

Online Education and Manufacturing Mode

Roy Rada

University of Maryland, Baltimore County, USA

INTRODUCTION

Online educational programs are changing the university profession. Two of the prominent organizational forms in modern society are professional and manufacturing. Universities are one example of the professional form; automobile factories are one example of the manufacturing organization. Online education is facilitating the move of teaching at universities from the professional mode to the manufacturing mode.

In the early days of online education, research was often about using particular tools to teach particular concepts. Attention is increasingly being drawn to organization-wide issues of online education (Rada, 2001). The Sloan Foundation in the United States (U.S.) moved from funding asynchronous learning experiments that demonstrate some new tool used in a few classrooms to requiring that funded projects demonstrate widespread organizational change. Collis and Ring (1999) emphasized that sociological factors are more important than technical factors in online education.

PROFESSIONAL VS. MACHINE MODE

Organizational types include “professional organizations” and “manufacturing organizations” (Mintzberg, 1979):

- The professional organization relies on the standardization of skills for coordination. Training and indoctrination first instill those skills in the new professional, and interaction with colleagues through time maintains the standardization (Beshears, 2001). The organization hires duly trained and indoctrinated specialists, and then gives them considerable control over their work. Most coordination between operating professionals is handled by the standardization of skills and knowledge.
- The manufacturing organization generates its own standards. Its technical staff designs the work standards for its operators, and its line managers enforce them. The machine organization has highly specialized, routine operating tasks; formalized procedures in the operating core; and a proliferation of rules, regulations and formalized communication throughout the organization.

While the university is a professional organization, introducing online education creates occasions for specialization and mechanization that introduce manufacturing features to the university.

Change in the professional organization does not come from new administrators taking office with major reforms. Instead, change arrives by the slow process of changing the professionals—changing who can enter the profession, what they learn in its professional schools (norms as well as knowledge) and, thereafter, how they upgrade their norms and knowledge. The professional administration lacks power relative to manufacturing administration and is decentralized. The administrators typically spend their time handling disruptions and negotiations. Nevertheless, administrative structures serve a key role in creating and modifying the boundaries of the organization. Often, through this boundary manipulation, the administration implements its will (Wetzel, 2001).

The modern, American research university operates as a holding company for thousands of faculty entrepreneurs (Duderstadt, 1995). The faculty has teaching duties, but performance in these teaching duties is only modestly linked to salary. The community colleges’ model of operation comes closer to the manufacturing model (Bibby, 1983). At a research university, a professor may typically teach one course a semester, whereas at a community college the professor teaches 10 times that much (Adams, 1976).

Places such as the Open University in England and National Radio Institute in the U.S. were created in the mid-20th century. These institutions helped stu-

dents access university education, despite being somewhere distant from the teacher. They were not research universities, but focused on teaching in a systematic (manufacturing-type) way.

Case Study

Pace University is a multi-campus private university based in New York City, with 15,000 students. It offers associate, bachelor's, master's, and professional degrees, but not PhDs—the focus is more on teaching than on research. Pace had negligible involvement in distance education prior to starting an online associate of arts degree in 1998 for employees of the telecommunications industry.

The program developed very quickly under the adroit leadership of the person responsible for continuing education programs, not academic programs. The leader runs programs more in the community-college mode than in the research-university mode. All courses follow a strict pattern. Numerous specialists support various operations of the program; for example, different roles:

- administer quality control surveys on a regular basis, at times weekly, to students in a class,
- phone students whose survey responses suggest a problem, and
- answer academic queries about the degree program for students.

The teacher of the course is not necessarily the person who developed the course content, schedule, examinations or anything else about the structure or function of the course. Furthermore, the teacher no longer does the quality control or social support expected of a traditional teacher.

The development of course content also is specialized:

- The requirements for the courses have come from industry.
- The template for all courses is fixed in advance.
- Technical staff helps place content in courses.

Someone designs the course, but other people teach it. Those who deliver the course are obligated to follow the curriculum developed by the designer.

A faculty member gets a few thousand dollars to design an online course, and the university owns the copyright on the course. The director has managed the rapid development of a full complement of online courses for an associate of arts degree and staffed the program for successful delivery.

Further evidence of the non-traditional, manufacturing mode of the program is the schedule. Courses each last a traditional 15 weeks. However, rather than starting only in the traditional fall and spring semester, a new semester starts every other month so that students can start whenever they want. The schedule is designed to suit telecommunications workers, whose sense of timing is not tied into the academic fall and spring semester schedule. The program is a wonderful success in terms of rapid development and successful marketing and delivery.

The average faculty member at Pace University did not desire all these changes. However, the administration has introduced the program by modifying the boundaries of Pace. First, the program was not officially offered by Pace but by a coalition called NACTEL, which is independent of Pace University. The tuition for employees of telecommunications firms is different than the tuition for other Pace University students, but this information is hidden from the public or university faculty. The tuition fees for employees of telecommunications companies is only learned after one demonstrates that one is an employee and makes a private communication with the NACTEL program.

Health Care Analogy

What can be learned from another profession? The health care industry has a professional component. The evolution of the modern American health system can be depicted in three stages (Rada, 2003):

- 1900-1940 – science and technology introduced,
- 1940-1980 – some manufacturing organization characteristics introduced, and
- 1980-present – quality control introduced.

The increasing role division in health care demonstrates the move from a professional organization to a manufacturing organization. Physicians constituted 30% of all health personnel in 1910 but 10% in 1990.

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