Developing Instructional Materials for Distance Education: A "Concerns-Based" Approach

Som Naidu

Abstract: Common approaches to instructional materials development currently used at distance education institutions are reviewed in this paper with the team approach considered in some detail. It is argued, that to a very large extent, the success or failure of most team approaches can be traced to the management of the team's effort. Good management of the process is not only being concerned with getting the administrative procedures right but also with effectively managing the concerns and aspirations of all individual participants In that effort. It means being sensitive to entry-level behaviours of individual members as well as being able to guide their development towards successful achievement of the team's objective. A model for adopting educational innovations using the individual and the innovation as the frame of reference —the Concerns-Based Adoption Model— developed by Gene Hall and others is proposed to show how it could be applied to cope with this issue.

INTRODUCTION

The most distinctive characteristic of distance education (hereafter referred to as DE) is the separation of the teaching and the learning activities. Since much of the teaching activity is incorporated in the instructional materials prepared well in advance of the learning activity, the proper development of these materials becomes very important to the ensuing learning activity. Distance educators are aware of the importance of effective instructional materials and have, over the years adopted a variety of approaches to develop the best possible materials for their requirements. The most common approaches are briefly reviewed in this paper with the team approach considered in greater detail.

Discussion is focussed on the management of the instructional materials development (hereafter referred to as IMD) process especially within a collaborative team environment. It is argued in this paper, that for the majority of course team participants instructional materials development for DE usually comprises a new experience —an innovation— which if inexpertly managed is the source of much trouble within the team. An innovation adoption model from the educational literature which uses the individual and

the innovation as its frame of reference is proposed to show how it could serve to expertly guide the management of this process in DE.
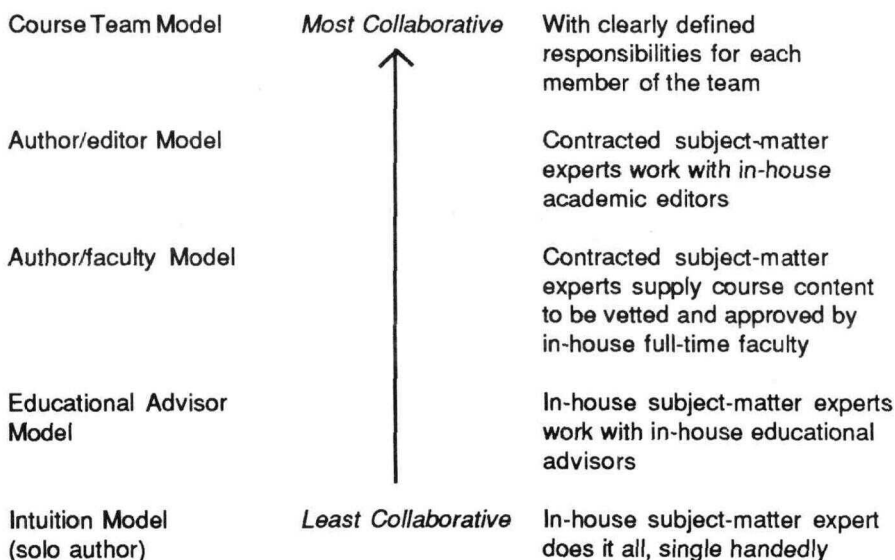
Common Approaches
    In a review of the commonly adopted approaches to instructional materials development in DE, Smith (1980) identified at least *five* clearly distinguishable models currently used by DE institutions around the world. These are:

1)   the course team model;
2)   the author/editor model;
3)   the author/faculty model;
4)   the educational advisor model; and
5)   the intuition (solo author) model.

    The basic differences between them is best understood when seen on a continuum of approaches with the course team model on one end, and the intuition (solo author) model on the other, as in Figure 1 below.

