

Service Science and Transformational Change in Educational Institutions

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The US spends roughly a trillion dollars a year on education and training. Taken together, the institutions that provide these services are one of the largest parts of the US service sector. Unfortunately they are not well organized to take advantage of the innovations that have transformed other service enterprises in the past few decades. Given the importance of finding a cost-effective way to meet growing educational service needs, any well managed program of research in service businesses should include a focus on strategies for effectively managing innovation and change in education and training. Any such program would need to combine a diverse set of disciplines including learning theory, instructional design, software engineering, and system management. No programs of this kind exist today in universities or in the private sector.

The need for innovation in education and training is painfully apparent. U.S. education and training institutions are being asked to prepare a highly diverse group of students and adult learners for an economy that demands higher knowledge and skills. At the same time schools are under pressure to increase their output, they are in a period of constrained budgets. The signs of pressure for performance improvement are increasingly clear.

- The *No Child Left Behind Act*, passed with bipartisan support, was designed to hold schools accountable for results.
- Recent concern about performance of high school and even college graduates has led to discussions about ways to measure the output and performance of institutions that teach these students.
- The productivity of educational institutions is actually declining.^[1] One result is that post-secondary tuition has risen much faster than the general inflation rate for decades.
- Alternative education choices are increasing, including private schools, charter schools, magnet schools, on-line classes, virtual schools, home schooling, and commercial education and training services,

After many false starts and failures, a wide range of service industries have begun to use information technology, and new forms of work organization and management to build lean, highly productive systems. These changes have resulted in:

- Improved productivity and quality
- Reduced costs
- Radical shifts in the cost structures of manufacturing and service provision
- Customization of products and services
- Cost-effective global supply chain management
- Dramatically enhanced product and service features

- Greater organizational flexibility, agility, and speed
- New ways to reach out to customers

But in spite of increased pressure, education and training institutions have been slow to adopt innovations. The way instruction is organized and provided has remained fundamentally unchanged—a low-productivity, high-cost mass production model that would not be competitive in any other industry today. The sector is simply not managed in a way that allows the kind of long-term investment in research and innovation that has transformed other service institutions – and service institutions as a whole lag far behind manufacturing in their investment in research. A variety of structural explanations can be given to explain the failure of education and training service organizations to make the investments in research and innovation needed to capture highly promising opportunities to improve productivity and improve the quality of services delivered to their customers. These failures define a need for a major program of federal research in the field. Legislation proposing an ambitious program in this area has been introduced, with bipartisan support, in both Houses of Congress.

[1] Productivity in Education and the Growing Gap with Service Industries, Barry Bosworth, The Internet and the University: Forum 2004