

April 2003
Research Publication



Rethinking the Organization and Effects of Schooling: The Post-Industrial Conundrum

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ABSTRACT

In this paper we explore the match between the dominant model of schooling and its effects and the experiences of children and adults in other sectors of society. We suggest that in comparison with other major sectors in which individuals are involved, public schools have lagged in completion of the modern project, that is, the rationalization of means and ends. It is this project that seeks to connect the structure and processes of schooling to a set of uniform predefined outcomes or effects. The school reform movement of the last quarter of the twentieth century has embodied this project in one form or another under a number of rubrics, including more effective schools, school restructuring, whole school reform, systemic reform, and standards. Because schools are still occupied with the completion of the modern project, they are not in a position to move beyond the modern model to provide consumers with the types of experiences they increasingly find in transactions with other service providers. These emerging consumer experiences are rooted in a post-industrial logic that emphasizes more intensive use of refined information technologies that support more differentiated and individualized conceptions of client needs and highly customized services and products.

INTRODUCTION

The organization and operation of public schools continues to be a topic of concern and discussion for policy makers, educators, and the general public in the United States.

Concerns about the quality of schooling available to citizens across all states and communities continue to grow as advanced education comes to be viewed as the essential element for success in U.S. society.[1] We are now several decades into a period of school reform that has sought to improve the quality of education through a series of strategies to modify the governance and the organization (Murphy, 2000) of public education.

The sustained widespread movement to change public education in the United States may signal a persistent and growing unease about the services provided by American schools.

In this paper we consider one possible, but largely unrecognized, source of this unease.

We explore the match (or mismatch) between the dominant model of schooling, a model that developed in the nineteen and early twentieth centuries, and the experiences of children and adults in other sectors of twenty-first century American society.

We suggest that in comparison with other major sectors in which individuals are involved, public schools have lagged in completion of the modern project, that is, the rationalization of means and ends. It is this project that seeks to connect the structure and processes of schooling to a set of predefined uniform outcomes or effects that represent mass education.

We argue further that because schools are still occupied with the completion of the modern project, they are not in a position to move beyond the modern model to provide consumers with the types of experiences they increasingly find in transactions with other service providers operating on a post-industrial model. Organizations oriented to the post-industrial model rely on a more intensive use of refined information technologies to provide more differentiated and individualized services and more highly customized products to meet client needs. The experiences of clients with these organizations stand in increasingly stark contrast to those available through public schools characterized by top-down mandates reinforced by centrally-driven accountability technologies designed to produce pre-specified unitary outcomes on a mass scale. As the contemporary school reform movement extends and reinforces this modern model of schooling, the contrast between the public's experience with public schools and their experience with other contemporary service providers becomes more pronounced and threatens support for public education.

To explore this thesis we first consider the contemporary school reform movement as a sustained effort to complete the modern model of mass education. We next explore the experiences of citizens as they interact with post-industrial organizations in other sectors. We then look for direct evidence of the clash of expectations as public school educators working under increasingly pronounced modern educational regimes collide with the students and parents they are mandated to serve. Finally, we pose some alternative courses of action if public schools are to become realigned with the public.

CONTEMPORARY SCHOOL REFORM AS THE COMPLETION OF BUREAUCRATIC SCHOOLING

To establish the major elements of contemporary school reform we review the literature on educational policy making that has evolved over the last quarter of the twentieth century along with the state and federal legislation governing schools. This will allow us to establish the primacy of the modern project of rationalizing the educational process. At least five major trends characterize the ongoing movement to reform public schools: 1) efforts to connect the means and processes of schooling with the ends or outcomes desired from the educational system, 2) a reduction in the breadth and variety of the outcomes of schooling, 3) convergence toward a uniform product offered to the mass audience, 4) the migration of choice from the substance of education to the provision of education, and 5) the pursuit of primitive information technologies. Each of these trends serves to move the education sector toward the fulfillment of the modern model.

Efforts to Connect the Processes of Schooling with the Outcomes Desired from the Educational System

In the 1970's and 1980's the literature on the organization of schooling began to recognize that schools were unfinished or incomplete bureaucracies. Authors such as Weick (1976) and Meyer and Rowan (1977) observed that the internal operations of schools were not completely rational or fully connected. The term "loosely-coupled" was coined to suggest the less than fully coherent and connected internal structure and

operations of schooling. Various reasons were advanced to explain this lack of internal coordinating mechanisms.

