

## STATEMENT OF PROFESSIONAL VALUES AND GOALS

*Students at school all over the world are naturally curious and impressionable. Therefore, understanding how to provide students with an optimal learning environment and facilitating their experience of school education in a more positive atmosphere has been my primary goal over the years. . .*  
Nathan Balasubramanian, December 2001, Statement of Purpose for pursuing a doctoral program.

*Ever since I attended the 2<sup>nd</sup> International Conference on U. A. E. Education Reform held on the theme “Education Development through Utilization of Technology” during May 2001, it has been my wish to pursue a doctoral program in education. . . It is now time for me to pursue my interests in teaching, learning, leadership and innovation, specializing in Instructional Technology. . .*  
Nathan Balasubramanian, April 17, 2002, Resignation of Service from Emirates International School

*The intellectual merit of the proposal is the creation of coherent instructional material using STRuctured-scenario ONline Gaming (“STRONG”) activities, to assist students from diverse backgrounds achieve science literacy Benchmarks. . .*  
Nathan Balasubramanian et al., April 30, 2003, Project Summary to the National Science Foundation.

*Influenced by the writings of Huxley (1901) and Einstein (1936), I believed that teaching students science as a form of inquiry was essentially teaching them everyday problem-solving and thinking skills. The intermediate statistics class in my doctoral program this semester provided me an opportunity to examine the nature and extent of the relationship between students’ science and reading achievement using a multiple regression analysis. . . Based on findings from a five-year study with 51 teachers and 1200 students, when Romance and Vitale (2001) replaced traditional reading/language arts instruction in grades 2-5 with in-depth science concept instruction, they found that both science understanding and reading achievement improved. . . In my view, when more scientists and scientific organizations such as the American Association for the Advancement of Science (AAAS) pay attention to the strong relationship between science literacy and literacy, they would enhance student learning in both subjects.*  
Nathan Balasubramanian, December 14, 2003, Major Project for Fall 2003 Intermediate Statistics Class

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The excerpts above, not only track my thought processes chronologically over the past two years, but also helps me articulate my passion, provides focus, and demonstrates my commitment to facilitate student-centered teaching and learning in our schools. Prior to the start of my doctoral program, I concluded my statement of purpose restating my overall goals. “My goal in pursuing a doctorate program in Educational Leadership and Innovation at the University of Colorado at Denver is to study how I can contribute to the existing knowledge base on ways to improve and enable effective instruction in schools. Education is the wealth of the future. Facilitating lifelong learning in the emerging knowledge-based global economy is a big challenge. Therefore, any new initiatives that could make the entire process of teaching and learning enjoyable for all, and the design of

learning environments that facilitate the greatest good for the greatest number is worth pursuing.”

With increased calls for accountability in school systems and fear of federal sanctions based on the “No Child Left Behind” (NCLB) Act, several schools have responded in fragmented ways by focusing on only literacy and numeracy. Hardy (2003, p. 5) alludes that by 2014, all public schools are expected to be performing at grade level in reading and math. These mandates have led several schools to compromise teaching and learning of other subjects. The authors in the *Designs for Science Literacy* (AAAS, 2001) observed that “students learn too little science” (p. 51) because there is not enough time for teaching and learning science. The authors of the *Blueprints for Reform* (AAAS, 1998) lament that the public is generally less interested in science education than in reading and mathematics (p. 41). In my view, the American Association for the Advancement of Science (AAAS), like Elmore (2003) observes, has allowed bad policy and practices to permeate (p. 10), has not rallied knowledge about similarities between science and reading achievement. Raising the awareness on this issue in scientific circles is one of my major goals in the doctoral program, and I believe science literacy would be a logical way to enhance the literacy of *all* our students, irrespective of their socio-economic backgrounds.

With over three decades of research, primarily by researchers in the international reading community, the relationship between science and reading has been shown to be strong. However, improving science education in the country has its own share of

problems, and as the *Blueprint for Reforms* (AAAS, 1998) illustrates; there are primarily three significant roadblocks (p. 41).

1. State of the existing science curricula,
2. State of teachers' knowledge,
3. (Lack of) public awareness on the need for reform in science.

Addressing these obstacles during and after my doctoral program, particularly in physics education, is one of my major professional goals.

The doctoral pro seminar in first semester of the doctoral program helped me identify three topic foci areas that could help me further these goals. The three areas were: concept-based physics education, career development, and classroom management. My first product, developed using Kurt Lewin's (1942) field theory for a framework, was titled "Smart education: Blending subject expertise with the concept of career development for effective classroom management." This paper helped me generate a working bibliography for pursuing my passion and interests. It was accepted for online publication in the prestigious ITFORUM (<http://it.coe.uga.edu/itforum/index.html>), and the discussions and numerous constructive feedbacks I received in June 2003, helped me pursue my convictions outlined in the paper.

