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ABSTRACT

Education's central challenge is to prepare learners for contributory and satisfying lives in a global economy in which they are productive enough for the nation to be globally competitive. Being globally competitive means that the benefits of foreign trade accrue to all on the basis of each country's pursuing its comparative advantages intelligently. This is related to the integration of academic and vocational education, because human productivity depends on what one does (vocational) with what one knows (academic). The nature of changes need to be examined and rethought with a global perspective to allow for an intelligent response. The basic restructuring of the world indicated by trend shifts will not leave untouched the system that prepares people to produce within it. Learners must be taught transferable skills or processes to deal with resources, people, information, systems, and technology with a foundation of basic skills, thinking skills, and personal qualities. This lays the philosophical groundwork for another global view of vocational-academic integration--how it can serve as the foundation for the reform and restructuring of education. This reform is based on the meaningful restoration of the natural connection of academic concepts and vocational applications from the real world into the educational setting. The effect of such reform would be promotion of learning for all. Such an effort would involve partnership of business and industry with education. (YLB)

The Global View of Vocational-Academic Integration

by
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Prepared for the Michigan Vocational-Technical Education Policy Issues Forums
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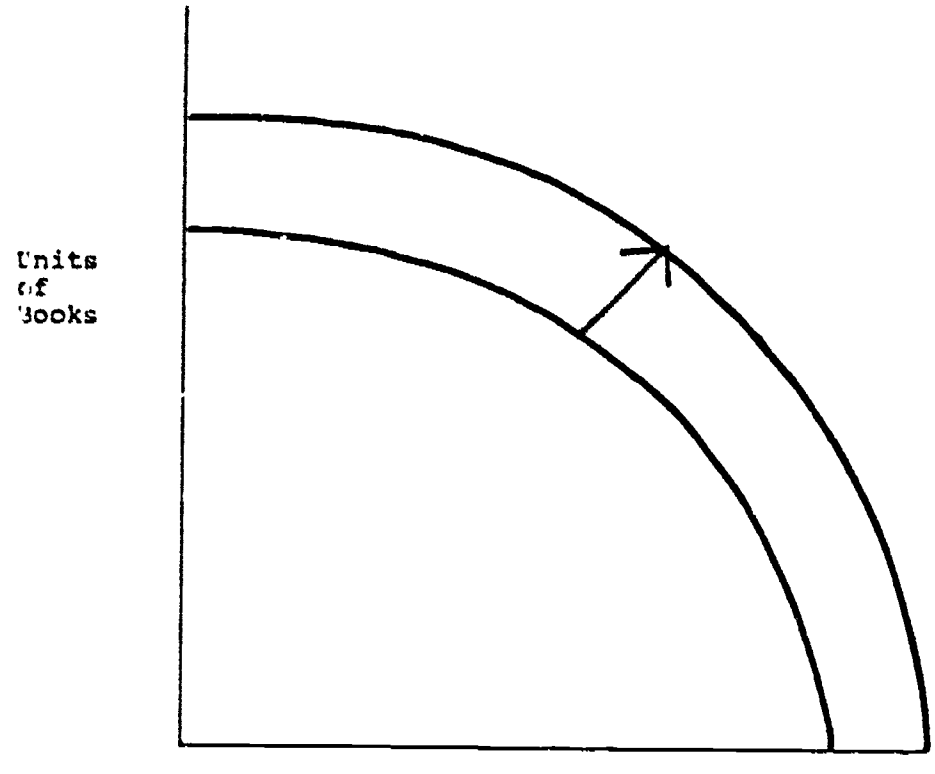
Having titled my remarks The Global View of Vocational-Academic Integration, I find that I cannot rest with one perspective on the term "global." First I will discuss the global view in its literal sense--how the fact that in May I spent 12 days in the heart of Siberia working cooperatively on vocational-academic integration does not today seem like a totally outlandish tall tale. Further, that only the motivation of a believed future application could have induced me to curl my somewhat set brain cells around the Syrillic alphabet to try to learn the Russian language. Taking a forest-rather-than-trees global view, integration of vocational and academic education may very well be the linchpin tying meaningfully together many strands of educational need.