In some cases the lack of fully rationalized internal operations was viewed as a problem, for instance, because the absence of tight linkages makes school organizations difficult to change (Herriott and Firestone, 1984); in other cases they were viewed as an asset as, for example, when they allowed schools or parts of them to be more responsive to demands from the local community (Meyer and Rowan, 1983). In still other cases they were viewed as the result of some value neutral outside factor such as the highly institutionalized nature of schooling within the larger environment or society, an institutionalization that left schools with a strongly perceived role in society that lent a degree of control and direction to schooling and so made tight internal controls less important (Rowan, 1982).

While theorists of loose coupling have observed with interest the lack of tight connections between means and ends in schools, or the absence of a technical core, school reformers over the past several decades have attempted to address the absence of such connections. These efforts have been carried out under a series of different rubrics, but all have been part of the broader and sustained effort to reform public education. The effective schools movement (Edmonds, 1979; Purkey and Smith, 1983) has identified a small set of school characteristics such as a clear mission, high expectations, strong leadership, and frequent monitoring of student progress, all designed to strengthen the connections between school inputs and the results of schooling. Similarly, school restructuring efforts, have identified structural elements of schools such as scheduling, instructional teams, schools-within-schools, school-site councils, and alternative assessment. These alterations in school structure are intended to produce better learning outcomes as a result of a more appropriate alignment of schooling resources and learner needs (Elmore, 1990; Murphy, 1992; Lieberman, 1995; Hess, 1995; Lee & Smith, 1995; Newmann, 1996). The rearrangement of the structural elements of schools is thought to strengthen the connection between schooling resources and intended student achievement.

Two other strands within the school reform movement attempt to take a more comprehensive approach to developing the technical core of schooling and realizing the modern model of effectiveness. Proponents of systemic reform (Smith & O'Day, 1990, 1991; Clune, 1998) seek to align a broad set of components of the entire educational system, both inside and outside of schools to mount a coordinated and concerted effort directed toward enhanced student performance. Within individual schools, developers of whole school reform programs (McChesney, 1998; Fashola and Slavin, 1998; American Institutes for Research, 1999) advocate a total alignment of all dimensions of school organizations toward the goal of enhancing student performance. Comprehensive school reform (McChesney & Hertling, 2000), a variant of whole school reform embodied in recent federal education legislation, takes a similarly broad approach to aligning all elements within a school and its immediate environment in the service of student academic achievement. Comprehensive school reform is even more fully committed to the modern model of strengthening the connection between schooling processes and desired student outcomes as evidenced by its requirement that approaches be research-

based initially, (i.e., proven to contribute to student achievement) and by the inclusion of ongoing evaluation and assessment of the effectiveness of the program of the school for enhancing student achievement (Coalition for Evidence-Based Policy, 2003)

The goal of operating schools that can deliver desired student achievement on a reliable basis through recognized technical means may be elusive thus far, but that very fact has motivated a great deal of effort as part of the school reform movement. In this regard, and others to be detailed below, contemporary school reform continues to seek to achieve the modern model.

A Reduction in the Breadth and Variety of the Monitored Outcomes of Schooling

Since its inception the public education system in the United States has been the target of all manner of tasks deemed important by the society it serves (Cremin, 1972, 1980, 1988; Tyack, 1974). The public schools have been used to inculcate religious values, to Americanize large numbers of immigrants, to prepare children for vocational roles, to improve public health, to desegregate society, and to enhance American economic competitiveness, among other things.

Although the proliferation of responsibilities assigned to the schools has continued almost unabated throughout the contemporary school reform period, the school reform movement has focused or been directed to focus almost entirely on one comparatively narrowly defined outcome, student academic performance. Beginning with the publication of *A Nation at Risk* in 1983 (National Commission on Excellence in Education, 1983), reflected in *Goals 2000* (Schwartz and Robinson, 2000), and continuing until the present day, an emphasis on academic standards has pervaded the school reform movement. This emphasis has attempted to focus the efforts of schools and educators on student achievement.

The concentration of effort on increasing student achievement is compelling from the perspective of those wishing to realize the modern model. Advocates of standards-based reforms reason that it is only by a total mobilization of the educational system in the service of increased achievement that success will be possible.

