DOCUMENT RESUME

ABSTRACT
        This forum paper contains the perspectives of three
adult education researchers (Jerold W. Apps, Daniele D. Flannery, and
T. Tappey Turner) concerning the role of adult educators in the
information age and the attitudes of adult educators toward the
recent information explosion. In perspective 1, on the roles of the
adult educator in the "information ocean," it is suggested that adult
educators must assume two roles: they must assist learners in making
sense out of specialized information in light of the learner's life
situation and they must help learners identify information that is
needed and not available. After a discussion of Margaret Mead's
assertion that the information explosion has made the transmission of
knowledge from teacher to student a lateral rather than a vertical
process, in perspective 2 it is concluded that adult educators must
focus on providing a sense of connectedness and increase their
efforts in the areas of collaborative research, interdisciplinary
sharing, and development of an atmosphere of collaboration among
adult educators rather than one of competition. Perspective 3 expands
upon the metaphor comparing coping with information to swimming in
the ocean, and suggests that adult educators must learn themselves
and must help adult students learn to be selective in focusing their
attention on and attempting to come to terms with specific subject
areas and levels of complexity of information, thus selecting that
information that is most useful to their own needs. (MN)

HOW ARE YOU SWIMMING IN THE INFORMATION OCEAN?

by

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ABSTRACT

Information creation and dissemination is an ever-present phenomena in our society. The amount of information stored in the world's libraries and computers has doubled over the last eight years. College students may have computer access to libraries and other data banks from their dorm rooms. Satellites provide information while it is happening via radio and television.

For some, this information issue is a challenge; for others it is a serious problem. At the very least, the information issue is a subject of much discussion, and concern for the influence of information issues on the future of society is widely apparent.

In adult education, practitioners and administrators often associate the information issue with worry about obsolescence. This concern is expressed by feelings of being overwhelmed and of inadequacy, by pressure to keep up to date, by the need to be more efficient, by concern with imparting sufficient information in programs and class offerings. Time management, speed reading and listening, stress and computer literacy offerings are marketed as solutions to the information problem, and

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implicitly, one hopes these solutions will lessen one's fear of becoming obsolete.

In this forum the writers want to begin addressing three areas: the information issue itself, the relationship of the information issue to the adult educator, and lastly, raise questions for considering the relationship of the information issue to adult education and to the notion of obsolescence. Three perspectives on the information issue and on its relationship to adult education are offered. The responses are not posed for purposes of argument itself, but are posed as a variety of considerations. Each of these responses comprise an on-going dialogue about these issues to which we invite adult educator participation.

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The authors want to thank R. Boyd and A. Knox for their comments on this paper.

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PERSPECTIVE ONE

I believe the metaphor of the ocean is an appropriate one to describe where all of us are these days in reference to information. You will readily see that I am taking a positive attitude toward the situation. Generally one hears the

question: "Are you drowning in the information ocean?" We are

assuming you are at least still swimming.

I would like to briefly explore three questions with you:

1. What is the information problem?

2. What is the relation of information to knowledge?

3. What are the implications for educators of adults?

I start with the assumption that we have an information

problem in our society, and there are two fundamental dimensions

to it. We have at the same time, too much information and not

enough information.

John Naisbitt (1982) author of <u>Megatrends</u> writes: "We are

drowning in information but starved for knowledge . . . This

level of information [the amount presently available to people]

is clearly impossible to handle by present means. Uncontrolled

and unorganized information is no longer a source in an

information society. Instead it becomes the enemy. . ." (p. 24).

Wendell Berry (1983) writes, "The evidence is overwhelming

that [information] does not solve the 'human problem.' Indeed,

the evidence overwhelmingly suggests . . . that [information] is

the problem" (pp. 48-62).

Berry and Naisbitt warn us that the tremendous amount of

information we have available, that floods across our desks

every day, is not as beneficial as some would have us think. In

fact, information may be a major contributor to a wide array of

problems. New research information that increases food
production through larger fertilizer applications has led to
ground water pollution. New technology requiring increasing
amounts of electricity, and large coal burning electrical
generating plants is a contributor to acid rain. New
agricultural equipment requiring huge fields in which to operate
has caused farmers to tear out windbreaks exposing thousands of
acres of soil to erosion.

