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# Anomalies in the System: Is a New Educational Paradigm Upon Us?

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*In this article, we describe the palpable changes of a paradigm shift in higher education. Although this shift has been described and/or predicted elsewhere, we affirm the transition from over 30 years of collective teaching and administrative experience at a predominantly undergraduate institution (PUI) with historical roots as a state normal school. In many respects, the anomalies that Thomas Kuhn predicted in such a transition are all the more evident given our institution's history. These anomalies include (but are not limited to) 1) the state of knowledge "ownership" (as mediated by the internet), 2) student-centered (vs. faculty-centered) educational practices, 3) the transition in student approaches to learning (primarily to technology), 4) organizational changes (including administrative ones) and 5) the change in public funding patterns for universities. We conclude that research-intensive and teaching-intensive universities are converging on a more process-oriented approach to education with less emphasis on prescriptive outputs while assuming a greater role in developing their own funding autonomy in response to the dwindling number of dollars taken in by public universities today. We recommend to readers a more rapid and explicit recognition of this paradigm shift, before we lose our existing educational missions to the consequences of this transition between paradigms.*

*Keywords: Higher Education, Internet, Knowledge, Paradigm, Student-centered*

The educational system we participate in today is, in some ways, a relic of the medieval *universitas magistrorum* concept born of the European Renaissance period. With the assistance of tuition and fees, faculty members within universities deliver their lessons with the expectation that students will assimilate knowledge to their benefit for employment or for the purpose of becoming a more informed citizen. This system promotes an intellectual authority figure in the classroom who oversees the teaching process. However, we are seeing increasing signs that this traditional educational system may be changing. Barr and Tagg (1995) use Thomas Kuhn's notion of a "paradigm" to help describe this transition occurring in higher education.

In 1962, Kuhn published his treatise entitled "The Structure of Scientific Revolutions" (Kuhn, 1962). His basic premise was that ideas in the scientific community are restricted to broadly held models (paradigms) that are tightly governed by the adherents of these models; non-complying members of the community are often severely reprimanded for challenging the status quo. Conformity among members is facilitated through a "puzzle-solving" approach to highly tractable problems. All problems are therefore acceptable to the community as long as the self-referential rules of the model are not broken. However, as the rules of a given paradigm fail, and can no longer be obviated by experts, anomalies appear. Eventually, the accumulation of these anomalies generates a "crisis stage" within which the community must face the shortfalls of its model and reject it to accommodate a sudden and often sociologically traumatic transition to a new model.

It is fair to compare the developing transition in higher education to Kuhn's paradigm transition (Scientific Revolution). The "rules" of this model are embedded in centuries of practice and woven into educational methodologies that now exist in formalized curricula. This content-oriented model has actually been under scrutiny for some time. Nineteenth century higher education in the United States, for example, was influenced by people like John Dewey, Charles Pierce and others who wanted an experiential component to graduate education (Menand, 2001). Undergraduate education is now being re-examined for its relevance to the learning process as overviewed by the Boyer Commission (Kenny, 1998). Several versions of this theme exist as 1) practice-oriented education (Freeland, 2004), 2) high impact learning activities (Kuh, 2007), 3) experiential education (Dewey, 1938), 4) adult education or andragogy (Knowles, 1970) and 5) transformative learning (Mezirow, 2000). Below, we identify at least five areas ("anomalies")

that suggest that our current perspective on teaching is no longer relevant, affirming Barr and Tagg's perspective from 1995.

## Knowledge Ownership

Knowledge Ownership. Perhaps the most significant shift between paradigms lies within the heart of the educational process itself – the transmission of knowledge. This change has occurred both in the ownership of knowledge and in the definition of how one acquires knowledge in the educational system. Knowledge, in the sense of information, has been the property of experts for centuries. The invention of the printing press in 1493 was the first step in creating widely accessible information. Even this invention was limited in its impact as there were limits to production of books and their cost put them out of reach for many people.

While a faculty member may carry years of well-synthesized information within his or her mind (and lecture notes), there is little that is not accessible to the student with a PC (or a PDA) and internet access. Knowledge (as facts) is no longer within the purview of universities. Rather, it is now at the fingertips of people throughout the world who only need to be able to type a keyword or phrase to assemble some of the most up-to-date information available on a subject. We see advantages and disadvantages to this new reality, including the threat of intellectual homogenization that accompanies the absence of physical barriers to communication (Friedman, 2005; Barthell & Wells, 2006). However, nobody can deny that the internet is here to stay and that it must be incorporated into our ideas of how to educate students. (No one over the age of forty can help but be somewhat astonished by the quick and easy access to information today. A Google™ search of the phrase “paradigm shift”, during the writing of this article, yielded 2,650,000 hits.)

## Student Centered

The term “student-centered” has become more common in higher education and represents another significant shift in thinking from the early days of experiential education as promoted by Dewey (1938) and the Progressive Movement of the early 1900's. Malcolm Knowles and the concept of andragogy that he promoted was strongly based on student needs, but somehow was not applied to undergraduate students (1970). Johns Hopkins University was one of the original institutions to promote direct practice of and innovation of research with graduate students (Menand, 2001).

