

# Taking on Innovation: An Emerging Role for Educational Researchers

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**Abstract:** Much of the complication surrounding innovation in any field derives from the fact that the gains from new and creative strategies can only be realized if organizations reconfigure the way they work. In these iterative rounds of change management, true innovation often occurs quite slowly. One true test of solid innovative engagement is the "institutionalization" of change and the questions it poses. North Carolina State University's College of Education has created such a unique entity with the establishment of the William and Ida Friday Institute for Educational Innovation, located on the university's Centennial Campus. FI is designed to capitalize on the University's long history of committed engagement in the public, private and nonprofit sectors of the state and its leadership role in economic development. This paper will consider the role of innovation in educational research and pose challenges that Friday Institute researchers will encounter as they embrace educational innovation.

## Introduction

Over thirty years ago, futurist Alvin Toffler wrote, "the key ... is not to suppress change but to manage it." When Toffler first published his seminal work Future Shock, the concept of change management certainly had a different meaning. The intellectual investigation into the field of technological change, or innovation, was in its early stages; terms that are commonplace today, such as "global innovation strategies" and "the knowledge economy," barely existed. Yet in this age of nanosecond technologies, virtually instant communication via the Internet, and the unprecedented growth and volatility in the high tech sector, never has his statement rung more true. What exactly is the nature of innovation in the knowledge economy? How do technical issues, organizational values, beliefs, and cultural structures encourage or impede innovative products and processes? These are the cross-sector questions that business leaders, educators, and government officials scrutinize. Much of the complication surrounding innovation in any field derives from the fact that the gains from new and creative strategies can only be realized if organizations reconfigure the way they work. In these iterative rounds of change management, true innovation often occurs quite slowly. This rather lengthy process is certainly true for the current education system in the U.S. and, arguably, in other educational arenas around the world. There is a perceived acceleration of innovation in other parts of American society, which has led to a widespread desire to stimulate the same process in education. This paper will describe the Friday Institute for Educational Innovation (FI), begin to define innovation in educational settings, and frame the challenges that educational researchers encounter in their attempts to embrace innovation.

## The Context of Creating the Friday Institute

One true test of solid innovative engagement is the "institutionalization" of change and the questions it poses. North Carolina State University (NCSU), located in the heart of the internationally renowned Research Triangle Park in North Carolina, has created such an entity with the establishment of the William and Ida Friday Institute for

Educational Innovation in the College of Education, located on the university's Centennial Campus. FI is designed to capitalize on the University's long history of committed engagement in the public, private and nonprofit sectors of the state and its leadership role in economic development.

FI was established to further NCSU's reach into the global knowledge economy, an arena defined by the creation, evolution, exchange and application of new ideas for the advancement of society. NCSU has a 116-year history of entrepreneurial spirit. The largest university of the 16-campus in the University of North Carolina system, it has an enrollment of more than 27,500 undergraduate and graduate students and is the system's flagship science and engineering university. This land grant institution has grown from an applied agricultural and mechanical sciences college to a major research institution with an international reputation in technology transfer expertise. NCSU benefits hugely from its linkage to the state's Research Triangle Park, a research and development center acclaimed as a national forerunner for the academic/business collaborative model that simultaneously addresses the needs of the public, nonprofit and private sectors.

The highlight of NCSU's 20<sup>th</sup> century transformation has been its Centennial Campus, a 1,334-acre research park. This planned academic-industry community, often referred to as a "technopolis," is unlike most conventional university research parks in that private sector business partners locate their operations there only if committed to establishing a long-term public-private research collaboration. This interface occurs through a variety of formats: contracts or grants; support for students; jobs or co-op opportunities; seminars; co-directed courses; and faculty consultancies. The Centennial Campus provides the outlet for the successful transfer of innovative, practical technologies to the marketplace while promoting entrepreneurial cultures throughout the university and the education system in North Carolina.

In 2002, FI was established with public and private sector support as a unique living laboratory for K-16 educators. In partnership with the Centennial Campus, including the adjacent Centennial Campus Magnet Middle School, FI's mission is to serve as a dynamic venue for conducting research directed at providing improved educational approaches to teaching and learning in technology-enabled environments designed to promote high achievement for all students. In its community of knowledge practice, FI is designed around five "collaboratories," multidisciplinary teams that partner with each other to focus on effective methods of knowledge creation and innovation management. These fully connected environments are composed of academics, students, educational and community leaders, government representatives and business partners.

