



MetaMetrics.
LINKING ASSESSMENT WITH INSTRUCTION

Restoring Faith in Public Education

By Malbert Smith III, Jason Turner and Steve Lattanzio

Featured in the October 10th Issue of Education Week



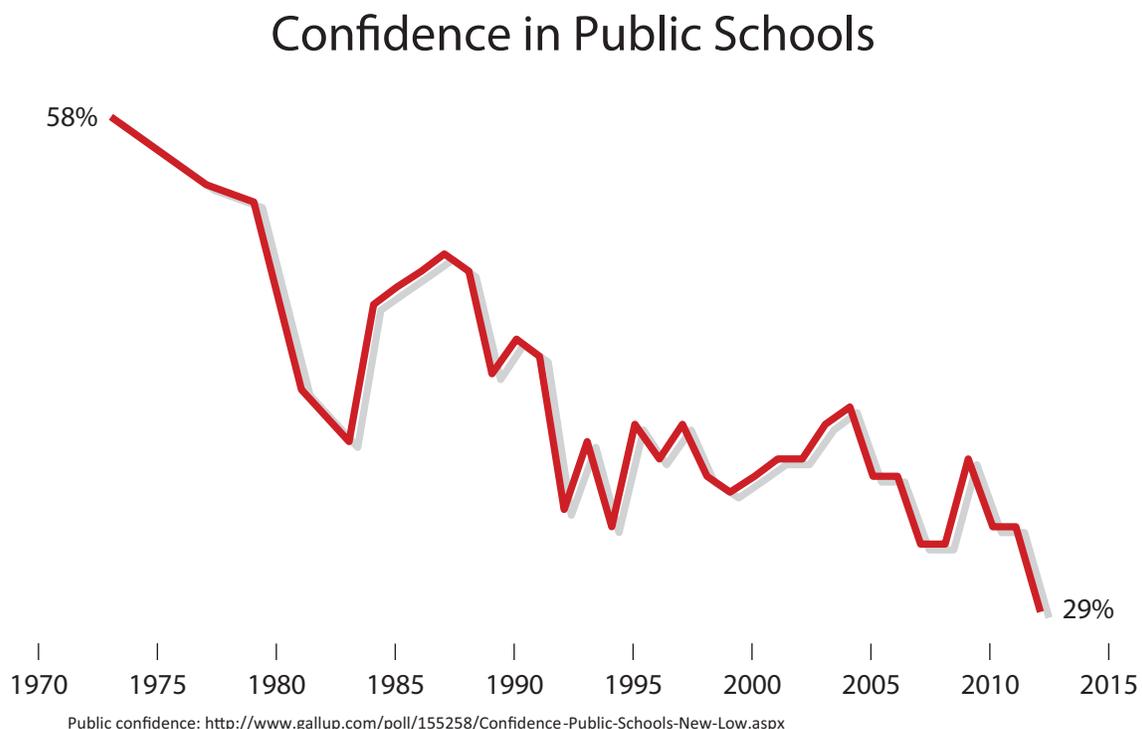
VISIT WWW.METAMETRICSINC.COM FOR MORE INFORMATION

RESTORING FAITH IN PUBLIC EDUCATION

Gallup's July 2012 'Confidence in Institutions' survey reveals a disheartening lack of confidence in U.S. public schools. While the majority of Americans continue to express confidence in institutions like the military and police, those same respondents expressed a much more dismal view of public education. Participants indicating 'a great deal' or 'quite a lot' of confidence in public K-12 education fell to an all-time low of around 29%— a 5% decrease from 2008 and a drop of 29 percentage points from 1973 when Gallup first began including public schools in its survey and public confidence was around 58% (Jones, 2012).

Unfortunately, faith in the public schools has been steadily eroding since 1973. By 1982, just 42% of respondents reported confidence in public schools; and while 1985 and 1988 saw a slight rebound in positive public perception, peaks and valleys notwithstanding, the trend has been clearly downward. As Figure 1 displays, this negative trend has been alarmingly consistent almost every year. For the first time ever recorded, less than 1/3 of the populace seems hopeful about the state of education (Jones, 2012).