Student-centered has come to define different and potentially disparate perspectives (Malachowski, 2006). At its heart is the idea that students should be actively involved in their learning, an idea that most educators and citizens would support; at its extreme is the student as customer model. The advent of terms like “learning-centered” typifies a shift toward a greater focus on process and the active involvement of both faculty and students. Peter Senge's *The Fifth Discipline* (1990) and *Schools That Learn* (2000) provide a model for such a learning organization.

## Not the Same Student

Not the Same Student. Can US higher education continue to serve students when many of those being “served” do not participate fully in classroom activities? Can an institution reliant on the interaction between faculty and students survive when one partner is only partially involved? Students who would give up daily luxuries for their higher education seem to exist outside of the USA, but it is relatively uncommon here. Today's student may not even list education as their top priority during the time they are enrolled. Education competes for their attention with jobs, families or other activities – sometimes provided by the institution itself. According to the National Center for Educational Statistics (2007) 38% of enrollments in higher education are now over the age of 25. As evidence of this new reality, the United States, for the first time in history, may soon produce a generation of people less educated than their parents.

Higher education institutions are being asked to account for students' graduation rates. The standard four-year degree has now been accepted as six years for most institutions as evidenced by the Student Right to Know Act and the retention and graduation calculations we currently use in institutional research offices. Regardless of the origin of such a focus, would anyone argue that these are the same students who were so beloved by yesterday's lecturers?

## Organizational Structure

The bureaucratic growth of academic institutions is visible in the increased growth on the administrative side of higher education. In addition, the number of non-tenure track faculty members (part-time and full-time adjuncts and lecturers) exceeds that of tenure track faculty at many institutions. The challenge for the future will therefore be how to better integrate this component of the faculty workforce into our academic institutions. Without this effort, the concept of "faculty governance" may recede in practice in higher education, reminiscent of health care forty years ago where physicians ran hospitals until they were overwhelmed with issues outside of their expertise and replaced by those trained in management.

Institutions have also chosen to partner with external entities for reasons ranging from a sense of social responsibility to the identification of revenue streams, to the value added to student learning. External entities, primarily sources at the state and federal levels, have sought greater accountability for the billions of dollars required to operate institutions of higher education. Any analysis of the Higher Education Reauthorization Act of 2008 makes it clear that more accountability for these and other revenue streams is part of the agenda for the future.

## Public Support for Financing Higher Education

The decrease in state support for public education is well documented. At times the justification is competition from other state agencies, and other times it seems to stem from a lack of confidence in the productivity of institutions as evidenced through attempts at performance based funding. Regardless of the rationale, this funding environment has had an increasing influence on the Academy in the 20th and 21st centuries, yielding a delicate nexus of educational interests and those of external funding agencies.

Accompanying the pressure on institutions to find external funding is the rise in tuition and fees to compensate for the decrease in public funding. The point has been made that students pay for "a whole bundle of things, like student activities, parking, athletics, and health services, whether or not they want to buy them or can afford them" (Rinella cited by Dessoif in *University Business* March 2009), perhaps reflecting a diversification in the interests of the average undergraduate as well as those of the entrepreneurial nature of modern universities. These investments are often responsive to market shifts, but may also risk dilution of institutional commitments to core curricula.

## Conclusion

In this essay we have identified five anomalies in the current educational paradigm. This paradigm is one that does not necessarily account for a growing independence of students from the traditional educational model. So what is the impending paradigm to which we are shifting in education? We may not be fully cognizant of it until it clicks into place and becomes a widespread reality among academicians. However, the outcome appears to be characterized by an independence of students from the traditional lecturer at the podium. The ease of retrieving large volumes of information on short notice through the computer-assisted world of the modern student (and faculty member) is nothing short of astounding when compared with only a few decades ago. The new paradigm seems to be one that will be defined more by outcomes of process than prescriptive standards for content.

Using Kuhn's model for understanding intellectual change, there may be more opportunities for writing our own response to the anomalies we are observing in higher education. Indeed, these anomalies may be as much a reflection of a change in technology as a misunderstanding about how to educate students. We can choose to delay the change and deny that it is a major shift in the educational playing field (just as scientists employ ad hoc

hypotheses to avoid conclusions about mainstream hypotheses). A second response is to flail about with quick fixes, searching for another survival mechanism (a “crisis stage” according to Kuhn). Lastly, following Galileo’s lead, those of us in higher education can make a conscious decision to accept that a paradigm change is occurring. At our own institution, we have made a conscious effort to move in such a direction (Barthell et al. 2010; Cunliff & Barthell, 2010). In this way we can produce a model for higher education that can be understood in the face of the anomalies we have described in this article. A first step in accepting such a new educational system is to begin discussing its emerging characteristics.

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Dr. Ed Cunliff has over 30 years experience in innovative organizational development. He has worked in social services, health care and higher education and has served in a consultative role with dozens of organizations. His areas of expertise include organizational development, planning for systemic change, creative problem solving and group facilitation. He is adept at systems thinking and quality improvement processes. He holds a Bachelors in Spanish, a Masters in Human Relations and a PhD in Adult Education. Ed is a strong believer in life-long learning for himself personally and professionally. In his spare time he practices Aikido and repairs guitars and mandolins.

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