The five thematic areas are mathematics and science, instructional technologies, cultural connections, leadership for educational effectiveness, and middle grades education. FI's model infrastructure is composed of these five physical environments that will enable a cadre of experts to work together on research-based, practitioner-reflective, and results-oriented contributions to the field of education. The mandate to lead as a change agent through collaboration requires a fluid research agenda combined with "grounded" innovation that responds to immediate problems. Because of its unique position on both the Centennial Campus and in the Research Triangle, FI positions itself to respond to near-term needs while developing long-term, interactive research agendas.

## **Defining Innovation at the Friday Institute**

What constitutes an innovation and how do technical issues, organizational values, beliefs, and cultural structures encourage or impede innovative products and processes? According to a recent report from the U.S. Department of Commerce, "innovative gains come not just from deploying innovative technologies" but also from the realization that organizations that are "taking advantage of innovative new technologies have to rethink the way they operate" (Digital Economy, 2000, p. xiv). The matching of the social context, people, technology, and purposive action make the innovation. Deal, Meyer & Scott (1975) found "organizational autonomy, decentralized authority, staff professionalism, and features of organizational climate as openness, trust, and free communication to be correlates of innovative behavior" (Szabo, 2002, p. 1468). Such rethinking of organizational operations typically initiates subsequent rounds of innovation. In education, innovation is complicated by the myriad of individual, group, administrative, organizational, national, and global systems and constraints already in place. Assessment and testing, technical and social disenfranchisement, and challenges posed by teacher preparation and retention dominate social discussions that surround and influence educational institutions and their capacity for innovation at all levels.

Interestingly, innovations that change the nature or scope of our educational enterprise have not come swiftly (Ong, 1982). Inventions such as the printing press eventually led to mass-market textbooks and certainly revolutionized education. Providing professional, citizen-supported public education, a radical innovation in its time, helped to democratize education in the United States. And the Internet, another powerful technological development, may eventually prove to have the transformative power of moveable type. Meanwhile, given the perceived acceleration of innovation in other parts of society, there is an understandable, widespread desire to stimulate more rapid innovation in American education today. Peter Drucker proposes that “Innovation is change that creates a new dimension of performance.” It’s not just new for the sake of newness; it must do something important. What’s more, we must understand what it is about any given innovation that makes it more likely to have significant, widespread impact. Some claim that innovation can be “institutionalized” -- making it a part of daily life -- by building safe places for people to cultivate new ideas, to explore them without fear of resistance, and to facilitate their development and implementation.

In the business world the concept of innovation has long been transformed into a creed that informs research, development, and marketing so as to enable companies to succeed competitively. The word, innovation, is ubiquitous in ad campaigns, brand positioning, and infomercials and is a construct that winning companies live by and foster. “The new innovation economy is marked by speed and flexibility of production, shorter product cycles, and fickle consumer tastes. As a result, technology, just-in-time production, local knowledge and international savvy are critical to meeting the ever-changing preferences of consumers” (Institute for Emerging Issues, 2003, p.3). Historically, the field of education has looked to the private sector as the organizational model for innovation because businesses are accountable to external standards (Lubienski, 2003). Education, on the other hand, is authority-driven with multiple constituents including a strong political influence. As a result, education does not have the luxury of operating in parallel to business models of innovation.

Innovation can be both a developed product (a “new and useful” invention) and it can also be a creative response to a real or perceived need for change. In both cases, innovative practice rarely follows a well-defined schedule. Because of the contingent nature of educational problem solving and goal setting, the Friday Institute intends to foster a work culture that is flexible and highly responsive to change. We will keep our research agenda fluid, to respond to unpredictable trends and events -- bearing in mind that innovators sometimes anticipate needs before they are duly noted by society. Because we have a public charter to address the pressing, near-term needs of our educational system, we intend to support “grounded” innovation that responds to immediate problems. By understanding what is happening in educational settings across the state -- listening to teachers, administrators and other educational leaders -- we can position ourselves to respond to near-term needs and to develop long-term, innovative research agendas.

Of course, the key to both short and long term innovation is *collaboration*. New knowledge is almost always a by-product of the creative exchange of ideas. In this respect, educational researchers and practitioners have a great deal in common with industrial developers, designers, and scientific researchers. Given the complex educational challenges facing us today, we believe collaboration — which invites multiple perspectives and varied approaches — is critical to productive inquiry. As James Austin argues, the “twenty first century will be the age of alliances.” At the Friday Institute, we will form strategic alliances and collaborations that move beyond financial support in order to leverage the core competencies of our partners and to create reciprocal value as we accomplish our goals.