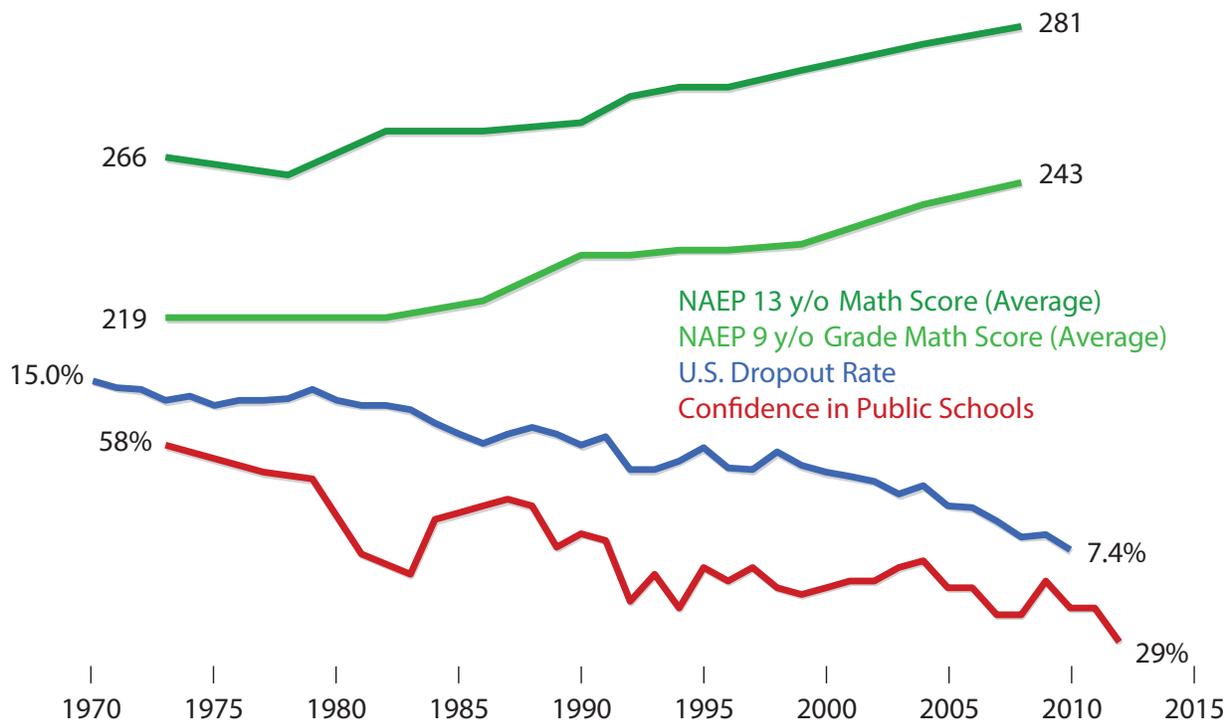
FIGURE 1



Yet are things really this dismal? Is the public's perception of our educational system consistent with the reality of public education's performance? Is all of the student performance data negative? In fact, upon closer examination, the public's perception does not seem tightly tethered to the reality of the progress that has been made in public education over the last twenty years. In Figures 2 and 3, we mapped National Assessment of Educational Progress (NAEP) performance and high school dropout rates onto the public confidence graph. As Figures 2 and 3 illustrate, performance data on these dimensions is improving while public confidence is declining. In fact, NAEP scores for both 9 year old and 13 year old students have been steadily rising and trending upward since the 1970s. Though there were small dips throughout the 1980s, scores for 9 and 13 year old students rebounded in the 1990s and have been steadily rising ever since and now sit at an all-time high for both reading and mathematics. Compared to an average scale score of 219 in 1973 for 9 year old students, 2008's average scale score of 243 represents significant progress in math performance (see Figure 2) (National Center of Education Statistics, 2010).