To return to the international meaning of global, we must begin by recognizing that productivity is far more than the weapon we might select for an international dueling contest in which pride and national grandeur are at stake. Productivity is the key to relieving the central economic variable: scarcity. The personal well-being of a nation's people in terms of their standard of living is inextricably tied to the economic health and progress of the nation. As noted in the just-released SCANS report (SCANS standing for the U.S. Department of Labor's Secretary's Commission on Achieving Necessary Skills), U.S. labor

productivity actually declined for the first time in 1989 and 1990. Median family income stopped growing around 1973, and the real income of families with heads of households under 34 years of age has decreased since 1979. The latter point was dramatically made at a recent conference where participants were divided into three age groups and asked to select the one word that best described them. The 55 year-old and up group chose the word "retiring," the 36-54 year-old group chose "peak," and the 25-35 year-old group, chose the word "jobless." These are indicators that follow on last year's warning from the Commission on the Skills of the American Workforce that America's choice is high skills or low wages--and that we are silently choosing the latter. Another way of stating this is that education's central challenge is to prepare learners (of all ages) for contributory and satisfying lives, and that this rests, in a global economy, on being productive enough for the nation to be globally competitive. It should be mentioned that being globally competitive does not have to mean "beating" foreign countries at their expense. Rather, the benefits of foreign trade accrue to all on the basis of each country's pursuing its comparative advantages intelligently. The production possibilities, viewed globally, expand for all when human productivity is increased. (See table 1).

And all of this may ultimately transfer beyond the globe. Was it not just last month that a planet was discovered outside our solar system? We can only guess what lies ahead, but we want to be in a position to welcome it.

Table 1



World Production Possibilities
from Available Resources

How does all this relate to the integration of academic and vocational education? The relationship is this: human productivity depends on what we do with what we know. One part, you will recognize, is usually called vocational and the other academic. Only when we do something with what we know are we able to touch and affect others as well as ourselves. Learners who know and can't do will be equally at risk in our future world with those who try to do without knowing.

And how can we assess what the future needs will be with regard to both knowing and doing? We know that accelerating change is a given, but we need to examine the nature of those changes and rethink them with a global perspective to respond

intelligently. We know, for example, that the use of technological advances is key to our future--and key to increases in human productivity. So when we read, as I did last week, that the technology exists to completely automate or robotize McDonald's and other fast-food establishments and that this will be pursued because of peoples' increased demand for speed and convenience, we can conclude that this is a piece of the shift of emphasis from goods to services, from manual processing to information processing. Peoples' time is being saved or freed from one use, flipping hamburgers, to be applied constructively elsewhere, perhaps in design or manufacture of robots. Note that some of the services being generated are dependent on manufactured goods. When we talk about changes in employment in manufacturing, construction, and mining, we must consider that the nature of the employment is shifting, not just the numbers.

And it does seem confusing to find evidence of automation being used to de-skill jobs while we worry about the need to up-skill the workforce. However, I would suggest that where de-skilling creates short-term employment dislocations, an up-skilled workforce will be in a position of long-term advantage--all of which points to the need for flexible, adaptable, transferrable skills.

One glance at the list of trend shifts compiled by the Naisbitt Group (shown in table 2) will confirm that this type of basic restructuring of our world can hardly leave untouched the system than prepares people to produce within it. And if the ultimate safeguard is transferrable skills, how are we to identify those? I find it helpful to think of them as "process"

Table 2

THE TREND REPORT

Over the past ten years, the Trend Report has developed an analysis of the basic shifts which are part of the restructuring of America:

FROM (where we have been)		TO (where we are going)
an industrial society	. . . . .	an information society
a centralized society	. . . . .	a decentralized society
North	. . . . .	South
a national economy	. . . . .	an integrated global economy
forced technology	. . . . .	high tech/high touch
either/or	. . . . .	multiple option
physics-oriented technologies	. . . . .	biology-oriented technologies
economics of scale	. . . . .	appropriate scale
a managerial society	. . . . .	an entrepreneurial society
left brain	. . . . .	right brain
institutional medicine	. . . . .	personal responsibility
sickness orientation	. . . . .	wellness orientation
hierarchies	. . . . .	networking
representative democracy	. . . . .	participatory democracy
short term	. . . . .	long term
printing	. . . . .	telecommunications
department store chains	. . . . .	boutiques
family as basic unit	. . . . .	individual as basic unit
party politics	. . . . .	issue politics
machismo society	. . . . .	androgynous society
resource exploitation	. . . . .	resource conservation
quantitative information	. . . . .	qualitative knowledge
myth of the melting pot	. . . . .	celebration of cultural diversity
material productivity	. . . . .	knowledge productivity
hired labor	. . . . .	contract labor
institutional help	. . . . .	self help
left vs. right politics	. . . . .	a politics of the radical center
conquerors of nature	. . . . .	partnership with nature
vertical society	. . . . .	horizontal society
top-down society	. . . . .	bottom-up society
business as usual	. . . . .	greater accountability

The Naisbitt Group, Washington, DC, 1991

skills--the patterns by which academic skills are combined and applied in a work context. I still remember when an attorney asked our then-14 year old son the inevitable "What do you want to do when you grow up?" and he unhesitatingly replied, "Buy and sell." The confused attorney, used to a very specific object for all his verbs, asked "Buy and sell what?" To which again the reply was unhesitatingly "It doesn't matter." Ah--the wisdom of youth. Transactions are a matter of combining communications and mathematics in a way that accounts for (or problem solves with) a person's needs. My son will be able to buy and sell compact disks today or an as-yet-unknown-product tomorrow if his education serves him well. But can he or should he learn these process skills only in the abstract today? He would be turned off in less than a minute and would have no idea how to apply the skills even if he hung in to learn them. Let him understand and practice with what we have today but with a focus on the process, not the product. And let him be conscious of how the learning and thinking are taking place--what is called the metacognitive approach.

This is precisely the kind of recommendation that the SCANS report makes: teach learners processes to deal with

- o resources
- o other people
- o information
- o systems
- o technology

(all of which are detailed in their report) with a foundation of

- o basic skills (communication & mathematics)

- o thinking skills
- o personal qualities

but then explain, practice, use them as they are used in the workplace.

All of this lays the philosophical groundwork for the second global view of vocational-academic integration--how it can serve as che foundation for the form and restructuring of education. The principles are these:

- o Academic basic skills are embedded in vocational tasks.
- o Vocational tasks provide the realistic use of academic basic skills.
- o Neither academic basic skills nor vocational skills should be taught in isolation from each other.
- o Differences in students' learning style and teachers' teaching style impact on basic skills acquisition.

Instead of "reform" based on requiring more academics without much regard for how that would be useful and for whom it would imply greater learning, this brand of reform is based on the meaningful restoration of the natural connection of academic concepts and vocational applications from the "real" world into the educational setting.

The effect of such reform would be that we would be engaged in promoting learning for all. One of the more encouraging aspects of the new Carl Perkins legislation, to my mind, is that integration is laced throughout with the purpose of making the country more competitive through development of academic and vocational skill competencies. Focus is placed on those who are inadequately prepared, and that includes both the economically and educationally disadvantaged. I have been involved for the

past three years in two federally funded dropout prevention projects with a cornerstone of vocational-academic integration, and the dropout rate has decreased in our nine sites. We know that if we pay attention to individual student needs and learning styles and restore relevance to learning, it does have a positive effect, even for those considered most at risk. In visiting one of our urban demonstration sites this spring, I found that the entire atmosphere was positively charged for students and teachers alike. Patrick, whom no one would have given a ghost of a chance of graduating, had passed his GED with flying colors and was getting his high school diploma. From that moment on, "If Patrick can do it---" became the slogan.

