Sleep is Overrated: The Developmental Education Innovative Research Imperative

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Developmental education sits at the nexus of all things educational, yet developmental education research seems asleep, unaware of the valuable and critical perspectives the field can provide. In that light, this article addresses the developmental education identity crisis addressed by Arendale (2005) in "Terms of Endearment," suggesting principles for a new wave of developmental education research. These principles suggest an innovative research imperative that includes the exploration of new learning contexts with new theoretical perspectives and analysis techniques. A new commitment to innovative research ideas should help revive research in the field and help students reach their educational goals.

Despite an array of published approaches and outcomes for developmental education, little has changed about developmental education practice since the 1970s, with two notable exceptions being the use of the computer and supplemental instruction. Essentially, developmental education programs assess learning deficits, and then try to repair them. For me, listening to the research of far too many reports at developmental education conferences is much like "Rockin' to the Oldies," same old tunes, re-mastered, re-mixed, and re-reported, one more time. Even the central term of the field, "developmental education," has an ambiguous, haze about it. Too often people outside the field confuse it with human development, particularly child development and even special education (Maxwell, 1997).

In fact, the terms we use confuse matters more. For instance, the field has been unable to shake the use of the verbal "to remediate."

Remediation is an identity defining characteristic, meaning to correct something that is bad or deficient. Remediation is hard, fast, and rather exact, not necessarily designed to bring hope and pride to policy-makers. More broadly defined is developmental education, a sophisticated concept rooted in cognitive and developmental psychology (Boylan, 1995). It includes personal autonomy, self-confidence, study behaviors, and social competence as factors that affect performance, along with academic preparedness (Boylan, 1995). Whether correcting a deficit or maximizing student potential, the field seems bound by the warring terms meant to describe, identify, and promote it.

While little has changed about developmental education practice, what we have learned about motivation and culture in the last 30 years is much improved over the previous 100 years. Much of this new knowledge comes from thinking and research that combines fields, like what is found now found in the new field of cultural psychology or the mixing of medical research and educational psychology to inform the study of adolescent motivation and achievement. One example is the series of sleep studies that suggested that adolescents needed more sleep than previously thought and needed to sleep later, causing many high schools to start school later in the day (Carskadon, 1999). These conclusions were based on the discovery of teenage sleep patterns governed by unique adolescent circadian rhythms. High school students who slept later learned more. Openness to presenting, examining, and encouraging syntheses of theoretical and research ideas across fields resulted in this type of finding.

In a similar fashion, developmental education research must reach beyond the current status, while still remaining accessible to practitioners. Examples of new research include the relationship between developmental education and numerous external outcomes like labor health and community factors. Examples of internal aspects of students' thinking include the examination of the relationship between social belief systems (including those of the developmental education practitioner) and students' perceived

control over their own academic performance. The unique place of developmental education in all of education provides countless perspectives for research that informs all of education and many other human endeavors.

Rethinking Developmental Education Research

We need to rethink developmental education research with a focus on innovation. Why is it necessary that developmental education begin when a student applies to college and end when a student is ready for college-level study? If the past is the problem, where is the heavy influence of developmental education research on elementary and secondary school practice? What are the roles of developmental educators in these same schools? What happens to developmental education students when they leave these programs; in fact, what are their life trajectories after developmental education? What are the developmental needs of students who are not in college? Are they the same as those who attempt college? Is there a need for developmental support for training programs in the business world, in government, in the health sciences, and in the military? In other words, are the theories that drive what developmental education programs do dependent only on the postsecondary context or can they be transferred to other contexts, like continuing education programs for physicians or prison guards? Can we ever have enough studies of the impact of culture on learning in developmental education? Also, and not entirely facetiously, do developmental education students need more sleep?