FIGURE 2

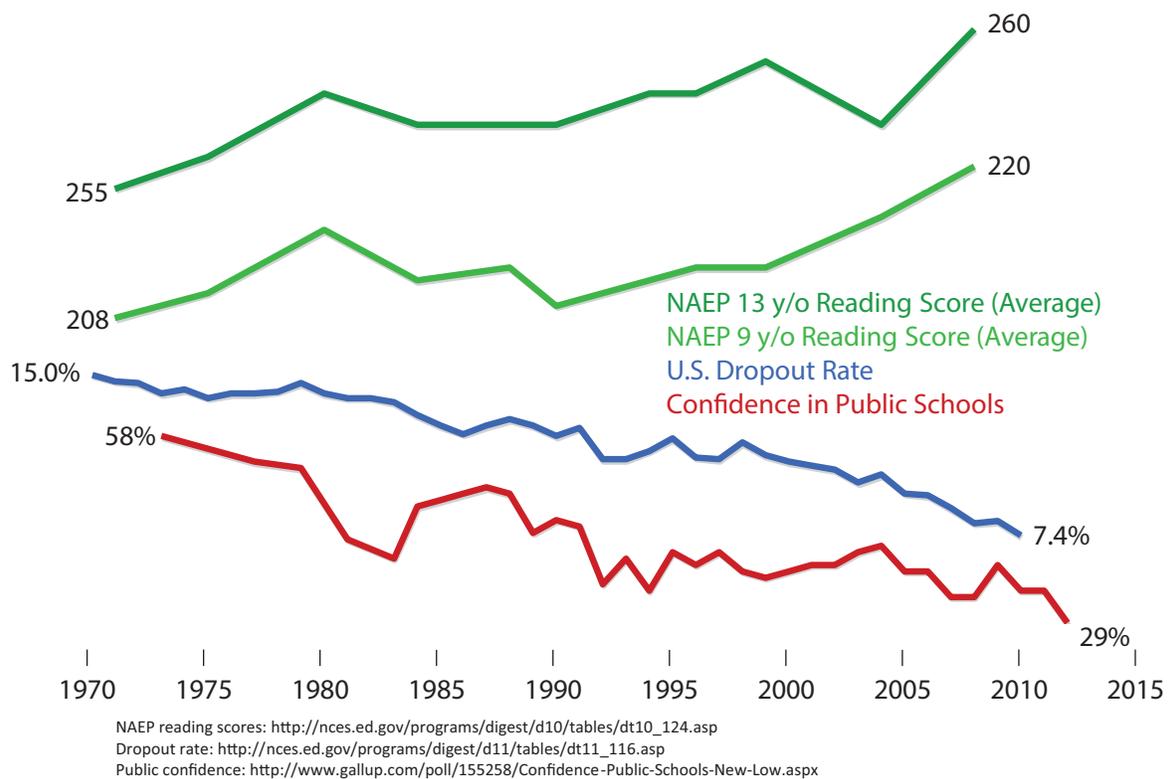
Confidence in Public Schools vs. Student Performance



NAEP math scores: http://nces.ed.gov/programs/digest/d10/tables/dt10_140.asp
 Dropout rate: http://nces.ed.gov/programs/digest/d11/tables/dt11_116.asp
 Public confidence: <http://www.gallup.com/poll/155258/Confidence-Public-Schools-New-Low.aspx>

FIGURE 3

Confidence in Public Schools vs. Student Performance



Graduation rates are worth a look too. The rate at which we graduate U.S. students – surely a key metric in assessing our educational system’s overall success – has been rising. In 1999, the graduation rate was 66% and by 2009 the graduation rate had improved to 73.4% (Education Week, 2012). While the U.S. high school dropout rate remained stubbornly anchored in the double-digits for two decades, by 2005 it was reduced to less than 10%. As of 2010, the dropout rate decreased to 7.4% (National Center for Education Statistics, 2010). Considering that educators are being asked to educate more students than ever before – students with increasingly diverse backgrounds and levels of home support – the increase in high school graduation rates should be commended. While the U.S. admittedly still has more work to do to ensure that every student is graduating college and career ready, we have made remarkable progress over the last twenty years.