At another level, increasing amounts of information require
more time for information management, and take away time (for
people) to reflect and discover meaning in information. For
some people, increasing amounts of available information have a
numbing effect, with the result that only minimum attention is
paid to any information. Many people have developed a survival
attitude toward information, trying to avoid becoming buried by
the flury of facts, paper, and electronic signals that bombard
them daily.

Not only do we have ever increasing amounts of information
thrust on us, we also often la k for information. Though there
may be ever increasing amounts of information available, we may
discover that to solve a personal problem we have, or for a
community to resolve a personal problem we have, or for a
community to resolve some issue it faces, specific and
appropriate information is lacking. With all the information

available; we may discover that none of it fits the specific

context of our problem or question. I will come back to this

later.

Now for a moment, I would like to explore the relationship

of information to knowledge. Our information includes

unexamined experiences, facts and numbers. Knowledge results

when we integrate experiences, facts and numbers, and relate

them to a problem or situation, or to a theory. For instance,

we may be interested in wood carving. We go to the library and

discover information about which knives to select, which wood

carves well, and perhaps we see examples of work from other wood

carvers. Until we reflect on the information and attempt to

apply it to our own wood carving projects, it remains

information. Once we have integrated the information it becomes

knowledge. There is thus a learning process involved, from

receiving new information to integrating and making sense of

this information which then becomes knowledge.

Each of us carries a supply of unexamined experiences,

facts, and numbers around in our heads, a supply of information

that we may one day incorporate into our knowledge. Let me

share another example to illustrate the difference between

information and knowledge. Let us say that you have organized a

workshop on international trade. You have arranged for a panel

of experts: an economist, a political scientist, an exporter,

and a banker. Each provides a view of international trade.
Each shares his or her knowledge with the group. But to the
participants in the workshop, what these experts are sharing is
information. Until each person takes the information and
reflects on it, tries to relate it to experience, to problems
faced, and so on, the experts' knowledge remains information to
the workshop participants.

Norman Cousins (1981), former editor of The Saturday Review
says it this way, "There is a tendency to mistake data for
wisdom, just as there has always been a tendency to confuse
logic with values, intelligence with insight. Unobstructed
access to facts can produce good only if it is matched by the
desire and ability to find out what they mean and where they
lead. They are too easily regarded as evaluated certainties
rather than as the rawest of raw materials crying to be
processed into the texture of logic. . . The computer can
provide a correct number, but it may be an irrelevant number
until judgment is pronounced" (p. 104).

Thus it is essential, in my judgment, for information to be
reflected upon, and to be integrated into one's personal life
situation. Unexamined information not only can be irrelevant,
but can lead to dependency relationships. When we know that a
wide array of information is available, we go looking for it
from experts, data banks, and so on, often believing that this

information can be applied to our situation without examination
and reflection.

Turning other people's knowledge into one's own personal
knowledge is further complicated by the kinds of knowledge
available these days. Much knowledge is highly specialized, and
this requires increasing effort on the part of people to see
where this highly specialized knowledge, information to the
learner, fits within the learner's life. Not only is there the
problem that information is highly specialized, but there is
also the problem of information being presented without
context. Fritjof Capra (1983) says, "The real problem that
underlies our crisis of ideas [in this country]: the fact that
most academics subscribe to narrow perceptions of reality which
are inadequate for dealing with the major problems of our time.
These problems . . . are systemic problems, which means they are
closely interconnected and interdependent. They cannot be
understood within the fragmented methodology characteristics of
our academic disciplines and government agencies" (p. 25).

Now to the third question: What are the implications of
what we have been talking about for educators of adults?

Our role as educators goes far beyond providing information,
or to use the jargon, delivering information. By only providing
information, we may, as Naisbitt suggests, contribute to the
problem rather than aid in solving it. At least two ducator

roles are suggested. One is for the educator to assist the learner in making sense out of specialized information in light of the learner's life situation. (When I use the word learner, in this instance, I could also use the words community or group. That is, we could assist a community in making sense of certain specialized information we have in light of that community's problem or question.) Along with assisting learners and communities making sense out of information in terms of specific situations, we also could assist by helping the learner raise such questions as: is this information accurate, is it useful or worthwhile in this situation, what costs are involved, and so on.

