PARADIGMS FOR ADULT CONTINUING EDUCATION

by

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ABSTRACT

This paper discusses the status of adult continuing education within four paradigms; Broadcast Information, Correspondence Study, Extended Classroom and Virtual Classroom. These paradigms are discussed with reference to instructional, media and cost variables. Currently, broadcast and correspondence paradigms appear to be the most popular for adult continuing education. The author suggests the need for a shift towards a higher paradigm and argues that the extended classroom model, though suitable for universities, may not be so for adult continuing education. Rather, virtual classroom is seen as the realistic alternative to the correspondence study paradigm currently dominating this mode of education. Implications for teacher training institutions are also briefly discussed.

INTRODUCTION

Research on distance education for adult continuing education has often focused on adults pursuing a university education. Very little academic research directly address adults with K-12 education who are interested in interest-related or career-related education. This paper will focus on feasible modes for distance education within four paradigms namely, Broadcast Information, Correspondence Study, Extended Classroom and Virtual Classroom, for this group of adults.

A discussion focusing on this category of adults is deemed necessary for at least two reasons.

1. 1. These adults form a large portion of the total working force. There have been concerns that these groups of adults are in danger of losing the most in terms of wage earning capacity if they do not keep up with the changing economic forces. It is envisaged that these adults can react in one of the following ways

   - ▪ Climb up the education ladder of getting into a university.
   - ▪ Update or learn new skills within their working domain as work becomes more sophisticated and computerized.
   - ▪ Be out of a job as present jobs are taken over by lower paying job seekers or be satisfied with lower wages offered by present job.

   This implies that there is to be an increase in the number of adults motivated to view education as a lifelong learning task.

2. 2. Among the skills to be learned are in the psychomotor domain in addition to cognitive and affective domains. Most research on higher education has often been biased toward the cognitive and at times affective domains in mind when dealing with higher education. In a sense this implies that we have a good body

of knowledge on cognitive based education to emulate though not in the psychomotor domain.

Some examples of interest related courses would be gardening, cooking and home repair while examples of career related courses would be word processing, woodworking and computer repairing. The courses can be offered for credit towards a certificate, diploma, university or no credit at all, but that is secondary. Individuals on a personal and voluntary basis may take these courses and thus compulsory courses provided by employers will not be included in this discussion. Focus will be given to institutions in the United States.

A brief description of each paradigm is provided next. A discussion of these paradigms with no reference to the instructional, media and cost variables, which influence distance education, will do no justice. Thus some elements of these variables are discussed though not in detail to provide a more contextual picture. Then I will describe where these groups of adult community are currently found within these paradigms. I will then offer plausible shifts this community can take, if at all, taking into account various factors.
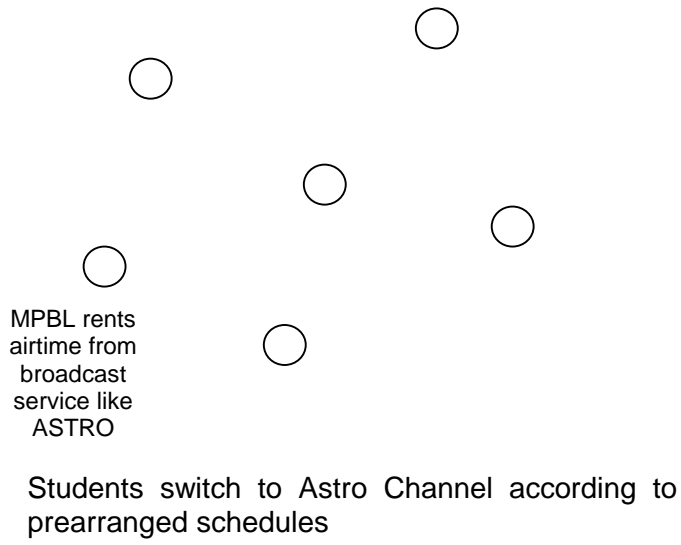

PARADIGM DESCRIPTION

In this section four paradigms are briefly described. A fictitious course called DM101 Educating Young Children at Home – ages 3 to 5, offered by a teacher training college is used as an example.