If public perception fails to mirror the reality of the commendable progress we have made in education over the last two decades, then what accounts for the erosion of confidence in our public schools? In light of clear positive performance metrics, is it

an unarticulated distrust fueled by negative media coverage? Stories examining a wide range of education topics—slashed budgets, students ill-prepared for the rigors of life after high schools, examples of ineptitude and bureaucratic waste—may reasonably shape negative public perceptions about the state of U.S. education. However, such explanations fail to account for the sheer depth and acceleration of the trend. Public confidence has been sliding down for almost forty years and seems to be getting worse despite some well-regarded empirical data demonstrating clear progress.

WHY THE NEGATIVE TREND?

One explanation for the diminishing confidence in public education is that Americans have become more cynical over the last thirty years and have expressed lessening confidence in most institutions. With the exception of the military, the police, and small business, which have notably remained above 50%, most public institutions have seen precipitous drops in public confidence. Banks, for example, once enjoyed confidence from a majority of the American public – 60% in 1979. Today that number is 23%. Congress has always received low levels of approval. Even in 1973 only 42% of Americans expressed confidence in the job Congress was doing. Today that number sits at an abysmal 12% - by far the lowest level of confidence for any of the institutions included in Gallup’s survey (Gallup News Service, 2012). This is not surprising. Elliot Gerson recently wrote, “According to a recent Rasmussen poll, only 17 percent of Americans believe our national government possesses the consent of the governed. These numbers may not seem shocking, because they’ve been low for so long” (Gerson, 2012).

Gerson’s interpretation accords with Gallup’s own summary of their most recent survey. As Lydia Saad writes, “The same poll found American’s confidence in public schools, banks, and television news at their all-time lowest, perhaps reflecting a broader souring of American’s confidence in societal institutions in 2012” (Saad, 2012). Our increasing cynicism toward some of our most fundamental public institutions may account

for the lack of confidence Americans express in public education, *despite the fact that public education is improving as measured by certain essential metrics.*

An even more compelling reason for our loss of faith in public education—an explanation beyond the resigned cynicism of our populace—is the growing awareness of our place and role on the international stage. Over the last few decades, the U.S. has become a less insular, globally competitive, cosmopolitan society. While it is easier to commend our educational progress when considered only against the solipsistic backdrop of our own internal achievement, it is far more difficult to regard our progress with satisfaction when considered against our international peers. In fact, when seen through the prism of international educational progress, the U.S. appears to be making incremental gains in some areas and losing ground in others.

A review of the Trends in International Mathematics and Science Study (TIMSS) data reveals that the absolute score in mathematics for U.S. eighth grade students has risen only slightly (between 500 and 508) from 1995 through 2007. That fact becomes even more troubling when considered alongside our international ranking. In 1999, the U.S. ranked a disappointing 19th in mathematics out of 38 nations. In 2003, we ranked 15th and by 2007, we finally jumped to a promising 9th place among participating nations. That is good news. Still, the perception that the U.S. leads the world in education is hard to justify when considered against the wider backdrop of our international performance. While we have demonstrated clear progress in mathematics achievement, many other nations continue to consistently outperform our students. China, Singapore, and Hong Kong, for example, have ranked in the top five performing nations in mathematics from 1999 – 2007 (National Center for Education Statistics).

In the area of reading, the emerging trend is not encouraging. The Progress in International Reading Literacy Study (PIRLS) found that in 2001, U.S. fourth grade students had an average scale score of 542. By 2006 that score actually dropped a bit to 540 and our rank among participating nations dropped from 9th place in 2001 to 12th place in 2006 (see Figure 4) (National

Center for Education Statistics). This reflects our international peers demonstrating clear progress and growing in achievement at a rate faster than the U.S.