Secondly, we have an obligation, (it would seem,) to assist learners in identifying information that is needed and is not available. Together with the learner, we can set out to find the necessary information. This cooperative effort in search for information could be called research. But it is different from what we ordinarily call research because the beneficiaries of the research are involved in doing the research. We are not researching for the purpose of writing papers and gaining tenure, but in assisting learners grapple with problems and situations. (To be sure, out of such joint information finding efforts, or research, publishable material may result that may assist others, but the primary purpose of such joint inquiry is to aid the learners who are involved.)

In summary, we could easily say that our society at the same time faces the problem of having too much information and not enough. We may be swimming in the information ocean with the waves crashing over our heads, and a moment or so later find ourselves crawling over the parched, dry ocean floor, in search of a mere cupful of water. As educators of adults, we have the responsibility of knowing where we are -- swimming, or looking for water. That in itself is often a difficult question to resolve.

PERSPECTIVE TWO

Perspective one begins with the assumption that there is an "information problem:" 1. the Megatrends quote states that "uncontrolled and unorganized" information is not a resource but an enemy; 2. the first perspective infers that because information does not give complete and perfect answers (e.g. "along with technological advance cf increased food production . . . come problems of ground water pollution . . ." that information is a major contributor to human problems; 3. states that "information is trust on us;" and lastly, 4. part of the information problem is we "lack for information."

Implicit in these statements, I would suggest, are some assumptions to be challenged: 1. Only when information is controlled and organized is it a resource; 2. Only when

information is absolutely complete, that is resulting in no

unanswered and unplanned for end results, is it not a problem;

3. The human being has no choice as to what information he/she

will hear, ponder, etc; 4. It is a problem inherent in

information that humans lack complete information.

I would suggest that this approach to information is

mechanistic, reduces the person to a helpless bystander and

imbues information itself with power over humans.

In place of this approach to the issues of information, I

would suggest that the very metaphor of the water should be

turned around. We are the water. We, to a large extent, bring

life and death upon ourselves. Information is one element which

may influence us.

And what is information? Information is accumulated data.

It may be collected and stored in peoples' minds and

experiences, on tablets, in books, in computer banks, etc.

Information may be disseminated by verbally sharing stories, by

drawing pictures and graphs, by television and newspapers.

Information may be received by listening, reading the printed

word, being exposed to billboards and magazines, by accessing

computer data banks.

Human beings have in large part, a choice to attend to, to

ignore, or to utilize information. I suggest that the real

problem today is not an information problem, but a human

problem. The human problem is that of a wrenching paradox of connectedness and separateness.

A glance at the recent history of information exchange demonstrates the paradox. As the potential for communication across the miles increased, (newspaper, telegraph, radio, T.V., satellite, computer), geographical, personal and educational isolation potentially decreased. Individuals became more potentially connected with the world.

However, with the increased potential for communication, several other factors resulted, factors which can be heard today in discussions about the information issue.

1. As the potential for communication and shared data with the world increased, individuals' sense of isolation began to increase because of too much stimulation. One simply cannot respond to all possible connections, nor think about, nor do something about each and every piece of information.

2. As the time it took to communicate decreased, there was often less autonomy and more centralization involved in decision making and in control of the communication itself, (e.g. newspaper, radio, T.V. and computer accessibility mediated by the largest of the technological companies). Individuals became more isolated from unmediated information and therefore, potentially more frustrated at their own lack of control.

3. As communication with the world increased, the complexity of skills involved in learning from and using the information itself increased. As complexity of skills has increased, so has the sense of isolation that one cannot learn all there is to learn.

In summary, the problem today is a human problem of connectedness and isolation. One cannot respond to everyone and cannot consider everything. Communication and information is often channeled or mediated by certain groups of people rather than by the individual. Third, the more complex the information and communication gathering and media themselves, the more complex the skills needed by persons to use and understand both the media and the information. And lastly, the processes of separateness, connectedness and isolation continue at rapid rates.

What can be done about this human problem? In 1959 Margaret Mead suggested at a meeting of the National Education Association that education was changing rapidly. Her comments may offer a new model for consideration.

