AN OVERVIEW OF SOME FACTORS WHICH AFFECT METHODOLOGY WHEN PREPARING PRINT MATERIALS FOR DISTANCE TEACHING

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This paper focuses on some key factors and issues which must be considered when plans are being made to develop materials for distance teaching. Some areas of similarity and of difference between face-to-face teaching and distance teaching are first highlighted and discussed. Special attention is paid to ways of writing, structuring, and presenting material so as to stimulate the learner to further enquiry and minimize the possibility of dropout. In this regard, the quality and meaningfulness of tutor comments on learners' assignments are seen to be particularly important. The paper ends with some questions normally considered when a curriculum is being designed, and emphasizes the fact that those questions are also quite applicable when developing distance teaching materials.

This paper focuses on the nature of the factors to be considered when we are preparing print materials for teaching learners in the distance teaching mode. However, in order to better appreciate all the issues involved, we should reflect, even briefly, on some of the important differences which exist between distance teaching and teaching in the traditional face-to-face mode. Clearly though, the methodology to be employed will, in the final analysis, be influenced by the reality and the potential of the environment in which we are to operate, as well as by the level of effectiveness which is desirable.

It must be acknowledged that even though there are major differences between the traditional teaching/learning environment and the one which involves teaching learners at a distance, there are also areas of overlap between the two, and there is much to be learned from seeking to develop a clear understanding of the characteristics of the traditional teaching/learning context.

Under normal circumstances, the traditional teaching/learning context reflects the following features: groups of students in one place or in one classroom, all of whom are expected to complete the syllabus within a specified time period, and who write the same examinations at the same time; teachers who are either present or in relatively easy access (meaning immediately available), and who are expected to be willing to repeat or to clarify what has been said, or supply further information in cases where the learner has some doubt, since formative evaluation will be quite possible.
Such teachers will also be expected to offer guidance and other forms of psychological support to their students whenever they need it. Also, through their very presence, teachers can better ensure that the learner remains on task. In the traditional situation, we also assume that there is a physical setting which can be clearly defined, such as a classroom, or a laboratory, or a lecture theatre. With respect to the activities which are indulged in, these generally involve a steady progression through a programme or a curriculum informed by short-term and long-term objectives, and which lead the learner through progressively higher levels of knowledge and skills thought to be appropriate. In such situations, there is also, naturally, a high level of teacher/student and student/student interaction, and a greater likelihood of developing teacher/student rapport directly. The learners in those situations can be considered captive and, in a sense, unable to effect changes of significance to what is taught and when it is taught. We can also expect some guaranteed, reasonably accessible place where material resources can be obtained, for example, a library, or a bookstore which is in relatively close proximity to the place where classes are being held.

On the other hand, what can we assume about the situation which more directly concerns us here, the distance teaching situation? Very often, the students are isolated from their teachers. Quite probably, there would be little or no student-student or teacher-student contact, except in cases where there are specially planned sessions in local study centres. More often that not, neither party will have any idea of what the other looks like, or what background each comes from. Because the students are likely to be dispersed or scattered over a very wide area, as is certainly the case in Guyana, for example, the classroom will have no physical boundaries in the usual sense. The student will most likely have more autonomy in terms of when to study, or whether or not to study, especially if he or she is doing the course voluntarily. In this sense, the 'class' can by no means be considered captive.

Because of the likely heterogeneous nature of the group, their individual educational history and academic achievement, their learning style, and level of motivation will be of special importance. Indeed, all of these factors could result in a rather fragmented
curriculum which, hopefully, each student or learner will complete.

As far as learning materials are concerned, there may most likely be some doubt concerning the kinds of material resources to which the learner will normally have access. In addition, unlike the case in the traditional situation where, in a sense, teachers manage and control the times when learners are exposed to the particular discipline, through the way classes are time-tabled, in the distance teaching situation, this particular factor is, by and large, controlled by the learner.

Notwithstanding the differences which, arguably, exist between traditional teaching and distance teaching, both situations, both contexts, necessitate the planning, implementation, and evaluation of a curriculum. However, it ought not to be difficult to see that from the distance teaching and learning perspective, the curriculum development process is probably much more demanding. Reference is being made particularly to the following: creating and maintaining a high level of motivation; respecting the learning style of the student; utilizing the environmental resources available to the student; paying keen attention to seasonal factors, and to factors of time and timing; controlling cost to the student, as well as to the institution; ensuring that texts provided are accessible (as distinct from available); facilitating the completion of homework assignments, getting them back, and being certain that the assignment done is the student's own effort, and that the student has learned from the experience; ensuring also that answers given to one student are not passed on to the others whom the student may happen to know, (bearing in mind that assignments may be returned at varying times by different students on the programme); minimizing attrition rate of students; minimizing the possibility that the student may feel he or she is being neglected, isolated as he or she is likely to be. We need also to be concerned about ways in which we show that we care about the learner. Research has shown that this factor is particularly important in influencing attrition rate. For this reason, the nature of tutor-comments on students' assignments is seen to be very crucial. They must encourage as well as enlighten the student and, at the same time, leave the door open for positive communication between tutor and student. Then, there is the matter of getting the learner to work within the expected deadlines voluntarily and, in addition, another question relating to the quantity
of homework allotted and the implications of the time of year vis-a-vis the normal social, agricultural, economic, etc. activities of the learners (since many of the learners may well be persons with a family to maintain, entertain and supervise).

