Donald N. Langenberg

It's a System!

A fellow physicist once remarked to me, in the context of a discussion about the merits and demerits of interdisciplinary scientific research, "The universe is not organized like a university." His point was that any serious effort to understand the real world must inevitably involve contributions from several, often many, of the narrow specialized fields into which we have divided scholarly inquiry, and around which we have organized our teaching and research institutions. His point is obvious, even self-evident, but it is also fundamentally important and, sadly, too often ignored.

Perhaps the most characteristically human activity is the development in each human of a fully functional mind within several pounds of remarkable tissue, the brain. We call that developmental education, and we have created a plethora of mechanisms and organizations to accomplish it. We have kindergartens, schools, academies, colleges, and universities. We have books, libraries, laboratories, blackboards, and computers. We have teachers, tutors, authors, professors, and mentors in bewildering variety. We have principals, superintendents, deans, directors, presidents, boards, and commissions. In short, we have a very large and complex education enterprise, one so large and complex that it has become all too easy to ignore the relationship between its form and its fundamental function, the development of human minds.

When the enterprise is working well, there may be little harm in that. But our education enterprise is not working so well as it should these days. We are bombarded daily with evidence to that effect, and with prescriptions for fixing the problem. Voices from within the education enterprise are being joined—and sometimes overwhelmed—by voices from the business world and from political leaders. School reform has become a watchword, nationwide. In such a time it becomes important to reconsider the structure of our education enterprise and its relationship to its fundamental function. In essence, we must consider the implications of the fact that *the human mind is not organized like our education system.*

Please note the appearance here of the word "system." This is not simply a catch-all term for a collection of things. It is the central concept behind this little essay and each of the articles that follow. A standard text (Blanchard and Fabrycky, *Systems Engineering and Analysis*) defines a system as "a set of interrelated components working together toward some common objective." The common objective of our education system is the development of human minds. Its components are obviously interrelated. If the system is not performing as we would wish, is it because some of its components are faulty or because they are not working together? The evidence suggests that it is

both. Some of our education system's components are indeed faulty, and they have certainly not been working together as they should.

The articles in this issue of *Metropolitan Universities* describe the experiences of several states with what are generically called "K-16 partnerships." These initiatives are founded on the premise that our preschool, elementary, secondary, and postsecondary institutions *are* a system, one in which whatever faults may exist in one or another of its components can be addressed properly only if all of its components work together to address them.

K-16 partnerships now exist in nearly twenty states. They have a variety of forms, reflecting differences in local circumstances. Typically they share two other basic premises. One is that student performance can be improved by establishing high standards for all students, and holding schools and students accountable for their performances relative to those standards. The other is that the most important determinant of student performance is teacher performance. The actions implied by both of these premises require coordinated, coherent responses from both schools and universities.

Another important element in this national K-16 partnership "movement" is the notion of scale. While schools are local institutions in the U.S., many of their problems occur and should therefore be addressed on a statewide or even national scale. It is thus natural, appropriate, and necessary to deal with them on at least a state level. We now see this happening in state after state. The establishment and enforcement of high standards at the secondary school level is obviously linked to issues of standards and performance at the postsecondary level. Moreover, meeting the challenge to improve teacher performance will require substantial reforms in teacher education and training by our colleges and universities. Here again, it is natural, appropriate, and necessary to address teacher quality issues at the level of state university systems. Such systems enroll most of the students attending public colleges and universities in the U.S., and they educate and train most of the nation's school teachers. It is therefore not surprising that the leaders of state university systems and their national association, the National Association of System Heads (NASH), are playing prominent roles in the K-16 partnership movement.

During each of the past two summers, state university system CEOs have invited their state education CEOs to join them in several days of serious discussion of K-16 problems and to hatch action plans for addressing them in their own states. These meetings have been followed each summer by gatherings of larger state working teams to flesh out the action plans. Both sets of meetings were sponsored by NASH. At their meeting last summer, the CEOs defined four fundamental commitments they believe we must meet if we are to succeed in reforming our education system. They are:

- We will ensure that all high school graduates meet high standards.
- We will accept only teachers who can bring all students' performance to high standards.
- We will accept into college only students who meet high standards.
- We will ensure that all teacher candidates we produce are prepared to bring student performance to high standards.

These commitments form a symmetrical quartet that has been dubbed "The K-16 Square." (It's really a tetrahedron.) Two refer to students and two refer to teachers. In two the primary responsibility rests with the schools, and in two it rests with colleges and universities. All four commitments are of equal importance and priority, and must be addressed together.

We are very far from meeting these commitments today. The CEOs understand how difficult it will be to meet them and how long it may take. Yet they share a strong sense of urgency about the task. They believe that we must all start now down the path to meeting these commitments and to move as quickly as possible. They believe that intending to complete the task by an indefinite "someday" is not acceptable, and that perhaps a third of the fifty states should strive (and can realistically be expected) to meet fully the four commitments by the year 2010. The trailing two-thirds of the states should be able to meet them by 2020.

In their article here about California's initiatives, Penny Edgert and Bob Polkinghorn quote from newly-elected Governor Gray Davis's 1999-2000 budget summary: "(T)he Governor calls upon the three higher education segments to shift their focus and view all the schools in California as *one system of education* (emphasis added) for all our citizens and our State....We must view education as a continuum—from kindergarten through baccalaureate and beyond." Governor Davis clearly "got the message." If we can continue spreading that message across the nation and follow it up with effective actions on the necessary scale, we have a chance to solve problems that have grown for a generation or more. It may take a generation to deal with them fully, but there are encouraging signs that we have at least begun. Let us continue!

Suggested Readings

Blanchard, Benjamin S., and Wolter J. Fabrycky, *Systems Engineering and Analysis* (Scarborough, Ontario: Prentiss-Hall Canada, 1998).

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