Figure 1.   *Commonly Adopted Approaches to Course Development in DE.*

Course Team Model	*Most Collaborative*	With clearly defined responsibilities for each member of the team
Author/editor Model		Contracted subject-matter experts work with in-house academic editors
Author/faculty Model		Contracted subject-matter experts supply course content to be vetted and approved by in-house full-time faculty
Educational Advisor Model		In-house subject-matter experts work with in-house educational advisors
Intuition Model (solo author)	*Least Collaborative*	In-house subject-matter expert does it all, single handedly

    The course team model on one end of this continuum exhibits the most collaborative effort with the largest number of people involved in the activity. These usually include subject-matter experts (SMEs), educational technologists/instructional designers, editors, and media specialists, each responsible for their particular areas of expertise. Not always the most

successful approach, the course team model has been widely used by institutions around the world, especially the Open University of the United. Kingdom (UKOU), its original proponent. On the other end of the continuum we have the intuition (solo author) model, which involves the least collaborative approach by way of the number of specialist staff engaged in the IMD process. Without suggesting that this approach is any better or worse than any of the others, it is characteristic of institutions which rely on a single SME to develop all the materials necessary for distance study.

We have between these two extreme approaches, a variety of others not very different from one another. Three of these bearing distinctive differences appear on this continuum. Their positions on the continuum reflect the degree of specialist instructional design input in the process.

Choosing a Model

An institution's decision to choose a particular model is usually based on, inter alia, its academic tradition and resources available to it for DE activity. Notice that institutions exclusively concerned with DE such as the UKOU, Athabasca University, the Open Learning Institute in Canada and the Sukothaithamathirat Open University of Thailand, have tended to adopt a more collaborative team approach, while the more traditional campus-based institutions, having decided to engage in DE along with their other functions have tended to adopt lesser collaborative approaches, more out of necessity than choice. Examples of the latter are the University of the South Pacific, Massey University in New Zealand, University of Queensland and a host of other Australian institutions. Generally speaking, however, as institutions become more and more deeply engaged in DE activity, and hence more familiar with its character and complexity, the tendency has been for them to adopt more and more collaborative approaches in their IMD process, as has been the case at the institutions listed above. This is not the same as saying that the more collaborative the approach the better is the process or even the end product.

Teams can be democratic, autocratic or even technocratic and team characteristics are also susceptible to vacillation. Sometimes the most democratic teams have ended up as the most autocratic and the vice versa is also true. In fact collaborative team approaches to instructional materials development in DE have really been quite notorious for their inability to co-exist without serious difficulties. The intricacies of team approaches and their problems are very ably documented by Batten, 1980; Crick, 1980; Delecroix, 1978; Lewis, 1971; Livingston, 1979; Mason, 1976; Newey, 1975; and Stringer, 1980.

Management of the IMD Process

To a large extent, in my view, the success or failure of most collaborative team approaches to instructional materials development in DE can be traced more than anything, to the *management* of the team's effort.

An instructional materials development team in DE is by nature a

group comprised of people from different professional backgrounds, some-
times as many as four or more. While its overall objective for getting
together is usually clear — the development of instructional materials for DE
— there are several hidden agendas and individual team member aspirations
that are not as clear. When these are coupled with ineffective leadership of the
team, there are a lot of problems which lead to not only a lack of credibility all
around, but poor instructional materials and, not too infrequently, abandoned
projects.

Most collaborative team efforts at developing instructional materials for
DE, include at least one subject-matter expert and an editor or course
developer. At best the latter may be an expert instructional designer. Very
often the SME is a campus-based classroom teacher with little or no experience
or expertise in the development of instructional materials for DE. The editor/
course developer may have greater empathy with the distance learner and a
little more experience in instructional materials development for DE. What-
ever materials production expertise per se the two may require is requested as
and when necessary. While this comprises a fairly accurate picture of the IMD
scenario at the majority of DE institutions operating today, increasing num-
bers of DE institutions are able to afford a lot more elaborate teams than that,
which include several more SMEs, educational technologists and media spe-
cialists.

For the majority of the members in the team, participation in the IMD
process comprises a new experience (Eastcott, 1981). An experience which not
only calls for new skills but some "de-skilling" as well, that is, shedding of
certain old habits (Nisbet, 1974). Old habits die hard and when members of the
team are faced with circumstances that render some of their previous experi-
ence "irrelevant" there is quite a lot of uneasiness, loss of confidence, disillu-
sionment, hostility, and at times withdrawal from the activity altogether. In
Nisbet's terms very often the "bandwagon becomes a hearse."

