

Interactivity And Media In Distance Education

By

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Distance education is the organised mode in which learner most of time is a distance from institution so material designed for these learner is self-instructional and self-paced which provides high degree of autonomy and independence. There were time when distance education was equated with correspondence education. But, since the last two decades, distance education is identified with the extensive use of technologies such as: broad cast radio and televisions audio tapes, video tapes, tele-phones fascimile machines, electronic mail and computers. But print is still in most cases core of the learning package. This increase in choice according to Bates (1990, p.20) has brought difficulties of decision making also.

The Loneliness of Distance Learner

In almost all definitions of distance education, most of the time learner is at physical distance from institution or the teacher. This means that interaction between the student on the one hand and the tutor counsellor - on the other hand is different from formal class. Bates (1990, p.24) classifies the social interaction in open and distance learning as:

- ❖ "Interaction between the learner and the originator of teaching material.
- ❖ Interaction between the learner and a tutor, who mediates between material and the learner, by providing guidance or assessment.
- ❖ Interaction between the learner and other learners"

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The first kind of interaction is very rare in distance education but position is now changing as the use of interactive technologies is spreading. Second type is common as in most cases, face to face tutorial is there, third type of social interaction has been the neglected one uptill now, only those may have some interaction who attend the tutorials/workshops.

By using technologies, interaction can take place without face to face contact, even interpersonal interaction can be from a distance via mail service or through computer based electronic mail etc. so social interaction is not necessarily time or place dependent or even instructor dependent if a mediating tutor or peer groups are used. This loneliness is covered by interaction with material which is designed for this function. Student is active while learning through distance material. He/she does not merely reads but have to do some thing with learning material. Students are required to demonstrate what they have learned, reprocess new material to incorporate with old one, apply to new education. Feed back is an important component of interaction as it indicates to the students the degree of learning they have.

There is towards "students and result oriented accountability". This is due to:-

1. The rapid or appropriate technologies.
2. The increasingly shorter span in the development of these technologies.
3. Their pervasive and far reaching impact on cultures, societies and the world"
(Hodgking, 1990, p.83)

Interactive Communication and Technology

Education by any definition depends upon human communication. Many forms of human communication are enhanced by new information technology. This technology has increased the fidelity with which messages can be transmitted and the amount and the variety in these message. Fidelity has also reduced noise. Accordingly to Hawkrige (1983, p.23), technology extends our senses and breaks the bounds of time and space for use/ Now technologies are human extension and evolutionary in their nature. Evolution is biological rather than mechanical process. In

the mechanical world whole equates to the sum of all parts, these subjects are analyzed and comprehension is made. While in biological world, whole is quite different from sum of parts, analysis can not explain satisfactorily the whole. Increasing shift can be seen in new learning technologies from mechanical universe to biological one.

In a sense, all communication is interactive (sent and received) but it does not necessarily mean that content is perceived and understood. In interactive communication people are allowed to communicate instantly and directly with each other. Here new technology provide base for interactivity. Pakdiraton (1990, p.140) terms two way communication as advanced learning technology.

Rational for Learning Technologies

Advantages of learning technologies are as follows:

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|----------------------|--|
| Adaptability | The technology should allow learning material to be used on a wide range of equipment without loss of essential characteristics. |
| Applicability | Learning technology should have more benefits when compared with other technologies. It should be user friendly and for high quality man-machine interactions. |
| Multimedia and multi | Technology should assist in production of learning material and provide systems which help in learning teaching strategies. |
| Adjustability | Learning material should be transferable to new developments and may be Adapted to different situations and cultures. |
| Compatability | Different systems must allow for full inter connection and should be able to be used compatibility in ways beneficial to the learning and teaching process. |

Inter connect-
ability

Learning technology must support communication and interaction between different users and systems in different users and systems in different environment (Pakistan, 1990, PP.140-141)

Holomberg (1983) identified the following purpose of two way communication:

- ❖ To support students motivation and interest by contact with an encouraging tutor and counsellor.
- ❖ To support and facilitate student learning by having students apply the knowledge and skill acquired, as well as by the tutor's comments, explanations and suggestions.
- ❖ To assess students progress in order to provide them with an instrument by means of which they can judge their educational attainment and the marks obtaining.

