

The Future of Education in a Season of Change

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Abstract

This paper makes an argument for re-thinking how and why adults should be educated for the future. The reader is challenged to discover what values lay behind his/ her assumptions of adult education and build personal wisdom based upon their own response to the suggestions made. Longer lives, more technical jobs, needs for personal and social development, new relationships with nature and more are discussed. New circumstances require new thoughts, and reaching conclusions does not signal the end to our reflections—as the world changes, so must the education we offer. Experts name a variety of personal areas of "wisdom" that are missing from formalized adult education. Many of these are found in letting students work with studies of the future.

Turmoil in Higher Education

Higher education is in great turmoil. It is a change of seasons when spring and winter fight for power. It has become big business—the education industry. Once higher education called up pictures of ivy covered brick buildings—college or university. Today it is globalized, virtualized and corporatized. However, no system changes overnight, it is a process. The pace of this change is increasing speed, and it is tangible. More changes lie ahead.

Colleges and universities are being assaulted!

From several directions with new competitors, new technologies, and new approaches to education many have chosen to ignore the warning signs, hoping it will just go away. Others have rolled out a few online courses or have encouraged deans to develop new programs. Few have developed a coherent strategy for ensuring success in the new environment. (JR. N. Katz and Associates "Dancing with the Devil- Information technology and the New Competition in Higher Education")

Rolf Jensen, lecturing on his book, *The Dream Society* pointed out that the time line for societies is getting smaller and smaller and that the information society will be short lived. He is not alone

in his thoughts. Ian D. Pearson, who focuses on technical development, says we will "shift to a 'care society' where people gradually concentrate more on the human side of activity"¹ These dramatic societal changes press education systems all over the world, for it is education that is society's adaptation mechanism. It is difficult for education to keep up with the pace of these changes.

Who should be educated?

Learning is no longer the realm of the young. The student population in tertiary education (all education after secondary school) is no longer in its late teens and early twenties. All ages are enrolled in University studies. The age for bachelor degrees is highly varied. In 1998, OECD countries showed twenty-five percent of people obtaining their degrees were twenty-eight years old. The typical student in the United States is 27 years old, lives off-campus, goes to school part-time and is attending to a two-year community college.

The population is aging, which is a trend that began in the late 1800's and continued through the 1900's, beginning in Europe. While it started in Europe, in postindustrial countries, it is a global trend following the path of industrialization. One consequence of this trend is the need to keep people longer in the workforce.

Another manifestation is a growing early retirement. A third is that jobs are requiring more education and older people are not exempt from needing more education. In Sweden, the available jobs without education requirements shrank from 25% in 1992 to 8% in 1998.² Many will have to keep working and some will want to keep working. Governments desiring to preserve their retirement monies and fill jobs are lifting the retirement age; Japan is increasing from 60 to 65 and in Sweden there is a discussion to increase the retirement age from 65 to 67.³ For this, older citizens will need to update their education. To this end, Sweden has made an effort to raise the general level of education of students who never completed secondary school, bringing a wide range of people over forty back to classrooms and distance courses.

What is the purpose of adult education?

Since the 19th century, North Americans have held the belief that higher education should be practical, industrial classes should be educated to be good workers. Johnson & Wales' University exemplifies this belief in its mission statement: "to empower its diverse student body to succeed in today's dynamic world by integrating general education, professional skills, and career-focused education." They desire... "to equip students with the conceptual and practical tools required to become contributing members of society and to achieve success in employment fields with high potential."⁴

The purpose of European higher education has traditionally been more knowledge for its own sake; today the labor market increasingly drives it.⁵ For example, Sweden has opened tertiary education to a wider range of students. New colleges have been established in the last five years and more places at universities have been created.

Potential employees and employers share a dream of higher education, each for their own reasons. For the employed, higher education levels have meant less time spent unemployed than those without tertiary education. Higher education levels for those age thirty to forty-four also mean an average of 50% more in salary than those not continuing after secondary school.⁶

Employers are demanding better skilled workers as technology changes the nature of jobs. The increasing desire on the part of companies is for greater social competencies or emotional intelligence and creativity in order to be competitive in a fast-paced marketplace.

