In this biographical sketch and personal statement, I highlight three important paths I have taken over my 40+ year career in the College of Education (COE) at the University of Oregon (UO). The first focuses on the development of sensitive measures of learning that contribute to the science of education. Appropriate measurement alone, however, can only set the stage for learning. At some point, it needs to intersect with practice, which leads to my second focus: Establishing a digital assessment system in which teachers have at their ready a full complement of technically adequate assessment tools to document not only student performance but their progress as well. Finally, with educational practices firmly seated on an empirical basis for behavioral change and a full array of insightful information on student learning, this well-balanced system needs long term and sustained support, which leads to the enterprise of innovation. This personal statement complements my 1-page vita summary.

The Science of Education. In brief, causal research designs and validated correlational associations are the sine non qua for creating durable results that can be trusted and eventually serve as falsifiable 'truths', through multiple paths of research design and statistical analyses on measured outcomes. For over 50 years, my scientific record has been expressed through over 100 publications in peer-reviewed articles, complemented by hundreds of technical reports and national conference papers, as well as a handful of books and scores of book chapters. My research has primarily addressed the learning of students on the fringe: students with disabilities, English language learners, and low achievers. For these populations, sensitive measures of learning need to be validated so teachers can trust them in responding to their students' needs reliably and prescriptively.

Establishing the right measures for the right purposes is critical to even begin practical applications in the classroom. I have distributed my research in three arenas with *published, peer-reviewed journals* as the coin of the realm. In these publications, I have written about curriculum-based measurement (CBM), an assessment approach begun in the 1980s and extended for the past 45 years to serve as the mainstay of response-to-interventions (RTI). In this research, the emphasis has been on both identifying students at risk of learning problems and, perhaps more importantly, in evaluating the effects of instruction by classroom teachers. I also have published extensively on inclusion of these student populations in large-scale testing programs required by local and state educational agencies (LEAs and SEAs, respectively). I have focused primarily on providing appropriate accommodations. While the peer review and publication process ensures proper oversight for scientific inquiry, *technical reports*, however, also need to be published to verify all aspects of technical adequacy, from generating reproducible student results (reliability) to ensuring appropriate interpretations (validity). These reports allow the full presentation of both aspects, which is not possible through the publication constraints of the peer-review process. Finally, I have combined both publication outlets with *national presentations and papers* to relevant professional groups. These presentations and papers ensure that current findings are being instantiated with professionals and in connecting research with practice.

An Empirical Basis for Change. Science notwithstanding, the practice of education rests on making an individual difference, even with, and despite recognition of individual differences.

The practices of teaching and learning cannot simply wait in abeyance while research findings accrue. Every day, sometime around 8 in the morning (local time), teachers face a classroom full of wide-eyed children alert to the possibilities. I have developed software to bridge and facilitate the distinction between addressing individual differences and making an individual difference (an attribution to Dr. Stan Deno). This technological landscape is designed to solve insufficient teacher measurement practices due to the lack of training or time. I have led a team of researchers and programmers to build four software platforms over a 40-year period that incorporate rigorous research-based tenets of measurement and facilitate an efficient process for documenting relevant student learning to make critical instructional decisions in real time.

The main assessment software I have authored plays off its roots as a curriculum-based measure (CBM): easyCBM® for monitoring reading and mathematics performance and progress of students in Grades K through 8. Three versions of the software have been developed to ensure widespread uptake. A free (Lite) version allows teachers to assess students and practice formative evaluation of instruction for individual students. A minimal cost (Deluxe) version allows teachers to evaluate instruction for classrooms (up to 200 students). Finally, a fully supported District version is marketed by Riverside Insights, a publishing company with an extensive history of distributing assessment systems. All three systems are currently in use across the United States, adopted in hundreds of school districts and used by tens of thousands of teachers to assess millions of students. See https://easyCBM.com.