But we are not talking only of one end of the student spectrum. Remember the 25-35 year olds that I told you had characterized themselves by the word "jobless"? What I didn't tell you is that they all held a bachelor's or master's degree. Their social communication and employability skills, their work ethic, which business often says are all it wants, have not been sufficient to get them jobs. If one looks at economic demand, it is rather striking that the demand is for engineers and accountants, both of whom know to do rather than simply know.

Further impetus for integration can be derived by systematic follow-up of college prep students. I was told at an integration conference last week by a director from Michigan that such follow-up led to the recognition that by the third semester out of high school, many are no longer in college nor are they meaningfully employed.

Now it is true that we don't have the hard evidence yet on achievement via the integrated approach, and we need to continue to strive to obtain it. One of the difficulties is our need for assessment instruments that fairly measure the effects of applied learning. However, if we consider the alternatives to vocational-academic integration, there is little to recommend them. Because we need to commit and the available evidence for integration is encouraging, it seems reasonable to trust the philosophy that favors common sense and that corresponds to all that cognitive psychologists are learning about learning.

Of the variety of ways in which experiments in integration are going forward, I feel that the approaches that adhere most closely to learning for all in a true restructuring spirit have the best chance for long lasting success--but those unquestionably require the most courage. An example is the Woodland High School in Sacramento, California, where traditional tracks have been eliminated for the entire school, and the curriculum is organized around career paths in 6 cluster areas:

- business and marketing
- social, human, and governmental services
- agriculture and natural resources
- health, home, and recreation
- arts and communication
- industrial technology, engineering

Students select, but are not locked into, a career path based on ability, interest, and achievement; a personalized four-year plan is formed that allows for college preparation and job entry skills. This plan has the benefit of providing the coherent sequence of coursework required by Carl Perkins without sacrificing academic rigor. In fact, the principal of Woodland

High School reports that over the last four years, the percentage of students going on to postsecondary education has gone from 48 to 74%, and those going to a 4-year university have increased from 18 to 38%. It is important, in my opinion, to point out the potential benefits for all learning groups, but not allow the system to be co-opted on behalf of any one group.

And how best to embark on such an effort? Again, I think, by trusting the philosophy and applying it to ourselves as educators. Educators are profoundly affected by their own experience. Most of them were successful at abstract learnirg--they liked it and they were reinforced in it. Now they need broader experience in application themselves. True partnership of business and industry with education would involve opportunities for teachers to work in the situations they need to teach about. In one of the programs I'm involved with, a team of a vocational teacher and an academic teacher are placed together in summer jobs, and everything they experience develops into integrated learning activities for their students. Here, as elsewhere, we have to get in and see what people do, not what they say. In truth, while we want to pay attention to what business and industry say they need, they are no different from the majority of schools in not having a real handle on the situation for the future. Not all of business is striking out knowledgeably on the high road. Otherwise the Commission on the Skills of the American Workforce would not have found 80% of the companies surveyed to be relatively complacent.

It makes sense for business and education to work on this together. For example, our Center is involved in helping

business to identify the specific academic basic skills needed to do particular job tasks through a process we call DELTA (DACUM Enhanced Literacy Task Analysis). Business needs this information for several reasons, not the least of which is to develop workplace literacy programs to help its current workforce to be more productive and to keep up with what technology-induced changes in their jobs demand. The resulting job-context academic skills programs that we develop are nothing more than vocational-academic integration by a different name and in a different setting. The same instructional materials could be used equally well for a school program, given the equipment and facilities. Intergenerational learning could be taking place. At one of our sites, academic credit is granted for after-school community-based experiences in the workplace--carefully structured and carefully monitored for competency outcomes so that nobody is fooling anyone about what learning and what doing are really taking place. There is no end to the creative approaches possible for furthering a balanced, integrated education.

Do they take effort? Of course. Will it be worth it? We need to keep the cost-benefit analyses running to find out, but the indicators are positive for both learners and educators. Ironically, what we most need now is the courage to apply what we ourselves know. One way to build the courage and commitment to operationalize the vision is to try to envision what it would be like to "do it right" and then describe the characteristics.

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