A lot of this disillusionment in the course team, however, can be avoided
through effective leadership and good management of the instructional mate-
rials development process. Good management of the process is not only a
matter of being concerned with getting the administrative procedures right
but also with effectively managing or co-managing the concerns and aspira-
tions of all individual participants in that effort. Good management means
being sensitive to entry-level behaviours of individual members and their de-
velopment during the process. Good management means knowing how to
expertly cope with the changing concerns and aspirations of members, and how
to move them towards the successful achievement of the team's objective
which, in this case, is the development of instructional materials for DE.

This has been the major orientation and firm conviction of a team of
researchers at the University of Texas Research and Development Centre for
Teacher Education. Led by Gene E. Hall, this team has, for more than a decade
now, worked on the development of a set of systematic procedures for adopting
educational innovations using the individual and the innovation as their frame

of reference (Hall, 1979). The product of their work is the *Concerns-Based Adoption Model* for the adoption of innovations. Although much of this group's work, so far, has been concerned with teacher education, since it was commissioned by the U.S. National Institute of Education, the procedures they have developed are generally applicable to the adoption of change and innovation.

The Concerns-Based Adoption Model

The concerns-based adoption model (hereafter referred to as CBAM) comprises a set of procedures for the effective adoption of change and innovation in human societies. These procedures are distinctly grounded in the concerns of individuals who are or hope to be adopting an innovation, including anything from a new product on the market, such as a food or drink item, to a new banking/shopping service facility.

The basic assumptions of the model are :

1) that change is a process rather than a single event and that it takes time to unfold;

2) that change is essentially made by individuals and that without a change in individuals, it is not likely that an organization will be able to initiate, maintain or institutionalise change;

3) that for these individuals change is a personal experience. To understand and facilitate change, attention must be given to this personal dimension of the process; and

4) that change entails developmental growth in terms of an individual's feelings about the innovation and skill in using the innovation (i.e., an individual is not one day completely naive in relation to the use of an innovation and the next day an instantaneous expert and a highly skilled user).

CBAM is specifically directed at the process of change and the adoption of innovation. It is not concerned with *decision-making* or the bringing about of decisions. It therefore assumes:

5) that the change or innovation in question is appropriate and desired; and

6) that there are formal or informal leaders who will be the *change facilitators*. These persons may be from within the organization or from outside it. They may be senior administrators or persons from the human resources development office or consultants from outside, but their generic function would be the same — namely, to assist users and non-users of an innovation to improve their levels of use and develop their concerns towards a more desirable stage.

The key dimensions then, of CBAM are the *Stages of Concern* of individuals, and their *Levels of Use* of the innovation.

Stages of Concern

The concept of concerns relates to the feelings, perceptions, motivations, and attitudinal dynamics of individuals as they first become aware of an innovation, approach it and gradually become increasingly confident in their use of the innovation. These concerns when determined are categorised in one or more of the following stages in the CBAM.

Figure 2. *Stages of Concern About the Innovation.*

> AWARENESS: Little concern about or involvement with the innovation is indicated.
>
> INFORMATIONAL: A general awareness of the innovation and interest in learning more detail about it is indicated. The person seems to be worried about him/herself in relation to the innovation. He/she is interested in substantive aspects of the innovation in a selfless manner such as general characteristics, effects, and requirements for use.
>
> PERSONAL: Individual is uncertain about the demands of the innovation, her inadequacy to meet those demands, and her role with the innovation. This includes analysis of her role in relation to the reward structure of the organizatbn, decision-making and consideration of potential conflicts with existing structures or personal commitment. Financial or status implications of the program for self and colleagues may also be reflected.
>
> MANAGEMENT: Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organising, managing, scheduling and time demands are of utmost importance.
>
> CONSEQUENCE: Attention focuses on impact of the innovation on clients/ subjects in the individual's immediate sphere of influence. Focus is on relevance of the innovation for its recipients.
>
> COLLABORATION: Focus is on co-ordination and co-operation with others regarding use of the innovation.
>
> REFOCUSSING: Focus is on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. Individual has definite ideas about alternatives to the proposed or existing form of the innovation.

