

Use & Integration of Media

in Open and Distance Learning



Training toolkit

Use and Integration of Media in Open and Distance Learning

Trainers' Kit 004

*The Commonwealth of Learning
and
Asian Development Bank*

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FOREWORD

Human development is one of the strategic objectives of the Asian Development Bank. The Bank recognises that social and economic development ultimately depends on the quality of human development. People with basic education are more productive and more likely to play an active role in development. Well-nourished people are healthier and learn better. The synergies among education, health and nutrition are well documented, and it is universally recognised that investment in human development is an essential component of any development plan.

The Bank has been investing directly in human development for more than twenty years. Since 1990 alone the Bank has provided over \$2 billion and \$.5 billion for health, or about seven percent of overall Bank lending for development in that period. Within its education portfolio, there has been a substantial shift in recent years towards primary, lower secondary, and non-formal education in recognition of the fact that investment in basic education has a much higher rate of return. The Bank continues to support higher and technical-vocational education but is increasing its focus on basic education.

Within basic education, the Bank understands that quality and access are perhaps the two most critical issues. People must be able to attend school, and the education provided to them must be good enough to enable them to learn effectively. Provision of adequately trained teachers is all too often an impediment to providing quality basic education. Distance education has been shown to be an effective means of reaching untrained teachers in remote areas, enabling teachers to receive information and techniques that would otherwise have to be acquired through prohibitively expensive classroom-based instruction.

The Bank has in the last decade supported a number of regional activities in the area of distance education, and extended that support to the area of distance education for primary teacher training in the context of a regional technical assistance project implemented together with United Nations Educational, Scientific, and Cultural Organization (UNESCO) and The Commonwealth of Learning. The project aimed to develop national action plans for primary teacher training through distance education in selected countries and to develop capacity to plan and implement distance education programmes. The Commonwealth of Learning collaborated with the Bank to undertake a series of training workshops in distance education and to develop materials for these workshops.

Those materials comprise three topics in this series of six: (i) planning and management of open and distance learning, (ii) use and integration of media in open and distance learning, and (iii) designing open and distance learning materials. The materials have been designed in a flexible manner so that they can be used by a

variety of trainers in a variety of situations. Their basic aim is to contribute to the development of essential skills related to the design and implementation of distance education programmes – an aim of great importance to both the Bank and The Commonwealth of Learning in their efforts to ensure that quality education is made available to all persons in a cost-effective manner.

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Use and Integration of Media in Open and Distance Learning

1. Background

The Commonwealth of Learning (COL) and the Asian Development Bank (ADB) are pleased to provide this toolkit for your use and we sincerely hope that it will be a valuable resource for anyone planning and conducting training in the practice of open and distance learning.

The development of this toolkit and others, in various topics related to open and distance learning, has involved the time and dedication of a number of organisations and individuals. The impetus and financial support which enable COL to embark on this undertaking came from the Asian Development Bank. Under the terms and conditions of the ADB Regional Technical Assistance Project for Capacity Building in Distance Education for Primary Teacher Training, COL was commissioned to prepare training materials for use in three training workshops in the Asian region. In addition, COL decided to concurrently develop an additional three toolkits. Therefore, toolkits will be available in the following topic areas:

- overview of open and distance learning
- designing open and distance learning materials
- planning and management of open and distance learning
- use and integration of media in open and distance learning
- quality assurance in open and distance learning
- learner support in open and distance learning

Each of the training toolkits will incorporate several elements including:

1. detailed trainer's guide including training strategies, exercises and activities
2. master overhead transparencies
3. recommended reading list
4. case studies of best practices

The toolkits are designed to stand alone although it is envisaged that trainers may choose to use complementary segments from other kits in order to customise training workshops for particular audiences. It is assumed that the ultimate user of the toolkit, the trainers, will have extensive experience and knowledge of the subject area and will augment and embellish as required.

Professional staff at COL were responsible for developing the preliminary blueprint for each of the six topic areas. The International Extension College, Cambridge, UK, was then commissioned to prepare the toolkits. IEC staff, COL staff and trainers, who were responsible for the first pilot test of the materials, consulted regularly throughout the development process.

A special thank you is extended to Dr. Charles Currin, Senior Education Specialist, Asian Development Bank, who has provided encourage and support throughout the

RETA project. Sincere appreciation also goes to Dr. Barbara Spronk, Executive Director, IEC and her staff, for their dedication, commitment and hard work in developing and producing the toolkits.

Finally, a special note regarding the case studies section of the toolkit and the gracious co-operation of the many colleagues from around the world who so readily agreed to share their experiences and prepared a case study for inclusion in the toolkits.

The training of people in the practice of distance education continues to be a priority for The Commonwealth of Learning and we are hopeful that this series of toolkits will be a valuable resource for the distance education community. We of course would welcome your comments and feedback so that we can continue to improve and enhance the toolkits.

2. Introduction to the Kit

In the pages that follow, you will find a variety of resources intended to assist you in preparing and offering a workshop on using and integrating media in open and distance learning.

The materials are arranged by topic, eight in total, followed by a bibliography of suggested readings, glossary of terms used in open and distance learning, and a set of case studies. Within each 'topic' section, you will find

- a complete table of contents;
- an overview of the section and the sources from which materials were drawn;
- a variety of material, including definitions, descriptions, diagrams, and checklists;
- a set of practice exercises; and
- a set of masters from which to make overhead transparencies.

Interspersed throughout the materials are examples of the issue or practice that is being outlined. These examples have been set out in indented sections like the following:

Examples: Some institutions are intent on integrating media into their programming as completely as possible; see the case studies for Deakin University, Murdoch University, and the Open Access College.

Suggestions for involving your workshop participants in the generation of additional examples that are drawn from their own experience are set out in screened boxes like the following:

Discussion: Ask participants to spend 15 minutes with a partner discussing their institutions' experiences with introducing a new technology. Ask each pair to produce one

lesson they learned from that experience, to share with the group.

The case studies are provided as yet another source of illustrative examples of actual practice.

These materials are not intended as a course in integrating media into open and distance learning. There are no ‘objectives’, no prescriptions, and no statements of what you should be able to do as a result of having worked through the kit. Neither are the materials intended as an outline of an actual workshop, for you are faced with new audiences, new contexts, and new challenges each time you set out to conduct a workshop. You may adapt these materials to any situation, as in these examples:

- you may be asked to provide a ten-day workshop to a group of academics, who represent a number of universities in a given country, to orient them to the significant features of open and distance learning for their context. Two of these days are to be devoted to integrating media; or
- you might have two weeks to spend with an audience that consists of employees of a foundation that provides funding for educational television, coaching them in the principles of materials design and media integration for distance learners; or
- you may be asked to do a workshop on integrating electronic media for people who are primarily managers rather than designers or authors, but who need a clearer understanding of what is involved in media integration in order to more effectively fulfil their jobs as managers of an open and distance learning programme.

As an experienced trainer you know that designing an effective workshop is the same as designing an effective course: the participants’ needs and contexts come first, and your decisions about what you will present and how you will present it will follow from what you are able to find out about your audience. Of course your workshop design will also be influenced by your own experience, expertise, and point of view because you bring a wealth of knowledge, skills, and understanding to your task. Consequently, a ‘trainers’ kit’ can aim only to supplement your own resources and to offer some ideas and materials to use or not use as you choose, based on your tasks and needs.

We hope you will find these materials useful. They are based on the real-life training experiences of a range of distance educators, some of whom prepared the outline for the kit, some of whom prepared the topic-by-topic materials, some of whom provided the case studies, and yet others who reviewed and piloted the first version and offered valuable advice and suggestions as a result. We look to you for continuing advice and suggestions, especially in the form of training materials that you have found useful and would be willing to share with others via the agency of the Commonwealth of Learning. Please contact the COL Project Manager, Patricia McWilliams, at the address provided in this kit, with your comments.

TOPIC 1

Introduction to Open and Distance Learning

Overview

Source materials for this topic

The concept of open and distance learning

Definitions

Distinguishing the types of open and distance learning

Time and place continuum

Open and distance learning systems

Advantages of open and distance learning

A systems approach to open and distance learning

Functions of open and distance learning

Kinds of open and distance learning

Practice exercises

Categorising various institutions

Application to home institutions

1. Overview

These materials support an introductory discussion on the topic of open and distance learning. The discussion is in two parts.

The first part discusses the concept of open and distance learning by defining terms and distinguishing the various types of open and distance learning, and then by establishing each type along a time and place continuum. The various sections of the first part can be used as follows:

- The *definitions section* focuses on the six features common to most definitions of open and distance learning. You may want to reword these definitions, or add to them. A discussion of *accreditation*, for example, can show how open and distance learning involves both teaching and learning and thereby is different from entirely self-directed learning. A discussion of *two-way communication* can raise points about learning theory that are central to distance approaches. A discussion of *industrialised processes* can be a starting point for discussing ways in which the teaching function in open and distance learning is reconfigured into *course development* and *course delivery*, setting open and distance learning apart from more conventional approaches to teaching and learning.

- The *distinctions* section provides material that will help you establish a working vocabulary for your workshop. Some examples are provided, but you will want to draw examples from your own experience and from the experience of your participants.
- The *time and place continuum* section provides an opportunity to discuss the varieties of delivery systems possible in open and distance learning. Again, you will want to draw examples from both your own and your participants' experience.

The second part looks at the types of open and distance learning systems, and can be used as follows:

- The first section lists the *advantages* that open and distance learning offers. This section is intended to prompt discussion of the problems that participants expect open and distance learning to help them solve.
- Open and distance learning applications are then studied using a *systems approach*, which recognises that all parts of the system are interrelated.
- Then the *functions* list provides one way of describing and labelling the tasks involved in operating an open and distance learning programme. You may have another list. The point is to emphasise how distance makes a difference in carrying out these functions.
- Finally, the *modes* or types of open and distance learning institutions and programmes are described. Again, you will doubtless have many examples to offer, and you may also want to take this opportunity to start participants thinking about the mode of open and distance learning in which they are operating or plan to operate.

1.1 Source materials for this topic

Jackling, N. Weaving my own design. In M. Parer (ed.) *Development, design, and distance education*. Churchill, Australia: Centre for Distance Learning, Monash University, 1989.

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Mugridge, I. The language of distance and open learning. *Journal of Distance Education*, IV: 2, pp. 83–85, 1989.

Sewart, D. et al. (eds.). *Distance education: international perspectives*. London: Croom Helm, 1983.

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2. The concept of open and distance learning

2.1 Definitions

There is no one definition of *open and distance learning*. Rather, there are many approaches to defining the term. Most definitions, however, pay attention to the following characteristics:

- **separation of teacher and learner** in time or place, or in both time and place;
- **institutional accreditation**; that is, learning is accredited or certified by some institution or agency. This type of learning is distinct from learning through your own effort without the official recognition of a learning institution;
- **use of mixed-media courseware**, including print, radio, and television broadcasts, video and audio cassettes, computer-based learning, and telecommunications. Courseware tends to be pre-tested and validated before use;
- **two-way communication** allows learners and tutors to interact as distinguished from the passive receipt of broadcast signals. Communication can be synchronous or asynchronous;
- **possibility of face-to-face meetings** for tutorials, learner–learner interaction, library study, and laboratory or practice sessions; and
- **use of industrialised processes**; that is, in large-scale open and distance learning operations, labour is divided and tasks are assigned to various staff who work together in course development teams.

Discussion: Take advantage of the wealth of examples available both from your own and your participants' experience. The case studies provided with this kit describe institutions around the world that exemplify the characteristics of open and distance learning.

2.2 Distinguishing the types of open and distance learning

The term *open and distance learning* and its definition are relatively new in the field of education, having gained prominence only in the past 15 to 20 years. The language and terms used to describe distance learning activities can still be confusing, and geographical differences in usage — for example, between North America and Europe — can add to the confusion. Among the more commonly used terms related to open and distance learning are the following: *correspondence education, home study, independent study, external studies, continuing education, distance teaching, self-instruction, adult education, technology-based or mediated education, learner-centred education, open learning, open access, flexible learning, and distributed learning*.

Correspondence education, home study, and independent study

These distance learning methods are:

- well over a century old;
- based on stand-alone, self-study materials. Learners do not have to leave their homes to study; and
- often print-based with communication through postal services or telephone. They can, however, use a variety of means for tutor–learner contact, including the postal system, telephone, electronic mail, television and radio broadcasts, and video and audio cassettes.

Example: Many university programmes in North America have, in the last 15 years, renamed their correspondence programmes to more current titles such as *open and distance learning* or *independent study*.

External studies

The term *external studies*:

- applies to instruction that takes place somewhere other than on a central campus, such as a classroom remote from campus; and
- includes a variety of delivery options like audio, video, or computer conferences or home study.