FIGURE 4

U.S. Student Performance on the PIRLS and TIMSS

	Year	Scale Score	Rank	Percentile
TIMSS	1995	500	28/41	33%
	1999	502	19/38	51%
	2003	504	15/45	68%
	2007	508	9/48	82%
PIRLS	2001	542	9/28	70%
	2006	540	12/28	59%

TIMSS math scores: http://nces.ed.gov/timss/table07_1.asp,
<http://nces.ed.gov/timss/TIMSS03Tables.asp?Quest=3&Figure=5>, http://nces.ed.gov/timss/results99_1.asp,
<http://timss.bc.edu/timss1995i/HiLightB.html>
 PIRLS reading scores: <http://nces.ed.gov/pubs2008/2008017.pdf>

Growing awareness of our global ranking in education has taken a toll on public confidence and the view that we enjoy a dominant position on the world stage is no longer sustainable. As Gerson writes, “In college attendance, our previous preeminence has long faded; we are now 9th in percentage of younger workers with two-year or four-year degrees, and 12th in college graduation rate” (Gerson, 2012). These trends point to significant cause for concern: many U.S. students graduate unprepared for the challenges they will likely face in college and careers. This unpreparedness not only portends significant academic challenges, but increasingly dire consequences at both the individual and macro-economic levels. At the individual level, students may find themselves unable to compete academically and miss out on employment opportunities in some of the world’s fastest growing career sectors.

At the macro level, below average academic performance suggests a troubling outlook for our country’s competitiveness in the international arena. In response to the 2009 NCES report, Education Secretary Arne Duncan said, “We are lagging the rest of

the world, and we are lagging it in pretty substantial ways. I think we have become complacent. We've sort of lost our way" (Holland, 2009). Duncan is right. A growing number of STEM (science, technology, engineering, and mathematics) doctoral students matriculate from outside the U.S. However they return to their native countries, leaving the U.S. with a shortage of qualified graduates in the STEM fields. The National Science Board's 'Science and Engineering Indicators: 2010' report stated that only 15.6 percent of bachelor's degrees were awarded in STEM fields (Business Higher Education Forum).

Given that by a number of important benchmarks we are – to paraphrase Secretary Duncan – lagging the rest of the world in some significant ways, it is no surprise that many Americans view the effectiveness of K-12 public education with increasing skepticism. While public education has shown green shoots of educational progress, these budding indicators fail to garner the attention of the press as compared to the disappointing news of our slippage in international rankings. It is difficult to recall a national news story or national press release celebrating any of the signs of positive progress in K-12 education. Recent developments, however, provide a reason for hope and support a more optimistic outlook.

REVERSING THE NEGATIVE TREND

We are cautiously optimistic that the public's confidence in public education will begin to rise as we take a number of significant steps. A major step in that direction has already been taken with the adoption of the Common Core State Standards. The Common Core State Standards were fueled by the recognition that our country needs to adhere to a set of clearly articulated standards of sufficient rigor to ensure that all students graduate college and career ready. The Standards establish a clear pathway for students and set clear markers for what it means to be college and career ready. This is a good first step.

An essential function of legitimate educational systems around the world is readying students for advanced studies and careers and for life after secondary school. There is a tight correlation between a country's education level and its economic productivity, which is why retaining our

nation's competitiveness among our international peers requires serious educational reform and a more rigorous and standardized curriculum, one that establishes readiness for the post-secondary world as the goalpost. An OECD study predicted that an increase of 25 points on the PISA (Programme for International Student Assessment) over the next 20 years would result in an economic gain of \$41 trillion for the U.S. economy (Armario, 2010).

That sort of commitment to educational reform—like the sort advocated by the authors of the Common Core State Standards—will require a heady mix of social capital and political will. The United States' place on the global stage is at stake. To remain economically and politically relevant, it is essential that we remain globally competitive in our educational outcomes. Our high school students must graduate ready for the demands of an increasingly competitive global workforce. The shift away from proficiency—where each state set their own standards, standards divorced from the rest of the nation and untethered to the demands of the global economy—toward a common set of shared curriculum standards represents a move away from an insular and self-referential standard of academic success toward a more rigorous and global set of standards. The new standards are designed for the global stage and are crafted to allow us to regain and retain our place of global competitiveness.