Note: Adapted from Hall, G. E. (1979). *Australian Educational Researcher, 7(2),* 5-32.

The stages of concern of users and non-users can be determined by expert interviewing, together with questionnaires specifically designed for this purpose. Persons carrying out the interview are required to undergo special training in its techniques. A manual for trainers, interviewers and raters has

been developed for this purpose. Training workshops in the use of these tools are also available at the Development Centre for Teacher Education.

Development of Stages of Concern

Research on individuals' stages of concerns has discovered that individuals do not have only one intense stage of concern at a time, rather a concerns "profile" with some stages of concern relatively more intense than others and, which change quite predictably as individuals become more and more familiar with the innovation. Hall and his colleagues found that, generally, "non-users" of an innovation tend to express their most intense concerns at stages 0,1 and 2 (self-concerns) and with their least intense concerns at stages 4, 5 and 6 (impact concerns). As use of the innovation is adopted, their management concerns (task concern) become more intense while their self-concerns decrease in intensity. As user experience with the innovation increases, the researchers found that management concerns of individuals gradually decrease in intensity and various impact concerns (stages 4, 5 and 6) increase in intensity.

Levels of Use of Innovation

Levels of use of an innovation focusses upon the patterns of behaviour of the individual as he/she approaches and uses an innovation. CBAM has identified eight levels of use which are operationally defined in Figure 3 on the next page. Levels of use of an innovation by individuals can be determined by focussed interview or ethnographic procedures. Users of these tools will require training in their use as well.

Innovation   Configurations

A third dimension of CBAM is the innovation's configurations. The notion of this is that as innovations get adopted, they are very likely to be adapted or *mutated* While change agents and users of innovations may not always be able to agree on acceptable configurations of an innovation, some attempt is made in the model to ensure retention of an acceptable identity of the innovation. CBAM utilises a configuration checklist drafting procedure called "configuration hunt" along with interviewing and on-site observations to maintain this identity. Subjects/clients may also be asked to compile innovation configuration checklists.

The CBAM Schema

An overview of the process involved in the model is illustrated in Figure 4 on page 175. The users and non-users of the innovation, as shown in this schema are part of the *user system.* The change facilitator (leadership/management) may be part of the user system or a consultant from the *resource system,* that is the organization or the institution concerned with the change. Regardless of origins and location, the change facilitator's role is to work with the users and non-users of the innovation individually and/or in groups to enhance their

Figure 3. *Levels of Use of the Innovation.*

O	NON-USE	State in which the user has little or no knowledge of the innovation, no involvement with the innovation, and is doing nothing toward becoming involved.
I	ORIENTATION	State in which the user has recently acquired or is acquiring information about the innovation and/or has recently explored or is exploring its value and its demands upon user and user system.
II	PREPARATION	State in which the user is preparing for first use of the innovation.
III	MECHANICAL USE	State in which the user focuses most effort on the short-term day-to-day use of the innovation with little time for reflection. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.
IVa	ROUTINE	Use of the innovation is stabilised. Few, if any, changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.
IVb	REFINEMENT	State in which the user varies the use of the innovation to increase its impact on clients within the immediate sphere of his/her influence. Variations are based on knowledge of both short and long-term consequences for clients.
V	INTEGRATION	State in which the user is combining own efforts to use the innovation with related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.
VI	RENEWAL	State in which the user re-evaluates the quality of use of the innovatbn, seeks major modifications of or alternatives to present innovation to achieve increased impact on clients, examines new devebpments in the field, and expbres new goals for self and the user system.

Note: Adapted from Hall, G. E. (1979). *Australian Educational Researcher, 7(2),* 5-32.