To enhance this CBM software, I have developed a new application that emphasizes specific student skill development in reading and math. Whereas easyCBM® provides critical information from a norm-referenced perspective (where students perform relative to grade-level peers) and an individual-referenced perspective (how students change over time relative to their own previous performance), this new assessment software (CBMSkills®) provides students specific skills in need of instruction and takes advantage of new, sophisticated testing and technology practices. Using a computer-adaptive test (CAT) and a cognitive diagnostic model (CDM), students are placed in specific skill modules where performance is low. Then, repeated practice and feedback are provided from within the software, including oral reading fluency (ORF), which is one of the most critical reading skills and a strong predictor of reading comprehension. In the future, this software will be used to collect and analyze common error patterns using artificial intelligence (AI). This free software is currently registered with 25,000+ teachers and students in Grades Kindergarten through Grade 5. See https://CBMSkills.com.

The last assessment software in the CBM Suite that I have developed focuses on writing for students in Grades 5-12: WriteRightNow® provides teachers a writing evaluation system for generating and evaluating narrative, informative, and argumentative text and hosts several best practices: a library of instructional prompts and feedback, monitoring writing production, teacher collaboration to integrate students with special needs into content classes in middle and high schools, student peer editing, exemplar student samples, automatic scoring, and graphic displays of performance and progress. This assessment system has a free version with most features and a Deluxe version for a modest price: Currently, about 6,000 teachers use it with over 12,000 students. See https://writerightnow.com.

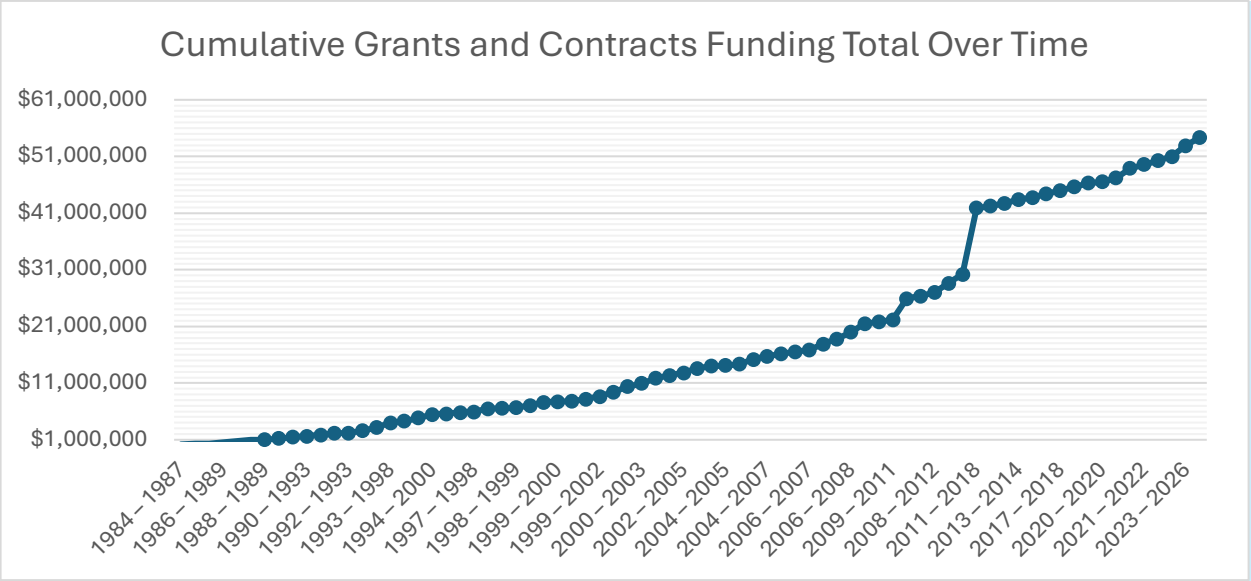
Finally, I have developed assessment software for students with the most significant cognitive disabilities to assess their emerging communication and academic skills. This software responds to state requirements for including this population in their federally mandated accountability programs. Given the fragile skill development with these students and the presence of multiple interfering behaviors, the software can be flexibly used by teachers to ensure measurement is construct relevant and reflective of the standards for testing. Currently, every special education teacher (1,700+) in Oregon relies on this software annually to assess approximately 5,000 students. In Virgina, a derivative of this software (Distributed Item Review) allows every special education teacher (approximately 5,500) to use appropriate measures for students with the most significant cognitive disabilities in the state (10,000+). See https://k12test.com.