With the blending of new ideas as a focus, this paper suggests a new language, in fact, a set of new research cultural values, that could improve what developmental educators do and how policymakers understand students who may not be ready for postsecondary study (Arendale, 2005). Furthermore, public schools are in the midst of tectonic shifts that will affect the practice of developmental education. For example, one shift is the growing Early College High School movement. More and more high schools are teaming with community colleges so their students can leave high

school with both a diploma and an associate's degree. In order to make the dual degree a reality, developmental education courses are being taught to high school sophomores and juniors, and developmental education researchers need to be there. This also means that serious preparation for college study needs to begin in the 7th and 8th grades, and developmental education researchers need to be there too. In another example, No Child Left Behind legislation will almost certainly be radically changed or dismissed soon, leaving a curriculum articulation vacuum and possible even wider differences in student readiness for college study. With little doubt, policy makers will call upon developmental education to close the educational cracks that appear.

Arendale (2005) argues for the transformation of developmental education, including development of a new language, partnerships, objectives, and programs. In particular, he suggests a language that supports a holistic view of the students. To that end, I suggest the commencement of a set of ideas designed to advance research in the field, called the Developmental Education Innovative Research Imperative. This imperative rests upon a foundation of a new set of fundamental research values that combine knowledge and beliefs about how to improve research in the field. Additionally, these values dictate that developmental education research must assume a much more central role in educational research. Developmental education is at the nexus of several fields of study—such as adult education and adolescent development, cognition and instructional design (for adults and adolescents), motivation and policy, secondary and postsecondary, and numerous other combinations.

Fundamental Values for the Developmental Education Innovative Research Imperative

Undergirding this new approach are several fundamental values. First, developmental education researchers must avoid insularity in what they research. In fact, they should challenge widely held assumptions about developmental education, particularly those held by developmental education researchers and practitio-

ners. Therefore, as the research becomes more inventive, so must a tradition of critique expand. Second, students at risk of failure (like all students) are embedded in multiple systems, both internal and external. Development, then, is the study of what happens inside students and what is going on in their environments (Goldstein & Brooks, 2005). That is, the problems that developmental students face are more complex than learning deficits. Therefore, it is incumbent upon developmental education research to embrace more fully human, student, and adult development.

Third, developmental education researchers must more fully capture the complexity of the situation with their research designs and analysis techniques. New theories suggest that human interaction and cognition exist on multiple levels, enriching the notion of the whole student. As the theoretical perspectives become enriched, so will the research designs and the statistical or other analytical tools needed to examine or test the theories. For example, cross-institutional and multilevel modeling approaches must become the new norm for quantitative research. Also, the rigor of meta-synthesis should compel better usability of qualitative research findings.

Fourth, instructional interventions must grow directly from this research. As the problems studied become more complex, the interventions will more than likely increase in complexity and power. Both developmental education researchers and practitioners must come to terms with this complexity. Therefore, the widespread training and certification of instructors is critical. Fifth, understanding and researching poor practice is just as important as understanding and researching best practice. In fact, while becoming more wary of the phrase best practice in its literature, the field should increase interest and emphasis on meta-analysis and meta-synthesis.

The study of developmental education should be just as multilayered, dynamic, aware of, and interested in the complex nature of developmental education students as these innovative research values require. One example of a set of theories that reflect the above research values comes from the intersection of social psychology and human development. Developmental education

researchers rarely use these theories, and they may bring more explanatory power and new interventions that will serve a greater diversity of students.

Example: Social Psychological Theories Bring More Explanatory Power

The theories that have dominated postsecondary study (e.g., Bean, 1985; Tinto, 1988) appear to explain immediate causes for student performance and persistence. Studies using these frameworks tend to focus on immediate issues like poor institutional fit, heavy student workload, or financial troubles. However, self-efficacy theories may suggest root causes of postsecondary performance, providing deeper insights and more explanatory power of context and behavior. Self-efficacy beliefs are people's judgments of their capabilities to perform tasks. Bandura (1993) extends this concept to say that people's level of motivation to achieve is based more on what they believe, rather than what is objectively true. Therefore, the beliefs that people have about their capabilities may be better predictors of performance than actual competence. Critically important here is that one key function of developmental education is to focus students' attention on what is objectively true, the learning deficit, a practice that theoretically could actually decrease motivation to perform as desired.

Of course, no amount of self-appreciation can overcome an actual lack of requisite knowledge and skill. This is particularly true for traditional developmental education students, who lack reading, writing, and mathematics knowledge and skills, at a minimum. But as Bandura's theories suggest, developmental education students are more complex than just learning deficits.

