10-1-1981

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Education and educators can and should become involved in "futuristics"

Looking ahead in education: Some predictions

By Richard E. Ishler

Many futurists view education as the one area with the most potential to help people adapt to what lies ahead. And yet, they charge, education presently remains the most reactionary and the least adaptable system in operation.

Educational planning in the future must include a series of considerations. No significant decisions can be made without viewing impeding technological advances which promise to alter learning systems, lifestyles and accountability methods, as well as provoke sociological changes. Futurists demand that educators rethink the role of long-range planning. Most schools tend to be immersed in problems now considered by futurists as "yesterday." As a result, schools produce people to fit into a reasonably well-functioning industrial society, but we no longer have one. As society shifts away from the industrial model, schools will have to turn out a different kind of person. Schools now need to produce people who can cope with change (Toffler, 1970).

Consider the following as evidence that change in fact occurs:

1. Nearly one-third of the items found on supermarket shelves today did not exist 10 years ago.
2. Fifty percent of today's labor force earns its living in industries which did not exist when this country was founded.
3. Seventy-five percent of all people employed by industry 12 years from now will be producing items that have not yet been conceived.
4. At least 50 percent of all today's factual scientific knowledge will be obsolete 10 years from now, a condition which has led scientists to define facts as opinions not currently in dispute.
5. Our store of knowledge will double each five years and over the next 30 years, new knowledge will exceed all that has been generated throughout the history of mankind. Incidentally, in 1999 the director of the U.S. Patent Office urged President McKinley to close the office because, he said, everything that can be invented, has been invented.

The list could go on, but suffice it to say we are living in a world of rapid change. The schools must educate people in what nobody knew yesterday, and prepare people for what no one knows yet, but which some people must know tomorrow.

Olark Kerr (1980:4), chairman of the Carnegie Council on Policy Studies in Higher Education, says that we are on the threshold of a new, electronic, technological era which many refer to as the fourth revolution. According to Kerr, the first revolution was the idea of having teachers, of having someone who specialized in teaching. The second revolution was handwriting and the third revolution was the printed page. Now computers, data banks, calculators and other electronic phenomena will catapult us into the fourth revolution.

I believe that this technology will not just augment existing methods, it will actually revolutionize schools as we know them today. School will become more of a "concept" and less of a "place." Schools without walls will become reality for all children, not for just the few who are enrolled in experimental programs. This is to say, the world will become the classroom through telegraphic projection and satellite links which will allow students to tour the British museum or visit China from their schoolroom. As a result, the curricula will become more

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Educational Considerations, Vol. 8, No. 3, Fall, 1981
exciting and more challenging. Right now, 50 percent of
the students say high school is too easy.

**Prediction**—Much of “schooling” will begin at home
and it will continue there with the aid of computers and
television. Education will be supplemented at home for
most students via those electronic devices but for many,
including the handicapped, they will receive their entire
ducation through computerized learning programs and/or
television. Television and its immense impact on
people’s thoughts and habits has achieved almost total
coverage. Today 80 percent of all U.S. homes have TV sets
and 60 percent have two or more. Computer assisted cable
television will make available to every home adult education
and correspondence courses; legal information; consumer
advisory services; credit card purchasing; bus; train; and airline scheduling; and sales information. Computers
will provide us with the ability to communicate orally and visually with anyone, at any place, at any time.
They will give us instant access to limitless reference and
research files. They will make it possible to examine
items, objects, and materials in three dimensions. All that
will be needed will be a compact console which can be
located in any home, office, or school. Already more than
100 companies are manufacturing home computers. Some
day, soon, virtually every home will have a computer. It will
be as standard as a toilet. By 1990, according to **U.S. News
and World Report** (1980:54), 80 percent of the homes will
have computers available for school assignments, doing
the family budget, figuring their taxes, and sending messages
to relatives and friends. Such computers are already available for around $1,000 plus hook-up fees and hourly
rental charges for the use of the telephone lines over which
the information is sent. However, within the decade,
personal computers will drop in price to $50-$100 and the
network of users will grow from a few thousand to
millions.

Besides the personal computer, many family television
sets by the late 1980s also will be equipped to serve
as complete information centers. Over the TV set,
people will be able to call us local and international news,
weather, sports results, calendars of local events, restaurant
menus, theatre schedules, etc. Even sections of magazines
and newspapers will be delivered on home screens and
families will be able to print out parts they want
to save. However, experts don’t believe that the screens
will soon replace the printed media. Even Walter Cronkite
said in a recent interview that rather than end his nightly
news broadcasts with “That’s the way it is,” he was often
tamped to say, “Consult your local newspaper for details
on tonight’s news.”

In general, then, school will begin earlier—age one or
two—and extend through adulthood with emphasis on
lifelong learning. The new technology will finally enable
teachers to accomplish what they have been striving for
so long—individualized learning. Curriculum will be de-
signed for individuals and will be carried out anywhere
and everywhere. For some it will be in school, for others at
work, for others at home, and for still others, elsewhere.
Computers will take on more human functions. We now
have robots to act as maids and butlers so we will
probably have robots to serve as teachers at home and at
school.

One of the most revolutionary educational out-
growths of the computer genre is the robot. Already
available for about $50 to $500 is a toy robot that talks and
tests people’s ability to think, learn, create and play

games.

