, overall funding per child served is lower than a decade ago.[44]

There is near-universal agreement that high-quality preschool programs more than pay for themselves in economic and social benefits. In reviewing the various cost-benefit studies, the RAND Corporation found that preschool education returns as much as $17.07 for each dollar invested, although the size of the return varies based on the nature of the program and how costs and benefits are calculated.[45] No study found negative returns. Professor W. Steven Barnett, of the National Institute for Early Education Research at Rutgers, concludes that even if the programs only delivered one-tenth of their proven outcomes, they would still be economically justified.[46] The Committee for Economic Development found the overall positive evidence to be so persuasive that they recommend early education as an international economic development tool.[47]

In terms of academic effects, preschool programs show large and immediate pay-offs. High-quality, intensive preschool education for at least two years can, by itself, close as much as half the achievement gap.[48] Overall, the initial size of these effects averages a one-half standard deviation higher than control groups.[49] This magnitude is the same as improving a score from the 30th percentile to the 50th percentile. These initial effects fade somewhat over time but nevertheless persist into adulthood, registering permanent effects in the 0.1 to 0.2 standard deviation range.

Perhaps more important than higher test scores is that children provided with preschool programs demonstrate more positive adult social indicators, across the board. Fewer arrests, less marijuana use, fewer grade retentions, higher graduation rates, higher college attendance rates, less special education, higher employment, higher earnings, greater social mobility and less welfare dependency are among the positive effects found in the best-designed studies.[50]

Program quality is absolutely critical. While no one factor can be considered determinative, the key program quality elements include:

- Small class sizes and ratios – 20 or fewer children, with two adults.[51]
- Well trained, adequately compensated and qualified teachers.
- Strong links to social and health services.
- Attention to families' needs, including wrap-around child care.
- Adequate and appropriate supplies and materials.
- Appropriate and sufficient indoor and outdoor space.
- A mix of child-initiated and teacher directed activities with substantial time for individualized and small-group interactions.[52]

A number of other issues are frequently raised. Here's a summary of the key research:

Very Early Interventions. The highly successful Abecederian program in North Carolina enrolled children beginning at four months of age. Researchers found sustained

academic effect sizes at 0.33 standard deviations at ages 15 and 21, higher graduation rates, higher college attendance rates and higher employment.[53] However, positive effects of this size are not universally reported and attention to program quality factors is of paramount importance.[54]

Extended Day and Year. Half-day and full-day programs both show strong results, but only full-day programs produce economic benefits through working parents.[55] A small randomized trial showed greater learning gains for extended year preschool.[56]

Universal *versus* Targeted Enrollment. Economically deprived children benefit most, but all children are advantaged by preschool programs. Children from middle income families have the greatest access problems as they are not eligible for programs like Head Start. As a result of the large size of the cohort, middle class children show the greater number of readiness needs.[57] Universal enrollment is therefore the wiser policy approach.

Center-Based Programs. While a given home-based program can be high quality, center-based programs are more likely to meet the essential criteria for a high-quality program and are the preferred approach.[58]

Private *versus* Public Programs. The research shows no advantage for one sector over the other. The key is the quality of the program being offered.[59]

Head Start. With low family income determining eligibility, Head Start enrolls fewer students than state or district programs. Study results vary according to the rigor of the research design. Overall, the results indicate Head Start is a cost-effective program albeit with lesser but still positive results, suggesting that the program should be retained but strengthened.[60]

Curriculum. No consistent advantage is found for any set-piece curriculum, although direct instruction matters.[61]

Key Research Points and Advice for Policymakers

- Investment in preschool is one of the most effective reform policies. Strong, positive economic, educational and social returns are well documented.
- Universal access is superior to targeted enrollment, as it reaches needy children from all walks of life.
- Successful preschool programs depend on the quality of the program. States should develop and monitor early education standards.
- States and districts should implement a continuous development and improvement program for both public and private providers.

- A successful program requires an emphasis on the "whole child." Some of the stronger early education benefits are found in reducing crime and delinquency while increasing emotional development and self-regulation.
- Preschool programs should be expanded to three year olds with an emphasis on needy children.
- For maximum effectiveness, preschool programs should be integrated with social and health programs.

Public Funding of School Choice

Various forms of school choice now exist across the United States: charter schools, conventional vouchers, neovouchers, magnet schools, open enrollment, and across-district choice. In addition, private schooling and home schooling have made claims for public support through methods such as tax benefits and partial enrollments. The threshold policy decision is whether public funds should be provided to choice schools, particularly to schools run by private corporations or religious institutions. Issues such as democratic governance, accountability of public funds, quality control and church/state concerns must first be carefully deliberated. When lawmakers do decide to allocate public funding to choice schools, as they have increasingly done over the past couple of decades, they must then engage in a new level of scrutiny regarding the structure, level and conditions of these subsidies.[62]

While the threshold "yes/no" issue is indisputably important, this brief focuses on the subsequent question: *what criteria should policymakers consider in making decisions about the nuts and bolts of choice school funding?*

The most common way of thinking about school funding is per-pupil spending.[63] On the face, a "neutral" policy would simply allot the same amount of money per student to a school of choice as it would to a conventional public school. But as professor Clive Belfield has explained, the issue is far more complicated.[64] For example, student populations may vary. Schools that serve autistic children will have different cost requirements than a school with a high population of economically deprived children.[65] Further, while cyber-schools require technology-related resources, they require only minimal resources for facilities, maintenance expenses and transportation. Should these schools receive the same amount of money as a school that must pay these expenses?[66] There are no easy or value-free answers to these issues.

Funding sources also vary. Some states have high levels of state support and others do not. Different states also pay charter schools, the most common form of choice, different percentage amounts of the state's base support level. Likewise, there are great variations in local tax support, pensions and construction aid.[67] If the state stipend is low, then questions arise as to whether the difference should be paid by local districts, parents or private sources.[68] Some private schools have substantial endowments and grant support

while others do not. Start-up funds are available for some schools but not for others.[69] Unless all revenue sources are considered, inequality of opportunities may arise.[70]

When a school receives public support, either directly or through tax benefits, the issue of accountability—the "strings attached"—must also be considered. Private enterprises are

> *Determining "fair" funding for various school choice approaches requires careful examination and inquiry.*

not generally required to have the same level of transparency as public undertakings. However, as a general rule, the greater the amount of public assistance, the greater the requirement for public accountability for the school's operations and results.

Policies must also consider regional cost variations. The cost of living and the cost of operating a school vary by location. A school in Manhattan, New York will have different costs than one in Manhattan, Kansas.[71] The largest expenditure for traditional schools is for salary and benefits. These costs vary dramatically based on geography as well as faculty seniority, class ratios, salary schedule and the like.

Should tax-based funding be predicated on actual spending (cost-plus) or on a set amount per pupil?[72] A set amount gives market-oriented operations an incentive to keep salaries low and class size high. A cost-plus system doesn't discourage funding a high-quality education but it has no incentive to keep costs low or efficient. Again, there are no easy or absolute answers to these dilemmas.