The emphasis on student performance has increased to the point where only analyses that include attention to such performance are taken seriously. Little attention is devoted to satisfaction or other more subjective measures of the schooling experience. Moreover, earlier attempts to include attention to things such as self-esteem have been driven underground in discussions of educational policy. The shift to a nearly exclusive concern with student performance is viewed as significant progress in policy making and policy research.

The dilemma for public schools and their clients lies in the broad set of student and family needs that have heretofore been perceived as the province of the schools and remain so in the absence of other institutions or service providers available to provide for such needs. The increasingly marginalized non-achievement aspects of schooling have the potential to leave students and their parents disappointed.

Convergence Toward a Uniform Product Offered to a Mass Audience

In addition to a more limited range of services and outcomes deemed worthy of serious attention in schools, the reform movement has prompted a convergence toward a single relatively uniform product even within the domain of academic achievement. This convergence began with a new commitment to raising the standards for student achievement prompted by the *A Nation At Risk* report (National Commission on Excellence in Education, 1983). It was extended through efforts to expose all students to higher order thinking skills (Clark & Astuto, 1990) and more demanding curricula organized through state level curriculum frameworks that did not differentiate expectations and outcomes for different students or groups of students (Reyes & Rorrer, 2001; Schwartz & Robinson, 2000). Indeed, a major thrust of the school reform movement has been to move away from earlier strategies of providing differentiated curricula based upon some assessment of student capabilities.

Most recently, the movement toward a single uniform educational product has been advanced by the raising of standards reflected in state level standardized assessment programs (Engler & Whitney, 1999; Stevenson & Baker, 1991) and, in some states such as New York, the elimination of multi-tier assessments (Identifying Reference, 2001). The new standards are intended to cover all students with few or no exceptions.[2]

This consolidation is further reinforced by the creation of statewide curriculum frameworks that are now in place in the vast majority of states. These frameworks envision the end of curricular tracks and the provision of a common high demand school experience for all students. Such statewide frameworks are designed to result in the reduction of variation in educational offerings from one locale within a state to the next.[3] The increasing involvement of the federal government in education is designed to lead to further uniformity in the evolution of the educational system and its products (Jung, 1988). Over the past several decades this involvement has included both efforts to reduce early school leaving and efforts to enhance student achievement (e.g., No Child Left Behind Act of 2001, 2002).

The Migration of Choice Options from the Substance of Education to the Provision of Education

The increasing specification of desired uniform educational outcomes at the state and federal levels has been accompanied by more vigorous central directives in the form of curriculum frameworks and more vigilant inspection regimes in the form of standardized assessments of student achievement. These reforms are designed to allow for much less choice in the educational sphere by educators, local communities, parents, and students.

Accompanying the reduction in the range of academic outcomes deemed acceptable as products of schooling, there has been a shift from providing choice in terms of educational experiences and outcomes to providing choice in terms of the governance and management structures of schooling (Murphy, 2000). A range of state and federal policies, including efforts to promote charter schools and vouchers redeemable for educational services, now attempt to stimulate a corresponding range of alternative

organizations to produce the increasingly uniformly specified educational outcomes.

Choice has moved from the educational sphere where it once allowed for differentiated outcomes from a common institution, the common school, to the governance sphere where it promises a common outcome through differentiated means.

The Continuing Pursuit of Primitive Information Strategies

The rational decision making associated with the modern model requires information strategies designed to monitor mass production processes. Indeed, one of the hallmarks of early twentieth century education was the use of information on students and schools to guide school improvement (Cremin, 1988). Such strategies offer rather undifferentiated and time-delayed views of organizational outcomes. These approaches to monitoring organizational performance are designed to support the reporting of performance to organizational superiors and owners on a summary basis for the purposes of informing longer-term decisions that might subsequently be communicated back down the chain of command to those providing front-line service.

A fundamental component of the school reform movement has been the full development of standardized assessments administered on a statewide or nationwide basis (*No Child Left Behind Act of 2001*, 2002). Such assessments are most appropriate for providing highly summarized views of the performance of schools and school districts that allow educational policy makers to monitor the overall system. They are admittedly less useful for guiding immediate action to enhance student learning opportunities.

The five trends of the ongoing school reform movement identified here place the movement squarely within the modern industrial era model designed to deliver a relatively uniform product or service to a relatively undifferentiated audience. This model calls attention to aspects of organizational operations and performance that have characterized the modern industrial period. The fact that the school reform movement continues to be occupied with these issues signals a failure to achieve the model earlier in the twentieth century. The question before us at this point is whether pursuing the modern bureaucratic school is sufficient to retain the support of students, parents, and the broader public.

