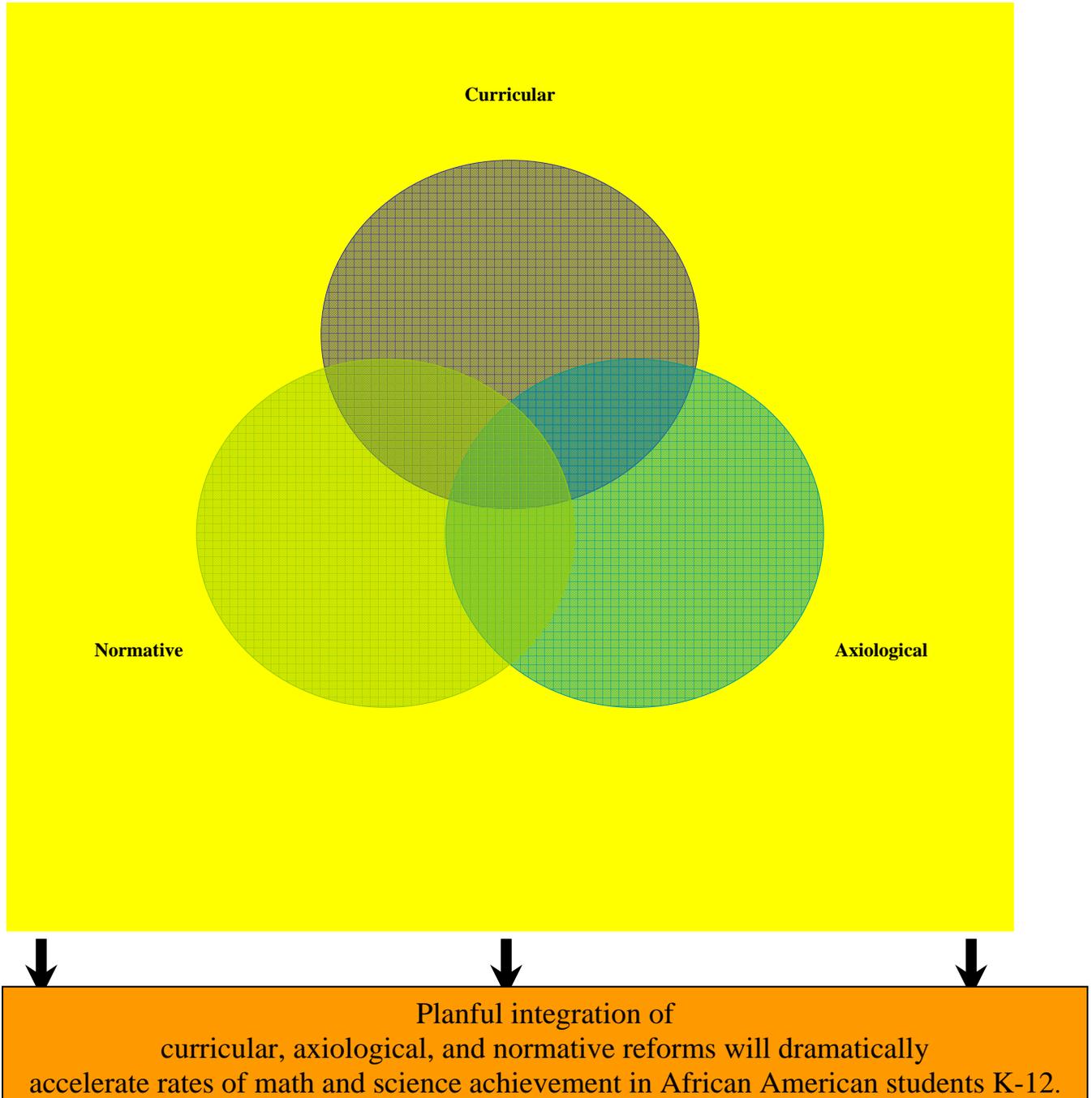


Document 05
Pennsylvania CAN:
Closing Racial Achievement Gaps in Math and Science
through Curricular (C), Axiological (A), and Normative (N) Reforms

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Pennsylvania CAN: Executive Summary

WITHOUT MAJOR INNOVATIONS IN EDUCATIONAL REFORM, closing the racial achievement gap in math and science is, by any measure, a *dream deferred*—deferred, indeed, well past the life span of the next several generations. Algebraic formulations based on the National Assessment of Educational Progress (NAEP, 2005) scores over the last four decades project that closing the gap could take between 65 and 780 years—and even longer, if the rate of closure continues to decline, as it has in recent years (Taylor, in preparation). Furthermore, a recently released report by the Comprehensive School Reform Quality Center (2005) found that *none* of the 22 most widely used best practice reforms had *strong positive effects on academic achievement*. In many school districts, inner-city schools are resegregating at an alarming rate and are plagued increasingly with random shootings, addictive lifestyles, and media representations that besmirch the reputations of these schools, their students, and surrounding neighborhoods.

The reform proposed here—Pennsylvania CAN—combines intensive state-of-the-art interventions in three areas: Curricular (C), Axiological (A), and Normative (N). Designed to function synergistically to supplement without supplanting existing academic programs, these initiatives have the potential to dramatically increase rates of math and science achievement of inner-city African American students K-12 and, with some adaptation, that of other underperforming minority groups. Our interventions have been developed, empirically evaluated, and validated through research efforts originating in this region. This evidence base supports our expectation that Pennsylvania CAN will fit the structural and educational needs and realities of urban school districts characterized by increasing concentrations of African American students.

Pennsylvania CAN is directed toward changing the ambiance of school and community in ways that quicken and deepen Black students' commitment to academic engagement and excellence and accelerate rates of achievement and adaptive character formation. As a value-added intervention, Pennsylvania CAN's impact is:

- **Curricular (C)**—stimulating interest and learning skills through model programs in science inquiry, immersion, and robotics as well as on-line cognitive math tutorials and structured feedback for teachers. (Developed and validated under National Science Foundation (NSF) grants by Pittsburgh Science of Learning Center (PSLC); University of Pittsburgh Learning Research and Development Center (LRDC), and Carnegie Mellon University.)
- **Axiological (A)**—promoting the embracing and exemplification of seven values—learning orientation, self-confidence, self-persistence, self-esteem, self-reliance, love and respect, and interpersonal skills—that are associated with accelerated rates of academic achievement and adaptive character formation. (Developed and validated as *Values for Life* under grants from local foundations, the Pittsburgh School District, and the National Institute of Mental Health (NIMH) by the Center for Family Excellence in Pittsburgh and its predecessor organization Institute for the Black Family at the University of Pittsburgh.)
- **Normative (N)**—organizing communities (parents, peers, neighborhoods, and schools) to establish an environment that promotes and rewards academic excellence. (Pioneered by leadership of the Center for Family Excellence in collaboration with churches and organizations, with support from the Pittsburgh School District and a local foundation, to demonstrate the effectiveness of 4 empowerment objectives and 75 corresponding tactics for community mobilization around achievement.)

In this plan, we introduce and evaluate 13 propositions that show how Pennsylvania CAN will dramatically increase rates of math and science achievement in African American students K-12 and positively affect teacher and student attitudes and behaviors that together normalize a culture of excellence within schools.

We conclude with a summary of unique strengths of Pennsylvania CAN, a presentation of our professional development model, a method for sustaining excellence in instructional process and achievement outcomes, a statement on considerations for buy-in, and an overview of our evaluation plan.

You may obtain further information about Pennsylvania CAN by contacting Jerome Taylor at jtaylor@cffe.org



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