There are also unique school factors such as age and condition of the facility, variations in contracted services, rurality, and availability of community services. Compounding an already complicated topic is the funding of private and public combinations. Should public school cocurricular activities such as school-sponsored clubs and teams be available for students enrolled in a cyber-school? Does the local school, the state or the cyber-school pay the costs?[73]

School funding formulas are therefore convoluted—and particularly so when choice is added to the mix. The accumulation of discrete political decisions and compromises has produced a crazy-quilt pattern of laws and rules both across and within states.[74] Thus, determining "fair" funding for various school choice approaches requires careful examination and inquiry. While it is likely impossible and arguably unwise to eliminate these variations, clarity, fairness, equality and cogency require that policymakers make funding decisions applying principles of scientific analysis and problem solving.

Key Research Points and Advice for Policymakers

- As a threshold matter, policymakers should deliberate about the advantages and disadvantages of providing public resources to financially support each type of schooling. Based on effectiveness, democratic governance, legal, financial and

equality concerns, are public subsidies to a given choice option in the public interest? Only after a decision is made to provide such support do the following issues and questions come into play.

- Each conventional public school and choice school receiving public funding should operate using a uniform chart of accounts, spending and revenue definitions. Finances should be subject to regular and public audit.[75] Otherwise, informed decisions regarding funding, equity, and fairness are not possible.

- Each type of school choice requires separate finance projections. Cyber schools, home schools, elementary, preschools, high schools, etc., all have natural cost-profile differences.

- Comparable costs should be established using comparable schools. If feasible, such comparisons should be within the same neighborhoods and with comparable student populations.[76] Regional cost factors have been used in some states and may be indicated, particularly in states with large cost-of-living differences.[77]

- Facility, transportation, and administrative costs should be separately analyzed. Neighborhood public schools and choice schools vary considerably with regard to these elements.[78]

- Rules and laws should guard against malfeasance and should place appropriate limits on profits and on the salaries of those running schools and management corporations.[79]

- Different funding structures for special education, English language learners, compensatory education and the like should be based on careful adequacy studies. Heretofore, funding weights have been primarily determined through an arbitrary political process, and they vary widely across states.[80]

- For students with relatively rare and unique high-cost disabilities, a cost-reimbursement approach may be indicated.

- In terms of revenue, all sources—public and private—should be considered in calculations to determine a fair level of public funding.[81] When private donations or tuition costs are added to public funding, inequities can result.

- The interactions of various policies should be considered. These may form a set of unintended consequences, such as when a tax credit policy is added to a voucher.

- All schools receiving public funding should be held accountable using the same system, including regular monitoring of fiscal issues and educational programs.[82]

Dropout Prevention

Dropouts are, without a doubt, an important social, economic and educational issue. Life chances for steady employment and a living wage are dramatically lower for those without a high school diploma. The average high school graduate earned $42,000 in 2008 while the average dropout's salary was $23,000. Graduates also have higher employment rates, better health histories and lower incarceration rates.[83]

As demonstrated by President Obama's proposals on high school dropouts in his state of the union message[84] and in policy pronouncements,[85] this issue is garnering a great deal of political attention. With revisions to the federal Elementary and Secondary Education Act (currently called NCLB) on the horizon, dropout rates may also play a role as an accountability measure.[86]

Incidence: Trying to bring some order to the variety of ways dropouts are defined,[87] the federal government adopted a more rigid, rigorous and uniform definition, which counts everyone who does not graduate from high school in the standard four years.[88] This change was not without controversy, as some groups argued that students who took longer or who took alternate paths should be counted.[89]

November of 2012 saw the first nationwide federal report of dropout rates using the new definition.[90] The results showed the following patterns: overall graduation rates were in the 70% to 85% range, depending on the state; rates for Black children were in the 60% to 75% range; Hispanic children were in the 60% and 80% range; and children from lower-income households graduated in the 60% to 80% range. In a separate estimate (which is consistent with other sources) females graduate at a 7% higher rate than their male peers.[91]

Causes and Contributing Factors: There is no single factor that explains or predicts the likelihood of dropping-out. A complex mix of individual, family, school and community factors leads to "a long process of disengagement that may begin before a child enters school."[92] The National Dropout Prevention Center identified 25 significant predictors. Typically, students are at risk when they have several (three or more) of the risk factors. These include items such as low socioeconomic status, students holding jobs, low parental educational level, family disruption, low education expectations, high-risk peer groups, low achievement, poor attendance and misbehavior.[93] A key lesson from this research is that the core underlying reasons primarily lie outside the school.[94] As educators have little control over individual risk factors, social conditions, and larger social problems, they are faced with effectively dealing with the manifestation of external factors.[95] In fact, schools, by themselves control only about 20% of the variance in dropout rates.[96] Accordingly, reducing dropout rates requires solutions that go beyond (yet certainly include) school functions.

"Dropout Factories": A great deal of recent rhetoric has used the term "Dropout Factory" to refer to a school with more than 40% attrition of the student cohort from ninth grade through graduation. Non-promoted students are considered as dropouts in this definition.[97] These so-called "dropout factories" have twice the minority enrollment percentages of other U.S. schools; they are concentrated in southern and southwestern states and in major cities.

The students in these schools should unquestionably be a focus of dropout prevention efforts. But the term is misleading, given that the schools are a relatively small part of the process leading to dropping out (and may in fact be a positive force, counter-acting outside-school causes). These schools have almost twice the poverty rate (69%) of the nation (35%), and the research is clear that "Poverty is the key correlate."[98]

Dropout Prevention Programs: The federally funded "What Works Clearinghouse" reviewed the research on effective dropout prevention programs, examining six program categories and finding four to be moderately successful and two to be minimally successful.[99]

Moderately successful strategies

- Assign qualified adult advocates to students at risk of dropping out, maintain low caseloads, and purposefully match students with adults.
- In conjunction with other supports, provide academic support and enrichment.
- Personalize the learning environment and instructional process, provide encouragement and support, and establish a sense of belonging and a positive school climate.
- Provide rigorous and relevant instruction, giving students the skills to graduate and skills that are directly relevant to that student's post-secondary options.

Minimally successful strategies

- Little evidence of dropout reduction is seen from implementing systems aimed at collecting and analyzing comprehensive, long-term data using unique student IDs.
- Programs for classroom behavior and social skills have proven to be more effective at pre-school levels rather than at higher levels.

