

80402

Research Paper  
HOW TO SELECT MEDIA

by  
DEN VI SARA

FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM  
UNIVERSITAS TERBUKA  
1 9 9 3

Universitas Terbuka

## P R E F A C E

The paper of 'HOW TO SELECT MEDIA' is written based on the author presentation in a Graduate Seminar at Simon Fraser University. The presentation itself was a main task for graduate students who registered to the Seminar in 1988.

The author realizes that Universitas terbuka develops a distance education system. Therefore, the understanding of "How to select media" seems to be very important to be written and known by Universitas Terbuka's course designers.

The paper provides you basic concepts of educational objectives. It is followed by information on kinds of media, and a process for selecting media. At the end, it also gives you a conclusion.

For all, the knowledge of "How to select media" is hoped being useful for Universitas Terbuka's course designers. It can be used and considered for making decisions.

## HOW TO SELECT MEDIA

Distance teaching may be defined as the use of instructional methods in which the teaching behaviours are executed apart from the learning behaviours, in such a way that in a continuous situation could be performed in the learner's presence, so that communication between the teacher and the learner must be facilitated by print, electronic, mechanical or other devices (Lopez, 1970:664).

This definition highlights that the separation of teacher and learner is fundamental to all forms of distance education. The students are responsible for their own learning to a considerably higher degree than in a conventional system. This does not mean that students want total independence. Distance study is better characterized as requiring both "interaction and independence" (Lopez and Marquis, 1979); that is independent student learning, but with the possibility of interacting with a teacher.

Thus, instructional learning materials or technical aids to bridge the physical separateness, play an important role to provide a guided didactic conversation between the "teacher" and the "learner". As a consequence, distance education, course presentation is seen as the instrument of a

communication that is selected between the student, the counselor, or the counselor and the tutor; the "teacher" on the other side (Hollnagel, 1977; Kull). In Hollnagel's scheme, the counseling conversation can be a simulated conversation that is the interaction with the study materials, or a conversation, between a student and a counselor for learning, on the telephone or by other means.

Another important notion following the principles of guided object construction in the sense described is assumed to be directed to the students, increase motivation to study and social skills (Hollnagel, 1977; p.117). Kull, now then to suggest skills that carry instructional material to allow the appropriate conversation given the objectives of a course.

In the purpose of this paper to discuss the process of audio selection under particular circumstances.

educational objectives.

The most influential force in identifying and defining instructional objectives is the taxonomy of educational objectives (Bloom, 1956). It consists of a set of general and specific objectives that encompass all possible learning outcomes that might be expected from instruction. The taxonomy is divided into three parts: the first one is the cognitive domain, which includes those objectives that emphasize intellectual outcomes, such as knowledge, comprehension, and thinking skills; the second is the affective domain, which includes those objectives that emphasize feelings and emotions, such as interests, attitudes, appreciations, and values or expectations; third, the psychomotor domain includes those objectives that emphasize motor skills, such as handwriting, typing, and operating machinery. Most courses include objectives from all three domains, although the balance of which objectives fall into which category varies depending on the nature of the course.

Language proficiency courses for example will primarily have objectives in the cognitive domain, whereas a wordprocessing course will primarily have objectives in the psychomotor domain.

### Kinds of media.

The following is a list of media as indicated by D.J. Upward (1982, p.10-11) that are at present available or likely soon to be so. All media require some technology to support them. The level of technology, however, varies very much.

1. Face-to-face, such as lectures, classes, small group discussions, tutorials, self-help groups, laboratory or practical work.
2. Printed text, such as textbooks and structured self-studies. These can be delivered in a single package or via a single payment (Johnson, 1997; p.279), and no special equipment is required. Even though printed material is static and inflexible; its pictures lack motion; its texts ageing and it is hard to keep up to date, it is still the favourite medium since it is cheap and flexible to use and store.
3. Film or television programmes, live broadcast or video based. In recent decades TV has been regarded as a potential superb medium. It can probably offer more exciting audio programs, with greater verisimilitude. Yet, TV broadcasting is at a disadvantage when instruction calls for control of scheduling, stopping, repetition or leading students through a practice exercise.

- a. audio, with or without captioning (that can deliver the text content, unfiltered, to very large audiences at reasonable cost), telephone conferencing, and audio tapes (that can be searched, started, stopped, and repeated, when students think they should be).
- b. audio-visual devices, such as cyclorps.
- c. computer-aided learning (CAL), such as using teletype terminals, using video display units, using the mail and a wordprocessor for preparing the communication from the computer. CAL has some qualities of a potential super medium if its costs can be brought down to acceptable levels. It is potentially better able than any other medium to accomplish the interactive sort of learning. It can be endlessly patient, for example, and more consistent than a live teacher in conducting practice.
- d. laboratory or practical work, such as kits for use in the home or at work.
- e. assignments.
- f. telephone and telephone conferencing.

### A process for selecting media.

Surveys have indicated that people will remember only 10 % of what they hear, as compared to 20 % of what they see, 10 % of what they see and 30 % of what they both see and hear (Borner, 1978). Of these, instruction designed for effective learning may be delivered in a number of ways and may use a variety of media. The choice of media must be undertaken within the context of the prevailing or intended instructional situation. However, it must be recognized that the instructional situation within which media are to be used is an even more broadly limiting factor affecting media choice. The nature of instructional situation is a factor that at one end limits media choice to a mere couple of options, while at the other extreme more possibilities are available. While that setting undoubtedly allows for choices of many different media, it carries at the same time its own limitations.

The limitations on media choice, according to Bagne (1972, p. 104-105) arise when the instructor:

1. is required to produce facilities performance, it limits media choice to the possibilities of real equipment or real time simulation. Surely this is true for psychomotor learning.
2. requires complex processes. It is likely to occur in



cases of low level where student population is large and widely dispersed. The limits of choice, in this context, are for a wide variety in which they have been used with a reasonable amount of success. Their limiting characteristics so far as learning is concerned is the absence of provision for learner interaction.