The National Science Foundation preliminary proposal that we submitted in May 2003 was based entirely on this premise, blending subject expertise with career development concepts. With the help of our competent team from Russia, *Physicon Ltd.*, we developed a prototype version of the proposed STRuctured-scenario ONline Gaming ("STRONG") activities. The grant proposal seeks to specifically address concerns about

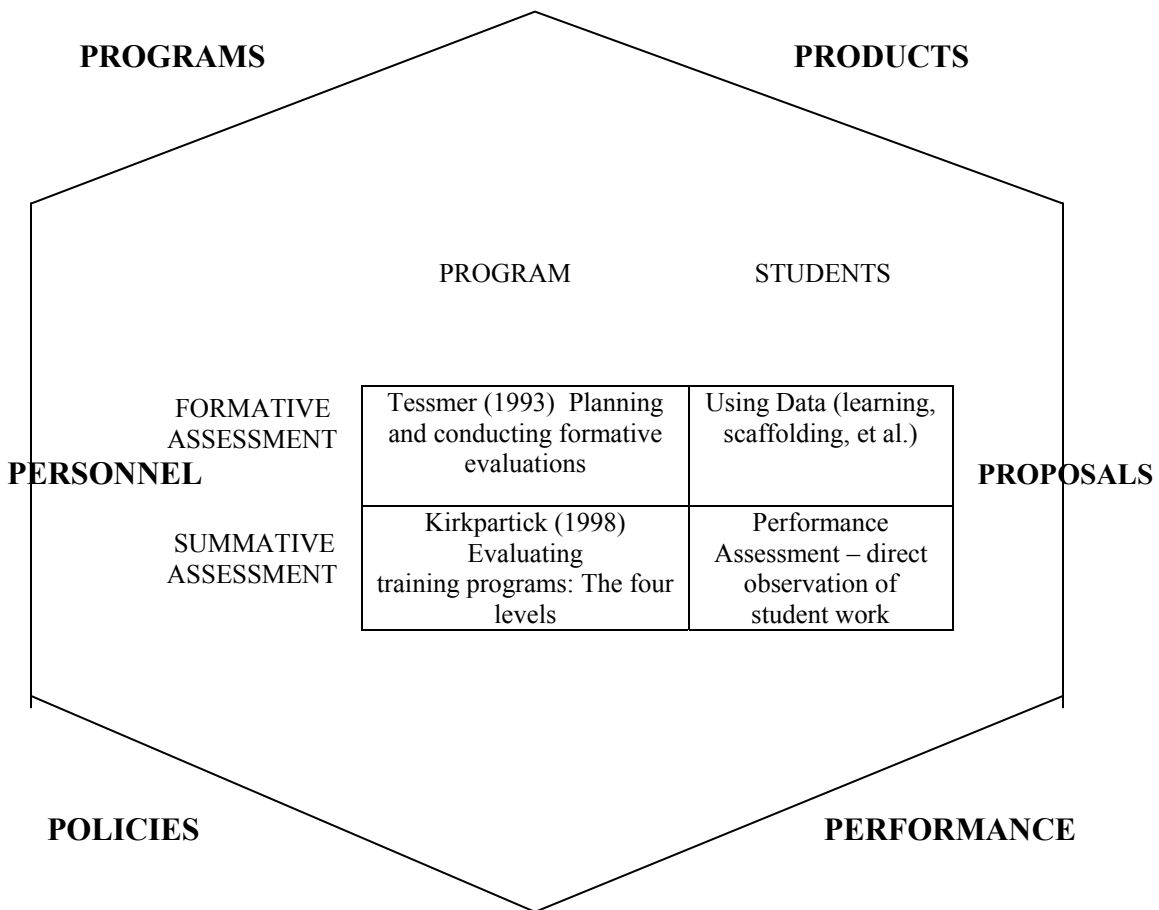
the curricula and teacher preparation. Using this prototype, we would like to survey students and teachers from target schools in three participating school districts, Adams 14, Denver, and Cherry Creek, during spring 2004.

The other significant development during the first semester of the program was our Leadership Seminar. This helped me examine my beliefs about leadership and innovation. The final paper “Challenges for leading, managing, and performing in self-directed work teams” was the framework used for writing a paper discussion proposal for the 2004 AERA meeting. The paper titled “Challenges for leading, managing, and accomplishing in high-performance school systems” stresses the need for moral leadership in schools (Burns, 1978; Sergiovanni, 2000) grounded in individuals’ aspirations, needs, goals, and commitments to perform competently. It focuses on the role of teachers and school principals in fostering learning environments that engender student competence. The paper uses a modified Gilbert’s (1978) Behavior Engineering Model as a theoretical framework (Chevalier, 2003), and argues that high-performance school systems should have the greatest impact on student performance and the “E-factor” (Handy, 1993): involving effort, energy, excitement, enthusiasm, and effectiveness in schools.

Although the paper was not accepted for presentation this year, the reviewers’ comments were reassuring, with several “4 out of 5” ratings. One reviewer observed: “This proposal lays out an interesting and somewhat compelling framework. However, it is a work in progress, likely more suitable for inclusion in next year's program than in this year's. I wish the author(s) well in their research and look forward to hearing about it then.” Unfortunately another reviewer made matters difficult and as the Chair of Division

A (Administration) Section 1 (Leadership) in AERA observed (2003, December 9): “It does sound like the reviewer you referred to was mixed up and speaking about a different proposal.”

The IDEAL doctoral lab meetings this semester not only helped me contribute towards numerous discussions on curriculum development for IT 6730: Comparative Models of Instructional Design, but also made me explore the topics of assessment and alignment. While this is still work-in-progress, the conceptual framework we arrived at, illustrated within Scriven’s (1993) “big six” P’s, is summarized below:



My current full-time teaching assignment as Applied Technology and Mathematics Engineering Technology Achievement (MESA) teacher at a middle school in a high-achieving school district in Colorado will also help me further the research interests outlined above. “Applied technology” or “industrial arts” or “technology education” as it is addressed in different schools around the country, is considered a vocational subject in schools. Applied technology seems to be one way of blending subject expertise with career development that is widely practiced. In my statement of purpose in December 2001 I wrote: “After my doctoral program, I would like to teach at a University and continue my commitment to enhance student learning through further research and understanding.” I would only like to reconsider the former, and might prefer working in a school district with an Applied Technology program and explore career options in the central administration, say as curriculum development director for science and technology education.

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