Policy Recommendations

- Because most dropout risk factors are centered outside the school, it is vital for schools to coordinate with social and health agencies to address the underlying core causes. Multiple risk factors must be addressed with multiple strategies, focused on students' personal assets and on skill building, academic support, family outreach and environmental change.[100]
- Implement high-quality early education programs, which have been shown to reduce dropouts as well as improve a broad range of social, economic and educational factors.[101]
- Educators must be trained to spot and report dropout warning signs such as home troubles, absenteeism, social difficulties, disengagement, and poor grades, in order to initiate vital early reporting and intervention strategies.[102]

- Schools should assign adult advocates, with appropriate backgrounds and low caseloads, to work with students with a high risk of dropping-out. Adequate training and support is crucial.[103]
- Schooling itself does play an important role. Schools can keep students engaged and successful if they provide academic support, challenging but engaging and relevant instruction, and post-secondary guidance geared to the needs of the individual, all *in conjunction with* other supports.[104]
- Laws should require students to attend school until age 18 or graduation.[105]
- Schools, districts and states should avoid or revoke policies that discourage successful school completion such as grade retention,[106] high school exit examinations,[107] and out-of-school suspensions for minor offences.[108]
- Since schools have limited control over most causes of dropouts,[109] great care should be taken in the design of any school accountability system that incorporates dropout rates.[110] Policymakers should not, as a matter of ethics and common sense, hold schools responsible for matters that are not within their control and for which the policymakers themselves do not provide adequate resources to resolve.
- Schools must consciously and deliberately work to create safe and welcoming school environments and cultures.[111]

Effective School Expenditures

Any discussion of effective school expenditures should start with two well-established premises. First, funding and other resources are necessary but not sufficient for providing high-quality educational opportunities.[112] As stated by Judge Howard Manning in deciding a school funding case, "Only a fool would find that money does not matter in education."[113] Second, simply spending money does not necessarily provide better learning opportunities. An expensive but ill-considered policy can prove wasteful or even counter-productive.

In considering beneficial expenditures, standardized test scores are the most commonly used measure of effectiveness. However, the relationship between high-quality education, test scores, and the amount spent is a highly attenuated one. Test scores alone are not a valid indicator of the broad range of public education goals. For example, while paying for a special education aide may be necessary for safety and equality reasons, there is no reason to expect appreciable school or district test score improvements as a result. The same can be said for many other recent areas of increased spending, such as security guards, girls' sports (Title IX), guidance counselors, athletics, nurses, breakfast and lunch programs, alternative education programs, special education, and increases in employee health care premiums. These programs have value in their own right, but there is no logical reason for most of them to have much more than an indirect effect on test scores.[114]

Other programs, such as dropout prevention, are—if successful—likely to have a *negative* effect on test scores, but they are still worthwhile.

On the expenditure side, money has different effects at different levels. As the international PISA test scores show, the amount of money allocated must pass an adequacy threshold. If the school is below this threshold, the lack of funding can have enormously harmful effects.[115] If it is well above the threshold, adding additional resources may not make much difference. For example, a new school bell tower is unlikely to improve math scores. For all of the above reasons, simple comparisons of spending with test scores will systematically underestimate the effects of proper school funding.

What Educational Investments Have the Best Payoff?

The public debate has shifted from *does* money matter to *where* money matters.[116] The past two decades have seen more than 70 studies exploring how much money is needed.[117] These adequacy studies are based on implicit or explicit definitions of how money is most effectively spent.[118] Clean, adequate facilities and learning supplies are unquestionably required. Likewise, qualified staff and a well-organized climate are necessary, although not as easy to measure.[119] Below are eight additional areas where increased funding will likely lead to improved outcomes.

Community and Social Factors: It might seem strange to list outside-of-school factors as the first and most effective expenditure. Yet socio-economic factors are the strongest correlates of achievement test scores. While some advocates contend that schools can overcome the effects of poverty single-handedly, the research evidence does not support this contention.[120] In fact, such claims "have the potential for doing serious harm."[121] In

> *Test scores alone are not a valid indicator of the broad range of public education goals.*

Montgomery County, Maryland, low-income students who attended schools with more affluent students cut the math achievement gap in half. Public housing students attending schools with more affluent students registered a sizeable 0.4 standard deviation advantage over similarly situated students attending schools with a less affluent population.[122] Nations that provide greater equalities of learning opportunities score higher on PISA exams than nations with greater inequality.[123] Given the enormous influence of economic and social conditions, ameliorating the negative effects of concentrated poverty may do more to improve our schools than most or all school reforms.[124]

Early Education: Arguably the strongest single within-school factor is the provision of high-quality early education programs. For every dollar invested in early education, as much as $17 is saved in later education and social costs. While the magnitude of returns varies by study, there is near-universal agreement on the high returns on this investment.[125]

Community Schools: When schools engage families continuously and provide related family, social and medical services, academic achievement and attendance tend to increase, and risky behaviors tend to decrease.[126]

Extended Day and Year: Less affluent students lose as much as one-tenth of a standard deviation on math scores over the summer.[127] Considering the cumulative effects, addressing this summer learning loss—along with similar learning losses associated with after-school time—may prove one of the most effective ways of closing the achievement gap. Yet, extra time must be more than just supervision and child care.[128] The added time must offer the sort of engaged learning activities that are routinely available to more affluent students. The quality of summer and extended-day programs is critical for academic maintenance or gains. Yet, like early education, the greatest gains may be in non-academic areas. Some of these benefits can be derived through collaborations with existing community members and organizations. Odden and Picus calculate that one full-time teacher is needed for every 30 at-risk students. They also recommend a full-day summer program running for eight to nine weeks.[129]

Full-day Kindergarten: Consistent with the research on early education and extending the school day and year, full-day kindergarten provides academic, socialization, attendance and readiness benefits that minimize later problems. However, as with early education and extended learning time, additional programs will accomplish little unless they are of high quality.[130]

Class size: The evidence on class size is most clear for grades k-3, with studies recommending between 12 and 15 for traditional classes. Middle school findings suggest between 16 and 25. And high school classes between 16 and 25.[131] However, for high-needs students, the drop-out literature tells us that much smaller caseloads with greater intensity are needed if interventions are to be successful.[132]

Teacher Quality: There is near-universal agreement on the importance of high-quality teachers. There is evidence that teacher experience, credentials and test scores have a positive effect on student achievement.[133] In recent policy initiatives, the use of standardized test score gains has been advanced by the federal government as a means of evaluating teachers, but this approach is problematic. Teachers showing high student growth on one test often show very low growth on other tests or in other classes or school years (and vice versa). The weakness of such measures and the resulting high error rates indicate that the use of such procedures in high-stakes applications is not warranted.[134]

High-Needs Children and Categorical Aid: Economically disadvantaged children need approximately 40%-100% more funding per child. English language learners need 76% to 118% more.[135] Yet for the nation as a whole, we spend $1,307 less per pupil on the education of disadvantaged students.[136] Adequate or equitable funding is a legal requirement in most states but, more importantly, it is the foundation for any policy hoping to achieve equitable outcomes.

