MetaMetrics®
LINKING ASSESSMENT WITH INSTRUCTION

Four Global Trends in Education (And Why They Matter)

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June 2012 *(Revised June 2015)*

PREFACE

During the past year, we have traveled the world to meet with leaders in educational assessment, technology, publishing, and research. As they have described the challenges facing education within their countries and organizations—and the strategies for confronting them—four common trends have emerged. Generally speaking, they represent advancements in thinking that can be traced to an increasingly global orientation and growing digital capabilities. Each trend represents real opportunities to improve learning and better meet the needs of students, parents, and educators. Our work with the Lexile® Framework for Reading offers examples of benefits being achieved today in support of these trends.

#1—UNIVERSITY AND CAREER READINESS

The first concern of most education systems around the world is the level of effectiveness in readying students for advanced studies and jobs. The tight correlation between a country's education level and its economic productivity holds the attention of policy makers everywhere. It is widely held that individuals and communities with higher education levels have more and better opportunities in the long run. However, for a country to stay competitive among our globally connected economies, it must stay globally competitive in its educational outcomes. This means students must graduate high school ready for the demands of increasingly competitive universities and workplaces. In other words, they must be university (or "college") and career ready. As a penultimate goal of K-12 education, this issue is at the forefront of current policy and research. Arne Duncan, the U.S. Secretary of Education, has referred to this achievement standard as the "holy grail" of education reform (Klein, 2009). This suggests not only the importance, but also its elusive quality; thus, useful definitions are critical.

> **"If we can dramatically increase high school graduation rates, if we can dramatically increase the number of graduates who are college and career ready, that's what this is about. Everything's a means to that end. That's the Holy Grail here. Are our students being prepared to be successful?"**
>
> *Arne Duncan, U.S. Secretary of Education*
> *Education Week, December 9, 2009*

In the case of reading in English, there is general consensus with the notion that students should graduate from high school able to read the increasingly complex texts that await them in universities and jobs. Through our research in text complexity, we are demonstrating how reading demands can be quantified to define university and career readiness. The Lexile Framework enables the scientific measurement of text on a vertical scale that describes the full range of text complexities. Lexile analysis offers a means to evaluate representative groups of texts from specified environments, such as freshman-level university courses or corporate HR collections. To date, we have measured over a 130,000 English books and more than 100 million articles, conducting along the way numerous studies that examined the characteristic reading demands within a wide range of settings. As a result, we were able to objectively

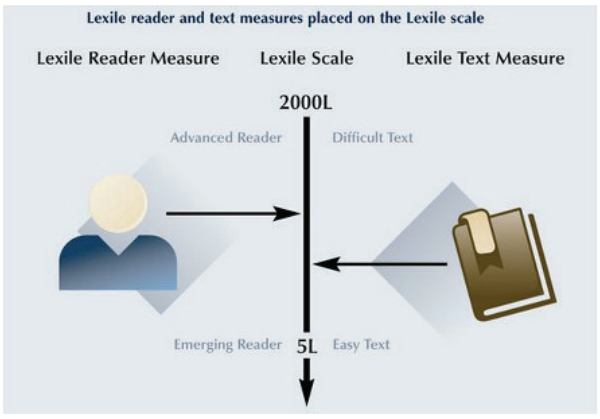
quantify a meaningful target for university and career readiness in reading. In Lexile terms, this was found to be approximately 1200L to 1400L, which corresponds to a *TOEFL iBT*® Reading score of 18 or above. Unfortunately, we know that too few students can read at that level when they graduate from high school.

#2—LONGITUDINAL PERSPECTIVE

There is growing recognition that we need to take a longitudinal perspective on education if we are to effectively address the challenges of its fundamental goal of creating university and career ready citizens. Historically, many countries (including the U.S.) have segmented their educational systems into different groups with discrete and independent governance. That is, higher education has been separate from K-12 education, which in turn has been detached from early (preschool) education. Not surprisingly, the groups have not been well aligned. The result for those students who are unprepared if and when they advance is costly remediation to address gaps in their skills. Those who are prepared get and stay ahead.

In response to this issue, many countries are recognizing the importance of taking an integrated perspective that accommodates P-20 education (preschool to higher education) and beyond—something that can be humorously described as a pediatric-to-geriatric view on learning. This trend toward longitudinal perspectives in education reinforces the need for vertical scales that span the developmental continuum. Of course, this also must be reflected in our measurement systems.

