

The Bicultural Scientist: Traveling in the Twin Worlds of Basic and Translational Science

March 02, 2011

Hirsh-Pasek (left) and Golinkoff

The dawning of the 21st century ushered in the era of translational science. Signs of the seismic shift in our field of developmental psychology are everywhere. Premier journals such as *Child Development* now request a media-friendly abstract of accepted papers and NSF and NIH require a serious statement on how funded research can be applied to problems in the real world. New journals like *Child Development Perspectives* and *Mind, Brain and Education* were designed to publish papers on research and its applications, and residents of the ivory tower began to write books that fill the shelves at Borders.

This meteoric rise in translational science offers researchers an opportunity to share their expertise on some of the most debated issues of our time: child-care, brain development, poverty, early education, and adolescent risk and resiliency to name a few. To take advantage of the new wave of translational thinking, we must bridge two cultures — one that preserves the sanctity of science and one that shares our wares in the broader marketplace of ideas.

Research from the newly-coined learning sciences illustrates one of many examples that connect the worlds of basic and translational science (Sawyer, 2005). By way of example, on January 9, 2009 the National Education Literacy Panel released a meta-analysis of the factors implicated in early literacy. In an effort to harvest available science on the question of how children learn to read, the National Institute for Literacy convened a panel of experts to identify the knowledge and skills children possess between birth and age 5 that are related to reading acquisition. Reviewing over 500 studies in early literacy, the distinguished scholars derived a set of 11 factors that contribute to strong early reading outcomes. In the new spirit of translation, the group also wrote a booklet for practitioners that contained recommendations for practice. What was remarkable about this report is that by stepping back from the details of particular research programs, they could appreciate the large body of data that has accumulated to inform policy and practice in early reading development. And while as scientists, we might (and will) debate about how to weight the building blocks for reading achievement, we have already made significant progress in this area of research. Adopting a bicultural stance, this report both suggests new questions for research while providing guidelines for teacher training and preschool curricula.

Our own journey in the twin worlds of research and practice started when we wrote two trade books as popular evidence-based guides for parents and practitioners, *How Babies Talk* (1999) and *Einstein Never Used Flashcards* (2003). Our goal was to put the science of language development and developmental psychology in the hands of parents, teachers, and practitioners. Writing these required that we step out of our safety zone, learn to write in more accessible ways, and seek areas of consensus rather than division among research findings.

Our latest book, *A Mandate for Playful Learning in Preschool: Presenting the Evidence* also attempts to straddle the two cultures (Hirsh-Pasek, Golinkoff, Berk, & Singer, 2009) by merging findings from education and child development. It grew out of a conference we organized at Yale University in 2005 as one way of responding to threats we saw to young children's early learning and social-emotional growth (Singer, Golinkoff, & Hirsh-Pasek, 2006). Despite the fact that extensive research suggests that play-based pedagogies promote academic (e.g., Bellin & Singer, 2006) and social outcomes (e.g., Berk, 2001), direct instruction and assessment-driven teaching strategies dominate preschool instruction. This emphasis on academic readiness in preschool put reading and math learning above mastery of social skills just as the field is learning about the importance of executive function and emotional regulation as inroads to academic growth (Barnett et al., 2008; Berk, 2001; Diamond et. al., 2007). Reviewing the extant body of research, we proposed that rich curricular content could be delivered in a playful, child-centered pedagogy that prepared children for school and gave them the skills to be life-long learners.

The process of moving from the halls of ivy into the complexities of the real world is often daunting. We had to learn to use strong verbs, write in Sunday supplement style, and unearth the areas of consensus so often obscured by our search for disconfirming evidence. Our travels among the two cultures, however, have been met with open arms by our colleagues, and, importantly, by teachers, policy makers, media outlets, and children's museum experts. The broad community of those invested in the well-being of children genuinely want to know what we have found and how they can collaborate with us to bring about policies and practices that are informed by science.

We have entered a new era. President Obama has pledged to not only tackle our failing economy, but also to deal with some of the most vexing social problems in our nation. Many of us do research on topics that are central to these plaguing problems and many of us have been reticent to offer our opinions beyond Saturday night dinner conversations. This is our time. We can take our seat at the table with practitioners and policy makers. We can be vigilant in making sure that our science is well represented and is accurately presented. To do this and to do it well, however, will require that we become anthropologists who understand the culture of application and biculturalists who are not shy about translating our research into practice.