Example: The Centre for External Studies at the University of Namibia is responsible for open and distance learning programming.

Continuing education

The term *continuing education*:

- usually applies to non-credit education;
- refers to courses that can be delivered on campus or at a distance; and
- has varied meanings.

Example: See the case study on the Distance Education Unit at the University of Botswana, which is part of continuing education at the university.

Distance teaching

The term *distance teaching*:

- refers to only half of the open and distance learning equation: open and distance learning encompasses not only teaching but learning; and
- emphasises the teacher's role rather than the system.

Self-instruction

The term *self-instruction* refers to a process in which:

- materials take learners step-by-step through an instructional process;
- self-assessment exercises are a central feature; and
- instruction can be paper-based or computer-based.

Example: The Faculty of Medicine at Chulalongkorn University in Thailand makes a variety of self-instructional packages available via computer-assisted instruction on topics such as the circulatory system. Many language schools offer self-instructional packages that consist of print materials and audio cassettes.

Adult education

The term *adult education*:

- emphasises the principles of adult learning, often known as *andragogy*, as compared to *pedagogy*, or child-centred learning.

Example: See the case study on the University of Botswana, Distance Education Unit, which offers a Certificate in Adult Education at a distance.

Technology-based or mediated education

The term *technology-based education*:

- refers to systems of teaching and learning in which a technology other than print has a major role; and
- takes two major forms — stand-alone (for example, computer-assisted learning and computer-managed learning) and conferenced (for example, audio, video, or computer).

Examples: The University of the West Indies uses audio conferencing to link its various campuses and learning centres. Two of the postgraduate degrees available in distance open and distance learning — those offered by Athabasca University and the Open University of the United Kingdom — use computer conferencing as a primary mode of delivery. See the case studies on both the University of Guyana, Institute of Distance and Continuing Education, which uses audio teleconferencing, and the Open Learning Information Network in Canada, which delivers courses via the World Wide Web.

Learner-centred education

In learner centred education, integrity and freedom of the individual is primary. Therefore, the teaching and learning process provides:

- flexible sequences of study;
- negotiated objectives and content;
- negotiated learning methods;
- negotiated methods of assessment; and
- a choice of support mechanisms.

Open learning

The educational philosophy of open learning emphasises giving learners choices about:

- medium or media, whether print, on-line, television, or video;
- place of study, whether at home, in the workplace, or on campus;
- pace of study, whether closely paced or unstructured;
- support mechanisms, whether tutors on demand, audio conferences, or computer-assisted learning; and
- entry and exit points.

Example: Many institutions use the term *open* in their names.
See the case studies for:

Open Access College and the Open Learning Institute of
Charles Sturt University, both in Australia;

Open Learning Information Network in Canada;

Indira Gandhi National Open University in India;

Open University of the University of the Philippines; and

Open University of Sri Lanka.

Open access

The term *open access* implies a lack of:

- formal entry requirements;
- prerequisite credentials; and
- an entrance examination.

Flexible learning

The term *flexible learning* emphasises the creation of environments for learning that have the following characteristics:

- convergence of open and distance learning methods, media, and classroom strategies;
- learner-centred philosophy;
- recognition of diversity in learning styles and learners' needs;

- recognition of the importance of equity in curriculum and pedagogy;
- use of a variety of learning resources and media; and
- fostering of lifelong learning habits and skills in learners and staff.

Example: See the case study for Deakin University, which describes the challenges of implementing a flexible learning system.

Distributed learning

The term *distributed learning*:

- emphasises the learning itself rather than the type of technology used or the separation between teacher and learner;
- makes learning possible beyond classrooms; and
- when combined with classroom modes, becomes *flexible learning*

Discussion: You and your participants can provide a wealth of examples of different types of delivery systems from your experience in open and distance learning. The case studies included with this kit are a ready source of examples as well.

2.3 Time and place continuum

Open and distance learning programmes fall somewhere along two continua: the continuum of time and the continuum of place. The *place* continuum has at one end all learners and their tutor or instructor gathered at the same place, and at the other end all learners and their tutor or instructor in different places. The *time* continuum has at one end all learners and their tutor or instructor interacting in ‘real time’, that is, at the same time, and at the other end all learners and their tutor or instructor interacting at different times.

The following chart demonstrates how these two continua intersect. Their co-ordinates are numbered and match four scenarios for open and distance learning. Most open and distance learning providers use a combination of the four scenarios.

Scenarios for Open and Distance Learning

| | Same Time | Different Time |
|-----------------|-----------|----------------|
| Same Place | 1 | 2 |
| Different Place | 3 | 4 |

1. *Same place and same time:* Classroom teaching, face-to-face tutorials and seminars, workshops, and residential schools.

Example: See the case study for the Open Learning Institute, Charles Sturt University in Australia, for an example of an institution that relies on residential schools to provide interaction between learners and tutors is being challenged.

The case study for the University of Nairobi describes a programme that is implementing more residential schools, to replace its tutorials.

2. *Same place but different time:* Learning resource centres, which learners visit at their leisure.

Example: See the case study for the Open Access College in Australia for an example of an institution that has a number of resource centres.

3. *Different place but same time:* Audio conferences and video conferences; television with one-way video, two-way audio; radio with listener–response capability; and telephone tutorials.

Example: See the case study for the Indira Gandhi National Open University for an example of an institution that is using audio conferencing and television with one-way video and two-way audio.

4. *Different place and different time:* Home study, computer conferencing, tutorial support by e-mail, and fax communication.

Example: The case studies provided with this kit describe a wide variety of ways to make learning materials available for this kind of independent study.

3. Open and distance learning systems

3.1 Advantages of open and distance learning

Open and distance learning offers a number of advantages to both learners and to providers of opportunities for learning. Problems such as distance and time, which are barriers to conventional learning, are overcome in open and distance learning.

Overcoming physical distance

Open and distance learning can overcome problems of physical distance for:

- learners in remote locations who are unable or unwilling to physically attend a campus; and
- learners and teachers geographically separated in that teachers in urban settings instruct learners in rural settings.

Example: See the case study on the University of Guyana, Institute of Distance and Continuing Education, for an example of an institution that is serving a widely scattered and remote population using open and distance learning.

Solving time or scheduling problems

Open and distance learning can solve time or scheduling for:

- client groups unwilling or unable to assemble together frequently;
- learners engaged in full-time or part-time work, both waged and volunteer; and
- family and community commitments.

Example: See the case study for the Southern Africa Extension Unit for a description of a programme for training councillors in local government.

Expanding the limited number of places available

Open and distance learning can expand the limited number of places available for:

- campus-based institutions few in number; and
- stringent entrance requirements.

Example: See the case study for the Open University of Sri Lanka for an example of an institution that is expanding access to university education in a country where the number of places available at conventional universities is very limited.

Accommodating low or dispersed enrolments

Open and distance learning can accommodate:

- low enrolments over a long period of time; and
- low enrolments in one geographic region but additional enrolments elsewhere.

Example: See the case studies for the University of Guyana and the Open Access College in Australia for examples of institutions that are meeting the challenge of dispersed enrolments.

Making best use of the limited number of teachers available

Open and distance learning can make the best use of the few teachers available when:

- there is a lack of trained teaching personnel relative to demand;
- teachers are geographically concentrated; and
- teachers with certain expertise are in short supply.

Example: See the case study for the Open Access College, Australia.

Dealing with cultural, religious, and political considerations

Open and distance learning can deal with differences, and consequently:

- widens women's opportunities to learn;
- meets the needs of populations affected by violence, war, or displacement; and
- makes learning possible even when group assemblies are proscribed.

Discussion: Use this opportunity for a discussion of the problems your participants are trying to solve.

3.2 A systems approach to open and distance learning

A systems approach sets the conditions for proceeding in an orderly way. A systems approach also recognises that all the components of the system are interrelated. A change in one component will bring about changes in the others.

Open and distance learning programmes, units, and institutions use a phased model for problem solving:

analyse → design → develop → implement → evaluate → revise

Analysis: a detailed examination of all facets of the problem

- What is the problem to be solved?
- Is the problem an instructional problem or an environmental problem?
- Who has the problem?
- What are the resources available to solve the problem?
- What are the constraints or limitations to be faced?

Output from the analysis phase:

- a clear statement of the problem
- a detailed description of the target population
- identification of the resources and constraints

Design: requires the preparation of a detailed solution

- Who are the target population and other stakeholders?
- What will the solution accomplish?
- How will the participants be different after the course or programme?
- How will the participants achieve the objectives?
- How will the course or programme be developed?
- How will you know your solution is effective?

Output from the design phase:

- a detailed plan that describes how, when, by whom, and at what cost the problem will be solved

Development: must address the following kinds of questions

- What strategies, media, and methods will be used for each objective or task?
- What learning resources will be required?
- Where, when, and how will learners be ensured of feedback as they practise their skills?
- Where, how, and when will evaluation activities be used?
- What will be the consequences of success or failure or both?
- How will the instruction be evaluated and revised?

Output from the development phase:

- a complete course or programme package, including all materials, tools, equipment, and plans for delivery, learner support, learner evaluation, and course evaluations

Implementation: putting the solution into practice

- Are all necessary resources (human, physical, financial) in place?
- Are data collection mechanisms in place?
- Are problem-solving and recording mechanisms in place?

Output from the implementation phase:

- learner progress and performance records
- data from a variety of sources (for example, records and solutions)
- other evaluation data (for example, interviews, questionnaires)

Evaluation: not an 'add-on' but an integral component

- How well does the system meet the goals initially identified?
- How well does it meet the needs of the learners and other stakeholders?
- Do you have sufficient specific information? How will you obtain it?
- What specific changes can be made to improve the system?

Output from the evaluation phase:

- analyses of records and data
- specific solutions, including time, cost, and other resource estimates

Revision: including a review of all decisions and activities of previous phases

- Were the original analyses complete and correct?
- Have circumstances changed sufficiently to require a major review of the analyses?
- What changes, modifications, or improvements are evident in the evaluation data?
- Are sufficient resources available to complete the recommended changes?
- What action needs to be taken?

Output from the revision phase:

- revised course or programme, including the course materials, learner support and evaluation plan, and a revised course evaluation plan

3.3 Functions of open and distance learning

Regardless of the size of the programme, unit, or institution undertaking development and implementation of an open and distance learning system, the following functions must occur at some level. Valuable considerations in relation to each open and distance learning task are listed following.

Obtaining and managing money and other resources

- grant-sustained, cost recovery (self-financing);
- higher development and start-up costs; and
- human support relatively expensive component.

Developing or acquiring programmes and courses

- considerable development time required for full-scale development and production;
- buying or leasing courses from other open and distance learning providers may be more effective use of resources; and
- continuum of approaches, from single author to large teams of specialists.

Example: See the case study for the University of Lincolnshire and Humberside for an example of *course franchising*.

Recruiting and promoting

- analyse and assess the needs of your prospective learner populations;
- make information available at right place and time;
- provide sufficient accurate information about time, cost, effort required;
- provide sufficient accurate information about when, where, and how to get involved; and
- reassure potential learners about legitimacy and credibility.

Physically producing, reproducing, storing, and disseminating materials

- course materials requirements may demand print, audio, video, or computer software;
- dissemination may require post, courier, transport companies, telecommunications, broadcasts, satellites;
- physical production and reproduction time consuming; and
- specialised equipment and personnel required for storage, handling, packaging, dispatch, inventory.

Enrolling and registering

- process varies from simple manual lists to complex electronic systems;
- fixed or rolling entrance dates; and
- range of delivery options available.

Delivering programmes and courses

- two-way communication required;
- evaluation and feedback;
- collaboration with other agencies;
- library services; and
- record systems.

Providing learner support

- personal support such as advice or counselling;
- academic support such as tutoring, grading, and examining; and
- face-to-face or mediated support.

Examining, crediting, and granting credentials

- range of credit options available;
- exam taking and credit evaluation requirements; and
- involvement of professional associations and external agencies.

Evaluating and revising processes, procedures, programmes, and courses

- learner performance;
- learner satisfaction;
- meeting goals and objectives; and
- resistance to change.

Training and developing staff

- orientation and adjustment to new technologies and approaches; and
- awareness of advantages and limitations of open and distance learning operations.

Discussion: There are many ways of labelling and describing these functions; the ones provided here are only suggestions. Extend your list with examples from both from your own and your participants' experience.

3.4 Kinds of open and distance learning

A variety of terms describe the type of educational provision that involves some version of an open learning approach and uses open and distance learning techniques to a greater or lesser extent.