The second critical step in restoring confidence in education is the implementation of the Common Core. The success of the Common Core hinges upon how well we as educators transition from adoption of the new standards to actual implementation. This step is critical and small incremental changes will not be sufficient. Implementation will require rigorous and dedicated focus throughout all of education. The importance of this step has been recently described in 'Transitioning from Adoption to Implementation of the Common Core State Standards' (Smith, 2012).

A third step in the process of renewing public confidence must be taken by the leaders of our political parties. As Matt Miller recently argued, both parties have failed to provide significant time, leadership, and political will toward education (Miller, 2012). Miller reported that in the

Republican debates, less than 1% of time has been devoted to education thus far. Democrats have proven equally guilty, devoting just as little time as their colleagues on the other side of the aisle. As Miller pointed out, President Obama devoted only two minutes to education in the recent State of the Union address—a speech lasting more than an hour (Miller, 2012).

Our leaders on both sides of the political aisle need to do more substantive work in education than merely complain about our lack of progress. In fact, our leaders would do well to point to some of our successes along the way. It is worth remembering that while we may trail our international peers in STEM related fields, many countries continue to send their students to our shores for our cultural significance and to study American ingenuity and creativity. However almost all players along the educational food chain—from the classroom teacher, the principal, the local superintendent, and ultimately the state chief—feels assailed on all sides. The accumulation of negative news reports and the labeling of teachers and schools as ‘failures’ do little to provide a conducive environment for productive change.

A fourth step in the process of restoring confidence in public education rests with our educators. An almost universal trait of educators is optimism. Educators tend toward their profession because of a deep-seated belief that all children can learn, that children can have a better tomorrow, and because education makes a difference in individual lives and to society as a whole. It is critical that our performance matches our beliefs. Educators must be realistic about the need to improve our educational system while simultaneously helping the public celebrate the successes and improvements we have made and will continue to make. The old adage that one can choose to see the glass as half empty or half full is undeniably applicable here. Unfortunately, the public overwhelmingly has come to see the education glass as half empty. While we should continue to have candid conversations about the areas we need to improve, let us also not hesitate to point to our many successes as these green shoots take root.