THE EMERGING POST-INDUSTRIAL MODEL

The current school reform agenda devoted to the full realization of the modern bureaucratic model of schooling is curiously out of synch with the emerging post-industrial model of service delivery to which more and more U.S. citizens are being exposed.[4] In this section we sketch the contours of this emerging model and consider how it differs from the industrial model that is the pattern for school reform. In framing this section we rely on post-industrial theory as explored in the work of Bell (1973), Kumar (1978), and Hage and Powers (1992) as well as information society theory as reflected in the work of Castells (1996) and Lévy (1997). We consider whether students and parents who are increasingly likely to experience service organizations operating on a post-industrial model will become increasingly dissatisfied with public schools even if the schools should fully realize the modern bureaucratic model.

We begin by identifying some essential elements of the post-industrial model of organization. Perhaps the essence of the post-industrial model is the application of more sophisticated information and communications technologies to permit the production and delivery of goods and services that conform to the needs and tastes of consumers to a degree heretofore not possible. This development is the result of several trends in U.S. society that converged at the end of the twentieth century.

First, there has been and continues to be an interest in the improvement and refinement of production processes. This was evident in the early part of the century in the development of mass production processes in the automobile and other hard goods industries as well as in the advances in continuous process industries such as chemicals.

The drive for more efficient production processes has directed attention and resources to approaches such as re-engineering and continuous improvement (Lawler, Mohrman, & Benson, 2001)

Second, there has been a long-standing trend of increasing consumption in the United States. The American habit of consumption had early roots in the colonial era (Axtell, 1999). Whenever economic conditions permit, Americans have increased their consumption of a wide range of goods and services, a pattern that has been particularly robust in the twentieth century (Lebergott, 1993; Cross, 2000). Americans are increasingly likely to find themselves in the role of consumer. In addition to greater consumption, patterns of consumer preferences are changing qualitatively as well with consumers demanding better information and more choices (Kress, Ozawa, & Schmid, 2000).

Third, there has been continued progress in the development and application of information and communication technologies (Bell, 1973). This process has accelerated in the last several decades, first, with the widespread use of computers by institutions and by individuals and, second, through the growth of networked communications (Castells, 1996; Sproull and Kiesler, 1991).

It is the convergence of these three trends that has resulted in the post-industrial model of organization characterized by information intensive production processes aligned to the needs and tastes of consumers, or what some have referred to as mass customization (Pine, 1992; Gilmore & Pine, 2000). Post-industrial organizations have or seek to develop the capacity to deliver individualized services based on individual needs, tastes, and choices to a large number of clients or customers and to do so efficiently by drawing on detailed knowledge of clients to configure all aspects of the production process. In such organizations clients drive the menu of services and products, and staff rely on real-time information systems to configure and reconfigure organizational resources. Such organizations are able to satisfy consumer[5] demands for convenience, customization, variety, quality, and reasonable cost (Carnevale (1991, cited in Hage and Powers, 1992).

To assess the extent of the development of post-industrial organizations we consider the experiences individuals in the U.S. are likely to have as consumers and as citizens. It is these experiences that are likely to set the expectations for all services, public and private, including educational services.

Consumer Experiences

The new consumer values are convenience, customization, variety, quality, and reasonable cost. Hage and Powers trace these values to the increased exposure individuals have to a various ways of thinking as a result of the increased levels of education, particularly college, made necessary by the knowledge explosion and complexification process (Hage and Powers, 1992, p. 56). Hage and Powers write that “In industrial societies large populations with low education levels generate markets for standardized products at low cost. As education increases, consumer values shift toward customization, quality, and innovation.” (p. 60). Kress, Ozawa, & Schmid (2000) note that consumers with advanced levels of education, discretionary spending power, and experience with information technologies act differently than other consumers; they prefer a wide range of choices, demand tailored information and communications, are willing to experiment, value convenience, and expect superior service. They note further that these same consumers have rapidly adopted new computing and communications technologies: “The largest gaps in PC penetration, online use, and interest in online searches are not between those who had computers when they were young and those who did not, but between the generation that had high college attendance and the generation that did not.” (p. 7).