Single mode institution

- set up to offer programmes of study at a distance;
- some face-to-face interaction involved, but often optional;
- teaching and learning process 'mediated' in some way
 - by print, including correspondence;
 - by audio, including radio (one-way, two-way), cassettes, telephone, or audio conferences;
 - by video, including television (one-way, two-way), cassettes, or video conferences; and
 - by computer, including computer-based training, e-mail, computer conferencing, or World Wide Web;
- characterises many of the world's 'mega-universities', including Indira Gandhi National Open University (IGNOU), Universitas Terbuka, Sukhothai Thammathirat Open University (STOU), and United Kingdom Open University (UKOU).

Example: See the case study for IGNOU included with this kit.

Dual mode institution

- offers two modes:
 - one using traditional classroom-based methods; and
 - one using distance methods;
- may also offer the same course in both modes, with common examinations;
- regards the two types of learner as distinct: on-campus and external; and
- may or may not allow 'cross-over' registrations.

Example: See the case studies for the Open Learning Institute of Charles Sturt University, the University of Nairobi, the University of Botswana, and the University of Zambia for discussions of issues facing dual mode institutions.

Mixed mode institution

- offers learners a wide choice of modes of study
independent, group-based, or some combination; and
face-to-face, mediated, or some combination;
- maximises flexibility of place and pace of study;
- the result of ‘convergence’ of face-to-face and distance modes; and
- increasingly characterises organisations that were once ‘single mode’ or ‘dual mode’.

Example: The case studies for Deakin University and Murdoch Universities provide examples of institutions that are now ‘mixed mode’.

4. Practice exercises

4.1 Categorising various institutions

Instructions: Divide the participants into small working groups (no more than five to a group). Give each group a set of three case studies — a single mode institution, a dual mode institution, and a mixed mode institution — without labelling the institutions as such; the case studies that are part of this kit are suitable for this purpose. Ask each group to

- agree on the category they think is most appropriate to each of the three institutions;
- list the main characteristics of each institution that justify the category; and
- report their findings to the group as a whole.

Use the findings of the working groups as a springboard for discussion of the challenges involved in defining *open and distance learning*.

Timeframe: Depending on the language level and experience of the participants, the small group work can take as long as an hour.

Materials: Case studies (see the case studies that are included with this kit); flip chart paper or overhead transparencies, and marker pens.

4.2 Application to home institutions

Instructions: Ask participants to spend half an hour, working on their own, describing the programme in which they work, in terms of how the supporting institution (or department or faculty) fulfils the nine functions of an open and distance learning system that have been discussed as part of this topic.

On the basis of this description, ask them to work with a partner to determine what kinds of changes will have to take place in each of these functions to make their institution function more effectively as an open and distance learning operation.

Timeframe: An hour in total, half an hour for individual work and half an hour for paired discussion.

Materials: Paper and pen or pencil for each participant.

TOPIC 2

Media Planning in Open and Distance Learning

Overview

Source materials for this topic

Terminology

What is a medium?

What is open and distance learning?

Enrichment or instruction?

Why 'integrated' media?

Media characteristics

Symbolic

Access

Control

Teaching functions of media

Terminology

General teaching functions

Specific teaching functions

Media choice and combinations

A systems approach

Identifying audiences and defining educational needs

Access to media

Choosing among alternatives

Development and production

The ACTIONS model for selecting media

Access

Costs

Teaching functions

Interactivity and user-friendliness

Organisation

Novelty

Speed

Practice exercise

A model for planning media usage in open and distance learning

1. Overview

These materials support a discussion on the topic of planning which media to use and integrating them into learning materials designed for use at a distance. These materials are introductory and ‘broad-brush’. The topics that are introduced here are covered in greater detail in subsequent sections of the kit.

1.1 Source materials for this topic

Bates, T. (ed.) *Media and technology in European distance education*. Proceedings of the EADTU workshop on media, methods, and technology. Milton Keynes: Open University/European Association of Distance Teaching Universities, 1990.

Bates, T. *Technology in open learning and distance education: a guide for decision-makers*. Vancouver: The Commonwealth of Learning and the Open Learning Agency, 1991.

Bates, T. *Technology, open learning, and distance education*. London: Routledge, 1995.

Jenkins, J. *Materials for learning: how to teach adults at a distance*. London: Routledge and Kegan Paul, 1981.

Mason, R., and A. Kaye (eds.) *Mindweave: communication, computers, and distance education*. Oxford: Pergamon Press, 1989.

Thomas, J. Media patterns and combinations. Block B, Unit 7, Course 2, *The development of distance education*. Cambridge: International Extension College, 1994.

2. Terminology

2.1 What is a medium?

A *medium* is simply a means by which something is communicated.

The *electronic media* are all those media that use electronic equipment to convey messages, such as

- audio cassette and video cassette players;
- radio and television;
- telephones;
- computers; and
- various devices attached to any of the above.

The electronic media require both:

- *hardware*: things you can touch, like the cassettes and their players; and
- *software*: the actual messages, whether voices, pictures, texts, or some other form, and the computer programmes that control the machines.

2.2 What is open and distance learning?

Open learning is primarily a goal or an educational policy. It implies provision of learning in a flexible manner, built around the geographical, social, and time constraints of individual learners rather than those of an educational institution.

Distance education is a means of providing both open and more restricted learning. Distance education is one way in which learners can study flexibly.

Open and distance learning is a term that combines the two, and emphasises *learning* rather than *teaching*.

In some countries, for example, in Canada and Australia, the boundary between distance education and open learning is becoming blurred as the use of electronic media by campus-based institutions increases. Learners take degrees through a combination of campus and distance courses, with some of their campus courses originating on other campuses. Flexibility is greater each year.

2.3 Enrichment or instruction?

Media can be used for enrichment as well as for instruction:

- *enrichment*: sometimes called *indirect teaching*, may add to learners' understanding in a general way; and
- *instruction*: or *direct teaching*, is aimed at conveying specific knowledge and skills.

2.4 Why 'integrated' media?

When media are integrated into a course, they cease being supplementary elements, and become an integral part of the learner's experience, over which that learner has as much control as he or she has with print.

Integrated materials:

- combine the 'symbolic' strengths of the media involved with the 'control' benefits of print;
- offer the course designer a coherent and integrated teaching system; and
- provide the learner a rich, varied, and coherent combination of learning stimuli.

Integrating a variety of media into a course offers learners the opportunity to use media most appropriate to individual learning styles and preferences:

- For those who learn best by watching and then doing, a video component can be invaluable, for example.
- Others may learn better by listening than by reading, in which case audio is of central importance.
- Yet others may learn most effectively by reading and then writing, especially when the material is densely packed with conceptual terms and requires a great deal of thought and reflection; computer-mediated communication becomes a valuable tool in such cases.

However, it is also important not to make too many demands on learners in moving from one medium to another. Too rapid switching can

- undermine the coherence of a course; and
- over-stretch the patience of the learner.

In the end, learners will decide for themselves how they use the materials.

Examples: Some institutions are intent on integrating media into their programming as completely as possible; see the case studies for Deakin University, Murdoch University, and the Open Access College.

Discussion: It may be useful at this point to ask participants to reflect on some of the media they have used for learning tasks, and on their appropriateness to their own learning tasks and styles.

3. Media characteristics

Media can be discussed in terms of a wide variety of groups of characteristics. A useful way to begin is by looking at three of these:

- symbolic characteristics;
- access characteristics; and
- control characteristics.

3.1 Symbolic

Symbolic characteristics refer to the range and type of ‘symbols’ that a medium uses to represent and communicate knowledge. Examples include:

- written language;
- visual images (still and moving);
- spoken language; and
- other sounds (for example, music).

Different types of symbolic representation are appropriate to different types of teaching and learning.

Example: Print is in many ways a good substitute for conventional teaching. It offers a powerful combination of written symbols — mainly words and numbers — and a wide range of illustrations such as charts, diagrams, tables, maps, photographs, and drawings.

Taken together, these symbols are capable of expressing clear and precise meanings. If they are used skilfully, within a sound design, they allow the teacher to communicate effectively on a wide range of subjects.

However, it is also important to remember the symbolic representations that print does not use — sound and moving pictures, for instance. As a result, some subjects are either impossible or very difficult to teach using print alone.

Discussion: Ask your participants to provide examples of subjects that are difficult to teach using print alone. Possibilities include listening and speaking skills in language teaching, an appreciation of performance in drama and music, and subjects and skills in science and technology that involve dynamic processes and movement.

3.2 Access

Access characteristics refer to the extent to which teachers and learners are in a position to use, and have the capacity to use, particular media for teaching and learning.

In terms of access, planners need to consider:

- the knowledge and skills necessary to use a given medium effectively; and
- the resources and costs that are involved in its production and use.

The subject of access is dealt with in greater detail below, in the closing section of this topic, and again in Topic 4 (Media Characteristics).

3.3 Control

Control characteristics refer to the extent to which both learners and teachers are able to exercise individual influence and choice over the way in which they make use of the medium.

This aspect includes:

- the degree to which the medium allows active learning on the part of the learner; and
- the degree to which the medium allows individualised interaction between teachers and learners.

These characteristics of the media available for use in open and distance learning are discussed more extensively under Topic 4 (Media Characteristics). Some of them also receive further attention in the final section of this topic.

4. Teaching functions of media

4.1 Terminology

The intended *teaching function* of a medium is the way in which the content of the message is used, by either the teacher or the learners.

4.2 General teaching functions

Some teaching functions of media are so general that they apply to all teaching media. These include:

- to increase learners' sense of belonging and identification of and with course designers, making the teaching less impersonal;
- to reduce the time required by learners to master content from reading alone;
- to pace learners, keeping them working regularly, to break the inertia of beginning to study;
- to prompt and promote discussion, whether between tutor and learners, between learners and other learners, or between learners and colleagues, family, and friends;
- to model behaviour that cannot be adequately communicated via the printed page, such as collaborative learning, or some practical skill such as speaking another language or performing some technique appropriately;
- to make the inaccessible accessible, such as the visual and aural presence of a renowned expert, or the culture of a group to whom learners would likely never have access;
- to recruit and attract new learners, whether by the novelty of the medium (for example, the World Wide Web, which learners want to learn about) or by the public nature of the programming (for example, radio and television programmes that anyone can listen to or view); and
- to establish academic credibility of a course — and an institution — to the 'outside' world, again through publicity and the use of the 'latest' media.

Discussion: You and your participants are welcome to add to this list any media functions that have been important in your and their own experiences.

4.3 Specific teaching functions

In situations of scarce resources, which are typical of distance learning organisations around the world, course teams are expected to propose more specific learning functions for the media they intend to use. Some of these more specific functions include:

- to demonstrate experiments or experimental situations, especially when the equipment or phenomena to be observed are large, expensive, inaccessible, or difficult to observe without special equipment;
- to illustrate principles involving dynamic change or movement;
- to illustrate abstract principles through the use of specially constructed models;
- to illustrate principles involving two-, three-, or n-dimensional space;
- to use animated, slow-motion, or speeded-up film or video cassette to demonstrate changes of time;

- to substitute for a field trip, giving learners a comprehensive visual picture of a site, or demonstrating the relationship between different elements of a particular system;
- to present learners with primary resource material, or case-study material, enabling them to recognise naturally occurring categories, symptoms, and phenomena, or to analyse a situation;
- to demonstrate decision-making processes, by filming, dramatisation, simulation, or role-playing;
- to change learner attitudes, by presenting material in a novel manner or from an unfamiliar viewpoint, or in a dramatised form that enables learners to identify with the emotions and viewpoints presented;
- through performance, to demonstrate methods of techniques of dramatic production or different interpretations of plays and novels;
- to analyse through a combination of graphics and sound the structure of music;
- to demonstrate the way in which instruments or tools can be played or used;
- to record specific events, experiments, species, places, people, and buildings that are crucial to the content of a course but are likely to disappear, die, or be destroyed in the near future;
- to explain or demonstrate practical activities that learners are to carry out themselves; and
- to condense or synthesise into a coherent whole a wide range of information that would require considerable length in print, and that in print would not provide the richness of background material necessary for learners to appreciate fully the situation.