Closer alignment of standards across the P-20 continuum is a key aspect of a longitudinal perspective, but a vertical scale is also essential for the meaningful analysis of growth to evaluate progress. Using a vertical scale—especially one that connects to practical definitions of readiness at all levels—provides a means of interpreting status and growth from a common perspective. Just imagine the confusion that would ensue in measuring growth norms for height if we utilized non-vertical, non-exchangeable



scales. Yet, too often in education, that is exactly what we have done. There are many good tests in use, but results are not easily comparable.

MetaMetrics produces scientific, vertical scales for educational measurement that promote longitudinal perspectives. But rather than limiting our scale to a particular test, we link our scale to the wide array of measurement instruments in use. In other words, we enable results from different assessments to report a common metric on a vertical scale. To date, we have linked close to a hundred assessments across the spectrum of high stakes, formative, and summative programs to our Lexile scale.

The trend toward longitudinal perspectives through a vertical scale is especially important for the measurement of reading since the end goal—university and career readiness—has been quantified in Lexile measures. To borrow from Steven Covey's work, an organization is better served when they start with a clear destination point. When we "begin with the end in mind," as Covey suggests, we can apportion the growth requirements in reading ability across the lifespan of the learner (Covey, 1989.). In fact, the authors of the U.S. Common Core State Standards using Lexile measures recently did this work.

Table 1. Text Complexity Ranges by Grade Level

Grade	Lexile Range
1	190L to 530L
2	420L to 650L
3	520L to 820L
4	740L to 940L
5	830L to 1010L
6	925L to 1070L
7	970L to 1120L
8	1010L to 1185L
9	1050L to 1260L
10	1080L to 1335L
11 and 12	1185L to 1385L

(Source: Revised Grade Bands from the Common Core State Standards)

#3—DIGITAL CONTENT

The shift from print to digital content in education—as in other segments of the publishing industry—presents unprecedented challenges and opportunities. The days of backpacks crammed full of "one size fits all" textbooks are fading fast in the emergent digital age of education. The production and distribution of physical textbooks is a costly undertaking with substantial investment risk. Economies of scale and least common denominators of curriculum drive development. Smaller education markets have long had to settle for materials developed with larger, higher value customers in mind. Few if any textbooks have adequately addressed the spectrum of needs and interests within a given classroom. The digital transition, however, is enabling customization at scale.

For publishing companies, the shift to digital requires new models for selling and delivering their high-quality content. It seems virtually inevitable (excuse the pun) that access will continue to shift toward online education portals, tablets, and other mobile devices—mediums that drastically expand distribution options and lower barriers to localized adaptation.

For students and educators, the shift to digital is generating new ways of viewing curriculum and assessment. However, major challenges emerge for navigating efficiently the abundance of online resources while retaining the deep curricular connections that education needs. While this digital trend holds great promise to truly democratize the delivery of educational opportunity across the globe, efficient tools and methodologies for finding 1) the right content at 2) the right level at 3) the right time must coincide with the adoption of digital resources. Without useful indexing and search mechanisms, the learner will be awash in a flood of disconnected and potentially fallacious digital content. The main opportunities inherent to digital would be largely lost if focused only on the medium.

As an example, Lexile measures can be integrated with digital library services to allow teachers and students the means to search for articles within a specified range of text complexity. Using automated processes, a Lexile measure can be produced and stored with meta-

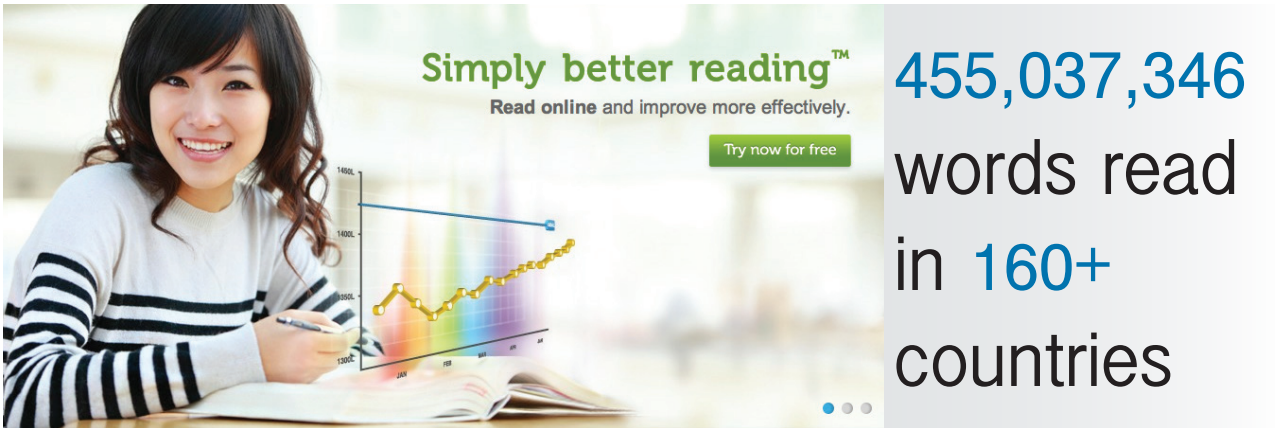
data. For example, the company EBSCO has measured *tens of millions* of articles from a broad range of publications, and incorporated Lexile-based search capabilities. Such digital enhancement of educational content is itself a transformative opportunity. But it is also an essential ingredient of the final common trend in worldwide education— individualized learning—which promises to harness and marshal the ocean of digital content in new and revolutionary ways.