Here the mphasis is on interaction between the individual student and the tutor. Simulated dialogue includes interaction-ship with study materials, assignments, self assessment exercises, review questions, discussion on telephone, group discussions residential summer schools.

Media

Media may be seen simply as ways of tansforming a signal into a message of making a sense of raw data, other conceive media as devices for transmitting messages simultaneoulsy to a large number of people. There are many kinds of media, this division depends upon the degree to which they rely on technical devices for transmitting signals into message. Hart (1991, P.4) classify media into:

- (1) Presentational media
- (2) Representational media
- (3) Mechanical/electronic media

Presentational media requires face to face communication (e.g. speech), Representational media enables the messages to be stored, passed over a distance and reproduced in the absence of participants (e.g. telegraphs, newspapers, magazines). They use symbolic codes, print, graphics and photography to communicate. Mechanical/electronic media is also representational media as this also uses codes to convey

the messages (e.g. telephone, radio). This rely on technical devices at the part of decoding as well as encoding. So first type of media uses codes but speech and sign language are to some extent representational, second different kinds of media are often used simultaneoulsy, for example television uses speech, television codes and electronic transmission of messages through air.

The media is usually taken to be mass media, relatively modern mechanical/electronic media which involve technical devices.

Mc Lawn (1973) insists that forms of media matters more than the content. He views the effects of media as implicit and subliminal. Media is either hot or cool. Hot media like print, radio and film are high in definition low in audience, cool media like telephone, writing and television are low in definition and high in participation.

Knowledge Meida

Various terms are used for new technologies used in distance education such as telematics, the information super highway and multimedia, knowledge media. Knowledge media as a term "designate the results of convergence of computer, telecommunications and cognitive science" (Daniel 1997, P. 78). It is about capturing scoring, imparting sharing, accessing, creating combining and synthesizing of knowledge. It is not CD-ROM or computer conferencing but the whole presentational style, the usr interface, the accessibility, the interactivity.

Understanding Media

Distance education personals should understand the following five basic principles.

- (1) The media do not simply reflect or replicate the world.
- (2) Selection, composition and elaboration occur at every point in the computer process of editing and presenting messages.
- (3) Audience are not passive and predicable but active and variable in their responses.
- (4) Messages are not solely determined by producers "and editors" decision nor by governments, advertisers and media moguls.

- (5) The media contains a multiplicity of different terms shaped by different technologies and capacities. (Hart 1991, P. 8)

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Achievement of goals of distance education depends upon the selection of teaching methods. Goals may be in cognitive, psychomotor and affective domain. The cognitive domain is concerned with acquisition of intellectual of intellectual knowledge. Usually, it is assumed that courses of Open Universities are of high quality as the course team practice is there. The course team usually makes the course up to data, consistent and high quality. As far skills in psychomotor domain is concerned, distance education institutes face some difficulties especially in science or technical subjects. Compensation of daily lab work may be met by providing casual lab work, home kit for personal use at home. Limitations are mainly in affective domain which is concerned with emotions and attitudes. As most of the clientele of Open University's are adults and have already plenty of professional socialization. When there is increased interaction between students and faculty, naturally affective domain is emphasized.

Media Utilization

Educational transaction is a collaborative process between teacher and learner, this process can be facilitated by various modes of communication. The communication process serves several functions. Some of these as listed by Garrison (1990, P.91) are:

- (1) Negotiation of objectives
- (2) Transmission of contents
- (3) Dialogue regarding meaning
- (4) Validation of knowledge
- (5) Feed back and rate of progression towards agreed goals

In developing instructional design in distance education the communication may present special instructional problems, thus use

instructional technology should be made by considering strengths and weaknesses of each media.

The current consensus that "we know neither how to measure the psychological effects of media nor how to adapt them to the goals and functions of education". (Settler, 1979, P.1) Clark (1983) is of the opinion that "media comparison studies clearly indicate that media do not influence learning under any condition" (P.445), but Bates (1981, P.20) suggests that many instructional functions" in a given circumstances, lend themselves more to one medium rather than another. In this regard, Salomon (1981 b. P.3) has established a psychological theory in which he integrates and considers the interactions among media, cognition and learning. Knowledge is represented symbolically, cognition and learning are based on internal symbol systems. Bates (1981,P.14) comments that :there is no super-medium, each can serve different functions. Thus media do not differ with different learning skills or teaching approaches. Each medium therefore enriches or adds to education of process.