Commercial organizations are beginning to position themselves to respond to post-industrial consumers. For example, the food industry, already responding to the demands of consumers for healthier foods, is expected to use DNA research to match food recommendations to consumer health needs.[6] Drawing on better information on consumers and linking that directly to production will result in better alignment of corporate resources and consumer demands (Gardyn, 2002). A particular case is mycereal.com, a web site currently in test phase at General Mills. The site invites customers to develop cereals that meet their specific tastes. A company spokesperson says “For years we’ve gotten calls from customers asking for very specific mixes of cereal ingredients, but most of those ideas are very ‘niche’ and wouldn’t warrant mass merchandising. This is a way to give consumers what they really want and at the same time learn more about consumers’ tastes.” (Gardyn, 2002)[7]

An example of mass customization currently operating is the production of custom clothing engineered for Lands End by Archetype Solutions. Drickhamer (2002) explains that:

Lands' End gathers the orders entered into its Web site every evening and electronically sends them to Archetype. The data is run through Archetype's software, which compares body measurements against a vast database of individual measurements. Using a number of algorithms, the system replicates the customer's body size and weight distribution, factors in individual fit preferences and adjusts the base fabric patterns accordingly. Archetype then electronically transmits the unique design files to a contract manufacturer in Mexico.

At the factory, the individual patterns are transferred to numerically controlled cutting equipment that cuts one layer of fabric at a time. After the various pieces

of the pants have been cut, they are bagged and sent to an eight-machine modular sewing setup -- unlike the batch production lines of most apparel operations -- where the pants flow through one at a time.

The entire process relies heavily on sophisticated systems for gathering and transmitting information and on highly developed agile manufacturing processes in order to satisfy very particular consumer demands.

Even quintessentially industrial corporations such as Ford Motor Company are repositioning themselves as post-industrial entities. Luke (2003) discusses the transformation of Ford through the use of outsourced just-in-time production processes that are brought together to produce cars rich in telematics, a combination of telecommunications and information systems. Luke quotes White (2000) in describing the benefits of telematics in transforming the services of auto companies:

Telematics tells you where you are in the world, how to get where you want to go, reads you your email, calls emergency services when your air bag inflates, reminds you to pick up flowers on your way home for your wife's birthday, etc. It's the fastest growing automotive sector. Telematics and the new car electronics will motivate buyers to buy this year's model, and not hold their present cars for as long. (White, 2000, p. 47).

The services envisioned are personal, flexible, high quality, and information intensive. Although a substantial proportion of the U.S. manufacturing and service sectors remain rooted in mass production, new enterprises and new offerings from existing enterprises are increasingly based on post-industrial principles of mass customization.

Examples of the post-industrial are appearing in some parts of the education sector. For example, in Australia, the Open Learning Institute of Technical and Further Education in Queensland has reinforced its "Customers-Are-Everything Strategy" with a customer relationship management system that tracks potential student interests from the first inquiry and maintains all student-related data in a single integrated database to permit staff to respond rapidly to student inquiries (Deloitte, 2002, p. 9).

Citizen Experiences

Private sector commercial entities are not alone in moving forward to become post-industrial organizations. Government agencies in the U.S. and elsewhere are taking steps to improve service and focus on the needs of citizens. A study by Deloitte Research (2002) surveyed over 250 state level government departments in the U.S., Canada, New Zealand, Australia, and the United Kingdom to determine where they stood in terms of e-government initiatives designed to enhance the access to and delivery of government services. The Deloitte researchers found that governments in all of the surveyed countries were adopting customer-centric perspectives, driven largely by citizens themselves as a result of experiences they have had with commercial online services.

Citizens want convenience, customization, and empowerment, things they have come to expect from dealing with other service providers. Moreover, the Deloitte study found

that customer needs were much more frequently the catalyst for initiatives to improve government services than were “legislative mandates, political pressure or the need to increase revenue” (p. 5). The Deloitte report identifies six stages for the development of e-government: 1) information publishing and dissemination, 2) official two-way transactions, 3) multi-purpose portals, 4) personalized portals, 5) clustering of common services, and 6) full-integration and enterprise transformation (Deloitte, 2002, pp. 22-24).