These dreams of employers and employees and the revised purpose of European education are prerequisites to tighter relationships between universities and businesses. Universities are expected to turn out professionals needed in the growth industries of biomedicine, com-

puter technology and environmental sciences. As late as 1998, private sources contributed between 0-10% to tertiary educational institutions in OECD countries in an attempt to fill that need. In comparison, the United States and Japan received 50 to 60% of their funding through private sources, while Korea brought home 80 to 90% of its higher education costs from outside the public sector.⁷

The European University is attentively observing the educational institutions in the United States when it comes to doing business. The University of Munich has spun off five private companies.⁸ Chalmers University of Technology, Sweden, is involved with business on several levels. In the year 2000, 7% of Chalmers' annual turnover was revenue from trade and industry totaling some USD 14 million/year. They sponsor Chalmers Innovation that helps newly started technical companies, from Chalmers and near-by Gothenburg University, spin off of companies replete with commercial viability and growth potential.

What should adults learn?

In one view of what universities need to teach adults, Jan Sinnott and Lynn Johnson write, "The purpose (of the university) is to enhance the personal and public growth of knowledge." They are looking for the university of tomorrow to raise the level of "Postformal thought," which they describe as a "complex form of adult logic."⁹ They quote D. Elias who describes five capacities that are applications of Postformal thinking:

"a capacity for intimate communication; the capacity to see patterns in relationships; a commitment to ongoing social transformation; an awareness of contexts for events; and a capacity to use technology to serve alternative social visions."¹⁰

Multiculturalism is another reason why we need to be educating adults. Sohail Inayatullah writes, in an introduction to *Futures, Forecasting, Planning and Policy Journal* (dedicated to the university of the future): "...the future of education, to be of any relevance, must be authentically multicultural."¹¹ Yu Kameoka, writing in the OECD Observer, adds that the internationalization of universities and other institutes of higher education call for the teaching of intercultural skills.¹² People are increasingly being exposed to other cultures through immigration, emigration or globalization. The ability to learn to discriminate between cultural/personal worldviews, generational worldviews, cultural worldviews, gender worldviews or dying/upcoming worldviews is acutely needed. All these worldviews must be understood by their relationship to power, individualism/collectivism, masculinity/femininity, the unknown, time¹³ and doing/ being. To truly meet the full spirit of Inayatullah's multiculturalism, it

will be necessary to lift the backdrop of our cultural stage setting and realize that there are other cultural stages on the other side. These seem just as real to the audiences who subscribe to them as the original setting is to the person peeking through. Multiculturalism has never been a goal of any traditional university system. Now, it is a matter of respect, a prerequisite for peaceful existence and well-being for commerce.

There are also scientific worldviews—paradigms. Rene Descartes' seventeenth century philosophy permitted scientists to handle matter as dead and completely separate. The material world was seen as a multitude of different objects assembled into one large machine. He also introduced the objectivity of the observer. Isaac Newton already held this mechanistic, linear worldview when he created his concepts.¹⁴ But it wasn't just science that Newton and Descartes influenced, it was philosophy, religion, work methods, lifestyles and how we educate our young and one another.

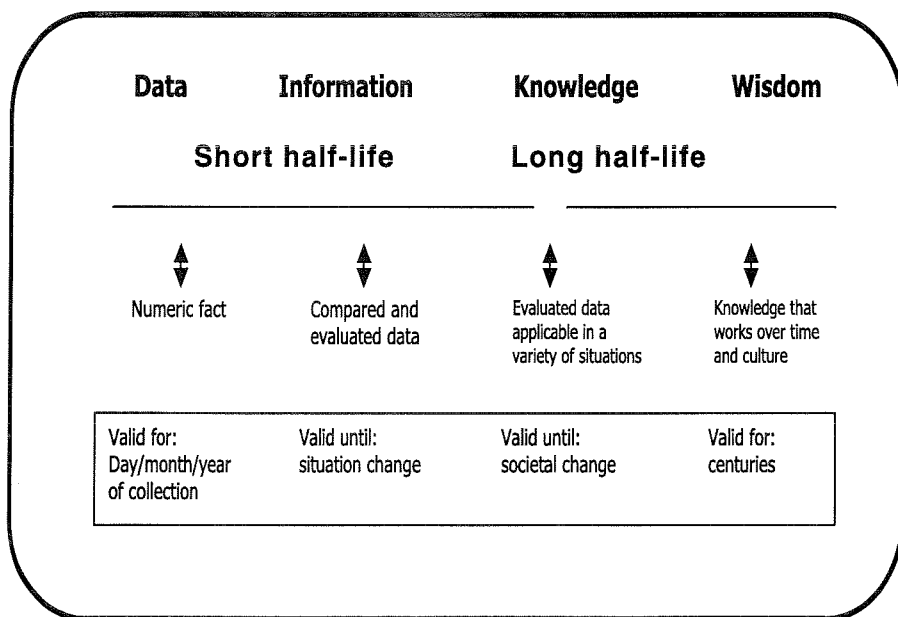
Use of the new sciences, systems theory and quantum mechanics and chaos theory represent a new scientific paradigm. They were first applied to natural systems and are now moving into organizations and psychology. Howard Gardner, Harvard researcher, adds to this list of

what adults should know.