#4—INDIVIDUALIZED LEARNING

Perhaps the most remarkable innovations being realized during this transformative moment in education relate to the individualization of learning. Technology is breaking down barriers to taking an entirely student-centric approach to learning, one that enables "just-in-time" educational delivery and extends the boundaries of educational time and space well beyond the classroom. Versatile online platforms are emerging that can store and use vast amounts of student data to inform and adapt learning paths in real time. Computer-based assessments are being blended seamlessly into differentiated instructional activities that provide immediate feedback. This data is being used to power sophisticated, real-time reports for teachers and make the management of diverse needs in a classroom far more practical and efficient. Teachers are getting unprecedented views into student activity outside the classroom, such as actual time spent on homework assignments, along with highly efficient ways to communicate around those activities. The incorporation of vertical scales is ensuring that progress and goals are always front and center from a common, longitudinal perspective.

Our Engaging English® reading service, which is powered by Lexile technology, was designed with these benefits in mind. Students have daily access to thousands of online reading options that match their ability and specified interests. As they read, computer-based items provide immediate feedback on their reading experience and track improvement toward goals on the Lexile scale. When a student's Lexile measure increases, the system adjusts in real time the recommended text complexity of subsequent readings to ensure that every reading experience presents the optimal amount of challenge for a given day. Progress reports help students see their rate of improvement over time, and clearly understand how their measure compares to reading goals in Lexile terms, such as university and

career readiness or target scores for a linked assessment (such as the TOEFL iBT® test). Additional monitoring tools help readers see the amount and diversity of their reading over time and reinforce the importance of daily practice. Game-like features help keep daily practice fun and interesting.



For more information about Engaging English, visit www.EngagingEnglish.com.

The Engaging English platform demonstrates how computer-adapted delivery of instructional content can be combined with computer-adaptive measurement of the learner on a common, vertical scale for a meaningful longitudinal perspective. When every instructional interaction can be mined for assessment data, the traditional paradigms of testing will become increasingly obsolete. No longer will we be limited to archaic testing windows at the end of the school year, during which time students are administered a fixed set of items from a costly exam. Rather, students will be continuously assessed and teachers will stay focused on their progress year round.

CONCLUSION

These four trends place education at the dawn of a new day with the legitimate potential to revolutionize how we teach and assess. For many generations, the delivery of education has remained largely unchanged: children are grouped by age and advance together through a series of classrooms along a prescribed path of print-based exams and curricular materials. Teachers have had few supports for differentiating instruction inside and outside of school. Today however, pre-school children share the promise of a very different educational experience: individual learning needs will be foremost at all times;

progress toward university and career readiness will be clear and present throughout their educational life span; continuous assessment will be used to inform their daily instruction and practice without intrusion; and enhanced digital resources will engage more fully their passion for learning.

To realize this potential, it is critical to establish foundations upon which to build and grow. The use of common, vertical scales that empower adaptive assessment, differentiated instruction, and persistent longitudinal views with meaningful standards are all essential ingredients. When it comes to reading, the Lexile Framework provides the requisite foundation upon which this future can be realized.

REFERENCES

Klein, A. (2009). An interview with arne duncan. Education Week, 29(14), Retrieved from http://www.edweek.org/ew/articles/2009/12/02/14duncan-transcript.h29.html

Covey, S. R. (1989). Habit 2: Begin with the end in mind. In The 7 Habits of Highly Effective People (pp. 95-144). New York: Simon and Schuster

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.

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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 and Duke University and UNC. Widely published, Dr. Smith speaks frequently around the globe on issues related to educational research, measurement, and technology.

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