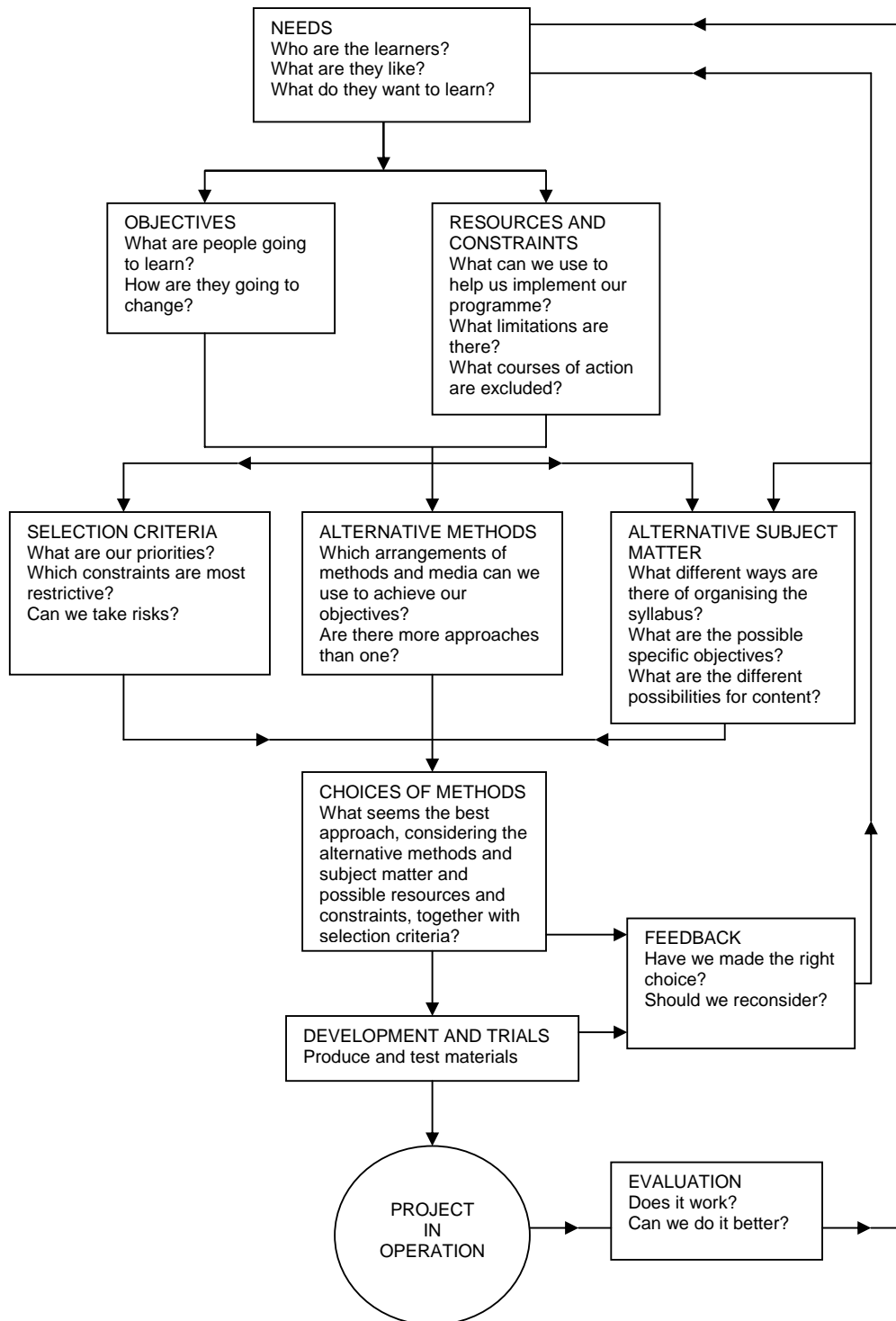
Discussion: Again, you and your participants will be able to add to this list a number of specific functions arising from your own experience.

5. Media choice and combinations

5.1 A systems approach

To apply the knowledge that is available about the various media and their characteristics in the practical task of choosing appropriate media and media combinations, a basic model of the planning process within open and distance learning is needed. The following example is based on a model proposed by Janet Jenkins (1981).

A systems approach for planning open and distance learning



(Source: Jenkins, 1981:36)

5.2 Identifying audiences and defining educational needs

Often, audiences and needs are determined from outside the institution, for example, by governments. This identification tends to be at a very general level, however. Media planners usually require much more detailed information about the characteristics of the audience and its specific educational needs. These require research.

Discussion: Ask your participants what some of the characteristics of audiences might be, and of their educational needs. These characteristics are dealt with in greater detail in Topic 3 (Instructional Design).

5.3 Access to media

The key concept in choosing media is access:

- What access does your institution have to different media?
- What access do learners have?

Learning objectives need to be developed in terms of:

- what media choices the institution can realistically offer; and
- which media in practical terms learners are in a position to use.

Print

The advantage of print is that:

- most institutions have access to print; and
- at post-literacy levels, most learners are able to use print.

Broadcast media

Access to broadcast media normally depends on:

- the national priority given to a project;
- the distribution of the target audience;
- the availability of receiving equipment; and
- the existence of dedicated broadcasting facilities.

Cassettes

Audio and video cassettes are highly accessible because they:

- require similar production and reception equipment as broadcast media; and
- do not need transmission facilities.

Computers

The accessibility of computers in learning is:

- still largely limited to industrialised countries.

Face-to-face instruction

Access to face-to-face instruction is based on the fact that:

- most institutions provide at least some face-to-face instruction; but
- costs of tutors and geographic dispersion of learners may limit the extent of face-to-face instruction.

5.4 Choosing among alternatives

Designing a media mix involves:

- relating learning objectives and content to the media available;
- originating the design because no scientific formula for a particular design;
- assigning varying quantities of media to different courses, an ability most institutions find always limited; and
- moving rapidly from one medium to another, an ability most learners find imposes limitations.

What tends to happen, is that:

- institutions decide on the ‘main medium’ of communication; and
- then decide how they can best use ‘supporting’ media.

In more formal systems:

- the main medium tends to be print; and
- face-to-face and electronic media take a supporting role.

In less formal systems:

- the broadcast of recorded media tends to take the lead;
- face-to-face contact provides focus; and
- print is used as additional support.

5.5 Development and production

In developing and producing the media components of learning materials, some points that are often neglected, including the importance of:

- establishing close working relationships between subject specialists and media professionals at the earliest stages of planning; for example, to establish the course team structure;
- monitoring media effectiveness through pre-testing and formative and summative evaluation, leading to the modification and progressive improvement of teaching and learning materials; and

- seeing media selection in a wider institutional context, allocation of scarce resources, and legitimate conflicts of interest.

6. The ACTIONS model for selecting media

When selecting media for your open and distance learning programme you can use the simple acronym, ACTIONS, to help you make your decision (Bates 1991).

The ACTIONS Model for Selecting Media

| | | |
|----------|--|--|
| A | Accessibility | Is the equipment your programme requires available to the learners? Where will they be learning? At home? In the workplace? At a learning centre? |
| C | Cost | Are the costs of production, delivery, and maintenance using this technology affordable? Are the costs appropriate to the number of learners who will be enrolled? |
| T | Teaching ability | Does the technology convey the level of facts, attitudes and skills your programme requires? Is it suited to the kinds of learning required? |
| I | Interactivity and user-friendliness | Is the technology user-friendly? Can it convey adequate and timely feedback to the learner? |
| O | Organisation | How open is your organisation to change and the introduction of new media? |
| N | Novelty | Is it important to your organisation to be 'leading edge'? Is this a technology that learners will want to try? |
| S | Speed | How fast can your programme implement this technology? How much training do staff and students need in order to be able to use it? Will its use enable you to revise your materials as quickly as you need to? |

6.1 Access

Factors to be considered when evaluating access include:

- Who is the target group? Who are the priority target groups to be served?
 - learners denied access to conventional institutions?
 - disadvantaged or equity groups?
 - the unemployed?
 - the working poor?
 - workers needing upgrading or further qualifications?

- What is the most appropriate location for this learning? For example,
 - at home?
 - in a local centre dedicated to open learning?
 - at a local public education institution that shares its facilities?
 - at work?
- Which technologies do learners have available to them?
- What proportion of potential learners have access to a particular technology?
- If you make the use of a particular technology optional for learners, is it worth using at all?

6.2 Costs

There are some important distinctions to be made between and among the various technologies available in terms of their costs.

What are the capital costs?

Television and computing, for example, require high initial capital expenditure -- a computing network or mainframe, a television studio and equipment.

What are the recurrent costs?

Television, for example, also has high recurrent costs because of the production staff needed to operate the capital equipment.

What are the fixed production costs?

Fixed costs for producing one hour of teaching material have been estimated as follows:

- | | |
|--|-----------------|
| • face-to-face lecture | 1 unit |
| • audio cassette, radio, or teleconference | 2 units |
| • televised lecture | 2 to 5 units |
| • computer-mediated communication | 2 to 5 units |
| • print | 2 to 10 units |
| • high-quality television programme | 20 to 50 units |
| • pre-programmed computer based learning | 20 to 50 units |
| • computer-controlled video disc | 50 to 100 units |

Will there be large numbers of enrolments over which to spread any high fixed costs?

Can the materials be used for a number of years, thereby spreading the costs?

What are the variable costs?

For example, if audio cassettes are used, then the delivery costs vary in direct proportion to the number of students.

Technologies vary considerably in their fixed and variable costs:

- audio cassettes and radio have low fixed and low variable costs;
- face-to-face teaching, computer-mediated communication, and tutor-mediated courses have low fixed costs but high variable costs;
- good quality broadcast television has high fixed costs and low variable costs; and
- pre-programmed computer-based learning and video discs have both high fixed and high variable costs, if work stations are to be provided.

Some of the newer interactive technologies such as computer conferencing and audiographics reduce fixed costs but have high variable costs, which make them suitable only for courses with relatively low student numbers.

Broadcast distribution is likely to be uneconomical for national distribution with less than 500 students per course for radio or less than 1,000 students per course for television.

6.3 Teaching functions

Media differ in the extent to which they can represent different kinds of knowledge:

- Most media can handle abstract knowledge, but some such as television are excellent for representing concrete knowledge.
- The representational possibilities of a medium like television are particularly important for non-academic learners, who often require concrete examples or demonstration rather than abstract theory.
- However, this form of television — which is symbolically very rich — is much more expensive to produce than televised lectures, which can be equalled symbolically by audio plus printed notes.

Media also differ in the extent to which they can help develop different skills. This is related to the control characteristics and the representational features of the medium. For example, computers are excellent for presenting and testing rule-based procedures, or areas of abstract knowledge in which answers are clearly correct.

Course designers therefore need both a good understanding of what is required to teach a particular subject and knowledge of the pedagogic strengths and weaknesses of the different media.

6.4 Interactivity and user-friendliness

Learners have much more control over permanent technologies such as books, cassettes, and computers than over ephemeral technologies such as lectures or broadcasts. This control enables learning from media to be much more effective.

Interactivity — the ability for the learner to respond in some way to the teaching material and obtain comment or feedback on the response — considerably increases learning effectiveness. There are two kinds of interactivity:

- *social interactivity*: learners' interaction with teachers and with each other via the medium; and
- *learning material interactivity*: learners' interaction with the medium; the level and the immediacy of feedback the medium itself provides; the extent to which the medium will accommodate the learners' own input and direction.

Media such as print and broadcasting that provide one-way interaction, need to be supplemented by media that provide two-way interaction; that is, social interactivity with tutors, via the following media:

- telephone;
- correspondence;
- computer communication; or
- face-to-face tutorials.

Computer-mediated communication provides:

- two-way communication at a distance;
- asynchronous contact, at the user's convenience;
- relatively low cost communication; and
- potentially the means for freeing students from the centralised control of pre-prepared and constricted curricula.

But computer-mediated communication also bears high variable costs, because of the amount of time a tutor must spend on-line.

6.5 Organisation

The existing technological infrastructure within a country or an institution is a major factor in influencing media selection. For example, if an existing broadcast network is under used, it is much easier to introduce television for open and distance learning purposes. On the other hand, the need to exploit an existing technology can also be a very conservative influence on media choice.

Existing funding arrangements for course production are another important factor. For example, it is often difficult to shift funds from existing, 'traditional' technologies to newer technologies, because of the threat to existing budgets and power bases.

Innovation in this area depends essentially on 'champions for change' at a high level, such as that of vice-chancellor or dean. However, those in influential positions may sometimes champion a technology because it is new or 'leading edge' even though it may not be an appropriate choice for the programme in question.

6.6 Novelty

Caution is well-advised if the pressure to use new media comes from a desire for novelty or status. For example, audio cassettes combined with print can be a very low-cost and effective medium, but it is often easier to get funding for *new* uses of technology because they are more spectacular.

Novelty may be an important criterion in a highly competitive market, however. The fact that your programme looks 'leading edge' because it is using the latest in multimedia technology may make it more attractive to learners who have a choice between your programme and several others that use only one or two more 'traditional' media.

6.7 Speed

Open and distance learning programmes are plagued by the problem of time; specifically,

- the time it takes to produce a course; and
- the time a course must continue to be offered without changes once it is produced.

In some subject areas, such as public policy or information technology, courses need to be put on quickly and easily updated. Electronic publishing can enable relatively minor changes to be made, but the initial design process is still slow.

Some of the more interactive technologies such as audio conferencing and computer conferencing do allow for a quick development of a course and continuous updating.