"Education in our time should provide the basis for enhanced understanding of our several worlds. The physical world, the biological world (environmental studies), the world of human beings, the world of human artifacts and the world of the self."¹⁵

British scholar Bruce Lloyd feels adult education should start with wisdom. Just talking about the knowledge society is not enough; we need to be very clear about what we are teaching. Is it good only for the short run, or is it workable throughout a lifetime? The terms knowledge, information, and data, are often used interchangeably, but wisdom is the most important and the least well-defined of all. "Wisdom is a useful truth or knowledge with a long shelf life."¹⁶ Knowledge has a shorter shelf life than wisdom and information and data increasingly less. That is to say that in the Supermarket of Thought, wisdom does not spoil over the centuries; knowledge lasts as long as there is no basic change in the system, as from industrial society to knowledge society.

Information is only good as long as the situation it describes is relevant, and data is only good until its "best before" date runs out.



Currently, there is no method for identifying universal wisdom. Bruce Lloyd suggests that sayings that have withstood the test of time embody wisdom. He has formed a database of these sayings from all cultures with the hope that this will be a starting point to defining what we collectively think is wise and worth passing on to future generations.¹⁷ "A stitch in time saves nine" is one

such example, which if agreed upon by a policy group might result in prioritizing preventive actions.

Tom Abeles discusses short half-life and long half-life information.¹⁸ Short half-life is similar to data, information and knowledge in the chart above; long half-life is roughly equivalent to knowledge and wisdom. Short half-life information is specific knowledge with commercial

value. Long half-life knowledge is a "core set of cultural values and basic skills."¹⁹

There is a growing acceptance in a number of countries²⁰ that the basic survival skills of adults need to be honed. These skills are so important that an international effort to devise standards and monitor them is being established. It is called the International Life Skills Survey. It is designed to measure skills in the adult community (ages 16 to 65) of each participant country. It is constructed to compare student results across countries and cultures. What makes this survey so interesting is the description of the skills measured. Some we recognize from days gone by with new twists and elements. Others are completely new:

Prose Literacy measures individuals' use of "printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential."²¹

Document Literacy is the, "knowledge and skills required to locate and use information contained in various formats (including job applications, payroll forms, transportation schedules, maps, tables, and graphics)."²²

Numeracy Skill is, "the knowledge and skills required to effectively manage the mathematical demands of diverse situations."²³ and Quantitative Literacy is, "The knowledge and skills required to apply arithmetic operations, either alone or sequentially, to numbers embedded in printed materials (such as balancing a checkbook, figuring out a tip, completing an order form or determining the amount of interest on a loan)."²⁴

Problem Solving is, "the ability to solve problems by clarifying the nature of the problem and applying appropriate strategies."²⁵

Teamwork is, "the competencies needed for effective participation in a team, including interpersonal communication skills, adaptability, flexibility, mutual trust, and willingness to work with others."²⁶

Communication Technology Literacy is defined as the, "skills and abilities that will enable the use of computers and related information technology to meet personal, educational and labor market goals."²⁷

Applied Systems Theory, called Systems Thinking, represents a way to illustrate the interdependency of facts, with one variable both affecting and being affected by at the same time. "To be a responsible and affective citizen in today's world," students must, write a team of authors from High Performance Systems, Inc. in their Stella Research 5.1.1 software instruction book, *Introduction to Systems Thinking*, have the "capacity to understand, and to generate insight into systems (at all levels) composed of interdependent relationships. Students must improve their ability to see the second, third, and fourth order consequences of their decisions

and actions." From systems thinking, adults derive the tools to understand environmental issues on a deeper level.

How should adults be educated?