1. Broadcast Information

In this paradigm (shown in Figure 1) information flow is mainly one way and is synchronous like through television. Occasionally it can be through video or audiotape of recorded broadcast sessions. Hardly any response is expected from the learner, but that can be arranged if required. The course DM101 could be delivered through a series of presentations by experts. This series of presentations can be broadcast periodically through leasing broadcast time with stations like Astro. It can be configured in a way that only those with the necessary password are allowed to view the channel.

Figure 1. Broadcast Information for six students in six different locations
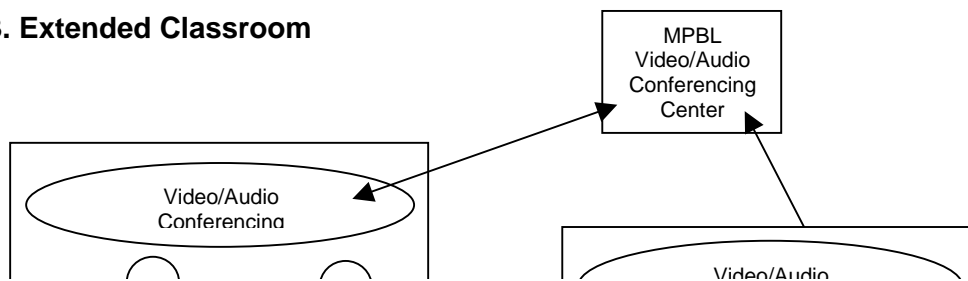
MPBL rents
airtime from
broadcast
service like
ASTRO

Students switch to Astro Channel according to
prearranged schedules

2. Correspondence Study

Figure 2. Correspondence Study for six students in six different locations

Student 2,   int 1,   Student 6,   Stud   Student 5,
Julau   rio   Batu Niah   Kuc   Saratok

MPBL uses
postal services

3. Extended Classroom

MPBL
Video/Audio
Conferencing
Center

Video/Audio
Conferencing

Video/Audio

Video/Audio Conferencing center
in Long Lama with 12 students

Video/Audio Conferencing center
in Serian with 14 students

Figure 3. Extended Classrooms in two different locations

In the extended mode, physical classrooms are established in small towns. Course is delivered through satellite either through audio, video or both. Interactions can be synchronous through one-to-one or one-to-many or many-to-many or one-to-centers with a facilitator in each center.

During prearranged schedules students gather in their respective centers and the lecturer from MPBL delivers his/her content for course DM101. Live discussions with the lecturer and facilitator can occur after or during delivery of content.

4. Virtual Classroom

Figure 4 is a visual example of a virtual classroom. In this paradigm students are separated by distance but not necessarily in time. With the help of the Internet and its associated web content and asynchronous tools (e.g., email, discussion group) and synchronous tools (e.g. chat) communication can range from one-to-one to many-to-many.

In this course, the content for DM101 could be delivered though the web where the participants read and discuss the readings and discussion questions – a powerful way for social negotiation of meaning in understanding of complex learning.
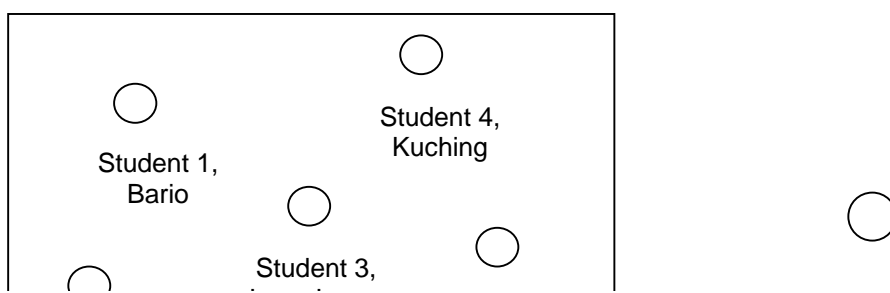
Student 4,
Kuching

Student 1,
Bario

Student 3,

Figure 4. A Virtual Classroom with six students in six different locations

EDUCATIONAL VARIABLES

Learner Elements

1. Learning Needs

In the past, a common view of education has been of finishing college and either getting a degree or to getting a job. As explained earlier, a number of factors have changed this view. The rate of change of knowledge has quickened. Work has become more information based as people become linked by communications technology (Moore, 1996). Work is becoming more automated and there is a shift of skill needs from being purely psychomotor to cognitive. For example, tuning a car was once done by skillfully listening to the noise of the engine. Now, there are instruments to do that job. Operating a sophisticated machine no longer need basic psychomotor skills but skills in interacting with a computer. This implies the need for continuous up dating of knowledge and the need for skills in communication technologies. These skills not only require psychomotor skills but also rely heavily on higher order thinking skills.