7. Practice exercise

7.1 A model for planning media use in open and distance learning

Instructions: Divide the participants into small groups. Ask each group to spend 20 minutes reflecting on the ACTIONS model for selecting media for use in open and distance learning. Ask each small group to choose one medium for analysis using the model, and then to report their results to the group as a whole.

Timeframe: Approximately one hour, depending on the size of the group.

Materials: Flipchart paper or overhead transparencies, pens.

TOPIC 3

Instructional Design

Overview

Source materials for this topic

Introduction to instructional design

What is instructional design?

Why use instructional design?

Principles of instructional design

Preliminary considerations

Defining tasks

Task analysis

Structuring the lesson

During the lesson

Models of instructional design

What do instructional designers do?

Roles of the instructional designer

Tasks of the instructional designer

Constructivist approaches to instructional design

Needs assessment of target audiences

Interactivity, feedback, and assessment

What is interactivity?

Why is interactivity important?

What activities are typical in learning materials?

How do you make learning materials interactive?

What kinds of feedback are needed?

What are some assessment strategies?

Managing the learning materials development process

Aspects of the development process

Personnel involved in management

Evaluating your design process

Practice exercise

Assessing sample materials

1. Overview

These materials support discussion on the topic of instructional design and the principles of effective teaching, whether that teaching happens face-to-face or at a distance. The principles of good teaching and effective instructional design are first identified; then the roles of the instructional designer are addressed. Instructional design is discussed in relation to target audiences, and the importance of interactivity is emphasised. Finally, the process of developing effective learning materials is presented.

1.1 Source materials for this topic

Morgan, A. *Improving your students' learning*. London: Kogan Page, 1993.

Parer, M. *Development, design, and distance education*. Churchill, Australia: Centre for Distance Learning, Monash University, 1989.

Parer, M. *Developing open courses*. Churchill, Australia: Centre for Distance Learning, Monash University, 1993.

Rowntree, D. *Preparing materials for open, distance, and flexible learning*. London: Kogan Page, 1994.

2. Introduction to instructional design

2.1 What is instructional design?

Instructional design is a systematic approach to facilitating learning by

- identifying the purposes of the learning, especially learning objectives;
- developing the learning experiences necessary to achieve those purposes;
- evaluating the effectiveness of those learning experiences in achieving the purposes; and
- improving the learning experiences, in the light of evaluation, so as to better achieve the purposes.

2.2 Why use instructional design?

One way of explaining why instructional design is of particular importance in open and distance learning is to describe some of the differences between learning in conventional face-to-face settings and learning at a distance.

In conventional face-to-face settings

Teachers have the ability to

- decide which methods and media to use; and
- vary the methods and strategies depending upon the learners' needs.

In open and distance learning

Thorough preplanning is essential because

- ‘how to teach’ becomes crucial to the success of the entire system;
- learning materials are prepared in advance;
- media to support those materials are pre-selected; and
- changes to materials cannot be conveniently incorporated mid-session.

Instructional design is precisely the necessary preplanning activity.

Discussion: This is an opportune moment for an initial discussion of the differences between learning primarily face-to-face and learning primarily at a distance.

3. Principles of instructional design

Sound instructional design is simply good teaching practice. Good teachers tend to follow similar guidelines. Do your participants agree with the following list?

3.1 Preliminary considerations

Before they begin a lesson, good teachers consider:

- the likely abilities of their learners;
- their learners’ level of education;
- their present level of knowledge;
- their social and cultural background; and
- their motivation and interest.

3.2 Defining tasks

On that basis good teachers then define:

- their learners’ ultimate overall task;
- the major components of this task;
- the conditions under which each component task will be performed; and
- the level of performance that is desired for each task.

3.3 Task analysis

Good teachers then analyse each component task:

- deleting those tasks that learners can perform already;
- selecting the most important and critical tasks; and
- stating what learners will be able to do as a result of the lesson.

3.4 Structuring the lesson

For a lesson to be effective, the teacher should:

- share the objectives of the lesson with the learners; and
- teach in logical order, using a lesson outline like the following:

Sample Lesson Outline

- A. Introduction
 1. issue materials
 2. review previous learning
 3. provide motivation, making this
 - a. brief
 - b. to the point
 - c. stimulating (for example, posing a question)
- B. Main body of lesson
 1. provide information
 2. use small steps
 3. break frequently for questions and comments
 4. use teaching aids
 - a. to illustrate
 - b. to simplify
 - c. to provide variation
 - d. to provide opportunities for practice and feedback
 - e. to summarise
 - f. to provide opportunities for future reference
 5. make contingency plans for
 - a. what to do with any extra time
 - b. which items are essential if time becomes short
- C. Conclusion
 1. deal with difficult points
 2. summarise
 3. mention the content and relevance of next lesson
 4. test
 - a. in class
 - i. put questions to class as whole
 - ii. be clear and precise
 - iii. require a brief answer
 - iv. be encouraging
 - v. avoid embarrassing learners
 - b. after class, evaluate whether
 - i. you ought to change anything about the way you taught the lesson
 - ii. you achieved what you set out to achieve

3.5 During the lesson

While teaching, effective teachers

- communicate clearly;
- are well-organised;
- link past and present learning;
- encourage learners to participate;
- provide practice and opportunities for practice;
- avoid monotony;
- use emphasis;
- demonstrate their own interest;
- use teaching aids effectively;
- repeat important points;
- ask questions; and
- remain flexible.

Discussion: Do your participants agree with this list? At what points do these guidelines differ when they are applied to open and distance learning?

4. Models of instructional design

In describing some models of instructional design, we begin by describing some of the tasks performed and roles played by the instructional designer.

4.1 What do instructional designers do?

The instructional designer works in collaboration with the subject specialist to design materials that facilitate learning of the subject matter. (This material is based on Noel Jackling's article, 'Weaving my own design', in M. Parer (ed.), *Development, design, and distance education* (1989).)

4.2 Roles of the instructional designer

An instructional designer is advised to approach the subject specialist in the following ways:

- regard the subject specialist an expert in the subject matter;
- listen to what the subject specialist has to say;
- provide feedback to the subject specialist (for example, 'If I were a student my response would be...');
- seek clarification;
- encourage new ideas (for example, 'Have you considered...?');

- ask the subject specialist, ‘What are your desired outcomes?’;
- draw out the traditional teaching wisdom from a specific discipline and respect it; and
- keep as a paramount concern what is best for the learner.

Approaches an instructional designer is not advised to take with the subject specialist:

- outside consultant;
- process expert;
- paternalist (spoon-feeding the subject specialist)
- colonialist (encouraging the subject specialist but never giving her independence);
- proselytiser (preaching values to the subject specialist);
- instructor (regarding the subject specialist as a pupil);
- remedier of subject specialist defects;
- prescriber of learning methods for particular subject areas; and
- client-centred counsellor.

4.3 Tasks of the instructional designer

The instructional designer works as a ‘surrogate learner’, asking the subject matter expert the kinds of questions a student would ask, for example:

- Do I understand or am I confused?
- Is there an ambiguity?
- Is there a clear learning path?
- Where have I come from?
- Where might I be going to?
- Am I being transformed from naïve learner to expert?
- Would an example help me understand?
- Would an exercise help me learn by doing?
- Do I consider that the writer is writing for me personally, or is the writer being impersonal and needlessly ‘academic’?
- Am I put off the whole subject by the difficulty of the first item of assessment?
- Am I put off by the style of writing or by the use of uncommon words or unduly long sentences? Can what is being said be said more simply?
- Am I getting cues as to what the really important parts are?
- Is the structure apparent? Have advance organisers been signposted?

4.4 Constructivist approaches to instructional design

Most textbooks on instructional design deal with ‘objectivist’ approaches to instructional design, which are concerned primarily with the transmission of knowledge and with facilitating the process of the learning of that knowledge.

In contrast, constructivist approaches to instructional design put the learners and the knowledge they bring to the learning situation at the centre of the instructional design enterprise. These approaches are based on the following principles:

- Learners are a legitimate source of knowledge. Learners are encouraged to learn to trust themselves and their knowledge.
- Learning is not a passive exercise of absorbing knowledge (information) developed and transmitted by ‘experts’. Learners are encouraged to take control of and initiate their own learning.
- Ambiguity and contradiction are not problematic. They can be helpful in pushing us toward a problem-solving, or problem-posing, approach to learning.
- Systematic reflection is an essential activity if personal experience is to facilitate a deeper understanding. Keeping a diary is a typical course activity.

In designing materials using this approach, the designer’s role is that of collaborator not just with the subject specialist but with the learner as well. In using constructivist approaches, instructional designers also need to be aware of the media which lend themselves more readily to this approach, such as computer conferencing and other forms of computer-mediated communication.

5. Needs assessment of target audiences

What do you need to know about your learners in order to design effective learning materials for them?

Discussion: Take advantage of the wealth of examples that are available from your and your participants’ experience. In addition, examples of different learner audiences and institutional responses are available in the case studies that are provided with this kit.

Needs Assessment of Target Audiences

| | |
|----------------------------|---|
| Demographic factors | How many learners are you likely to have? What age or age range? Are they children or adults? Are they men or women? What is their family status? How many children do they have? What is their geographic location (rural or urban)? What is their previous education? |
|----------------------------|---|

| | |
|---|--|
| | <p>What language or languages do they read and speak?</p> <p>Do they hold jobs?</p> |
| Motivation | <p>Why are they learning?</p> <p>How might your programme relate to their lives or work?</p> <p>What do they want from the programme?</p> <p>What are their hopes and fears?</p> |
| Learning factors | <p>What are their beliefs about learning?</p> <p>What learning styles do they prefer?</p> <p>What learning skills do they have (for example, what reading ability)?</p> <p>What experience do they have of open and distance learning?</p> |
| Subject background | <p>How do they feel about the subject of the programme?</p> <p>What knowledge and skills do they already have in that subject?</p> <p>What misconceptions or inappropriate habits do they have?</p> <p>What personal interests and experience might they have that are relevant?</p> |
| Resource factors | <p>Where, when, and how will they be learning?</p> <p>Who will be paying their fees and expenses?</p> <p>How much time will they have available for study?</p> <p>What access will they have to facilities such as study centres?</p> <p>What access will they have to the equipment and media required for the course?</p> <p>What access will they have to support from tutors, mentors, colleagues, and other learners?</p> |
| Typical problems of open and distance learners | <p>What are their family pressures?</p> <p>Do they face worries about work and money?</p> <p>Are books and libraries lacking?</p> <p>Do learners lack their own study space?</p> |

| | |
|--|--|
| | <p>Are they isolated from other learners?</p> <p>Do they lack transport to get to tutorials?</p> <p>Do they lack confidence?</p> <p>Have they no undisturbed study time?</p> <p>Is their reading ability at a low level?</p> <p>Are they too busy to attend tutorials?</p> |
|--|--|

Discussion: Divide participants into pairs or small groups and assign them the task of describing the learner population for whom they are designing learning materials, using the characteristics listed above.

6. Interactivity, feedback and assessment

6.1 What is interactivity?

Interactivity is an essential aspect of open and distance learning materials, for the following reasons:

- Learners in distance learning courses generally have limited opportunity for interaction with their tutor or other learners, and the learning materials, whether in print or electronic form, must take on some of this role.
- Learners always interact with learning materials, simply by reading them, listening to them or watching them, and thinking about what they say.
- Distance learning materials also seek to build in additional interactive features, in particular, activities asking learners to think about something or to do something.

6.2 Why is interactivity important?

Interactivity in learning materials is important for some of the following reasons.

- An interactive approach can make up for the lack of other kinds of interaction and reduce the learner's sense of isolation.
- An interactive approach can personalise distance learning materials and bring the writer closer to the learner.
- An interactive approach is likely to stimulate deep rather than surface learning. A 'deep' approach to learning refers to an intention to develop one's understanding and to challenge ideas, while the 'surface' approach is the intention to memorise information and to follow instructions.
- Interaction can stimulate many learning events, such as focusing the learner's attention or encouraging performance.

- Interaction is essential if print materials are to meet requirements for a ‘learning dialogue’.
- Interaction can encourage active learning and ensure that learners try things out for themselves.
- An interactive approach can help learners to process new ideas and link them with their existing experience and so help to anchor learning.

Discussion: Ask your participants for additional reasons why interactive approaches are valuable in designing open and distance learning materials.

6.3 What activities are typical in learning materials?

Discussion: It is useful for the sections that follow to have sample course materials available from which to draw examples of activities, feedback, and assessment strategies.

To be effective in fostering interaction, activities must make explicit the active nature of learning. Activities should suggest to learners some of the more successful strategies they may adopt to achieve a particular objective. These activities must:

- be relevant to the learner’s own objectives;
- be worth doing because learners are busy people;
- be inherently challenging and interesting; and
- include a variety of opportunities for interaction that will suit diverse learning styles.