The Enterprise of Innovation. Finally, the economics of both science and practice has a financial overlord, ruled by legislative and free market systems that can only be addressed by a single focus: Follow the money. An important component of innovation is that it needs to be based on a sustainable business model. To support a program of research, not just individual studies, and ensure systemic adoption of best practices in assessment, long-term and braided funding is needed for employment of lead researchers, programmer analysts, project managers, business directors, and support staff, who can collaborate with publishers and entrepreneurs. Educational innovations are best maintained through diversified funding with grants, contracts, and e-commerce. So, behind the scenes of both science and practice, I have created a research unit in the COE (Behavioral Research and Teaching – BRT) that is funded through a complex mix of authorized/legislated funds and free market dollars, which have resulted in generating about 70 million dollars to sustain BRT research and innovation.

BRT was established in 1985, one year after my arrival to the COE–UO: See https://brtprojects.org. As noted in our mission statement, we have focused on three outcomes: (a) Measurement Development, (b) Measurement Use, and (c) Large-scale Systems Use. To date, BRT has procured nearly $61 million from 82 contract, research, and training Requests for Proposals (RFPs) issued by federal agencies (e.g., *Office of Special Education Programs and the Institute of Educational Sciences*), as well as state educational agencies (SEAs) and state collaboratives. BRT also has been funded through the sales of educational software, with easyCBM® resulting in nearly $9 million since 2012. BRT software has been copyrighted to the University of Oregon (UO) with funds directed through the Office of the Vice President of Research and Innovation (OVPRI) and used to support personnel who directly support the software, with no royalties distributed to any innovators.

In summary, enhancing educational innovations requires a vision that connects the science of education, direct and practical applications in classrooms, and a sustained infrastructure with institutional support and long-term funding. With these three paths, it may be possible to turn around the extensive history of bleak results reported by the National Assessment of Educational Progress (NAEP) in 2024: Only one-third of our nation's students can read and understand text or compute and solve math problems at a proficient level since 1992.

Note: The graph depicts cumulative dollars from competitive funding sources with a spike upward in 2011 with the *National Center on Assessment and Accountability in Special Education – NCAASE* – an $11 million center funded by IES. Otherwise, growth has been steady and continuous for over 40+ years with no boom or bust interruptions.



The table on the left includes all three sources of competitive funding and on the right, software revenue from the marketplace.

Revenue Sources

Contract • Research • Training		easyCBM® Sales (2012- 2025)		
Source	**Sum**	**Fiscal Year**	**Deluxe**	**District**
Contract	$15,566,151	FY12		$54,510.92
Research	$36,251,113	FY13		$93,645.45
Training	$8,918,781	FY14		$174,094.76
Grand Total	**$60,736,045**	FY15		$291,332.55
		FY16	$138,284.43	$419,465.75
		FY17	$214,786.29	$396,160.79
		FY18	$242,859.27	$492,722.28
		FY19	$268,172.94	$475,370.16
		FY20	$297,245.67	$513,114.78
		FY21	$342,394.38	$488,553.45
		FY22	$386,142.64	$665,091.93
		FY23	$358,877.20	$610,921.95
		FY24	$324,185.15	$538,094.02
		FY25	$333,733.24	$623,101.99
		Grand Total	**$2,906,681.21**	**$5,836,180.78**