Other considerations which affect the curriculum development process relate to testing and evaluation procedures. How will we test, and how do we relate the effectiveness of the programme or course? In the traditional situation, we rely mainly on examination results, and we use the same criteria for evaluating all learners. Should the criteria in the distance mode be the same for all? Should the particular environment in which the learner is operating be considered in the evaluation of the course's effectiveness? Should difficulties regarding the accessibility of support material, and the development of learner independence and autonomy be factors to be considered? The answer to all these questions is indeed very important.

All of the above-mentioned needs, difficulties, and considerations have special implications for the methodology we use in distance teaching and the development of distance teaching materials. To cater for these variables, distance teaching strategies often include a variety of teaching/learning materials and various types of media, such as television, radio, audio- and video-tapes, computer, and telephone, to name the more common techniques. However, studies done to determine the type of resources used most by adults in their learning, show that the resources most frequently identified were books, articles, newspapers and other print resources (Brockett, 1984, p. 16). Moreover, it has been observed that in the early 1980s the Open University in the United Kingdom offered only about 5% of course content through television. The position taken is that the primary function of television is to motivate students rather than to convey information (Weisner, 1983, p. 219) Information presented through video is often intended to reinforce what has been presented in print, or to present other perspectives on the issues being addressed.

Clearly, the presentation of material through various forms of media is also influenced by the fact that different learners may have different learning styles as well as different learning circumstances. Broadly speaking, what we are dealing with here is what is often referred to as
"self-directed learning," as opposed to the normal traditional school situation where the institution is more evidently in control of what is learned, even if not totally so. And, if we agree, as research on self-directed learning has shown, that "those persons who are in control of their own learning are highly motivated to participate and persist in such efforts since they are able to shape the learning experience to meet their specific needs and interests" (Brockett, p. 16), we see why it is of utmost importance to utilize a 'proactive' rather than a 'reactive' approach to the development of written materials. In the reactive approach, written materials are seen as an effective resource primarily in the transmission of content. This approach sees the learner as a passive recipient of knowledge. Brockett notes that programmed instruction, where content, test questions, and correct answers are predetermined by someone other than the learner, exemplifies the reactive use of learning materials. And, he continues, "there is much untapped potential for using materials as a resource for stimulating self-directed inquiry" (Brockett, p. 16). This is precisely what the proactive approach to materials development attempts to do: prepare materials in such a way as to stimulate further inquiry on the part of the learner. Such preparation involves not only what is being presented, but also how it is laid out, and what problem-solving techniques are utilized in order to stimulate the learner toward further inquiry and reflection.

From what has been said so far, two key points must be emphasized. One is, that in self-directed learning, printed material is what is used most by adult learners. The other is, that constantly involving the target group (through formative evaluation) when materials for a particular programme are being produced, at all stages, namely, planning, development, dissemination, implementation, and summative evaluation, can indeed lead to a significantly high level of motivation on the part of the target group, and is thus likely to limit possible attrition to a very low level (See Appendix II). The implications are that materials development must be informed by the relevant research involving a sample of person for whom the materials are being prepared, either as distance teachers, or as distance learners.

When we were reflecting on the kinds of difficulties usually encountered by distance learners, and on the barriers to be overcome, the
question of the accessibility of the materials, that is, their allowing themselves to be understood, was cited as one major area which needs special attention. Of all the areas where barriers to communicate may exist, this one, accessibility of materials, is perhaps the one that is most under the control of writers of distance teaching texts. Consequently, advice and guidance often given to writers of such materials include the following:

* write bearing in mind the identified target group
* respect the reading ability of the learner
* do not use a style that suggests arrogance and aloofness
* write as succinctly as possible, taking care to ensure the point is not lost
* organize the various sections so that they flow logically and smoothly into one another
* avoid language which may appear to be sexist
* avoid too many technical terms
* select a format which is appropriate
* identify, and take into consideration the level of formality needed
* vary the types of activities provided.