Conclusions

This list of eight policy areas where increased funding is likely to lead to improved outcomes is not meant to be exhaustive. A different author could validly add relevant items (with a different emphasis) to this list. Nevertheless, there is considerable consensus regarding these areas, and they are therefore offered as a useful starting point for addressing effective school spending.[137]

English Language Learners and Parental Involvement

The education of all children is imperative for the well-being of a democratic society. Yet, our non-English speaking populations are often denied equal educational opportunities.[138] Children from Spanish-speaking families in particular have consistently scored below the children of native-English speakers.[139] Further, a number of school finance adequacy studies[140] and court decisions have pointed to inequities in state funding systems that discount the unique needs of English Language Learners (ELLs).[141] Estimated additional per-pupil costs needed for ELL students ranges from 25% to 140%, depending on the system's funding base and how the program is defined.[142]

Overall, ELL students have grown from approximately 2 million students in 1989 to more than 5 million in 2004-2005[143] and increased to 5.3 million in 2009.[144] The fastest-growing segment is among Hispanics,[145] and Latino parents and students represent the largest segment (76.1%) of ELL learners. Asian-language speakers represent about 10% of the ELL student population and are increasing as a percentage of the total school population as well. Although the ELL student population is often portrayed as an immigration concern, only 24% of ELL elementary students and 44% of ELL secondary students are foreign-born.[146]

ELL students are concentrated in certain states, metropolitan areas, communities, and schools.[147] As a group, these schools have a low instructional capacity, serve a low-income population, suffer a shortage of trained teachers, and have limited instructional materials and fewer opportunities to learn.[148] These resource issues are often exacerbated by communications barriers. In particular, interactions between schools and parents are often unidirectional and fail to value and take advantage of the families' resources and culture.[149]

Parental Involvement

While many systemic inequalities in the U.S. require correction at the national and state policy levels, some key improvements can be made locally. The education of ELL students could be significantly enhanced by school-based efforts to strengthen parental involvement in the child's education. Under typical circumstances, ELL parents are ill-equipped for effective engagement with the school due to their own limited facility in English, lack of formal education and education in U.S. schools, unfamiliarity with the norms of U.S.

schooling, and limited time and ability to attend meetings and events – all exacerbated by school-home cultural differences.

Arias and Morillo-Campbell outline these issues in their NEPC policy brief on this topic.[150] They describe best practices whereby schools can help foster educationally supportive parenting skills, establish two-way communications, recruit families as volunteers and audiences, involve families with homework, include families in school governance, and collaborate with community organizations.[151]

Arias and Morillo-Campbell further advise that ELL parental involvement will be enhanced if the school embraces the culture of the community in its activities calendar as well as in the cultural and linguistic interactions of schools with parents. ELL parental involvement will also benefit if schools provide parents with avenues to learn English and with techniques for parents to support and encourage reading and writing with their children. Two other elements they suggest are working with parents to increase their understanding of the school community, with the aim of increasing parental efficacy, as well as effective parental advocacy.[152]

Recommendations

For Policymakers

- Many states have conducted adequacy studies and identified financial inequities in serving ELL learners. These studies should be reviewed, updated and turned into legislation and budgetary allocations to rectify resource inadequacies and inequalities.
- State laws, rules and regulations should be reviewed and revised to ensure that school evaluation frameworks systemically and specifically evaluate the instructional capacity of schools with a high concentration of ELL students. A particular focus must be placed on the training and quality of staff, the adequacy of instructional materials, and the overall funding and support for ELL students.
- States must provide adequate training for ELL teachers which embraces and builds upon the students' native and family culture.

For Districts and Schools

- Provide home-school coordinators, fluent in the children's language, to enhance communications and bridge school-home cultural differences.
- Incorporate community cultural events and celebrations into school activities.
- Provide translators for all key parent meetings.

- Publish bi-lingual or multi-lingual newsletters.
- Provide a multi-lingual telephone network.
- Provide parents with avenues to learn English.
- Open meetings to extended families.
- Assist parents in educationally supportive child-raising skills.
- Support and encourage parent reading and writing with their children.
- Recruit families as volunteers and audiences.
- Involve families with homework.
- Include families in school governance.
- Collaborate with community organizations.
- Boost parental understanding of the school community.
- Assist parents in effective advocacy and interactions with the school.

Twenty-first-Century Skills and Implications for Education

"Teaching 21st-century skills" is a commonly heard school-reform catch-phrase. But the exhortation has very different meanings, depending on who is speaking.

One prominent interpretation of "21st century skills" is reflected in the influential SCANS report (Secretary's Commission on Achieving Necessary Skills), which focuses on a person's ability and willingness to rapidly learn new skills, exercise responsibility, work as a team player, embrace cultural diversity, access and evaluate information, be creative, and practice negotiating skills.[153] Following a similar line of thought, labor economists Murnane and Levy conclude that jobs increasingly require non-routine cognitive skills. Thus, "soft skills"—such as facility with solving semi-structured problems, the ability to work in groups with persons of various backgrounds, effective oral and written communication skills, and the ability to use personal computers to carry out simple tasks—become fundamental.[154] This emphasis on soft skills has also been endorsed by the National Governor's Association and the American Youth Policy Forum.[155]

Appealing to concerns about the nation's international economic competitiveness, the Obama administration presents a different perspective on 21st-century skills, often in connection with support for the Race to the Top criteria and the promotion of "career and college readiness" standards such as the Common Core State Standards (CCSS).[156] The president also advocated for more rigorous science, technology, engineering, and math (STEM) education in his State of the Union address.[157]

In broad brush strokes, the debate about 21st century skills is represented by these two perspectives: soft skills with constructivist learning versus test-based, set-piece, top-down

prescribed subject matter. In theory, few would embrace such a stark contrast, as evidenced by the CCSS listing of "habits of mind."[158] But given the CCSS testing component (primarily the work of the two national testing consortia), the key question becomes whether and how these soft skills will be included in assessment and implementation.

The dominant policy since the watershed *Nation at Risk* report in 1983 has been test-based and cognitive.[159] This was given a strong boost in 1994 by the requirement for state standards in Goals 2000[160] followed by the No Child Left Behind Act of 2001.[161] Unfortunately, as the education secretary's own Commission on Equity and Excellence concluded, this approach has not worked very well.[162] The National Research Council came to similar conclusions, finding that the gains are "concentrated in elementary grade mathematics and are small in comparison with the improvements the nation hopes to achieve." Adverse side-effects include curriculum narrowing and an increase in drop-outs when tests are tied to graduation requirements.[163]

Recognizing the additional need for soft skills, various groups are working to reconcile these perspectives through mechanisms such as the three R's plus the four C's (Critical thinking and problem solving, Communication, Collaboration, and Creativity and innovation).[164] Yet given our history of testing as well as current obstacles, it seems likely that the four C's will end up being treated merely as weak add-ons to the three R's.

Seeking a more responsive and integrated model to meet 21st century learning requirements, Saunders developed a policy brief and recommendations on how the blending of the two perspectives could be achieved.[165] Initially named "Multiple Pathways" and later dubbed "Linked Learning," this approach has been adopted in various forms by states and school districts. She describes an approach that combines academic and technical learning, provided in the context of real-life situations.[166] Rather than the traditional one-size-fits-all, classroom-based approach to education, a rich variety of options are open to students, including higher education, workforce internships, career academies, magnet schools, small learning groups and technical centers. This stimulates student interest and promotes engagement, which also increases students' ability to access the full range of post-secondary options.