Types of activities

Using different types of activities will make your learning materials more interesting. Activities can be classified according to:

- action needed to arrive at response;
- type of response demanded; and
- level of difficulty (or cognitive level).

Examples of the kinds of activities learners may be asked to undertake include

- reflecting on what they have read, heard, or seen;
- reflecting on their own experience in relation to what they have read, heard, or seen;
- describing personal experiences;
- consulting an expert source (for example, dictionary or local expert);
- reading a piece of text;

- listening to a tape;
- performing a calculation;
- carrying out practical work;
- examining experiment results; and
- observing aspects of their own surroundings.

As to the type of response requested, examples include

- writing down answers;
- making a summary;
- filling in or completing a table or chart;
- making glossaries;
- drawing a diagram;
- asking questions of friends or colleagues;
- repeating aloud a phrase or answering a question aloud; and
- performing some physical movement.

6.4 How do you make learning materials interactive?

Strategies for making text interactive

Learning materials can be made more interactive by including the following:

- activities that focus a learner's attention on the subject;
- activities that encourage learners to reflect on their existing knowledge and experience that may be relevant to the subject;
- activities that suggest ways in which learners can apply what they are learning;
- problem solving activities;
- project work; or
- a question and answer approach, exploring a subject through a series of questions which encourage learners to carry out their own analysis.

Encourage learners

Ways of encouraging learners to make the most of activities include

- explaining why the activities have been added;
- describing the advantages of an active approach to learning;
- explaining the purpose of each activity;
- highlighting the benefits that activities will offer learners;
- integrating activities into the course assessment;

- creating a range of types of activities; and
- avoiding activities that require large mental leaps away from the line of thought pursued in the materials.

6.5 What kinds of feedback are needed?

Designing activities that encourage interaction is one side of the coin; the other side is providing feedback to learners so they will know whether they are on the right track.

Print materials

Mechanisms for offering this feedback when print materials are the primary learning resource include:

- providing sample answers in the print materials, either directly after the question or at the end of a unit;
- providing the page numbers of the set texts or other readings where these questions are discussed, answered, or both;
- providing sample answers on audio cassette;
- suggesting that learners contact the tutor to discuss their answers;
- asking learners to send their answers to their tutor so the tutor can give them written or oral feedback; and
- designing face-to-face tutorial sessions that actively engage learners and provide them with immediate feedback on their performance.

Other media

Some examples of providing feedback when using other media include the following:

- *audio cassette*: asking the learner to stop the tape in order to perform some activity (such as answering a question) and then start the tape again for feedback on that performance;
- *video cassette*: using a question-and-answer format in the video programme;
- *audio conference*: ensuring that participants have frequent opportunities to work off-line in small groups (you can use the site format effectively here) and then come back on-line for reporting and feedback;
- *video conference*: using a question-and-answer format and avoiding straight lecture formats; and
- *computer conference*: proposing questions for consideration and discussion and then moderating effectively by summarising the discussion from time to time, prompting further discussion, responding in supportive fashion to specific statements, and so on.

6.6 What are some assessment strategies?

Why assess?

Assessment in open and distance learning may have any of three main purposes:

- *formative assessment*: to give learners feedback on their progress so that they know how well they are doing and can, if necessary, change the way they are tackling the course;
- *summative assessment*: to provide the basis for marks that may contribute to the learner's eventual certification ; and
- *as part of the overall evaluation process*: to help the open and distance learning institution to monitor the effectiveness of its courses.

Who should assess?

Assessment may be carried out by any of a number of people, including:

- *the learner him or herself*: generally called self-assessment;
- *other learners*: called peer assessment;
- *the learner's tutor*: often through *tutor-marked assignments* that are built into the course;
- *examinations*: an examiner or assessor, as may sometimes be the case with summative assessment; and
- *course evaluation*: someone else, perhaps a researcher evaluating the course.

How can formative assessment help learners?

Formative assessment can help learners learn in a number of ways:

- *diagnosing learning needs*: early on in a course, assessment can help learners decide which parts of the course they need most, and may form the basis of a learning contract;
- *checking progress*: self-assessment questions during or at the end of study units enable learners to check how they are getting on and provide immediate reinforcement of learning;
- *increasing motivation*: reinforcement helps to keep learners going;
- *providing feedback*: tutor comments on tutor-marked assignments ensure the learner knows what to do next;
- *encouraging a deep approach to learning*: particular types of assessment such as questions that call for reflection, analysis, or application, projects, and practical assignments can help learners improve their approach to learning;
- *facilitating contact between learner and tutor*: tutor-marked assignments are often the main point of contact between a learner and his or her tutor, and are therefore an invaluable way of reducing learner isolation; and

- *increasing learner control*: giving learners the means to assess their own progress can increase their control over their own learning.

When to assess?

In deciding at which times during your course assessment is appropriate, here are some points to bear in mind.

- Early in the course learners may not have learned enough to warrant testing.
- On the other hand, an early assignment provides an opportunity for early interaction and feedback and thereby builds the relationship between learner and tutor.
- Assessment should be related to major sections of content.
- Assessment should be evenly distributed throughout the course to generate regular feedback.
- Keep in mind the turnaround time and capacity of your tutors.
- If an assignment is prescribed very late in the course, learners are unlikely to receive feedback before any end-of-course examinations.

7. Managing the learning materials development process

The process of developing learning materials begins with the initiation of a new course and follows right through the design, approval, writing, production, delivery, formative evaluation, summative evaluation, and rewriting process.

7.1 Aspects of the development process

Some of the aspects that are important for the management of this process are:

- choosing appropriate media and technologies;
- costing the process accurately and monitoring costs on an ongoing basis;
- recruiting and contracting staff;
- providing staff training, in specialist skills and also in effective teamwork;
- motivating staff on a continuing basis;
- setting performance targets and monitoring their achievement;
- ensuring that the development process is smoothly integrated with the other functions of the organisation, including recruiting, enrolling, production and delivery, learner support, and evaluation; and
- adhering to legal requirements, especially copyright.

7.2 Personnel involved in management

In a sense, all those within open and distance learning share some responsibility for managing course development, even though they may not recognise this aspect of their jobs:

- dean and heads of schools;
- subject specialists;
- writers of print materials, electronic text, and scripts;
- media specialists, for example, radio and television producers, computer-assisted learning developers, and computer-mediated communication specialists;
- budget managers;
- support staff;
- editors and graphic designers;
- librarians;
- copyright specialists;
- printers;
- dispatch clerks;
- tutors;
- markers;
- study centre staff; and
- evaluators.

Who bears overall responsibility?

Technically in materials development it is usually the chair of the development team. In practice, these people are effective only if all within the process share the management and work together.

Discussion: Ask your participants to describe the staff that are or are likely to be involved in the materials development and production processes in their organisations.

7.3 Evaluating your design process

Why evaluate?

In practice, managers evaluate for a variety of reasons, including:

- to prove they have done it, lest it be done ‘on their behalf’ by someone else;
- to be able to make informed judgments about the effectiveness of the process and the outcomes; and
- to determine where there are problems in the process so they can be solved.

What to evaluate?

The aspects of the design process that are typically evaluated include:

- the planning process by which the materials were produced;
- the proposed aims, objectives, and content of the materials being designed;
- the proposed teaching strategy; and
- the appropriateness and effectiveness of the media chosen for implementing the strategy.

Preliminary evaluation

All of these aspects of the design process might be evaluated before the learners ever begin studying the materials. It can be valuable to have an outside ‘expert’ look over your materials before you make them available to learners, paying attention to aspects such as academic credibility and likely effectiveness.

Academic credibility

You might want to ask some expert in the subject matter questions about your materials such as those in the following checklist.

Checklist to Evaluate Academic Credibility in Learning Materials

- Are the aims and objectives sufficiently explicit?
- Do the aims seem relevant to the needs of the target audiences?
- Do the objectives support the aims?
- Are there any additional aims and objectives we should include?
- Is the content up-to-date?
- Is the content accurate?
- Are there any important omissions?
- Do there seem to be any faults of emphasis?
- Are the assertions made adequately supported by evidence?
- Do the materials avoid oversimplification or overgeneralisation?
- Are they true to the nature of the subject or discipline?
- Are they balanced, and at pains to present opposing points of view when appropriate?
- Are the media that have been selected being exploited appropriately and to their full potential?

Likely effectiveness

The questions in the following checklist can be asked about how educationally effective the materials are likely to be.

Checklist to Evaluate the Likely Effectiveness of Learning Materials

- Does the structure seem sensible and coherent, using introductions or previews, and summaries or reviews where appropriate, and providing a means that allows learners with different needs to use the lesson in different ways?
- Are adequate steps taken to motivate the learners and make clear to them what they are to do with the material and to get out of it?
- Are the materials pitched at the right level of difficulty and matched to the assumed prerequisite skills and understandings of learners?
- Is the tone that of a rigorous but friendly tutor, lively and interesting?
- Is the language plain and straightforward?
- Are analogies, examples, case studies, and illustrations used where appropriate to develop understanding?
- Are questions, exercises, and activities properly integrated into the materials to encourage learners in the self-assessment and practice of relevant skills?
- Are print and electronic media effectively integrated?
- Is the form of presentation conducive to effective learning?
- Are learners given sufficient information and practice of a kind likely to help them achieve the objectives?
- Is the relationship between assessment items and aims and objectives clear?
- Are assessment items clear in what they demand of learners?
- Are assessment items likely to result in answers that can be marked with reasonable consensus of agreement among different markers?
- Is the likely learner workload reasonable for the topic?

Discussion: A useful exercise at this point is to have sample course materials available for participants to assess against these checklists for appropriateness to their own contexts.

Developmental testing

Developmental testing involves trying out materials with learners in the hope of developing or improving those materials for the benefit of other or future learners.

Methods of developmental testing include:

- *tutorial tryouts*: trying the materials out on one learner or a small group of learners; and
- *field trials*: using larger numbers of learners (20 or 30) in circumstances as similar as possible to those in which your eventual learners will work.

Continuous monitoring

Once the learning materials are in delivery, you will want to ‘keep an eye on things’ to see what problem areas need addressing, what good things are emerging and should be enhanced, and what to prepare for end-of-course evaluation.

Mechanisms available for this kind of formative evaluation include:

- *a course log book*: used to record the main things you notice in the running of the course and the main in-course corrections you have used;
- *casual evaluation*: appraising what is happening in day-to-day situations and responding to it; and
- *deliberate evaluation*: actively seeking specific kinds of information, through discussions, interviews, and questionnaires.

Summative evaluation

When the course is completed, a summative evaluation of its effectiveness may address questions such as those in the following checklist.

Checklist for Summative Evaluation of Course Effectiveness

- Did the course attract enough learners?
- Were they sufficiently qualified?
- Did enough of them last the course?
- Was the standard high enough?
- Was the course cost-effective?
- Were the learners satisfied?
- Were other stakeholders satisfied?
- What needs to be changed?

Typical instruments and sources for obtaining this information include:

- *questionnaires*: for learners, for tutors, and for others involved in delivery;

- *interviews*: with selected learners, with tutors, and with others involved in delivery; and
- *records*: course registrations, revenues, expenditures, completions, and passes.

Example: For an example of an institution that evaluates its courses and services on a regular and continuing basis, see the case study included in this kit for Deakin University.

8. Practice exercise

8.1 Assessing sample materials

Instructions: Consider a sample of course material prepared for teaching at a distance. Assess the extent to which it meets the criteria set out in this session. This task can be divided up among the participants, one criterion per person, two or three criteria per small group, and so on. The last criterion (administrative requirements) cannot be dealt with in this way, but the group could be prompted to engage in a general discussion of the kinds of administrative problems they encounter in delivering instruction effectively to learners.

Timeframe: Approximately one hour.

Materials: Sample course materials. If you do not have ready access to sample course materials, The Commonwealth of Learning will assist you to locate appropriate packages.

TOPIC 4

Media Characteristics

Overview

Source materials for this topic

Media characteristics

Accessibility

Costs

Teaching functions

Interactivity

Descriptions of open and distance learning media

Print

Face-to-face

Audio

Radio

Video

Television

Computers

Practice exercise

The Lego® block version of communicating for learning without visual cues

The paper and pencil version of communicating for learning without visual cues

1. Overview

These materials support a discussion on the topic of the various media used in open and distance learning.

1.1 Source materials for this topic

Bates, T. *Technology, open learning, and distance education*. London: Routledge, 1995.

Collis, B. *Tele-learning in a digital world: the future of distance learning*. London: International Thomson Computer Press, 1996.

International Extension College. *Electronic media in distance education*. Course 6, M.A. in Distance Education. Cambridge: IEC, 1995.

Khan, B. (ed.) *Web-based instruction*. Englewood Cliffs, N.J.: Educational Technology Publications, 1997.