More than a few agencies of the U.S. government have been involved in customer-centric initiatives. The U.S. Mint has become a web e-retailer. The Patent and Trademark Office has fully digitized the patent application process. The Transportation Department has launched a do-it-yourself website for issuing permits and registrations. The Clothing and Textiles Directorate at the Defense Supply Center developed a cataloging and ordering system that speeds and eases purchases (Dean, 2001). Perhaps the most pervasive government service undergoing change in recent years has been the Internal Revenue Service which has led the charge to encourage citizens to use online technologies to file tax returns. The IRS now presents comprehensive information and services online, and in 2003 over 53 million citizens files their taxes online. This growing forum for interaction presents the possibility of a more fundamental shift in the relations between citizens and government characterized by more two-way communication and genuine participation for enhanced democracy (Cooper, 2004) despite some early signs that governments do not always take full advantage of these opportunities (Chadwick and May, 2003).

As we examine the increasing discontinuity between schooling and other sectors, we must question how consumers who are provided with convenience, customization, variety, and quality at a reasonable cost and citizens who interact with their government agencies in more personalized and efficient ways will judge schools that are still attempting to simplify their processes to achieve tighter means-end relationships.

THE GROWING DISCONTINUITY BETWEEN PUBLIC SCHOOLS AND THEIR CLIENTS

Finally, we suggest that schools, as they concentrate on fulfilling the modern project, are increasingly likely to be judged unsatisfactory even as they improve their core technologies. This occurs because the services being improved suffer in comparison with those provided by other sectors that have advanced beyond the modern model to the post-industrial model of product and service delivery. If the school reform movement is leading public schools in the United States to develop along lines that are increasingly inconsistent with the experiences and expectations of the public, we can anticipate that there will be an increasing number of instances of contention between schools and the students and parents who are their clients.

We see at least four major points of contention as schools continue the pursuit of the modern project. The clients of schooling are likely to be disappointed in the accountability systems, the opportunities for creative development, the possibilities of choice within the educational program, and the information resources available in schools

striving to realize the modern bureaucratic model of organization. We consider each of these briefly.

Contention 1 - Schools as Awkward Accountability Environments

As public schools seek to gain greater control over their outputs through fully embracing the standardized assessment regimes first encouraged and most recently mandated, they are likely to engender discontent from students and their parents who are regularly exposed to more personalized and finely developed assessment processes elsewhere. The signs of such discontent are becoming more prominent. In recent years there have been requests for adapting the assessments to address the special circumstances of students for whom English is not their first language (Palmer & Garcia, 2000). There have been calls for special testing circumstances to address the needs of students with learning disabilities (Henderson, 1995). There have been clashes between suburban parents accustomed to higher levels of services in other sectors and legislators who have implemented statewide assessments. In Birmingham, Michigan parents and students boycotted standardized tests; in Marin County high school students walked out on testing day (Louv, 2001). Each of these represents a type of discontent with the growing use of standardized testing.

Contention 2 – Schools as Constrained Creative Environments

There are long-standing concerns about structuring schools so that they become sites where students can engage in creative and productive work (Kilpatrick, 1918). Two conditions are evolving to enhance such concerns. First, the evolving information environment is promising to make it much easier for the average person to become involved in the creative process and share the results of their work with others (O'Connor, 1997). Such opportunities for creative activities do not require substantial resources or organizational facilities. Second, the modern school must limit student and teacher creativity in order to strengthen the alignment of means and ends in the rational school program. The spread of standardized assessments is influencing teachers and school administrators to focus student effort and their own on meeting the demands of the tests, sometimes to the exclusion of other productive work (Popham, 2004; Corbett & Wilson, 1992; McNeil, 2000). If students increasingly find it easier to engage in creative pursuits outside of school than within, it is likely that schooling will become increasingly unappealing to them and to their parents.

Contention 3 - Schools as Limited Choice Environments

Students have far more choice in what they do and what goods and services they consume outside of schools than inside of schools. The school choice movement promises consumers choice among schools, but successful contemporary organizations in other sectors provide choice within an institution. Even schools that are internally differentiated seldom offer students and their families real choices among school offerings or approaches. Students are typically denied choices of what to learn, how to learn it, the conditions under which learning might take place, and the staff that might facilitate their learning. Indeed, current management approaches in both regular public

schools and charter schools are not configured to provide even rudimentary choices of each type.