The advice given above is in fact saying: make the material accessible to the learner. This goal cannot be achieved if there is inappropriate format, poor sentence structure, a thoughtless punctuation strategy, crowded or congested presentation of information, language which discriminates against a particular group or individual, or inadequate and inappropriate illustrations and examples. Such features can, and often do, lead to inaccessibility of course materials, or to barriers to the communicative quality of the material. It is also to be noted, as Janet Jenkins reminds us, that "a good distance-teaching text will contain numerous activities, so that the student is perpetually stimulated to learn" (Jenkins, 1985, p. 63).

With respect to the range of media to be included in the final package of learning materials, it is useful to create a checklist against which the various media components included may be monitored, so as not to create the kind of imbalance between print and audio-visual material which would impact negatively on the motivation of the learner.
Lawless (1988) lists the following among those components which have formed parts of distance teaching material packages: course guides/handbooks, study guides/commentaries/notes, broadcast notes, audio-cassette notes, video-cassette notes, TV broadcasts, home experiment kits, computer software, telephone group materials, individual phone contact, self-help study groups.

In addition to consideration for components of the distance teaching package, and the delivery of information to the learner, a distance teaching programme must also plan for making support services available to the learner. Such services will include counselling services, as well as mechanisms which ensure that there is much scope for communication between learner and teacher even though they may be miles apart. As we indicated earlier, this goal can be facilitated, in part, by the nature of the comments learners receive on their assignments. The Indira Gandhi National Open University (IGNOU), for example, is one of those distance teaching institutions which pay very special attention to the aspect of support services. It links this feature with the notion of moving the learner toward learner autonomy. Its support services include the development of effective reading skills and study skills, study centres, counselling, meaningful interaction with the learner through assignments, and carefully structured face-to-face sessions with a local tutor.

A related consideration regarding the nature of materials which are to be created has to do with the delivery systems which are available or which can be established within the necessary time period. Can materials only be taken or mailed, for example? Is there an available telecommunication system? Is the electricity system reliable? Can students on the programme meet at study centres closer to their own distant environment? Do they come to the university campus for face-to-face sessions? Should there be a combination of both strategies? These are important decisions which will have to be made. In addition to influencing the nature of the learning materials, the delivery system determines the kinds of assignments and assessment procedures that will be planned, and the weighting which will be given to these. In the interest of academic as well as social credibility, it will be extremely important to pay special attention to those factors just mentioned.
One activity which institutions may consider as part of a training programme for writers of distance teaching materials, could be that of analyzing and evaluating some print materials written for normal reading or for face-to-face transmission, with a view to identifying their shortcomings for distance learning, and determining how they may be adapted in order to make them more accessible to the distant learner. In this regard, two important observations pertaining to distant learners' response to learning materials, and their level of motivation should be borne in mind: it has been found that correspondence materials plus letters of support have resulted in increased achievement, better attitudes, and greater number of assignments completed (Weisner, 1983, p. 216). This strategy is, therefore, one way of supplementing the motivational power of the written material itself; secondly, with respect to the layout, structure and format of the material (text), it is crucial to consider the following:

* construct a text with work-sheets which are detachable, and which can be returned with homework, and with questions from learners;
* provide wide margins in the text, so as to encourage learners to jot down notes, comments, personal reactions, etc. on the very page as they interact with the material;
* ask learners occasionally to refer to previous sections or exercises in the same text, to turn back (or forward) to a particular page, to compare the present explanation, observation, or diagram with one at another point in the course text, or elsewhere;
* consider having the learner turn the text in various positions (e.g., have the diagrams drawn at times upwards, at times sideways) so as to involve the learner physically, actively, with the text;
* where possible, make much use of colour, charts, tables, and so on;
* state at the beginning of each section what it is that the learner is going to learn to do, what skills and knowledge are going to be acquired;
* summarize the main points at the end of a few sections, as a model, then ask the learner to summarize a particular argument, for example, in a space provided in the text;
* determine whether units are going to be 'independent,' whether they are going to be put together in one single text (bearing in mind
costs, postage, pace at which the material is likely to be covered. This may depend on the academic level of the learner).

As an illustration of some of the points made above, consider the two extracts in Appendix 1. Example 1 may be difficult for some readers, mainly because of the number of concepts which are being presented without appropriate examples being given. Apart from this, the somewhat impersonal manner and style of the extract may fail to motivate the reader. Example 2 seems much better in this respect. However, both can be made more accessible through the inclusion of a statement relating to the objectives and the purposes of the material, some idea of how the material may be approached by the student, and some idea of what additional supporting material is included in the learning package which the student has received. Additionally, there should be Self-Check exercises and activities which would aid the student to determine whether the material has been correctly understood. The entire unit of work should include:

* a statement of the content according to the unit structure
* a statement of the objectives
* an overview of the unit which stimulates the learner toward approaching the material in a critical, analytical way
* a note on accompanying support material and on the assignment(s) to be completed after completing the unit
* the text of the unit, broken down logically into manageable parts or sections
* a summary
* Self-Check exercises and other assignments.