Mason, R. *Using communications media in open and flexible learning*. London: Kogan Page, 1994.

2. Media characteristics

The media that are available for use in open and distance learning can be described in terms of a number of characteristics. Among the more important characteristics are:

- accessibility;
- costs;
- teaching functions; and
- interactivity.

2.1 Accessibility

The first questions to ask in any open and distance learning programme are:

- Who is the target group?
- Will there be open access to the course?

In particular, it is important to ask where the learner is expected to learn. There are several possibilities:

- at home;
- at work;
- at a local public education centre; or
- at a regional learning centre.

To some extent, access will depend on what technology is already available for other purposes. For example:

- if every learner already has their own computer for work purposes, it might also be used for the open and distance learning course; or
- if the teaching is to be home-based, then the limited technology available in most homes must be taken into account.

Open access, home-based learning will be limited in many countries to relatively few technologies:

- print and radio in the poorest countries;
- print, radio, audio cassettes, and possibly television in more wealthy countries; and
- print, video cassettes, telephone, and computer in the wealthiest countries.

Some technologies may be relatively common but unavailable to all members of the target group. Even in the wealthiest countries there are always a small number of people who do not have television, or access to a telephone.

It may be a mistake to make some media or technologies 'optional', in the sense that learners can pass examinations or do assignments without using a particular technology, just because some potential learners will not have access to the technology. Experience suggests that course designers will avoid using these media for essential material, and learners will stop using the technology as well.

Example: For an example of an institution that makes media use compulsory, see the case study for the Open Access College in Australia.

2.2 Costs

It is important to distinguish among

- capital and recurrent or operating expenditure;
- central (or production) and local (or delivery) capital costs; and
- fixed costs and variable costs.

Costs can be distinguished using the following examples.

- The cost of putting equipment into local centres or workstations can far exceed central capital costs in organisations with multiple study centres.
- The major cost of using technologies for teaching is in production and hence recurrent rather than capital; in general, the recurrent costs of producing good quality technology-based materials tend to be underestimated.
- Since production is the main cost, and hence is fixed for any course, for most technologies currently used in national distance teaching and open learning institutions, fixed costs usually far exceed variable costs; consequently the economies of scale apply to 'traditional' open and distance learning courses: the more learners, the more cost-effective technologies become.
- Some of the newer interactive technologies such as computer conferencing and audiographics reduce fixed costs but have high variable costs, thereby making them suitable for courses with relatively small learner numbers.

These cost issues are covered in more detail in Topic 8 (Managing Media Integration).

2.3 Teaching functions

It is much easier to discriminate between media on the basis of access or cost than it is on the basis of teaching effectiveness.

Media are flexible in that each medium can be used in a wide variety of ways. Differences within a medium may be greater than between media; for example, the

differences between two television programmes may be greater than the differences between a face-to-face lecture and a lecture on a radio programme.

Nevertheless, intrinsic differences between media are being identified that have implications for teaching and learning. Specifically, media differ

- in the extent to which they can represent different kinds of knowledge, for example, concrete or abstract; and
- in the extent to which they can help develop different skills, due to the control characteristics of the medium and its representational features.

Course and instructional designers need to identify clearly

- the content of a course;
- how best to present knowledge in a particular subject area; and
- what kinds of learning — comprehension, analysis, application, problem-solving — are required.

2.4 Interactivity

Interactivity — the ability for the learner to respond in some way to the teaching material and obtain comment or feedback on the response — considerably increases learning effectiveness. There are two kinds of interactivity:

- *social interactivity*: learners' interaction with teachers and with each other via the medium; and
- *learning material interactivity*: learners' interaction with the medium; the level and the immediacy of feedback the medium itself provides; the extent to which the medium will accommodate the learners' own input and direction.

Media such as print and broadcasting that provide one-way interaction, need to be supplemented by media that provide with two-way interaction with tutors, that is, social interactivity, via the following media:

- telephone;
- correspondence;
- computer communication; or
- face-to-face tutorials.

An important feature of this two-way interaction is the extent to which it is under the learner's control, allowing learners to interact easily with tutors and other learners.

The following table categorises different media used in open and distance learning according to whether they offer one-way or two-way interaction.

Media Categorised as One-way or Two-way Interaction

| | Audio | Radio | Video | Television | Computers |
|----------------|--|--|-----------------------------|--|--|
| One-way | Cassettes Audiovision | Educational radio Interactive radio instruction | Cassettes Discs Clubs | Educational television | Games Computer-assisted learning Databases Bulletin boards Web-based instruction |
| Two-way | Telephone tutoring Audio conference Audio-graphics | Two-way instructional radio | Interactive video | Video conference Interactive television | Computer conference Computer-mediated communication |

3. Descriptions of open and distance learning media

3.1 Print

Print continues to be the most widely used medium in open and distance learning. Even in organisations that use telecommunications technologies to transmit the bulk of information and learning materials to the learner, some ‘hard copy’ or print materials are required.

Advantages of Print Media

| Accessibility | Costs | Teaching functions | Interactivity |
|---|--|---|---|
| a familiar technology easy to use portable learner-controlled pace | relatively low-cost to buy relatively low-cost to produce | can provide carefully argued analyses and systematic presentation provides learners with a record of their learning experience graphics, photographs, diagrams, and sketches are useful learning aids can be used for group discussion | can be used as a medium of exchange between tutor and learner, assuming efficient postal or other delivery service can be designed in an interactive manner that involves the learner in his or her learning |

Limitations of Print Media

| Accessibility | Costs | Teaching functions | Interactivity |
|---|---|--|------------------------------|
| requires learner to be able to read and write disadvantages learners who are not part of a 'reading culture' | storage, handling, and distribution costs can be high | needs to be integrated with other media to make it truly interactive and responsive to learner input | essentially a one-way medium |

3.2 Face-to-face

Face-to-face tuition continues to be the most common way of enabling distance learners to communicate with tutors and with other learners in an immediately interactive manner. Open and distance learning organisations often tend to provide decentralised, face-to-face contact with learners by means of a network of access centres, tutorial centres, regional offices, or centres of all three types, to which learners come to obtain information about courses, enrol in courses, collect their course materials, attend tutorial and counselling sessions, and write their examinations.

Advantages of Face-to-Face Contact

| Accessibility | Costs | Teaching functions | Interactivity |
|---|--|---|---|
| the most familiar mode of teaching and learning the 'study circle' helps those with low levels of literacy work with print materials | requires no special materials or equipment | personalises the learning materials greater impact for changing attitudes academic abstractions can be brought to life teacher can help learner work through difficult concepts can model good practice can incorporate other media facilitates practical work such as laboratories | the most fully interactive of all the modes of teaching and learning directly responsive to learners' needs and problems learner-learner interactions valuable for motivation and understanding |

Limitations of Face-to-Face Contact

| Accessibility | Costs | Teaching functions | Interactivity |
|---|---|---|--|
| <p>learners must travel to a learning centre or other site</p> <p>difficult to provide for remote or dispersed learner populations</p> <p>physical or other handicaps can deter learners from participating</p> | <p>requires facilities owned, rented, or shared with other institutions</p> <p>tutors and facilitators must be trained in facilitation</p> <p>learner-to-tutor ratio needs to be kept low if sessions are to be truly interactive</p> | <p>needs to be integrated with other media and teaching aids to maintain learner interest and to present the sights, sound, and 'spirit' of subject</p> <p>learners need instruction and support in effective communication and note-taking</p> | <p>relies on effective facilitation of communication</p> <p>not automatically a two-way medium</p> |

3.3 Audio

Audio cassettes

In every country of the world, you can see people, young and old, listening to audio cassettes, probably enjoying music recorded on them. As a means of conveying culture, audio cassettes have become extremely important. Used in this way, they are certainly a form of open and distance learning.

Advantages of Audio Cassettes

| Accessibility | Costs | Teaching functions | Interactivity |
|---|--|---|---|
| a familiar technology easy to use portable learner-controlled pace literacy not required | relatively low-cost to buy relatively low-cost to produce short lead time to produce | hearing words helps vocabulary and pronunciation emphasis and meaning are added by modulation of human voice personalises teaching greater impact for changing attitudes academic abstractions can be brought to life lessons can be of variable duration can be used for group discussion teacher can 'talk' learner through difficult concepts can model good practice allows use of drama and documentaries | can be used as a medium of exchange between tutor and learner |

Limitations of Audio Cassettes

| Accessibility | Costs | Teaching functions | Interactivity |
|-----------------------------------|------------------------------------|---|------------------------------|
| power source needed for operation | batteries can be relatively costly | needs to be integrated with other media, especially print, for visual component professional readers may be needed for full realisation of advantages of human voice | essentially a one-way medium |

Audiovision

The power and scope of audio can be greatly enhanced as audiovision, where it is closely linked with visual materials. Audiovision is a composite medium. That is, the visual materials are not subordinate to the audio, but are rather essential source material that the audio cassette interprets for the learner. The visual material is the content, and the audio cassette talks learners through that content.

Advantages of Audiovision

| Accessibility | Costs | Teaching functions | Interactivity |
|---|--|--|---|
| learner-controlled portable easy to use | less costly than video for combination of sound and visuals for situations in which motion is not needed | particularly effective in talking learners step-by-step through a process inclusion of visuals widens teacher's scope | prompts activity on the part of the learner |

Limitations of Audiovision

| Accessibility | Costs | Teaching functions | Interactivity |
|---|-----------------------------------|------------------------------------|------------------------------|
| need for print materials limits portability | extended production time required | lack of motion may be a limitation | essentially a one-way medium |

Telephone tutoring and audio conferencing

Telephone tutoring is normally between a tutor and an individual learner, usually at home, with no special equipment required other than that provided by telephone company exchanges. Audio conferencing links teachers, groups, or both via a two-way speech channel, over telephone lines or sometimes by radio, usually in study centres but also in homes.

Advantages of Audio Conferencing

| Accessibility | Costs | Teaching functions | Interactivity |
|---|---|--|----------------------------|
| familiar technology readily available to most learners in industrialised countries | costs typically lower than travel costs over long distances considerable savings in time | dialogue can be established tutor can diagnose learners' problems and offer help isolated learners can get in touch with other learners or tutor tutor can guide learners, question their values, suggest alternative views, and help them assimilate knowledge audio conferencing accomplishes learner-learner discussion | a fully interactive medium |

Limitations of Audio Conferencing

| Accessibility | Costs | Teaching functions | Interactivity |
|---|---|--|--|
| in many countries the quality of telephone lines is poor and access is limited over half the world's people have never made a telephone call audio conferences can require travel to learning site, which may be difficult even in industrialised countries audio quality can be problematic | in many countries the ownership and rental of a telephone and long distance charges limit usage to elite audio conference requires purchase of expensive equipment and its maintenance | lack of visuals can be very limiting staff and learners need training in how to use telephone communication effectively for learning teachers tend to lecture over the system, which can be deadly audio conference sessions need to be carefully planned and facilitated | problems with the telephone line and equipment breakdowns can limit interactivity 'real-time' interaction, requiring learners and tutors to co-ordinate their schedules |

Audiographics

Audiographic learning occurs when learners and instructors use telephone and graphics technologies to facilitate dialogue, exchange messages, and access experts as part of a learning process. Graphics technologies or devices are pieces of equipment that create, store, and send visual materials such as handwriting, drawings, and still pictures over normal telephone lines. Audio conferences become audiographic conferences with the incorporation of this equipment, which allows everyone in the conference to handwrite or type text and draw graphics that are seen in all locations in the conference.

Advantages of Audiographic Media

| Accessibility | Costs | Teaching functions | Interactivity |
|---|--|--|--|
| <ul style="list-style-type: none"> generally the same as for audio conferences | <ul style="list-style-type: none"> costs to user still tend to be lower than cost of travel over long distances | <ul style="list-style-type: none"> addition of graphics expands teacher's repertoire considerably subjects such as mathematics can be taught successfully over the telephone | <ul style="list-style-type: none"> a fully interactive medium |

Limitations of Audiographic Media

| Accessibility | Costs | Teaching functions | Interactivity |
|--|---|---|---|
| less flexible, since learners must attend conference sites in order to use equipment | higher cost than audio conference alone | <p>teachers and learners need training and practice on equipment to use it effectively</p> <p>greater complexity of equipment can mean greater likelihood of breakdowns, limiting utility</p> | real-time interactivity, requiring co-ordination of schedules |

3.4 Radio

Radio is the most accessible of all the media for open and distance learning. In even the poorest countries, most people can be reached through radio, at relatively low cost. Radio broadcasts words, music, and other sounds, and in the case of digital radio can also be used to transmit data in the form of text and graphics.

Educational radio

What counts as educational radio? It includes

- the broadcasting of programmes that aim to teach directly and indirectly; and
- the use of these programmes in both formal and non-formal learning, whether in classrooms, factories, community centres, or at home.