We now know that there are many ways to learn, many doors to the development of intelligence. Seven of these identified by Howard Gardner are: linguistic, visual-spatial, musical, body-kinesthetic, social intelligence and intuitive intelligence. Virtual learning: two-way radio, video, Internet, etc., primarily stimulates the linguistic portion of the brain through reading, listening and answering factual questions. Technology is adding color and animation to what once was the black and white page. Multi-media is adding pictures and sound. Edutainment and documentaries transport the observer to the scene and allow us to "experience" other doing that which we wish to learn. A talented actor has replaced the lecturing-professor-behind-podium. Where does body-kinetics learning come in? Not only learning by doing, but movement combined with theoretical concepts. Many learners old and young avoid more theoretical subjects because they are primarily kinesthetic learners. They are physically active and are drawn to physical work and handwork. How can they be prepared for more technical jobs? The future requires that we learn to teach in new ways, ways that are individualized to a personal learning style.

Education is borrowing ideas from business, industry and the community. They see that people often work in project groups or teams. This style then has been emulated and there are currently a number of learning institutions offering project-based learning and on the job learning. Companies complain that newly hired graduates needed a thorough orientation before being able to work in the "real" world, and so, learning by doing was born. In adult education this has been called "experiencing learning" and is currently being offered in a number of institutions. Another variation of experience learning is the granting of credit to adult learners for documented life experiences.

Students want to go out into the real world and make a difference, a contribution. At the same time in market driven economies governments cannot afford the institutionalized welfare services they once provided their citizens. Volunteer organizations have been taking the burden in Italy and more recently in Sweden.²⁸ A number of American Universities are offering "service learning"—they understand that jobs also develop in the volunteer sector and offer service learning, where service to the community is matched with appropriate academic courses.

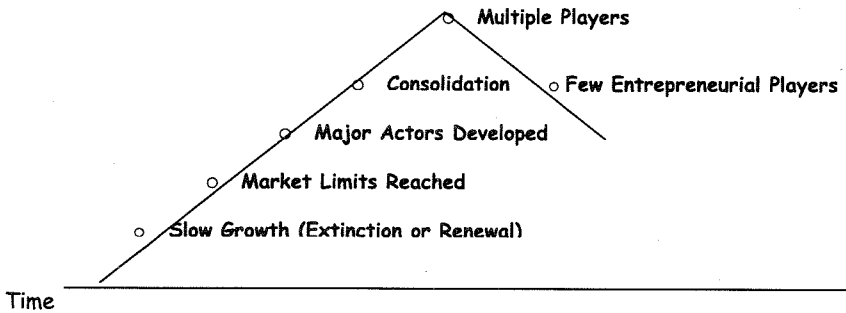
Distance education is often thought of as a teaching method. A Booze Allen Hamilton report, "Re-Learning E-Learning", June 2002, warns existing and new entrants in the e-learning arena of attempting to reinvent or replace traditional learning tools through new media. Five types of e-learners are identified: School, Higher Education, Professional, Corporate, and Lifelong Learners. Tailored materials for the above e-learning groups will supplement that which currently exists, raising the effectiveness of teachers and textbooks. It is big business, so big that Booze Allen Hamilton forecasts an e-learning market, of \$12-14 billion range by 2004. E-learning is getting more sophisticated. Samuel L. Dunn predicts, "By the year 2025, at least 95% of instruction in the United states will be digitally enhanced."²⁹ Virtual learning has the technical

capacity to teach according to individual intelligence and tailor learning to the individual. If it does that, a healthy future is assured!

The Future for Tertiary Education

Virtual learning opportunities are now so prolific that it is difficult to catalogue all the courses and methods. This is an indication that the virtual education industry, like the rest of the education industry, has passed into the consolidation stage in the process of industrial growth. This is a typical stage of development for any industry and is spurred by competition, rise of major actors and darification of niches.

The Process of Industrial Growth



It is logical to expect the education industry to continue further into the consolidation stage. It will be helped tremendously by the growth of third party competency evaluation that will act as a quality control. Given the diversity in learning needs and the changes in society, the time frame for consolidation could be quite long. But this only describes the structure of education, not the content.

Higher education is a social mechanism that forms society's members to their personal and professional roles. The content of education is always partially rooted in the past—history, philosophy, archeology and classic arts. It is also partially rooted in the future through research—technical, medical and social.