We must remember that one of our chief aims in a distance teaching course is on moving, or guiding, the learner from a state of dependence to one of confidence and independence in learning. Consequently, we must see the information we provide as primarily stimulus material, aimed at guiding the learner toward developing certain skills (researching, organizing data, summarizing etc.), rather than mainly at the mastery of the information provided per se.

In course preparation and course writing, we do not only have the task of educating the learner, but also that of ensuring that the learner does
not become a 'dropout.' For the pre-university English course offered by the Institute of Adult and Continuing Education (IACE) of the University of Guyana, the main reasons for student dropout are: having been accepted, the student moved away from the region before the course started; the student migrated during the course; the student enrolled in another course after starting the IACE course and found that the new course was, although very demanding, the one that was more important at the time. Thorpe (1988) has identified five categories of factors which are associated with learner dropout:

A. Course factors--where the learner perceives the course as being either too difficult, or not sufficiently advanced or, perhaps, the content is not what was expected, or is uninteresting. At times, the course may be too over-loaded with too much material to be covered in too short a period of time by the distance teaching mode, or by largely self-directed learning;

B. Institutional factors--not enough tuition/counselling is provided; there may be problems with a particular tutor; administration of the programme may be poor; schedules may be disorganized, and facilities may be inadequate;

C. Learning environment--(1) unforeseen changes, such as illness, accident, job or responsibility changes, unemployment; (ii) lack of encouragement from family, employer, or some important other; lack of money, conflict with other domestic/leisure/work commitments;

D. Learner's approach to learning--the learner may perceive himself or herself as being 'not clever enough,' 'too old to learn,'; low level of skill in learning, difficulties with using the texts, completing assignments, problem-solving, etc.; learner may lack confidence in own ability to learn, pass exam, and so on;

E. Motivational factors--coursework may have been associated with a goal which is no longer desirable, or which has been achieved another way; more appropriate learning opportunities may have been provided elsewhere; another goal, or activity, such as hobby, family, trade union work, may have taken
priority (Thorpe, 1988, p. 109, adapted from Woodley, 1987).

While it is clear that some of the factors mentioned above are outside of the institution's control, certainly, those in A, B, and D can be influenced by the institution. We need to see how far the quality, content, attractiveness, accessibility, etc. of our materials can persuade our distance learners to stay with the course. One way to achieve this, we indicated earlier, is to have in place a system of formative evaluation at every stage of the process toward the production of the final materials; planning, development, dissemination and implementation, summative evaluation. This is quite different from a system in which evaluation takes place only when the materials have already been proposed in their final version. The approach being proposed helps to minimize the need for major modifications at the final stage.

Some specific questions which are usually considered when educational materials are being prepared include the following:-

- what purposes/functions are the materials intended to serve?
- who are going to use the materials? Learners or trainers?
- who identified the needs? How was this done?
- do similar materials already exist? Are they available, and cost-effective?
- how much time is available for getting the materials ready for use?
- what will be the format?
- how many components will there be?
- who will write? who will edit? what do they need to know?
- how will the materials get to the learners?
- what feedback mechanisms are there? Are these adequate and suitable?

These questions are of course also very applicable when we are considering the development, and provision, of distance teaching materials.
References


APPENDIX I

Example 1

There are two major sets of descriptive measures: measures of central tendency and measures of variability. The mode, median, and mean are measures of central tendency. The mode is the most frequently occurring score. The median is the value which divides the distribution in half after the scores are placed in ascending or descending rank order. The mean is the arithmetic average. The range, variance, and standard deviation are measures of variability. The range is the difference between the smallest and largest score. The variance is the average squared deviation from the mean. The standard deviation is the square root of the variance. Standard deviations are useful as units of measurement. (From: Gordon Wood (1974). Fundamentals of psychological research.)

Example 2

Sickness Begins With One Common Denominator ... Toxemia

All illness begins with poisonous waste in the human body. Healing and health can follow only when these poisons are eliminated. When waste is eliminated, warning signals such as pains and aches stop. And how is this accomplished? Through fasting. Fasting is an answer to personal contributions to wilful negligence, but you have to know what you're doing to correct the problem. This chapter tells you how.

Understand Fasting Thoroughly Before Starting on Your Way

Let's make one think plain: There is no help for you through fasting unless you want to do it ... (From: J.V. Cerney (1976). Handbook of unusual and unorthodox healing methods.)
APPENDIX II

Written Materials Development Model
(Ralph G. Brockett, 1984)