2. Demographics

Learners in this category would fall between the ages of 20 and 40. They are mature with jobs and families. This will necessitate them to coordinate their activities between their families, job, spare time and studies. This also implies that most of these learners cannot afford to move to distant sites.

3. Motivation

They need the course to improve themselves (e.g. changing nature of their job), to update their knowledge or even to get a better job. They can be considered as highly motivated and goal orientated. Their view of education as a lifelong task (sometimes even without realizing it) is a powerful source of motivation.

4. Social Needs

They bring more experience and thus can contribute more to the learning process if put in a social scene. Due to their maturity they can assume a higher degree of responsibility and independence in the education process. They can relate to more new experiences.

5. Logistics

They are attracted to the distance education environment due to a number of reasons
- Distance education is the only plausible mode considering their commitments
- Distance education is the only mode available
- The independence and autonomy offered by distance education setting attract them.

Instructional Variables

In general, learning at a distance is enhanced when the quality of interaction increases. There are three categories of interaction that are possible: learner-instructor, learner-content and learner-learner. The benefits of interactive teaching process (Patti, Baker & Albaugh, 1993) cannot be denied. They include

- Increase student interest
- Higher cognitive processing
- Development of cooperative learning skill
- Teacher involvement
- Curriculum integration
- Teacher/student collaboration

Bates (1995) in his twelve golden rules points out that interaction is essential, and he refers to all three modes of interaction. I generally agree with Bates on this rule but this rule has to be seen in context. There are some instances, especially in the interest courses and lower order cognitive skills courses that do not require the learner-learner interaction condition to be strictly met.

Stone (1990) as quoted in Willis (1994) found that the need for live interactive instruction is not supported by research. He believes that off-campus graduate engineers do not suffer from the lack of opportunity to talk back to faculty synchronously. He further believes that in this case, high quality learning can occur better when the learner could control when he could have interaction with the faculty.

Cost Variables

Cost is an important factor for the learner especially for the interest courses that can be classified as non-vital. But as Bates argues, cost includes delivery, production and support. The situation for these interest and career adult group is unique in the sense that there are already a large number of courses available through correspondence and broadcast modes. Cost is going to play an important part in marketability of a course, especially if a significantly more expensive technology is introduced in direct competition with available cheaper but less novel media.

Media Variables

Countless studies have shown that specific delivery systems is not vital in making an educational endeavor a success, it only allows it. Russel (1995) has listed about 218 research materials from 1945 to 1995 in support of the no significant difference phenomenon. A good example of how an instructor takes advantage of a delivery system can be found in "Distance Education Success Stories for University of Wisconsin" (Bjerke, 1993) where the lecture series by video tape is not just the conventional instructor lecturer presenting his lesson. The elements of traditional lecture have been combined into a documentary format.

"In addition to Schultz's commentary and explanation, historical footage and photographs bring an added visual element to the material. When a point discussed required particular emphasis, computer graphics are used to highlight the concept". (Bjerke, 1993)

The session is not only covered in half the time but also able to take advantage of the gain in time to include more material.

MATCHING COURSE TYPES, EDUCATIONAL VARIABLES
TO PARADIGMS

Broadcast Information

Broadcast Information paradigms work well for interest type courses. Interest type course typically are not priority courses and adults taking these course (or series) basically would not like to commit themselves to interacting with the instructor unless necessary. They just want to add to their knowledge base and stimulate their thinking skills. As such many interest courses are offered non-formally through the television media. WTIU is an Indiana University television service offering Public Broad casting Service (PBS) programs. Some examples of programs delivered are Computer Chronicles and the American Woodshop.

Open air broadcast television has been successfully used as a formal delivery media by the Open University of Britain. Many career-oriented courses have been successfully offered through this medium. Because of the motion element in television, it allows for demonstrations and simulations to be shown more realistically than in a print and correspondence mode. Its limitation though, is said to be more of the production cost.