REFERENCES

- Armario, C. (2010, December 7). Wake-up call: US students trail global leaders. Retrieved from MSNBC: http://www.msnbc.msn.com/id/40544897/ns/us_news-life/t/wake-up-call-us-students-trail-global-leaders/
- Business Higher Education Forum. (n.d.). *Confronting the STEM Challenge: A New Modeling Tool for US Education Policymakers*. Washington D.C.: Business Higher Education Forum.
- Education Week. (2012). National Graduation Rate Keeps Climbing; 1.1 Million Students Still Fail to Earn Diplomas. Retrieved from EdWeek.org: http://www.edweek.org/media/diplomas-count2012_presspacket_final.pdf
- Gallup News Service. (2012). *Confidence in U.S. Public Schools at New Low*. Gallup Poll Social Series. Gallup New Service.
- Gerson, E. (2012, July 10). To Make America Great Again, We Need to Leave the Country. *The Atlantic*.
- Holland, S. (2009, August 25). U.S. Students Behind in Math, Science, Analysis Says. Retrieved from CNN: http://articles.cnn.com/2009-08-25/us/students.science.math_1_math-and-science-fourth-and-eighth-graders-math-scores?_s=PM:US
- Jones, J. M. (2012, June 20). Gallup Politics. Retrieved from Gallup.com: <http://www.gallup.com/poll/155258/Confidence-Public-Schools-New-Low.aspx>
- Miller, M. (2012, April). *The Third Party Education Agenda We Need*. Retrieved from mattmilleronline: <http://www.mattmilleronline.com/pdfs/third-party-education-speech-2012.pdf>
- National Center for Education Statistics, National Assessment of Educational Progress (NAEP), NAEP 2004 Trends in Academic Progress; and 2008 NAEP Long-Term Trend Mathematics Assessment, retrieved from NCES.ed.gov: http://nces.ed.gov/programs/digest/d10/tables/dt10_140.asp
- National Center for Education Statistics. (2010). National Center of Education Statistics. Retrieved from NCES.ed.gov: <http://nces.ed.gov/fastfacts/display.asp?id=16>
- National Center of Education Statistics. (2010). National Center for Education Statistics. Retrieved from NCES.ed.gov: http://nces.ed.gov/programs/digest/d10/tables/dt10_124.asp
- National Center for Education Statistics. (2010). National Center of Education Statistics. Retrieved from NCES.ed.gov: <http://nces.ed.gov/pubs2008/2008017.pdf>
- National Center for Education Statistics. (n.d.). Progress in International Reading Literacy Study. Retrieved August 2012, from National Center for Education Statistics: <http://nces.ed.gov/surveys/girls/>
- National Center for Education Statistics. (2009). *The Condition of Education: A Close Look*. National Center for Education Statistics.
- National Center for Education Statistics. (n.d.). Trends in International Mathematics and Science Study (TIMSS). Retrieved August 2012, from National Center for Education Statistics: <http://nces.ed.gov/timss/>
- Saad, L. (2012, July 12). US Confidence in Organized Religion at Low Point. Retrieved from Gallup Politics: <http://www.gallup.com/poll/155690/Confidence-Organized-Religion-Low-Point.aspx>
- Smith, M. (2012, July 19). *Transitioning from Adoption to Implementation of the Common Core State Standards*. Retrieved from Lexile.com/about-lexile/Policy-Briefs/.
- U.S. Department of Commerce, Census Bureau, Current Population Survey (CPS), October 1967 through October 2010. Retrieved from NCES.ed.gov: http://nces.ed.gov/programs/digest/d11/tables/dt11_116.asp

ABOUT METAMETRICS

MetaMetrics, founded in 1984, is an educational measurement and technology organization whose mission is to connect assessment with instruction. The company's distinctive frameworks for English and mathematics bring meaning to measurement and are used by millions to differentiate instruction, individualize practice, and improve learning across all levels of education.

ABOUT THE AUTHORS



MALBERT SMITH III, PH.D., is President and Co-founder of MetaMetrics®, where his vision for common metrics and individualized learning has driven extensive partnerships throughout education. Dr. Smith is a senior investigator on a U.S. National Center for Education Statistics research study to examine National Assessment of Educational Progress (NAEP) benchmark scores in relation to university and career readiness. Dr. Smith also serves on the UNC School of Education Foundation Board, the advisory board of Capstone Digital, and is a member of the advisory board for EdSteps, a joint project of The Council of Chief State School Officers and The Bill and Melinda Gates Foundation. Dr. Smith is a research professor at the University of North Carolina at Chapel Hill and has taught graduate seminars in educational research and test design at Duke University and UNC. Widely published, Dr. Smith speaks frequently around the globe on issues related to educational research, measurement, and technology.



JASON TURNER is the Professional Development Director at MetaMetrics, where he has played a variety of roles. Mr. Turner has managed implementations of and professional development for The Lexile® Framework for Reading and The Quantile® Framework for Mathematics. Additionally, he has overseen various state and district outreach efforts and developed content and training modules for the Lexile and Quantile Frameworks. Mr. Turner has also worked extensively in the training and implementation of the Lexile and Quantile Frameworks in classrooms across North America.



STEVE LATTANZIO is a Research Engineer at MetaMetrics where he specializes in the development of new algorithms and data analysis. Steve has worked on algorithms that range from growth modeling and forecasting of student ability to automatic essay scoring engines. Steve received his B.S.E. and M.Sc. in Civil and Environmental Engineering from Duke University where he performed research in the area of control theory and developed a passion for stochastic dynamic processes, optimization, and machine learning which he has applied to his work at MetaMetrics.



www.MetaMetricsinc.com

www.Lexile.com

www.Quantiles.com