As contrasted with tracking, all students in a Linked-Learning school are provided with a high-quality education that maintains both college and workforce options.[167] As contrasted with a uniform paper-and-pencil form of assessment, students demonstrate proficiencies through a broad variety of assessment strategies. Linked Learning has been found to increase student academic engagement, increase learning, improve graduation rates and higher education participation, and promote civic learning.[168]

Recommendations

- Accountability systems must allow for the demonstration of student proficiencies through a broad array of assessment methods beyond conventional test-based systems tied to a system of test-based sanctions. Formative assessment goals must

be balanced with summative goals. Excessive focus on the latter narrows the curriculum, narrows learning opportunities and increases dropouts.[169]

- Accountability systems must be re-focused on the degree to which the school provides authentic opportunities to learn[170] through a wide variety of learning experiences.
- Internal school structures for learning must
    - Encompass a range of learning sites beyond the walls of the high school;
    - Provide greater flexibility in school schedules, day and year;
    - Replace tracking and ability grouping with universal acceleration;[171] and
    - Modify support structures such as teacher credentialing, professional development, and the structure of standards to encourage multi-disciplinary studies and approaches.[172]
- Work-based learning opportunities have been common for decades. Proficiencies and competencies must be defined for these school venues and adopted as legitimate parts of the school curriculum.
- Cooperation between secondary and higher education must be expanded through vehicles such as joint planning groups, which could adopt admission requirements for high school students and support "dual enrollment" in college and high school.
- Teaching in a Linked-Learning environment requires integrated, multi-discipline, experiential and interactive curricula and modes of instruction. This requires extensive re-development and new skill sets for teachers. Teacher training must include soft skills curricula along with academic and technical curricula, beginning in pre-service training. The support and involvement of educational leaders is essential.
- The transition to Linked Learning requires careful planning and implementation. Training and retraining will likely depend upon the reallocation of existing personnel and resources.
- To both enable and encourage implementation of Linked Learning, and to ensure that other policies do not thwart its expansion, even unintentionally, policymakers may wish to consider state legislation that would support a Linked-Learning approach. Model language to that end can be found at: http://nepc.colorado.edu/files/NEPC-LL-MP-2011.pdf/, pp. 29-36.

Addressing School Environment and Safety for LGBT Students

As a simple and self-evident moral imperative, all students have the right to be free of abuse, harassment or attack. Schools must therefore create healthy, welcoming environments conducive to learning for all students. These requirements are particularly

salient for lesbian, gay, bisexual and transgendered (LGBT) youth, who are disproportionately at risk of an unsafe and unhealthy school environment.

Yet, an extensive national study conducted in 2011 by the Gay, Lesbian and Straight Education Network (GLSEN) found 81.9% of LGBT students reported being verbally harassed, 38.3% reported being physically harassed, and 18.3% reported being physically assaulted. More than 60% of these students did not report the incidents to school officials, believing that little or no action would be taken or that the situation might even be exacerbated if reported.[173] The suicide rate for LGBT students continues to be three to four times higher than that of their straight counterparts, and in some parts of the country LGBT runaways may account for up to 40% of the teen homeless population.[174]

Attending school in an adverse environment inevitably affects both achievement and aspirations. Of the LGBT students surveyed by GLSEN, 31.8% missed a day of school in the past month because of feeling unsafe, compared with only 4.5% of a national sample of

Under well-settled legal mandates, school-district employees must endeavor to provide a safe and supportive learning environment for every student.

secondary school students. Not only do their grades suffer as a result, but the percentage of LGBTs who do not plan to pursue a post-secondary education is almost twice the national average.[175]

Conducted biennially since 1999, the latest GLSEN survey shows a significant decrease in anti-LGBT language over the years as well as a significant decrease in victimization. Recent advances in law, in societal views, and in school policies have undoubtedly helped many LGBT students, but the problems these youth face in the nation's schools are still substantial.

Scholarship focusing on gay and gender-non-conforming youth consistently finds that large percentages of LGBT students in K-12 public schools continue to experience ongoing challenges above and beyond those of the typical adolescent, such as negative self-image. These challenges occur at every level of social interaction.[176]

Under well-settled legal mandates, school-district employees must endeavor to provide a safe and supportive learning environment for every student.[177] Affirmative steps are necessary in order to overcome the obstacles faced by gay and gender-non-conforming youth. To some extent, these additional steps would build on legal protections arising from constitutional protections (arising from the First and Fourteenth Amendments) and from statutory protections (arising from Title IX and from the Equal Access Act). These steps are also grounded in the basic goals of schooling and of society, that schools provide healthy learning environments for all students.

In a legislative brief published by NEPC, Biegel and Kuehl[178] set forth these affirmative steps in guiding principles:[179]

- Organizational change should include teacher education and administrator training in credentialing programs, professional development within individual districts, school-family-community partnerships, and collaborative leadership by educators.
- LGBT students should not be viewed as separate and apart from other identifiable persons and groups, particularly since gay and gender-non-conforming youth often have multiple identities as,for example, people of color, English-language learners, students with disabilities, devoutly religious, dedicated athletes, etc.[180]
- Strategies do not always have to be LGBT-specific to succeed. Indeed, broad, general approaches applicable to all students can help address many LGBT needs.
- School-climate policies seeking to promote respectful interaction can be designed in a manner that comports with the First Amendment. Education officials have broad power to restrict expressive activity that is reasonably likely to lead to material and substantial disruption or to interference with the rights of others.[181] Indeed, a key component of K-12 First Amendment jurisprudence is its focus on preventing the type of escalating violence that is often set in motion by bullying, harassment, and intimidation.[182]
- LGBT educators can serve as valuable resources, both day to day in the schools and in professional-development settings. Yet, instead of taking advantage of the fact that openly LGBT teachers, coaches, and school-site administrators can play a central and highly positive role, too many districts continue to put explicit or implicit pressure on these educators to keep their identities closeted.[183]
- It is not possible to address problems without being able to talk about them. To fully and effectively take on the LGBT-related issues that persist in schools, all members of the school community must be able to discuss the topic openly, in a courteous, respectful, and professional manner, and in all possible settings.

Recommendations

Implementing these principles requires advances in three areas of school policy: school climate, curriculum and pedagogy, and school sports.

Key Policy Recommendations about School Climate

- Adopt proactive school climate initiatives that demonstrate a commitment to inclusive policies and shared values within our pluralistic society.
- End discriminatory disciplinary practices and the inappropriate referral of LGBT students to special education.

- Implement LGBT-specific programs or activities at individual school sites, which may include safe zones, gay-straight alliances, and suicide prevention programs.

Key Policy Recommendations about Curriculum and Pedagogy

- Develop and implement LGBT-related professional development, locally determined and agreed upon by faculty and staff, for all school-site personnel.
- Align classroom pedagogy with shared values and respect for differences.
- Include age-appropriate LGBT-related content in the curriculum.