"Although," she said, "the educational system remains basically unchanged, we are no longer dealing with the vertical transmission of the tried and true by the old, mature, and experienced teacher of the young, unmature, and unexperienced pupil in the classroom . . . in a world of rapid change vertical

transmission no longer adequately serves . . . (us). One is not

sharing knowledge one acquired a year ago . . . but one learned

what was new yesterday and the pupil must learn it today."

She continues and suggests that what is "needed and what we

are already moving toward is the inclusion of another whole

dimension of learning: the lateral transmission, to and by

every sentient member of society, of what has been discovered,

invented, created, manufactured and marketed. This is not

necessarily a tried and true handed down wisdom, but continual

adjustment to take in new, to weigh, to envision ramifications,

to use and to innovate - individually and collectively - the

lateral transmission of information by all to all as knowing

individuals."

Mead's concept of lateral transmission of knowledge has

several implications: 1. All ages, generations, classes of

workers, of thinkers, etc. have information and knowledge to

share, and not necessarily the same information; 2. People do

gather some information and not other; 3. Different people have

or acquire different skills; 4. A future of keeping up with the

information we ourselves are generating consists in a trusting

and sharing together with each other.

In summary, it is human beings who create and disseminate

and decide to use information. The issue is how will this be

done. With Mead's model of shared transmission of knowledge as

a basis three areas for educators might be considered.

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Let us look at our own language and our own practice:

1. Do we talk about information or technology which transmits information as if it were the problem (e.g. the computer vs. the human, the information problem)? In other words, are we going to give power to that which human's have created or are we, joining together with others, going to take power and responsibility for it and for how information and technology are used?

2. Let us look at our own practice in terms of whether we try to do it all ourselves.

- issues of collegiality
- issues of collaborative research (including changing tenure, promotion, and pay raise policies which today support individual research)
- issues of interdisciplinary sharing
- issues of administrators, trainers, ABE instructors, professors, etc. collaborating rather than competing

3. Let us look at our practice in terms of what is communicated in our classrooms, program planning, workshops, seminars. Does the manner in which each is run demonstrate a position of connectedness which takes responsibility for the world, including the creation, dissemination and use of information?

PERSPECTIVE THREE

Consider information like an ocean; it surrounds us, and in its all-pervasiveness is as taken for granted as the air we breath. Information is part of the environment which sustains life.. If we can momentarily visualize ourselves as swimmers, we can begin to feel the water around us, and gain a new appreciation both of the setting, and of our abilities to interact with the ocean and with our fellow swimmers. Depending on our abilities, the temperature of the water and ambient air, the amount of wind and waves, the presence or absence of clouds, the kind of beach nearby, the friends who are near us, and other circumstances, we more or less enjoy ourselves.

How might we relate water conditions to information? Let us consider salt content as roughly equivalent to information which is relevant to the work we do. The higher the salt content, the easier it is to float, the more a person's information coincides with the person's work requirements, the greater the potential satisfaction. Water temperature represents congruence between personal competencies and occupation; a 'people person' is more likely not only to succeed but be content as a salesperson, than an introvert who prefers solitude. The wind can be considered large social contexts such as the national economic situation; waves correspond to local social contexts such as racial unrest; proximity to land equates with our degree of self-awareness and

comfort with change; depth of water shall represent levels of abstraction we are dealing with, and longitude and latitude refer to our upbringing and social status.

Presumably we would all like to think that we are accomplished swimmers, comfortable in our body's natural buoyancy. For various reasons, some people never seem to get enough of the elements, while others quickly tire of it all - or so they let on. Even after seventy years of swimming, there are those who still delight in flying fish and the sparkle on a clear spring morning, and many others who take the bounty casually. We can speculate about how people's attitudes toward their life experiences predispose them to exercise more or less energy to tread water in one spot, or move to other places near or far away.

To this point we have been talking about various elements which contribute to the kind of relation between the swimmer and the ocean. There are the physical and mental attributes of the swimmer as well as the external, environmental conditions of the information which interact on a daily basis.

Now let us consider questions about the quality of the ocean we are swimming in, as well as our responses. In metaphoric terms, what is the salt content, temperature, surface of the ocean? Do we swimmers possess one stroke or several, can we negotiate more than flat, still waters?