Learning objectives for learner is adequate, but receipt of content is as the learner is lacking.

1. It can be used for self-instruction. Learners will receive content through some medium and will react to such content directly in an individual manner without the supervision or guidance of an instructor. The limits of this is that some of certain instructor functions that cannot be adequately performed by a medium by itself, such as the function of human modeling.
2. It is affected by learner characteristics, such as the age of students, the amount of educational experience, the ability to read, and the funds they have. Obviously the medium employed for student who has one characteristic may not be entirely appropriate for other students who has different characteristic.

Furthermore, Gagne (1977, p.289-292) also identified media, in relation to learning effectiveness as follows:

The so-called "total system corrective strategy". The individual may give or receive feedback to responses made by the machine. In other words, an interactive quality for learning and feedback skills is needed. A text designed to achieve "programmed instruction" can be specified in this category because it provides feedback that simply gives the correct answer or gives differential feedback matched to the kind of typical errors learners. For the degree of feedback analysis, nevertheless, the computer or interactive television has greater possibilities for a considerable variety of learner responses. Its programs can be designed to give corrections, and rapid access to a number of corrective displays. Therefore, the computer or interactive television is the optimal medium in this regard.

The motor skill action, in this options practice is considered as a requirement for the actual movements that are part of the skill, in order to attain the timing and smoothness recognized as a characteristic of motor skills. The media that are appropriate for the involvement of motor movements are portable training device, computer, programmed texts, interactive television. The such media several practice of the movements that make up the motor skill.

*The attitude option.* Attitude is identified as the type of attitude assessed that influences the design of instructional materials. It will influence the learner's choice of material, attitude toward some object, person, or event. Media options dealing with attitude are motion pictures, video cassette, and slides/tapes. They make possible realistic speaking and talking by human beings.

*The memory alternatives option (declarative knowledge).* Words are optimal in verbal communication media. One of them is a graphic that is accompanied by pictures or diagrams. It reduces the retention of verbal materials (Magne & White, 1978). Thus, appropriate designed signals may be judged capable of aiding recall in the encoding and retrieval of information presented. A number of media that became candidates for design designs were audio and film strips, motion pictures, slides, and TV cassettes. Motion pictures are easy to handle and to reproduce, and when readers may prefer to be instructed by printed text and may not be helped by pictures at all, there is another alternative of non-illustrated (oral or printed) that are not accompanied by pictures and diagrams. These may be delivered as oral speech from an audio recorder or other types of audio devices.

medium, the most effective, appropriate and more widely used medium for the learning situation "self-instruction with response" is the printed text.

In general, there is no recipe book for media selection that can be applied automatically in every educational context. Media have not been found to be differentially more suitable for different people (Gage, 1963; Gage, 1968). In fact, it is concluded, there is no one best medium, and no single medium is likely to have properties that make it best for all purposes. The issues for selecting media are not only applicable to educational situations, but also in non-educational settings such as politics and economic, and social settings. Prestige considerations can also affect media choice. Essentially, in terms of educational needs (based on the function of media), media have to present students with stimuli and evoke a response (Rowntree, 1982), related to the subject matter and the educational objectives given in a lesson. Yet, the cost effectiveness, which is indicated by the cost of media and their power in giving results should not be forgotten as the other basis for the media selection. Finally, student educational skills will need special change, because students' ability is directed to prerequisites required by a particular medium. For example, it would be unrealistic to use video for a

blind student, and audiocassette for a deaf one. In the same way, it is impossible to use CBL in many situations since the microcomputer is still not accessible for many individuals. In brief, the choice of media for a given course is a function of (a) the instructional setting, (b) the "domain mix" of the its objectives, (c) the cost effectiveness of media in a given setting, and (d) student characteristics (particularly media literacy).

Therefore, based on resource, delivery, and other constraints given above, all course development projects need to have an instructional design plan. It includes a section on media selection, developed prior to starting development, so that media can be chosen rationally in order to attain as many objectives as possible.

## References

- Bailey, D.A. (1981). On the Nature of Distance Education. Distance Education 2:2, 212-219.
- Bates, J. (1982). Trends in the Use of audio-visual media in distance education systems. Distance Education: international perspectives. London: Croom Helm, 227-241.
- Conham, D.H. (1980). "Audio Visual Material" in Home Study Course Development Handbook. Lambert, M.P. and Mach, S.K. (ed.). Washington: National Home Study Council.
- Daniel, J.S. & Harolis, C. (1979). Interaction and independence: getting the mixture right. Teaching at a distance 19, 27-34.
- Diagne, R.N. (1988). The conditions of learning and the theory of instruction 4th ed. New York: Holt, Rinehart and Winston.
- Holmberg, R. (1977). Guided didactic conversation in distance education. Distance Education: A survey and bibliography. London.
- Keegan, H.A. (1980). On Defining Distance Education. Distance Education 1:1, 13-35.
- Rudinger, I. & Skarman, D., eds. (1986). Distance education in Canada. London: Croom Helm.
- Rowntree, Derek. (1987). Educational Technology in Curriculum Development. Bath: The Pitman Press.
- Schramm, W. (1977). Big media, little media: tools and technology for instruction. London: Sage Publication.
- Sparkes, J.D. (1982). On choosing teaching methods. ZIFF-Papiere 19. Hagen: Fern-Universität.
- Garland of Educational Objectives: (the cognitive domain (Benjamin Bloom, Ed.). Longmans, Green and Co., New York, 1956).
- Technology based learning: selected readings. (1987). Ed. Nick Rushby. New York: Nichols.