Key Policy Recommendations about School Sports

- Involve key members of campus athletic programs in LGBT-related initiatives.
- Make it clear that homophobic comments and actions by coaches and student athletes are completely unacceptable.
- Encourage student athletes to participate in targeted programs such as initiatives addressing bullying and hate violence, as well as gay-straight alliances, safe zones, and wellness programs.

Legislative Recommendations: A Menu of Options at the State Level

The NEPC legislative brief from which this digest is primarily drawn also contains a range of legislative options from which state policymakers may choose. The complete brief as well as model policies and model legislation can be found at:

Biegel, S. & Kuehl, S. J. (October, 2010). *Safe at School: Addressing the school environment and LGBT safety through policy and legislation* (NEPC policy brief). Retrieved from http://nepc.colorado.edu/files/Biegel_LGBT.pdf/.

Moving Beyond Tracking

The Research

For several decades, researchers have documented the effects of tracking students into segregated classrooms according to perceived ability or achievement. Whether known as tracking, sorting, streaming, or ability grouping, an expansive body of literature conclusively shows tracking has been harmful, inequitable, and an unsupportable practice.[184] Initially touted as a way of tailoring instruction to the diverse needs of

students, tracking has instead become a way to stratify opportunities to learn, limiting the more beneficial opportunities to high-track students and thereby denying these benefits to lower-tracked students. This generally plays out in a discriminatory way, segregating students by race and socio-economic status.[185] In his 2012 meta-analysis of the vast body of tracking research, John Hattie incorporated 500 studies. Also incorporating the findings of 14 earlier meta-analyses, he found that tracking has "minimal effects on learning outcomes and profound negative equity effects."[186]

These harms likely arise from a combination of predictable elements. Low-track classes tend to have watered-down curriculum, less-experienced teachers, lowered expectations, more discipline problems, and less-engaging lessons.[187] When high-quality, enriched curriculum is provided to all students, the effect is to benefit both high-achieving and low-achieving students.[188]

Successful heterogeneous ("untracked" or "detracked") grouping is found in U.S. schools and abroad. Most notably, top-scoring Finland has long used heterogeneous grouping as a

Despite incontrovertible evidence demonstrating the harms of tracking, the resistance to eliminating tracking is substantial.

way to promote high achievement among all its students. The Program for International Student Assessment (PISA) report explained, "In countries where 15-year-olds are divided into more tracks based on their abilities, overall performance is not enhanced, and the younger the age at which selection for such tracks first occurs, the greater the differences in student performance, by socio-economic background, by age 15, without improved overall performance."[189] Finland, in addition to having overall high scores, had the smallest achievement gap of participating nations in 2003.[190]

Tracking Remains Pervasive

Despite incontrovertible evidence demonstrating the harms of tracking, the resistance to eliminating tracking is substantial. Rarely couched in the express language of race or class differences, arguments for tracking are generally made on the grounds that it assures high-track courses will not have a diluted curriculum and that meritocracy will be preserved. Yet the preservation of privilege is almost always the subtext.

At the community level, the resistance is generally from "high-track" teachers and parents who believe that they have benefited from a tracked system. The teachers assigned to high-track classes tend to be more experienced and therefore can exercise more power. The parents who are able to secure high-track placement for their children are disproportionately likely to be white, well-educated and politically vocal and therefore similarly able to pressure schools to keep higher-track classes for their children – apart from students of lower wealth, students of color, or both. Alliances between high-track teachers and parents are often formed to protect tracking or fend off de-tracking.[191]

At the policy level, some policy advocates campaign to rehabilitate the idea that tracking can be beneficial. These efforts have not gone unchallenged by researchers.[192]

Recommendations

The following policy recommendations are drawn from Burris, Welner and Bezoza.[193] Greater elaboration on these recommendations, plus companion statutory, language can be found in that earlier brief (here).

Given the clearly documented negative effects of tracking, curricular tracks that separate students by race, socio-economic status or assumptions about their learning ability should be eliminated. In moving toward this goal, specific policy steps are recommended:

- State policies should require schools and districts to identify and describe tracks and to communicate placement policies to state departments of education and to the communities they serve.
- States and non-profit organizations should connect educators with researchers to advance best practices in serving heterogeneous populations.
- States, districts and schools should communicate to the public the rationale for eliminating curricular stratification.
- Districts and schools should phase out curricular stratification, starting with the lowest track.
- Districts and schools should allow open enrollment in advanced placement and international baccalaureate courses.
- Districts and schools should provide sustained professional development so teachers are prepared to successfully instruct all learners in heterogeneous classrooms.
- Districts and schools should listen to all parents, including those who don't readily speak out.

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DuFour, Richard, DuFour, Rebecca, Eaker, R. & Many, T. (2010) *Learning by Doing: A Handbook for Professional Learning Communities at Work* (Second Edition). Retrieved April 2, 2013, from http://files.solution-tree.com/pdfs/Reproducibles_LBD2nd/LBD2ndeditionactionguide.pdf/;

Schank, Roger C. (1995) *What We Learn When We Learn by Doing* (Technical Report No. 60). Northwestern University, Institute for Learning Sciences. Retrieved April 4, 2013, from http://cogprints.org/637/1/LearnbyDoing_Schank.html/.

167 Saunders, M. & Chrisman, C. (April 2011). *Linking Learning to the Twenty-first Century: Preparing all students for college, career and civic participation.* Boulder, CO: National Education Policy Center. Retrieved March 21, 2013, from http://nepc.colorado.edu/publication/linking-learning/.

168 Saunders, M. & Chrisman, C. (April 2011). *Linking Learning to the Twenty-first Century: Preparing all students for college, career and civic participation.* Boulder, CO: National Education Policy Center. Retrieved March 21, 2013, from http://nepc.colorado.edu/publication/linking-learning/.

169 National Academies (2011, May 26). *Incentives and Test-Based Accountability in Education*. Retrieved March 21, 2013, from http://www8.nationalacademies.org/onpinews/newsitem.aspx?recordid=12521/;

Center on Education Policy (July 2005). *NCLB: Narrowing the Curriculum* (Policy Brief No. 3). Retrieved April 3,2013, from http://www.cep-dc.org/displayDocument.cfm?DocumentID=239/.

170 See for example:

Carter, P. L. & Welner, K. G. (Eds) (2013). *Closing the Opportunity Gap: What America Must Do to Give All Children an Even Chance*. New York: Oxford University Press;

Oakes, J. (1990). *Multiplying Inequalities: The Effects of Race, Social Class, and Tracking on Opportunities to Learn Mathematics and Science*. Santa Monica, CA: RAND. Retrieved April 2, 2013, from http://www.eric.ed.gov/PDFS/ED329615.pdf/.

171 Burris, C. C., Welner, K. G., & Bezoza, J. W. (2009). *Universal Access to a Quality Education: Research and Recommendations for the Elimination of Curricular Stratification*. Boulder, CO: Nation Education Policy Center. Available online at http://nepc.colorado.edu/publication/universal-access/.

172 Oakes, J. & Saunders, M. (2008). *Beyond Tracking: Multiple Pathways to College, Career and Civic participation*. Cambridge, MA: Harvard Education Press.