Correspondence Study

Historically most distance education courses began as correspondence courses. Currently, a major number of such courses still fall into this category. Recently this mode of study has been enhanced by the addition of telephone, fax and Internet to communicate asynchronously but the delivery mode is still mainly through the written media.

The international Correspondence School Learning Systems offers a number of interesting courses; Business, Technology, Career programs like Bookkeeping, Dental Assistant, Animal care, Travel Agent, Surveying, Auto Mechanics.

The Wisconsin Technical College System (WTCS), through the Independent Learning delivery system of University of Wisconsin Extension is a popular university offering distance education courses. It offers a number of occupational programs and allows for an entire course to be completed at a district campus. These courses, though, are not offered completely by correspondence mode. It offers courses in the area of Agriculture, Economics, Health Occupations, Interior Design, Materials Management and Written and Oral Communications. It is interesting to note how skill based courses are taught. Courses like Dental Assisting require the learner to be under the employment of a dental office or clinic with a qualified person to supervise the hands-on work of the course.

Penn State University is another famous university offering a number of interest and career courses by independent learning: Philately Series, Business Logistics, Beekeeping, agriculture based courses like Market Milk, Cottage Cheese Making: home and commercial, Flower Arrangement.

Bluestone, a proprietary training institute offers a series of computer related courses. They use a combination of audiocassettes, printed course materials, hands-on lab exercises. Interaction with instructor and help desk support is through telephone and the Internet. Some examples are HTML comprehensive, GUI learning track, C++ Object oriented Programming, UNIX Fundamentals.

The correspondence paradigm for now seems to be the most popular paradigm for interest and career related courses. A subtle distinction though, can be made of the content domains offered by the universities and that of the proprietary schools. The proprietary schools focus their program offerings on practice-based courses like machine repair, computer assembly and computer programming. The universities tend to focus on courses that allow for higher-level thinking and less need for the use of psychomotor skills.

Many computer related courses like WWW basics, Internet, computer language courses are being offered through the computer. This is to be expected as more homes and offices have computers. The asynchronous interaction mode offered by computer-mediated communication attracts many adults.

Extended Classroom

The extended classroom paradigm seems to be the direction taken by the United States in exploring solutions for higher interaction (as compared with the Virtual Classroom).

Institutions and corporations that can afford them or being sponsored by companies that provide these technologies on an experimental basis provide courses that make use of latest and most sophisticated technologies like video conferencing. These institutions normally focus on higher education and experiment with secondary and elementary education. Their interests in vocational courses are spill off from their main thrust.

The Pacific Bell Company is an example of a huge company dealing with communication services. As services change continually, the staff needs to be educated. The company offers courses by one-way video two-way audio conferencing to its interested staff.

University of Wisconsin has been teaching engineering courses to distance learners nationwide since 1990 over regular phone line (Weiss, 1994). Each site is connected

by two lines; one for an open teleconference and the other for a virtual whiteboard for all the networks to share. This whiteboard permits the instructor and the learners to display image and annotate them with colored pens.

The extended classroom paradigm does not seem to be a popular paradigm for the interest and career courses. Possible explanations are
- It is a more expensive paradigm to the already established broadcasting and correspondence paradigms
- Research has shown that many adults do not want to be dislocated to another site, they prefer to study at home
- The advantage of an extended classroom paradigm is basically in the availability of synchronous interaction and most working adults prefer the asynchronous mode of interaction

Virtual Classroom

A lot of interest has been generated in this area especially using Computer Mediated Communication. There is currently a course offered by an individual in the Internet. In the Internet Photography Workshops, 1996, Paul Light, the instructor offers works hops on General Photography, Stock Photography, Travel Photography Workshop and Photography as Digital Art. The main mode of communication is by e-mail. The instructor claims to be an expert in photography. On one of his courses, he asks his learners to send their photographs to each other to be critiqued. Some form of virtual discussion goes on between student and student and student and instructor. Most of his other courses have connoisseurship relationship (more towards the correspondence paradigm). The student sends his product to be evaluated.

This paradigm has worked well for a course emphasizing the affective domain. The Gilbert "Grief in a family context" course do demonstrate that this area is viable. This course was offered exclusively through the net.

Within this paradigm, Computer Mediated Communication offers a lot of promise. Computers are beginning to be found in many homes. It is reasonably cheap to connect to the Internet. This medium allows for asynchronous communication and learner-learner interaction. These factors together give a convincing attraction for those in the correspondence schools paradigm to move into the virtual classroom paradigm.