When it comes to students who need learning assistance, Borkowski and Thorpe (1994) suggest a breakdown in the integration of self-regulation and motivation aides in underachievement. However, studies of self-efficacy in developmental education students present a puzzle: developmental education students tend to have self-efficacy beliefs similar to those of college students

who have much higher skill levels (Young & Ley, 2001). Students needing remediation at college entry may not know that they lack particular skills and will be unaware of the strategies and effort needed to acquire the needed skills. Borkowski and Thorpe (1994) identify this disassociation as a block or misinterpretation of feedback received about the causes of successful or unsuccessful performances. Therefore, a characteristic of underachieving students' attribution beliefs is inappropriate beliefs about effort and strategies that improve performance. Borkowski and Thorpe (1994) outline the consequences of an immature attributional belief system as an immature self-regulatory system, leading to less planfulness, more impulsivity, and less persistence for underachievers.

This conception of self-efficacy suggests a rethinking of much of developmental education research. For example, more research is needed on student belief and attitudinal systems, as suggested by Ajzen's Theory of Planned Behavior (1991). According to the theory, behavior (or performance) results from students' intentions that are influenced by attitudes and beliefs about the behavior, what others think about it, and one's actual and perceived control over the behavior. When applied in fields outside of education, the theory has demonstrated high predictive value, and it fits well with the values of the Developmental Education Innovative Research Imperative. Also, resiliency theory (Goldstein & Brooks, 2005) is drawing increasing attention with its focus on student assets as predictors of success, rather than deficits—the current raison d'etre of developmental education. Born in medical research, resiliency theory suggests that risk factors accumulate over long periods of time to produce failure. However, protective factors or assets exist along with risk factors, and enhancing these can multiply the positive effect of any later intervention. The innovative aspect of resiliency approach is that those responsible for the later intervention drive the development and implementation of the earlier protective systems. Such re-thinking will refresh research in the field, ultimately helping developmental education research live up to its great calling and expand its reach.

Implications for Future Research

Based on its vantage point, developmental education can become the center for innovation research and practice in education. Of course, this idea of innovation is incomplete without the research also being effective. To this end, I believe that the innovative research values can be used by leaders in the field and groups like the American Council of Developmental Education Associations (ACDEA) to organize efforts to promote innovative research. This will begin with the testing of new theories using secondary data sets, developing primary research studies designed to test innovations, and providing an innovative method for organizing and disseminating findings.

A blue ribbon commission of ACDEA conducted a strategic analysis of the profession, citing major weaknesses of the profession as lack of support for research, lack of training in program evaluation and research, and limited access to graduate programs (Blue Ribbon Commission, 2006). However, ACDEA could capture the attention of departments of education, coordinating boards, and foundations with a relatively, inexpensive and unique way of disseminating and promoting research. The ACDEA must continue the work it has begun by disseminating and promoting research.

For example, perhaps a website could be funded that links all of the research produced by its participating organizations. Rather than just information and links to papers and other resources, this website would continually store, organize, and calculate the statistics for a running meta-analysis of developmental education research results. Researchers would submit their published and unpublished studies to the site, where others in the field would review and rate the studies. The engine for the website would be a database that could be queried so that any end-user could assess and reanalyze findings based query terms. Next, end-users could query the database to get the actual studies, create new maps of sub-regions regions, examine criteria for evaluating the studies (like effect size), and read peer commentary on the studies.

Conclusion

With the above principles as just a start, great interest and funding can be drawn to developmental education, with new ideas tracking the new ascension of developmental education research. The practitioner's role in this is critical: practitioners need to be much less satisfied with developmental education research. They must question, critique, and demand more from research. Since so many developmental education researchers double as practitioners, they should also insist that research methods be accessible, despite their complexity. In fact, the field is overdue for a journal that focuses on research methods and also targets developmental education practitioners. Therefore, developmental education researchers need to shake off our current dormancy, examine our own circadian rhythms, and produce new, transformative research. Indeed, our current sleep is overrated; it is imperative that we wake up to our immense potential.

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