Figure 4. *The Concerns-Based Adoption Model.*
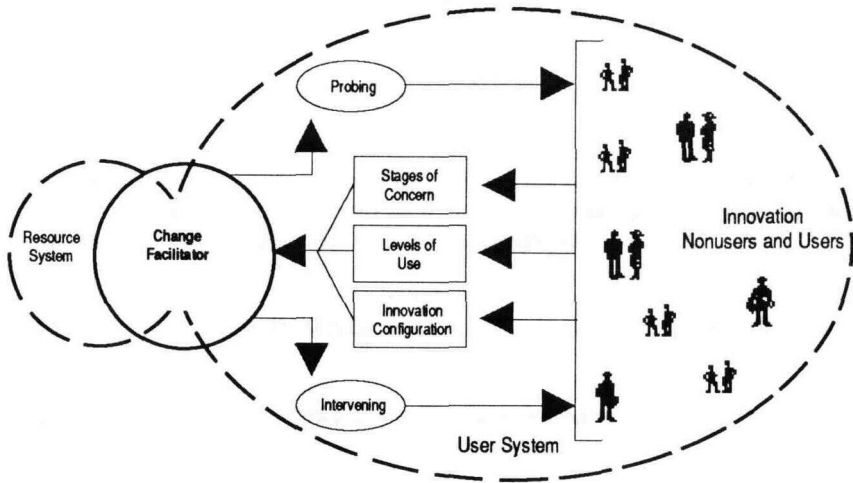
confidence and competence in the adoption of the innovation. He/she is also responsible for ensuring that acceptable configurations of the innovation are being adopted at all times. The role of the change facilitator in this schema, therefore, is an extremely critical one requiring a high degree of skill in problem-solving and management of interpersonal relationships. He/she is the manager of the innovation adoption process responsible for diagnosing user concerns and levels of use of the innovation, and based upon that, for introducing appropriate interventions in user behaviour. This comprises a very large responsibility successfully achievable only over extended periods of time, usually several years.

Application of CBAM

An example of how the mechanics of CBAM could be suitably applied in the development of instructional materials for DE is attempted in Table 1 (see next two pages). The strategies suggested therein are by no means the only ones. They offer an example of how a change agent possibly in the form of the course team leader, instructional designer or course developer could manage the IMD process. Notice that the subject of instructional materials development and instructional design in particular are brought up only at the *impact level* of concerns. The reason for this is that instructional materials development for DE comprises a very specialised task that can not be effectively carried out without a good grasp of the nature and function of DE in general. Its discussion will be meaningful only after participants' concerns about the nature of DE as a whole have been sufficiently dealt with. Eventual success of this program of action will be possible through good management and effective leadership but

TABLE 1

The Application of CBAM to the Development of Instructional Materials in DE (Table spans two pages)

STAGES OF CONCERN	AWARENESS	INFORMATIONAL	PERSONAL
Typical expression of concern of individuals.	I don't know anything about DE and am not interested.	I dont know very much about DE but would like to know more.	I am not very sure I will be able to do this. How will it affect me?
LEVEL OF USE OF INNOVATION	NON-USE	ORIENTATION	PREPARATION
Major Focus of Innovation	Raising awareness	Providing information	Establishing relationships
Intervention Rationale	A lack of concern and/or awareness is very legitimate and ought to be expected.	Keep information relevant, basic and simple. Present it progressively rather than all at once.	Personal aspirations and fears at this stage are realistic. Acknowledge aspirations and allay fears.
Intervention Strategy	Sensitize individual to the need for change and the challenges of DE. Its relevance to the institution and the client.	Provide overall picture of DE activity, costs and benefits, instructional materials development and student support activity etc.	Develop confidence in the individual while enhancing faith in the tasks involved.
Suggested Interventions	Vigorously publicize the challenges and relevance of DE. Follow up with resource material for individuals. Obtain feedback. Incite disussion and debate. Hold short orientation workshops for small groups (no more than 5 at a time). Invite the converted to present their success stories.	Hold short workshops to explain the nature of DE activity and its function in the context. Follow up with resource materials for individuals. Obtain feedback. Arrange on-site visits of study centres, materials production sites, dispatch/ delivery etc.	Offer plenty of encouragement and promise of support. Use several case studies of innovative success stories by their own colleagues, if possible, to show that it can be done. Establish realistic expectations, easily achievable but challenging tasks at first.

TABLE 1, cont'd
The Application of CBAM to the Development of Instructional Materials in DE

MANAGEMENT	CONSEQUENCE	COLLABORATION	REFOCUSSING
It's getting organized that is taking a lot of my time	How can I improve my work for better student/client performance?	How can I work with others to increase my impact?	I think I have a better way here!