In many ways this social mechanism is still based on current teaching of 300 year-old Newtonian (linear, mechanistic) thinking. The incoming scientific paradigm is based on the new sciences; Einstein inspired quantum physics, system theory and chaos theory. This integration of non-linear, holistic thinking will spread through our

society and resonate with many non-western cultures. A recent article in Trend Letter is titled "Holistic education takes hold in United States and Japan: Standardized tests and learning by memorization become passe as schools look to teach creativity and independent thinking."³⁰

The information society is the name we use to denote the current age. Soon information will seem shallow, lacking spontaneity and joy. Information's promise of status, like cars and TVs from industrial society, only satisfy surface needs. What kind of material will learners need then? Looking back to the section on what adults need to learn we find the following, wisdom or long half-life subjects:

Social competency in:

- Intimate communications (37,500)³¹
- Empathy (50,000)
- Patterns in relationships (299,000)
- Awareness of context of current events
- Knowledge of the self (1,130,000, personal development + courses, 622,000)

Stress management (225,000)
 Deep multiculturalism: (multicultural + courses 232,000,
 diversity + courses, 11,000)
 Understanding of personal paradigms
 Spiritualism and global scientific paradigms (spiritual + courses 774,000)
 Spectrum of power distribution
 Spectrum of masculine/feminine behaviors
 Spectrum of individual/ collective identity
 Spectrum of understanding of the unknown
 Spectrum of understanding of time
 Systems Thinking (576,000)
 Multiple-solution problem solving (based in systems thinking, 576,000)
 Long-range consequences analysis
 Teamwork (178,000)
 Alternatively, data, information and knowledge or short half-life information for the future is:
 Knowledge of the physical world,
 Knowledge of the biological world
 Knowledge of human artifacts
 The use of printed information
 Numeracy Skills
 Information and Communication Technique
 Prose and Document Literacy

If the above is indicative of the knowledge adults should be learning, what kind of society would develop such needs? Is it Ian Pearson's Care Society or Rolf Jensen's Dream Society? Whatever we call it, it proposes a new and deeper look at the total world around us, not just that part on which we ourselves happen to live. We will find wisdom subjects will be interwoven with data/information subjects and will increase in status.

It is in the alternative portion of any field that we find the seeds of future change. Sohail Inayatullah confirms this thought when he refers to companies that have lasted over one hundred years. "...one of the key factors in explaining longevity was "the capacity to tolerate ideas from the margin."³² One of those marginal ideas is the Me University. The idea is that the student consciously puts together his or her own learning plan, not within the walls of a university, but from many sources, public lectures, study circles, internships, volunteer work, mentors, Internet, etc. Practitioners of the Me University will see the world as their university and their major as a collection of subjects with a common thread—interesting! A well-known expert to a neighbor down the block can be a teacher; this type of education can move from the margin to mainstream when more people are articulate about their own learning styles and have experienced an individualized education. The Me University is the ultimate in democratic learning:

Futures Studies: the all-encompassing alternative.

Another alternative, Futures Studies, a cross-disciplinary field, ties many wisdom or half-life subjects together when learners are allowed to perform their own studies. Intimate communications and teamwork are necessary when discussing values and feelings about desirable futures. Self-knowledge is required in order to keep learners from extrapolating their values and beliefs to others alive now and to future generations. Empathy with others' values comes as learners study their own and others' paradigms and deep multiculturalism. The paradigm emerging from the new sciences and non-linear religions are a part of this learning. Patterns in relationships are encouraged when looking at past social and organizational behaviors as indicators of future behaviors. Awareness of the context of current events in a wide variety of subjects is necessary to identifying trends and patterns. Long-range consequence analysis is introduced when trend analyses are performed.

In other words, Futures Studies provides adults with necessary skills not broadly offered; awareness of historical or mega trends which add context to today's occurrences, the ability to think in terms of long-term consequences, the ability to think out of the box, the ability to handle complexity and the ability to see patterns (trends) and the ability imagine possible selves in the future.

Although it is easy to say that we need to decide on a purpose for educating adults, it is unrealistic to expect that it will occur. Instead, we will remain with many different reasons to educate adults. When the economic climate is negative, there is a shortage of workers; hence, there will be more emphasis on education for a specific job. When times are good we allow ourselves to spend more on wisdom or long-half life subjects that give life meaning and contribute indirectly to every part of our lives. Both trends are part of a system that is always striving to stay in balance. It is driven by our need to know what is coming next, by our instinct to survive and perpetuate our family/group, and to understand basic existence questions.

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