173 Kosciw, J.G., Greytak,E.A., Bartkiewicz, M. J., Boesen, M. J., & Palmer, N. A. (2012). *The 2011 National School Climate Survey: The Experiences of Lesbian, Gay, Bisexual and Transgender Youth in Our Nation's Schools.* Gay, Lesbian and Straight Education Network. Retrieved May 16, 2013, from http://www.glsen.org/binary-data/GLSEN_ATTACHMENTS/file/000/002/2105-1.pdf/;

Kosciw, J.G., Diaz, E. M. & Greytak, E. A. (2008). *2007 National School Climate Survey: The experiences of lesbian, gay, bisexual and transgender youth in our nation's schools.* Gay, Lesbian and Straight Education Network. Retrieved May 9, 2013, from http://www.glsen.org/cgi-bin/iowa/all/news/record/2340.html/.

174 Biegel, S. & Kuehl, S. J. (2010, October). *Safe at School: Addressing the school environment and LGBT safety through policy and legislation (*NEPC policy brief). Boulder, CO: National Education Policy Center.. Retrieved May 9, 2013, from http://nepc.colorado.edu/files/Biegel_LGBT.pdf/;

Wagner, D. (2010). *Nowhere to go: Issue brief on gay and transgender youth homelessness*. Center for American Progress. Retrieved May 9,2013, from http://www.americanprogress.org/issues/2010/08/homelessness_brief.html/;

Ray, N. (2006). *Lesbian, gay, bisexual and transgender youth: An epidemic of homelessness*. National Gay and Lesbian Task Force. Retrieved May 9,2013, from http://www.thetaskforce.org/downloads/HomelessYouth.pdf/;

Russell, S. T. (2003). Sexual minority youth and suicide risk. *American Behavioral Scientist, 46*, 1241-1257.

175 Biegel, S. & Kuehl, S. J. (2010, October). *Safe at School: Addressing the school environment and LGBT safety through policy and legislation (*NEPC policy brief). Boulder, CO: National Education Policy Center.. Retrieved May 9, 2013, from http://nepc.colorado.edu/files/Biegel_LGBT.pdf/;

Kosciw, J.G., Diaz, E. M. & Greytak, E. A. (2008). *2007 National School Climate Survey: The experiences of lesbian, gay, bisexual and transgender youth in our nation's schools.* Gay, Lesbian and Straight Education Network. Retrieved May 9, 2013, from http://www.glsen.org/cgi-bin/iowa/all/news/record/2340.html/;

Kosciw, J.G., Greytak,E.A., Bartkiewicz, M. J., Boesen, M. J., & Palmer, N. A. (2012). *The 2011 National School Climate Survey: The Experiences of Lesbian, Gay, Bisexual and Transgender Youth in Our Nation's Schools.* Gay, Lesbian and Straight Education Network. Retrieved May 16, 2013, from http://www.glsen.org/binary-data/GLSEN_ATTACHMENTS/file/000/002/2105-1.pdf/.

176 Ryan, C. C. & Futterman, D. (1998). *Lesbian and gay youth: Care and counseling*. New York: Columbia University Press.

177 These mandates are reflected in legal doctrine addressing K-12 public school safety in every state, under principles derived from negligence law, threat law, and harassment law. See generally:

Biegel, S. (2009). *Education and the law*. St. Paul, MN: West, 12-46, 71-95, 226-249, 261-302

178 Biegel, S. & Kuehl, S. J. (2010, October). *Safe at School: Addressing the school environment and LGBT safety through policy and legislation (*NEPC policy brief). Boulder, CO: National Education Policy Center, 9-16. Retrieved May 9, 2013, from http://nepc.colorado.edu/files/Biegel_LGBT.pdf/.

179 Biegel, S. & Kuehl, S. J. (2010, October). *Safe at School: Addressing the school environment and LGBT safety through policy and legislation (*NEPC policy brief). Boulder, CO: National Education Policy Center, 9-10. Retrieved May 9, 2013, from http://nepc.colorado.edu/files/Biegel_LGBT.pdf/.

180 Innovative scholarship exploring the boundaries and overlapping of multiple identities in this context has emerged in recent decades, with researchers identifying the potential for new paradigms. See, e.g.:

Wu, J. (2010). *An alternative is possible: A rebellious vision of intersectional lawyering*. Unpublished manuscript, UCLA School of Law, Los Angeles, CA.;

Grady, J. & Marquez, R. (2010). *Rethinking revolutionary critical pedagogy: Queer youth of color creating dialogues of resistance*. Paper presented at the annual meeting of the American Educational Research Association, Denver, CO.

Also, see generally:

Crenshaw, K. (1989). Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory, and antiracist politics. *University of Chicago Legal Forum, 1989*, 139-167.

181 The basic principles linking student freedom of expression to campus safety in the K-12 public schools are set forth in *Tinker*, where the U.S. Supreme Court held that First Amendment rights are explicitly made available to

public school students, subject to limitations that arise out of the special characteristics of the school environment. See:

Tinker v. Des Moines Indep. Commun. Sch. Dist., 393 U.S. 503 (1969).

The 2007 case *Ponce v. Socorro Indep. Sch. Dist*. built on the jurisprudence of Tinker and its progeny in this context. In Ponce, the Fifth Circuit determined that in the aftermath of the tragic events at Columbine High School in 1999 and in light of the U.S. Supreme Court's 2007 decision in *Morse v. Frederick*, 551 U.S. 393 (2007), the heightened vulnerability of students arising from the lack of parental protection and the close proximity of students with one another make schools places of special danger' to the physical safety of the student. And it is this particular threat that functions as the basis for restricting the First Amendment in schools: school officials must have greater authority to intervene before speech leads to violence. See:

Ponce v. Socorro Indep. Sch. Dist., 508 F.3d 765 (5th Cir. 2007), at 770.

182 In another recent decision, the Seventh Circuit Court of Appeals, per Judge Richard Posner, upheld the constitutionality of a policy that sought to improve school climate by prohibiting derogatory comments that refer to race, ethnicity, religion, gender, sexual orientation, or disability.

Nuxoll v. Indian Prairie Sch. Dist. #204 Bd. of Educ., 523 F.3d 668 (7th Cir. 2008), at 669-674.

183 Recent poll data and national survey results continue to support the conclusion that there has been a significant positive change in the attitudes of Americans toward LGBT educators. It remains the case, however, that a substantial percentage of people--particularly in rural areas and certain regions of the country--continue to oppose the hiring of LGBT teachers. See:

Neidorf, S. & Morin, R. (2007). *Four in ten Americans have close friends or relatives who are gay: Survey finds familiarity is closely linked to greater tolerance.* Pew Research Center for the People & the Press. Retrieved May 9, 2013, from http://pewresearch.org/pubs/485/friends-who-are-gay/.

184 The seminal research study, which also includes a discussion of other research, is *Keeping Track* by Jeannie Oakes:

Oakes, J. (2005). *Keeping Track: How Schools Structure Inequality* (2nd edition). New Haven, CT: Yale University Press.