We needed to turn our attention not only to packaging and presentation of information, but to transaction itself. Clark (1983, P. 456) states that it is what the teacher does, the teaching that influences learning. Now, there is a shift in emphasis from investment of resources in the development of material to the investment in the instructional environment. This will result in student centered approach.

Selection of media is an essential decision that must be made in developing instructional design. Romiszowski (1977, P.61) classify the characteristics of media into two classes.

- (1) Essential media characteristics: These are ones which control the clarify the Message.
- (2) Optional media characteristics which improve the quality of presentation.

There are several considerations which might influence ones choice or selection

- a) Choosing media which are attractive to the learner.
- b) Choosing media which fit the learners study habits.

- c) Choosing media which suits the teachers teaching habits, skills and preferences.
- d) Choosing media for particular application.

Factors Those Count In Media Selection

Factors those count in media selection are:

Task Variables

While selecting media, most of the designers considers the type of performance expected from learners. This implies that some media lend themselves better than others to the incorporation of the desired conditions of learning. Gange and Briggs (1979, P. 180) have developed a list which indicates how the identification of type of stimuli presented in a lesson implies certain options of media choice.

Type of Stimuli	Media options
1. Printed words	books: programmed instruction handouts, charts, computer.
2. Still pictures and spoken words	slide tapes, voice slide, lecture with poster computers.
3. Motion, spoken words, and other sounds	motion pictures, television live demonstration
4. Pictorial portrayal theoretical concepts	animated motion pictures, puppets and props

Learner Variables

All the instructional designers agree that while selecting media, student profile should be considered. Here Dales (1969, P.128) counts one experience which is useful and its categories are as follows:

Verbal symbols
Visual symbols sign, stick figures
Radio and recording
Still pictures
Motivation pictures
Educational Television
Exhibit
Study trips
Demonstrations
Dramatized experiences, plays, puppets role-playing
Contrived experiences-models; mock ups; simulation
Direct purposeful experience

For cognitive objectives, Briggs (1972) stated thum rule "Go as low on the scale as you need but go as high as you can for the most efficient learning". From this, Gagneand Briggs (1979, P.18) suggest to consider opposing factors of "slow but sre" and "fast but risky" for the selection of media.

For affective domain, Dale's age/media relationship becomes inverted as compared with cognitive objectives.

The Assumed Learning Environment

Administrative considerations are also important in selection of media. These factors are 1) size of school budget' 2) size of class; 3) capacity for developing new materials; 4) availability of radio, television and other media equipment, 5) availability of modular materials for individualized, performance based instruction; 7) attitudes of principal and teachers towards innovations, and 8) school architecture (Gagne and Briggs, 1979, P. 182)

The assumed development environment time, budget, and personnel available influences the designing of specific delivery system, so determine the kind of media which is to be used. Here design models and team management systems are also needed to be considered.

The Economy and Culture

While choosing media, users acceptability is also important, moreover whether selection is within budget and technology available re-

sources. Different groups of clientele may have different attitude towards different media. Besides this, cost effectiveness is over riding factor. For these, designers need to ascertain the target clienteles status and intentions. Information required may be collected by visiting the users, use of questionnaires etc. but best way is to arrange some of the users on the design team, this will help to ensure acceptance of the media but also enhance the effectiveness of the total instructional design.

The important is not the interaction but is the quality of interaction and feedback also. One way of evaluating of the quality of interactivity is "what kinds of thinking it is likely to stimulate in the learner and is it appropriate for the task at hand? Usually learning is an isolated activity between the student and learning material if learning material is not designed on the principles and techniques of instructional design.

To be "interactive" it is necessary to understand the strengths and weaknesses of different technologies. Two ways communications media are valuable tools for distance educators according to Dekkers (1990,P.34) these provide greatly improved interactive capabilities with institutions, staff, other students, resources etc.

In short, effective interactivity will help in an increase in the students population, a decrease in dropout rate, reduction in tutorial problems, reception of broadcasting with more convenience and improving the tutor performance.

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