In business, industry, and academia, collaboration is a prototypical model that drives most productive research. Collaborative efforts can be highly organized and possess a functional gravitation towards practical or demonstrable results. At the same time, collaborative efforts are fueled by individual work and insight and individual strength and experience. In both cases, collaboration fosters the likelihood of short- and long-terms progress and success.

The Institute’s mission of improving teaching and learning in North Carolina and beyond has the scale and complexity that makes collaboration both suitable and necessary as a working model. One salient aspect of the collaborative model that we’ve adopted is its inclusion of practitioners in the field as collaborators and team members. Teachers, students, administrators, and educational experts will participate in the work of our research *collaboratories*. We expect that our laboratories will be leveraged and intensified by existing and emerging Internet and desktop technologies. These technologies will enable instantaneous discussion, exchange, and

communication and foster speedy and widespread distribution and testing of everything from research data to prototype learning modules and techniques.

The Institute will serve as a unique research, development, and outreach hub for educators. Institute participants will find, develop and disseminate innovative, research-based educational practices and products to support high achievement for North Carolina's teachers and learners. In education, which is among the most social of enterprises, *productive collaboration has the potential to unlock the door to innovation*. This emerging theme has inspired the creation of the Friday Institute, and it will guide us as we develop and build the Institute, its research and outreach programs, and its legacy. Over time, we anticipate that the theme of collaboration and innovation will evolve in new and unexpected ways, becoming more complex and nuanced.

## **Framing the Challenges of Educational Innovation**

Taking innovation seriously in the academic arena requires a shift in organizational culture in terms of work processes as well as reward structures. Even though the term educational innovation is used broadly, most innovations are rarely adopted and diffused (Rogers, 1995; Szabo, 2001). University researchers may easily underestimate the enormity of the invasive nature of innovations and may often apply "inappropriate change strategies instead of looking to the guidance from the history of innovation diffusion" (Szabo, 2002, p. 1478).

Dooley (1999) points out widespread characteristics that seem to explain why innovations fail, such as, 1) practitioners are disenchanted and disillusioned because the innovation is more difficult than expected and it causes too much change and takes too much time; 2) innovation supporters depart; 3) personnel lack training and enthusiasm; 4) funds run out; 5) there is inadequate supervision; 6) there is no accountability; 7) there is a "take it or leave it" attitude; 8) and/or there are no consequences for termination." We know that institutions as well as individuals possess a natural and rational resistance to anything disruptive and innovative, because they are invested in the systems that they have worked to create over time. Rossman, Corbett and Firestone (1988) observe that adults are experts at pretending reform is taking place without vesting any ownership in the process, especially when there are implicit sanctions against making the proposed changes.

The FI will work to bring new understandings to the adoption and diffusion process of innovation in academia. We agree with Szabo's (2002) assumptions of innovation that follow, and will incorporate them into our working culture: 1) technological innovations spawn sociotechnological systems, 2) innovation diffusion is driven by vision, 3) innovation diffusion is poorly understood, 4) innovation diffusion is rarely successful, 5) innovation diffusion takes longer than we believe, 6) innovations undergo radical changes during their lifetimes, 7) innovation diffusion cannot be managed, 8) innovation diffusion involves trial, error and risk taking, 9) innovation diffusion progresses through well-defined stages, 10) successful innovation diffusion is hard to define, and 11) resistance to diffusion is natural.

Peter Drucker notes that every organization needs one core competence: innovation (Harvard Business Review, 1995.) The 21<sup>st</sup> century global knowledge economy requires a new paradigm for the research university, not simply adjustments to the 19<sup>th</sup> and 20<sup>th</sup> century models. Clearly, global and economic forces are placing a premium on technological skills, that in turn force educational institutions to step up to the challenge of producing a literate and technical workforce. At the same time, the egalitarian nature of society in the US demands equal educational opportunities for everyone, principally those for whom equity, access and quality is a challenge. Lastly, and simply, technology is driving the pace for change. The inexorable pressure of these forces--the global economy, democratic society, and technology--makes it clear that educators must find news to make the mark. In fact, these forces make the field of education the most vital resource the US has to stay competitive and to fulfill its social goals. But the rules are changing, and the metrics for measuring the value of the educational "product" are also changing. More and more, there seems to be a demand for results. Through its design of invention NCSU's William and Ida Friday Institute for Educational Innovation will take up the mantle of innovation, with its inherent challenges and complexities, and continue to define the emerging role of the educational researcher in this context. With an understanding of the need for strategic synergies across a matrix of educational concerns, the Institute is poised to engage in educational innovation and define new ways of engaging the educational system with an eye toward implementation and adoption of research-based innovations.

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