PSYCHOMOTOR SKILLS ISSUE

Psychomotor skills based courses has not been specifically dealt with yet. I would like to divide psychomotor skills courses into two basic types; those that are simple to learn and those that are complicated and requires many prerequisite skills like computer skills. Correspondence courses have been dealing with simple psychomotor skill courses for years. I will refer here to the kind of skills, which requires a higher level of skills.

Higher level psychomotor skill based courses have been dealt in 3 major ways.
- University of Wisconsin-Extension has handled psychomotor skill based courses cleverly. They require the learner to be currently employed in a place that allows him to practice skills learnt.

- Proprietary correspondence schools posted the necessary tools together with their printed text. Tools and meters are part of the posted materials in an electronics course.
- The student is required to go to a site to get hands on lesson on the use of psychomotor skills.

Let us look at some specific courses like some modern press machine. How can an individual gain access to learning about such an expensive and complicated machine? For one, in such cases you would expect the individual to be employed in a company that has such machines then the question of which paradigm is suitable does not arise. What about individuals who are not attached to such access, like an individual who like to change jobs? There are a number of ways to handle this situation.

- Basically only large companies have expensive machinery. The distance education providers can make arrangements with these companies to make use of their facilities at some designated times to allow the adult to have practical training.
- Vocational and technical schools can participate by offering these kinds of specialized courses and allow their hardware facilities to be used by adults for practical training. The student could do his industrial training' at designated times.

SHIFTING TO A HIGHER PARADIGM

There is this argument that interaction, especially the learner-learner type, is vital in education. This suggests that the extended classroom and the virtual classroom models as the most desired mode. If at all the above statement is vital for most of interest and career education, in practice, for an institution to shift over to this more desired mode of instruction, one has to compete with the already cheap market for such courses through the proprietary schools. The other issue is, is learner-learner interaction really an issue worth arguing for the many cognitively less demanding courses? Again I see Computer Mediated Communication as offering potential for satisfying the learner-learner interaction when deemed necessary.

IMPLICATIONS FOR THE TEACHER TRAINING COLLEGE

As we progress into the information age, society is getting more complex and together with it our children are facing more challenging environments. I expect parents to want to learn more systematically how to educate their children in their own home. I subscribe to the notion that we have reached a stage that it is important that children are brought up by parents having sound understanding of the psychological, social profile and capabilities of their children. As one of our focuses is on teacher education for primary school children, it would not be difficult for our staff to stretch our expertise to younger children.

I also see many institutions of learning mushrooming up as expected of in a developing country. Many of the instructors in these institutions do not have pedagogical background. It would be too costly, financially as well as loss of income,

to pursue formal knowledge in pedagogy and androgogy. As such there is a potential for teacher training institutions to fulfill its role of help provide effective teaching force for the nation.

Even our own teachers may want to update themselves on their knowledge. For example, at present the college with support from the state education department conducts short course for teachers. The teachers have to be physically present to attend the course and result in disruption of teaching in their respective schools. In addition, it is not feasible to reach teachers stationed far in the interior. As our government fulfills its part on providing access like telephone to the interior, there is great potential for these teachers to update their professional knowledge.

Again the virtual classroom paradigm using Internet technology offers feasible delivery options for reaching the above group of potential clients. The teacher training colleges should seriously explore these options especially the potential of Internet technology as distance education delivery mechanisms to fulfill its obligation of providing quality education.

CONCLUSION

This paper described the adult continuing distance education situation in terms of the paradigms introduced in an earlier chapter. The broadcast and correspondence paradigms appear to be the most popular. The extended classroom model attracts the universities but is not a realistic model for most adult learners. I would like to suggest seriously considering Computer Mediated Communication as realistic alternative to the numerous correspondence schools paradigm currently dominating the adult continuing education market.

Note: This paper is taken and modified from an unpublished monograph written as part requirements of a Masters/Ph. D. level course "R685 Topical Seminar in Instructional Systems Technology: Distance Education Technologies", offered by the Instructional Systems Technology Department of Indiana University, Bloomington, USA in 1996. The modification was necessary to make the paper stand on its own and apply to the teacher training college.

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