Contention 4 – Schools as Poor Information Environments

Students have far greater access to information than ever before, and increasingly, this means they have access to greater information resources outside of schools than inside of schools. In affluent communities and even in less affluent communities with reasonable public facilities, students enjoy greater access to knowledge outside of schools where the expanding state curriculum and assessment regimes focus effort by placing constraints on knowledge. The increasingly prescribed nature of school knowledge may have presented fewer problems in earlier generations where schools held a monopoly on access to knowledge, but that monopoly is gone, and schools are now competing with a wide variety of knowledge sources for the attention of students. The relative disadvantage of modern schools is made more severe by the fact that students have access to far richer communication tools outside of schools than they can access inside of schools. This is true even when schools have invested substantially in technology because the social organization of schooling precludes full use of such technology (Cuban, 2001).[8]

CONCLUSIONS AND IMPLICATIONS

Like the schools in which they teach or conduct their research, educators and educational researchers have been constrained to conceive of school organization and school effects within the modern model of rational means-end relationships. Whether such a model is necessary is not a question for this paper. Assuming the necessity of mastering the modern model, simply providing the kind and level of such services envisioned by the model will be insufficient to satisfy parents and students whose experiences in other service areas of the society are far different.

To begin to understand how post-industrial educational organizations might operate, researchers should pay closer attention to the broader service concept embraced by more and more organizations. For example, educational researchers might examine private or public schools that far exceed the demands of the modern model to begin to explore how such institutions conceive of their service mission. Similarly, an examination of a non-school institution with a mission to deliver a complex array of services might provide insights into the possibilities for post-industrial schooling. Of course, it will be necessary to resist the temptation to simply compare core proficiency scores in examining such institutions.

A key question for those concerned with the delivery of educational services to meet the needs of both adults and children in the post-industrial era is how best to move toward the provision of education in ways consonant with the increasingly dominant patterns of experience in other sectors. At least two courses of action are suggested by our analysis.

One course would be to proceed along the lines of the current school reform movement to complete the modern schooling project, that is, the full realization of the rational model of school operations. This would include the current strategies for the mass delivery of relatively uniform educational services to support the mass production of “educated” or

“schooled” populations. A second course would be to skip the completion of the modern project and proceed directly to develop and implement models of post-industrial schooling.

This choice is somewhat akin to the choice of how best to provide communications in societies without a fully modern infrastructure. On the one hand, a course of action could be pursued to provide a network of wired phone connections throughout a nation to link all citizens or households to a national communications grid. On the other hand, wireless cell phones could be provided to all households without the need to build the ground-based network infrastructure. Leap-frogging several generations of technology could be a sensible course of action in terms of delivering necessary educational services or it could be a shortcut that only provides an illusion of progress. Which is it? Answering this question is important for educational researchers, policy makers, educators, and the public.

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NOTES

[1] Although there is no doubt that concerns about the quality of schooling available to Americans have grown in recent years, there is debate as to the validity of claims that the quality of schooling is wanting for large proportions of the population. See David Berliner and Bruce Biddle, *The Manufactured Crisis*.

[2] Note that even students from whom an exception to the new testing regimes might be anticipated, i.e., English language learners and special education students, are mandated in most cases to take and pass the new assessments.

[3] The uniformity represented in the application of curriculum standards and assessments at the state level does extend to the realm of finance where there are still very substantial differences in the resources available for education associated with local community wealth (Ladd and Hansen, 1999).

[4] Murphy (1993) makes this point in his examination of American schools in the 1990s, and he goes on to note the need for changes, including increased standards, a focus on outcomes, individualized instruction, moving beyond the age-graded organization, expanding education to begin at birth and operate year-round, locating more authority in teachers, among things.

[5] Throughout this essay we use the term “consumer” to refer to an individual who can elect to receive services from a set of distinct and competing choices.

[6] The pharmaceutical industry is already well along with plans to revamp production processes to tailor medications to individual patients.

[7] Perhaps even more prescient is another web site featured on a link from the General Mills Home Page (<http://www.generalmills.com/corporate/>). This site, called “You Rule School” opens with a pop-up window with a picture of a school building with a sign reading “Old School” accompanied by an audio clip of a dour-voiced announcer who says “School is a serious institution built on the traditions of learning, discipline and routine.” This is immediately contrasted with a child’s voice set to music proclaiming “This is you rule school. The only school where kids rule. Come on in and explore and you can start ruling school.”

[8] The sorry situation for most modern schools is highlighted in the case of Jonathan Lebed who used the computers in his school library to trade stocks and make money despite the protests of the school librarian who told him that the computers were only for study (Lewis, 2001).