See also:

Burris, C. C., Welner, K. G. & Bezoza, J. W. (2009). *Universal access to a quality education: Research and recommendations for the elimination of curricular stratification*. Boulder, CO: National Education Policy Center. Retrieved May 28, 2013, from http://nepc.colorado.edu/files/Epic-Epru_LB-UnivAcc-FINAL.pdf/.

Welner, K. G. (2001). *Legal rights, local wrongs: When community control collides with educational equity*. Albany, New York: SUNY Press.

185 Burris, C. C., Welner, K. G. & Bezoza, J. W. (2009). *Universal access to a quality education: Research and recommendations for the elimination of curricular stratification*. Boulder, CO: National Education Policy Center. Retrieved May 28, 2013, from http://nepc.colorado.edu/files/Epic-Epru_LB-UnivAcc-FINAL.pdf/;

Oakes, J. (2005). *Keeping Track: How Schools Structure Inequality* (2nd edition). New Haven, CT: Yale University Press.

186 Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. New York, NY: Routledge, 90. See also:

Is Ability Grouping or Streaming Effective? (2012) *ASCD Edge*. Retrieved May 16, 2013 from http://edge.ascd.org/_Is-Ability-Grouping-or-Streaming-Effective/blog/6394531/127586.html/;

Slavin, R. E. (1990). Achievement effects of ability grouping in secondary schools: A best-evidence synthesis. *Review of Educational Research, 60,* 471-499;

Kulik, C. L., & Kulik, J. A. (1982). Effects of ability grouping on secondary school students: A meta-analysis of evaluation findings. *American Educational Research Journal, 19,* 415-448;

Kulik, J. A. (1992). *An analysis of the research on ability grouping: Historical and contemporary perspectives.* Storrs, CT: National Center of the Gifted and Talented;

Slavin, R. E. (1990). Ability grouping in secondary schools: A response to Hallinan. *Review of Educational Research, 60,* 505-507;

Slavin, R. E. (1995). Detracking and its detractors: Flawed evidence, flawed values. *Phi Delta Kappan, 77,* 220-223.

187 Burris, C. C., Welner, K. G. & Bezoza, J. W. (2009). *Universal access to a quality education: Research and recommendations for the elimination of curricular stratification*. Boulder, CO: National Education Policy Center. Retrieved May 28, 2013, from http://nepc.colorado.edu/files/Epic-Epru_LB-UnivAcc-FINAL.pdf/;

Oakes, J. (1982). The reproduction of inequity: The content of secondary school tracking. *Urban Review, 14*(2), 107-120.

Oakes, J. (1986). Keeping track, Part 1: The policy and practice of curriculum inequality. *Phi Delta Kappan, 68,* 12-18.

188 Burris, C. C., Welner, K. G. & Bezoza, J. W. (2009). *Universal access to a quality education: Research and recommendations for the elimination of curricular stratification*. Boulder, CO: National Education Policy Center. Retrieved May 28, 2013, from http://nepc.colorado.edu/files/Epic-Epru_LB-UnivAcc-FINAL.pdf/.

189 OECD (2010), *PISA 2009 Results: Executive Summary*. (p. 9). Retrieved May 17,2013 from http://www.oecd.org/pisa/pisaproducts/46619703.pdf/.

190 Burris, C. C., Welner, K. G. & Bezoza, J. W. (2009). *Universal access to a quality education: Research and recommendations for the elimination of curricular stratification*. Boulder, CO: National Education Policy Center. Retrieved May 28, 2013, from http://nepc.colorado.edu/files/Epic-Epru_LB-UnivAcc-FINAL.pdf/;

Aho, E., Pitkanen, K., & Sahlberg, P. (2006). *Policy development and reform principles of basic and secondary education in Finland since 1968*. Washington, DC: The World Bank;

Finnish National Board of Education. (2004). *Background for Finnish PISA success*. Retrieved July 9, 2007, from: http://www.edu.fi/english/page.asp?path=500,571,36263/.

191 Burris, C. C., Welner, K. G. & Bezoza, J. W. (2009). *Universal access to a quality education: Research and recommendations for the elimination of curricular stratification*. Boulder, CO: National Education Policy Center. Retrieved May 28, 2013, from http://nepc.colorado.edu/files/Epic-Epru_LB-UnivAcc-FINAL.pdf/;

Oakes, J. Wells, A. S., & associates (1996). *Beyond the technicalities of school reform: Policy lessons from detracking schools*. Los Angeles: UCLA Graduate School of Education & Information Studies, 40.

See also:

Welner, K. G. (2001). *Legal rights, local wrongs: When community control collides with educational equity*. Albany, New York: SUNY Press.

192 For the arguments set for by tracking proponents and the critiques of these works, see:

Loveless, T. (1999). *The tracking wars: State reform meets school policy*. Washington, DC: Brookings Institution Press.

Loveless, T. (2009). Tracking and Detracking: High achievers in Massachusetts middle schools. *Thomas B. Fordham Foundation*. Retrieved May 29, 2013, from http://www.sbsdk12.org/programs/gate/documents/200912_Detracking.pdf/.

This work has been subject to critique, pointing out weaknesses in research methods and tenuous links between data, conclusions, and policy recommendations. See:

Welner, K. G. & Mickelson, R. (2000). School reform, politics, and tracking: Should we pursue virtue? *Educational Researcher*, *29*(4), 22-26.

Welner, K. (2009). Non-evidence about tracking: Critiquing the new report from the Fordham Institute. *Teachers College Record*, Retrieved May 29, 2013, from http://www.colorado.edu/education/faculty/kevinwelner/WelnerTCRLovelessForham.pdf/.

Similarly, a recent, non-peer-reviewed working paper that found tracking to be advantageous was promoted by advocates favoring tracking, but the research was found to be of low quality and not useful in guiding policy. See:

Collins, C. C. & Gan, L. (2013). *Does sorting students improve scores? An analysis of class composition*. Cambridge, MA: National Bureau of Economic Research. Retrieved May 29, 2013, from http://www.nber.org/papers/w18848/;

Burris, C. C. & Allison, K. E. (2013, April). *Review of "Does sorting students improve test scores?"* Boulder, CO: National Education Policy Center. Available online at http://nepc.colorado.edu/files/ttr-tracking-nber-burris_2.pdf/;

Slavin, R. E. (1995). Detracking and its detractors: Flawed evidence, flawed values. *Phi Delta Kappan, 77,* 220-223.

193 Burris, C. C., Welner, K. G. & Bezoza, J. W. (2009). *Universal access to a quality education: Research and recommendations for the elimination of curricular stratification*. Boulder, CO: National Education Policy Center. Retrieved May 28, 2013, from http://nepc.colorado.edu/files/Epic-Epru_LB-UnivAcc-FINAL.pdf/.

See also Burris, C. C., & Garrity, D. (2008). *Detracking for excellence and equity*. Washington, DC: Association for Supervision & Curriculum Development.