Quality is certainly relative in many if not all
situations. Yet we can not disregard the perennial philosophic
question whether some areas of the ocean are good for all
swimmers all the time. Or, from a social perspective, are some
areas of the ocean open to public access, while other areas are
off-limits? From a cross-cultural perspective, we know that
while there is some overlap between different parts of the
ocean, there are also territorial waters protected by claims of
national sovereignty. The merits of the water/information is
dependent upon so many other inter-dependent factors as well.
We can inquire about the sources of water/information. Does it
originate from continents such as governments, from countries
such as news agencies, multinational corporations, or from
principalities such as academia? From what points of the
compass are we in relation to these land masses? To the North,
South, East, or West? What languages are spoken, under what
political system, with what kind of diplomatic relations with
other countries?

These are nettlesome questions if we take them seriously
because they require a constant exercise of individual and
social judgment. What are our standards for assessing 'good'
information from 'bad,' 'relevant' from 'irrelevant,' 'accurate'
from 'inaccurate?' What are the social filters which predefine
the categories we use to order our world? What information is

systematically excluded, and why? The time and energy we devote
to such considerations varies with our interests, training, and
priorities. And if we are very busy and comfortable in a crowd,
and swimming in familiar waters, it is much more difficult to
ask questions which may challenge people's basic beliefs about
the water they swim in and their corresponding abilities as
swimmers.

Sometimes such questions are thrust upon us and we cannot
avoid them. We all experience choppy seas from time to time; we
get disoriented, take in some big mouthfuls of salt water, and
begin to look for a raft, shallow water, or in truly extreme
situations, solid land. Sometimes we need something more
substantial than our own wits to shelter us from a storm.

In our daily lives, we might enter our office on certain
days to find our desk covered with paper work, five phone
messages to return immediately, and two students who need ten
minutes of our attention right now. Sorting the mail at home,
we wonder who sold another mailing list with our name on it.
Turning on the television or radio, or reading a journal or
morning paper, we may conclude that the world is too messy and
complicated, that there is little one can do to resolve some of
the problems which just do not go away. Some people may
nonetheless keep the T.V. on while reading the New York Times,
thirsting for more and more information - becoming information

junkies who occupy most of their waking hours attempting to satisfy their addiction. Others will turn off the television set, close the newspaper, and resolve to focus on more tangible situations to work with. After all, why attempt to swim the English Channel when negotiating the swimming pool is challenging enough after a big meal? Yet another group may decide to head for a shallow, well-protected lagoon an remain there indefinitely; convinced that there is little to do but relax and enjoy the simple pleasures.

Earlier I alluded to the depth of water in which we are swimming. In the paragraph above, the intrepid swimmer is moving through various depths of water. Generally speaking, we may assume that the farther out from shore, the colder the water, the choppier the sea. But if Harry Stack Sullivan is correct, then more of us need to risk such perils occasionally in order to learn and become more accomplished swimmers. His claim is that people exercise selective inattention to screen out certain kinds of information. In the case of someone swimming in a world-class competition, concentration is devoted to a narrow field. It would not be appropriate to listen to the sounds of gulls overhead, or marvel at the color of swimming trunks of the nearby competitor.

By the same token, there are occasions when selective inattention may not be so useful. Way out in the far reaches of

the ocean, we may have some momentous information which demands
attention. How do we respond to the continued advances in
genetic engineering, stockpiling of nuclear weapons,
deteriorating international relations, the maldistribution of
food in the world? Such information is far out in deep and cold
water. The prospect of swimming out there is daunting.
Besides, there are expert swimmers who have been there before
us, and surely they know what they are doing. . '.

ADDITIONAL QUESTIONS FOR DIALOGUE

1. What is the relationship of education to information? Is it
    sufficient to describe adult education as disseminating
    information? If this is the case, do adult educators then
    become irrelevant with the proliferation and availability of
    computers?

2. If we are concerned with obsolescence, what does it mean to
    be "adequate" in adult education? e.g.

    a.   keeping the file filled

    b.   knowing where to go for information

    c.   being able to make decisions about the worth and value
         of information

    d.   expanding information sources

    e.   sharing information

    f.   etc. . . .

3. Margaret Mead challenges the structure of education where information is controlled by a few.

    a. Is this a challenge to the structure of adult education today?

    b. Is this a challenge to information sources or providers?

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