MECHANICALS ROUTINE USE	REFINEMENT	INTEGRATION	RENEWAL
Demonstrating procedures	Experimenting with new designs	Establishing networks	Facilitating renewal
Very realistic concerns. These must be promptly resolved to sustain participant interest.	An acceptable level of use (LoU) has been reached. There is readiness for new information.	There is interest in sharing information and skills. Facilitate it through networks.	Be receptive to new ideas but careful with divergent thinkers and major shifts in innovation configurations.
Demonstrate how to get organized. Leave no concerns unresolved. Use focus groups to diagnose problems and arrive at possible solutions.	Introduce and experiment with sound models of ID, evaluation and reconstruction of efforts.	Facilitation of networks and net-weaving of ideas and skills. Keep tabs and follow these through.	Offer support for renewal of ideas but only after establishing clear parameters.
Examine each specific concern. Offer specific "how to" strategies. Follow up with support. Arrange workshops of people with similar concerns. Hold small problem-solving focus groups on time and resource management, and workloads. Offer models/role models if available.	Provide on-going support. Make available new literature to individuals on instructional design. Obtain feedback. Share in workshops with interested participants. Involve individuals in assessment, evaluation exercises. Use their expertise.	Encourage development of networks — groups or on-line. Ensure information flow. Use collaborative team effort to publish, produce and evaluate. Document these. Encourage individuals to initiate these efforts and be responsible for them.	Initiate and support pilot projects and new directions, using participant leadership. Introduce new design models. Draw from other fields, consolidate. Allow participants to initiate, lead and conduct. Be willing to help but careful not to lose control.

not without a good amount of *readiness* on the part of the individuals participating in the process as well.

CONCLUSION

Instructional materials development for distance education is a complex process and expert management of it is essential towards achievement of a successful end product. Yet, while this is so, distance education literature has not, as yet, suitably addressed the process of IMD. Meticulous adherence to the principles of instructional design and development have been found to be insufficient on their own. They do not address, for example, the question of how one might best be able to harness the wide range of skills and resources that is often drawn into a course team.

While CBAM does not originate in distance education literature, it was developed within the context of innovation adoption in higher education and in this author's view offers the best framework to-date for a systemic approach to the management of any form of collaborative approach to IMD for distance education. In this manner CBAM is very much a generic model for innovation adoption and can be applied in distance education as is. A sure strength of the model is its usefulness as a means for zooming in on very specific concerns of individual users and participants. Where groups of individuals share similar concerns, these can be addressed just as effectively.

REFERENCES

Batten, P. (1980). Some notes on one person course teams. *Teaching at a Distance, 18,* 10-12.

Crick, M. (1980). Course teams: Myth and actuality. *Distance Education, 1,* 127-141.

Delecroix, M. (1978). Questions for the course team. *Open Line, 20,* 7-9.

Eastcott, L. R. (1981). *External studies as an innovation for the academic.* Paper presented at the ASPESA Forum, Fiji Islands.

Hall, G. E. (1979). Using the individual and the innovation as the frame of reference for research on change. *Australian Educational Researcher, 7(2),* 5-32.

Lewis, B. N. (1971). Course production at the Open University: Some basic problems. *British Journal of Educational Technology,* 2(1),4-12.

Livingston, K. T. (1979). Course design and development: Some practical implications of the team approach. *ASPESA Newletter,* 5(1), 27-44.

Mason, J. (1976). Life inside the course team. *Teaching at a Distance, 5,*27-33.

Newey, C. (1975). On being a course team chairman. *Teaching at a Distance, 4,* 47-51.

Nisbet, J. (1974). Innovation: Bandwagon or hearse? *Bulletin of Victorian Institute of Educational Research, 33,* 1-4.
Smith, K. C. (1980). Course development procedures. *Distance Education, 1,* 61-67.
Stringer, M. (1980). Lifting the course team curse. *Teaching at a Distance, 18,* 13-16.

AUTHOR

Som Naidu is a course developer for distance education at the University of the South Pacific based in the Fiji Islands. He is currently on leave working on a Ph.D. in Educational Technology at Concordia University, 1455 de Maisonneuve Blvd. W., Montreal, PQ H3G 1M8.