Also available are advanced teaching robots, though
most are still experimental. One such robot created by
New Yorkers, Michael Freeman and Gary Mulkowsky
is called Leachim. They describe Leachim’s introduction
in the educational community as follows (1978):

> “When the fourth-graders heard about their new
teacher, the description made him sound quite
normal, 200 pounds, six feet tall, well-spoken, and
dressed in a blue suit. Leachim—called L—was
exceptional, except for one thing. Leachim is a
computerized electronic robot. Leachim knows the
names of their brothers, sisters, parents, pets,
reading scores, IQ scores, math scores, hobbies and
interests, the contents of their seven class textbooks,
and a number of different teaching methods. Leachim
is motorized and has an adjacent visual display screen
(called a tableau) that exhibits material as Leachim
explains it verbally.

Leachim is an advanced experimental verbal computer
that has all the capabilities of conventional

computer systems but can convert standard

computer output into words and tailor his responses
for different children. In addition, Leachim grades tests
and maintains progress reports on each child.

Leachim can be quite stern if a child is working well
below his capacity. On the other hand, when slower
children demonstrate even a little success, Leachim’s
compliments and reassurances are
generous.”

So much for computers. Let’s move on to some of my
other predictions for education in the future and touch on
them briefly:

**Prediction**—Grade levels will disappear and students
of various ages will learn together. As school becomes
more of a concept and less of a place, it will no longer be
necessary or even desirable to group children by age.
When it is necessary to group children at all it will be done
on the basis of common learning experiences and not on
the basis of chronological age. In the future, of course,
most education will be highly individualized with much of
it occurring in the home via television and computer, thus
diminishing the need to bring children of common ages
together. Even today there is no sound educational reason
for grouping children by grade and age. It is, of course,
administratively more efficient and so we continue to do
this way. But this will all change in the future.

**Prediction**—Subjects as we know them will disappear
and more emphasis will be placed on the integration of
knowledge from various fields. Most schools today tend
to operate on a factory model. Kids are grouped neatly
together by grades and courses are packaged by subject.
The student graduates when he reaches the end of the
assembly line. By reflecting on this approach to education
it becomes obvious within a few minutes that it is
anachronistic and does little to prepare students for life in
American society. The separate subjects curriculum
employed in most schools does not teach the student to
integrate and assimilate knowledge in such a way as to
make it useful to the individual to function well in society.
If schools have a major shortcoming, it is this—their
failure to go that next step to assist students to integrate
the knowledge which they have learned.

**Prediction**—Educators will work in teams to educate;
thus allowing teachers to advance career-wise without

**FALL, 1981**

http://newprairiepress.org/edconsiderations/vols/iss4/6
DOI: 10.4148/0146-9282.1878
giving up teaching. Some teachers will become more highly paid than any other profession. The innovations described earlier imply enormous changes in instructional techniques. Today lectures still dominate the classroom. Research indicates that nearly two-thirds of the teaching at all levels can be described by the broad term of lecturing. While still useful for limited purposes, lectures must inevitably give way to a whole battery of teaching techniques, ranging from role playing and gaming to computer-mediated seminars and the immersion of students in what we might call contrived experiences. Experimental programming methods drawn from recreation, entertainment and industry will supplant the familiar lecture. Learning may even be maximized by biofeedback techniques and through the use of controlled nutrition or drugs to release IQ, to accelerate reading, or to enhance awareness. These changes and the technologies underlying them require basic changes in the organizational patterns and, hence, in the roles of teachers. Differentiated staffing arrangements will be necessary to operate the classrooms and direct the learning experiences of students in the future. Instructional teams will include learning specialists, counseling specialists, child development specialists, computer technicians, perhaps even medical personnel, and, as indicated earlier, perhaps even a robot. These instructional teams will be managed by team leaders who will command high salaries as a result of their complex responsibilities. It will not be uncommon to see salaries as high as $50,000 for team leaders in the schools of the future. Different configurations will require a different set of skills on the part of the teacher, skills possessed by various members of the instructional team. Salaries will match the level of skills which each team member has and will reflect each individual's contributions as a member of the instructional team. The single-track salary schedule for all teachers will become a thing of the past.

Prediction—Teacher education will change dramatically. Teachers as previously described as members of instructional teams will be prepared in various places. Some will be prepared in schools and colleges of education as they are today, some will be prepared in schools of business, some in schools of engineering, some in medical schools, and almost certainly some will be prepared in law schools. Training will be ongoing in order for teachers to remain abreast of the new technology and innovations being employed to educate children. Competencies will be defined for each role and programs will be designed to enable teachers to acquire the specific competencies. Performance will need to be demonstrated before teachers will be certificated. Since most teaching will be done by instructional teams, there will be apprentice teachers or intern teachers on every team. Team leader positions will be held by master teachers who possess the doctoral degree and who are experts in the teaching-learning process.

I have some additional predictions for education in the future which I will enumerate without elaborating on them. They are:

Prediction—Class size will decrease dramatically as research continues to demonstrate that smaller classes result in higher achievement. In fact, as indicated earlier, most of the educational process will ultimately become individualized.

Prediction—Alternative or specialized schools will become commonplace.

Prediction—Process skills will be emphasized over product skills.

Prediction—Schools will allow and encourage students to enter, dropout, and reenter according to individual circumstances.

Prediction—Our educational system will strive to achieve the twin goals of access to education for all and excellence for all.

Prediction—There will be special programs for preschool handicapped children and gifted children (infants to age 4) with increased emphasis on parenting and parent education.

Prediction—Child care services in business and industry will increase and will become more educational as opposed to just providing babysitting service.

Prediction—Schools will include courses in "Futuristics" which will be designed to provide students with an orientation to their alternative futures, to increase their awareness of potential careers, and to help them gain new interests in the use of leisure time.

In summary, let me suggest to you that education and educators can and should become involved in "Futuristics." No other profession has greater potential for molding and shaping the future than does the education profession. Will we meet the challenge? We cannot wait until tomorrow. The future is now!

References