There are many different combinations of purpose on the part of broadcasters and use on the part of learners.

Direct teaching by radio is also known as instructional radio. It is formal instruction if it relates closely to the school or university curriculum.

Indirect teaching is often called enrichment, and can be formal or non-formal. A radio campaign is an example of direct, non-formal teaching.

Example: For examples of institutions that use radio extensively, see the case studies for the Open Access College and the Indira Gandhi National Open University.

Discussion: Ask participants what types of educational radio are used in their countries and contexts, and for which audiences. If some types of radio broadcast are not used, why not? Do audiences exist for which they could be valuable?

Advantages of Educational Radio

| Accessibility | Costs | Teaching functions | Interactivity |
|--|--|---|--|
| <p>probably the most accessible electronic medium</p> <p>in almost every country of the world, most households have a radio</p> <p>literacy is not a requirement</p> | <p>receivers tend to be relatively low cost</p> <p>the 'Baygen' wind-up radio needs no batteries</p> | <p>can be used to motivate learners, increasing their interest in specific topics</p> <p>gives learners an organisational framework for structuring information, which can improve their assimilation, storage, and retrieval of this information</p> <p>transmits to learners some immediate learning goals or objectives related to course content</p> <p>more generally shows learners how to use this information in different situations</p> <p>can be very effective combined with print and study groups</p> | <p>radio can be used in interactive contexts</p> |

Limitations of Educational Radio

| Accessibility | Costs | Teaching functions | Interactivity |
|--|--|---|--|
| <p>broadcast times tend to be inconvenient</p> <p>reception can be poor</p> <p>access to household radio by women, for example, can be limited</p> | <p>power supply for radio, for example, batteries, can be costly</p> | <p>learner has no control over pace and time of broadcast</p> <p>lack of visuals can be problematic if broadcasts are not combined with print</p> | <p>broadcast radio is essentially a one-way medium</p> |

Two-way instructional radio

Can radio provide a two-way communication system for teaching and learning? In theory, yes; but in practice, seldom.

Example: The School of the Air, serving children in remote parts of Australia's outback, has used two-way shortwave radio so that teachers can have conversations with individual children, as if they were on the telephone. The Open Access College in Australia continues to use radio, in the form of high frequency radio links.

Other countries with two-way shortwave radio networks have probably done the same, but on a very small scale involving at most hundreds of learners, not thousands.

There are also hybrid systems that involve radio and telephone.

Example: A 'narrowcasting' tutorial system using sub-carrier FM radio and telephone feedback was trial tested in the 1980s in Australia. The tutor, who was based at Murdoch University in Western Australia, broadcast from a studio using a radio signal that rode 'piggy-back' on a normal signal. Only learners with a decoder could pick up the sub-carrier signal. They could talk back to the tutor by telephone.

Radio is also used for direct teaching in schools. Interactive radio instruction is the best-known example. It is a one-way communication system, and is only interactive in the sense that the radio teacher stimulates the children to respond actively.

Example: Interactive radio instruction was first implemented on a large scale in Nicaragua, in the Radio Mathematics Project. Mathematics may not seem the most obvious subject to teach directly by radio, but evaluators deemed the project a success. It ended because of a change of government, but the concepts have been exploited in several other countries, for teaching English and science as well as mathematics, in countries including Kenya, the Dominican Republic, and South Africa, to name only a few.

3.5 Video

Video cassettes

Video cassettes can carry either complete television programmes or short segments of specially prepared instruction. The teacher and learner can stop the tape and re-play it.

Video is supplementing or even replacing broadcast television in open and distance learning. Some institutions that use video have never bothered about broadcasting. For example, this is true of the German Fernuniversitat, the Dutch Open universiteit, and the Spanish UNED. In the United Kingdom, the National Extension College once used television but now relies on video.

Advantages of Video Cassettes

| Accessibility | Costs | Teaching functions | Interactivity |
|---|--|--|---|
| <p>in industrialised countries, the majority of households own or have access to video cassette players</p> <p>not bound by broadcast schedules</p> | <p>costs of playback equipment have dropped considerably in recent years</p> <p>video cassettes are relatively inexpensive</p> | <p>learners have control over pause, rewind, fast forward, and replay</p> <p>video provides learners with vicarious experience for experiments, field trips, and techniques</p> <p>imparts visually or conceptually dense information</p> <p>triggers reflection or group discussion</p> <p>segmentation into short, unrelated sequences makes video more an audio-visual resource and less a coherent presentation, which is useful in some learning contexts</p> | <p>learner can be prompted to interact actively with video material rather than sit as passive viewer</p> |

Limitations of Video Cassettes

| Accessibility | Costs | Teaching functions | Interactivity |
|---|--|---|---|
| <p>access to video playback equipment in developing countries is likely limited to learning centres</p> | <p>costs of playback equipment prohibitive for individuals and households</p> <p>unlike broadcast television, costs of video cassette distribution rises with the number of learners</p> | <p>locating a particular segment on a video cassette can be problematic</p> <p>learners may need training in using the technology effectively</p> | <p>video cassettes are essentially a one-way medium</p> |

Video discs

Video discs contain digitally recorded video and sound. They look rather like an old 78-rpm gramophone record, but are iridescent and silvery instead of black. One disc contains about 54,000 frames, which can be used in several ways: as an hour of video with sound; as several thousand pages of text; or as a mixture of text, still pictures, and video. Video discs offer some extra advantages to teachers and learners because access to any part of the disc is precise and takes only a few seconds. Like video cassettes, video discs can store moving pictures and two sound tracks. They can also store still pictures better than can video cassettes, though stills have no sound, as with video cassettes. But video discs require a separate player, and not many people or institutions have such a machine. For this reason, and because of the high cost of making the master discs, video discs have not entered open and distance learning in large numbers.

Video clubs

Video cassette recorders or players are essential for using video cassettes. In industrialised countries, people on lower incomes own them as often as those who are richer. Video cassette rental outlets (which used to be ‘clubs’ requiring membership) enable individuals to rent videos of many kinds, mostly films for entertainment. Similarly, libraries carry stocks of videos that schools and individuals can borrow.

In developing countries, video clubs operate in many locations. They usually show movies and charge a fee for admission. Some of the videos available through such sources can be counted as offering education of a kind, even enrichment. There are no reports yet of video clubs being drawn into open and distance learning. They seem likely to continue to provide cultural enrichment, on the spot rather than at a distance.

Discussion: Ask participants if video clubs are part of open and distance learning in their countries and contexts or likely to become so.

Interactive video

Interactive video includes video cassettes and video discs controlled by a special player or a computer. The emphasis is on interaction of the learner with the video images and sound, to increase the learner’s active learning. It is one-way communication, however; the learner does not interact with the video teacher.

Not many examples exist of use of interactive video in open and distance learning. The United Kingdom Open University wanted to introduce interactive video into certain science courses, and, with help from the British Broadcasting Corporation, made a few interactive video discs at considerable expense. Learners study these at residential school, however, because they do not have the players at home. For example, an interactive disc developed for a course in Materials Science takes about three hours to work through. Similarly, the Dutch Open universiteit provides teaching through interactive video at study centres only.

3.6 Television

Educational television

Television came into favour for educational purposes from about 1950 onward. Although the mode of transmission has become much more varied, with conventional broadcasting from terrestrial transmitters now supplemented by cable television and broadcasting via satellite, the purposes remain the same:

- to enrich lessons through documentary-type programmes; or
- to teach content directly.

Advantages of Educational Television

| Accessibility | Costs | Teaching functions | Interactivity |
|--|--|---|---|
| in more affluent countries, almost all households have television; it is a familiar medium | although costly, the entertainment value of television prompts households and individuals to purchase sets broadcast transmission is a cheap and effective mode of distribution | television serves an explanatory role, particularly useful in areas in which sound and moving pictures and models are needed to further understanding television provides evidence; showing documentary real world material takes learners into real world useful for pacing work for the learner, because of the need to keep up with the broadcast schedule can be used to keep learners in touch with events within the institution | well-designed broadcasts can involve the learner in active ways |

Limitations of Educational Television

| Accessibility | Costs | Teaching functions | Interactivity |
|--|---|---|--|
| broadcasts tend to be at times that are inconvenient to learners | in less affluent countries, the cost of television sets restricts their use to the elite high quality programming is costly to produce | broadcast programmes offer little or no opportunity for learners to determine the depth to which they attend to and study different sections of the material the presentation style must be appropriate to a single viewing broadcasts specify a particular programme length that may be inappropriate to the learning task | broadcast television is essentially a one-way medium |

Video conferencing

In video conferencing, participants are linked by two-way vision as well as two-way audio. Television screens at the front of the classroom display pictures from distant locations, and video cameras show people in the distant locations what is happening in the classroom. The links are essentially telephone connections. These links are more costly than those for audio conferencing, because far more data must be transferred, either by broadband ISDN cable or through television transmitters and receivers, sometimes via satellite. Costs are dropping, however, especially due to improved techniques for compressing the data thereby reducing transmission costs.

Advantages of Video Conferencing

| Accessibility | Costs | Teaching functions | Interactivity |
|--|---|---|--|
| <p>in industrialised countries, video conference suites are available in most cities and many institutions</p> <p>desktop video conferencing equipment makes it possible for learners to participate without leaving their homes or offices</p> <p>Multi-site small group conferences make expertise via the virtual classroom available to remote sites</p> | <p>costs of equipment, although still prohibitive for most individual learners, are dropping to the point of becoming affordable for institutions and organisations</p> <p>producing sessions for video conferencing is less costly than production for broadcast television</p> <p>reduces costs of travel and time</p> <p>collaboration via consortia offers cost sharing opportunities</p> | <p>most closely approximates a face-to-face lecture or training session –as in the ‘virtual’ classroom</p> <p>creates social presence and comfortable environment for learning</p> <p>lecture format is appropriate for state-of-the-art subject levels; for example, postgraduate courses or professional updating</p> <p>various formats, involving less lecturing and more demonstrating or pre-prepared video presentations, enable to show what could not be seen live</p> <p>document cameras enable the use of text and pre-prepared graphics</p> <p>studio-produced video conferences present discussions among experts, for example, with voice overs and visual footage</p> | <p>video conferencing is the most interactive medium available</p> |

Limitations of Video Conferencing

| Accessibility | Costs | Teaching functions | Interactivity |
|--|---|---|---|
| demands 'real-time' interaction; learners must attend video sites at particular times even at home, time schedule ties learners to particular times and places | cost of equipment and usage charges for higher bandwidth communications links are major drawbacks at present more preparation time is required of teachers to plan sessions and make visual material | demands much higher energy levels than face-to-face lecturing because of the need to concentrate simultaneously on content, visual material, and learners at remote sites learners find medium more intense as well; with slight blurring or incomplete synchronisation. | lack of interactivity in many applications, because of unfamiliarity with equipment or less than full exploitation of capabilities if video transmission disappears, the session can carry on, but if audio link breaks down, the session must end |

3.7 Computers

Computer-assisted learning

In computer-assisted learning, computers

- work interactively with individuals, patiently providing instant feedback;
- tutorials simulate a dialogue between learner and tutor, with the computer as tutor;
- the computer provides information and tests the learner;
- the computer more or less controls the route the learner takes;
- simulations model or represent a variety of situations, from the abstract (for example, economics) to the concrete (for example, an airplane cockpit).

Example: Few open and distance learning institutions use computer-assisted learning, even at the tertiary level. The Dutch Open University is the open and distance learning provider that appears to have committed perhaps the most energy to exploiting this medium, starting off with microcomputers for computer-assisted learning in its local study centres and now making packages available for home use.

Teaching computer-based skills via computers shares many of the same features as computer-assisted learning, but is not the same.

Examples: Distant learners at many institutions in the United Kingdom (for example, the National Extension College and the Open University) learn word-processing, database, and spreadsheet skills using computers at home.

Engineering learners of the Open University of Sri Lanka are expected to use computers for 60 hours a year during weekends in regional study centres to learn computer-aided design. Learners are pushed to try computer-aided design by requiring them to submit all three assignments and obtain a pass on them in order to be allowed to sit the final examination in the course.

Computer-mediated communication

Computer-mediated communication usually includes computer conferencing, electronic mail, and access to databases and electronic bulletin boards or newsgroups. In computer-mediated communication:

- all utterances are stored, retrievable, and editable;
- participants can contribute at their own pace and convenient times; and
- time is allowed for reflection and careful composition of contributions.

Advantages of Computer-Mediated Communication

| Accessibility | Costs | Teaching functions | Interactivity |
|--|--|--|---|
| in industrialised countries, household and personal ownership of computers and subscription to Internet service providers is growing exponentially in less affluent countries institutions can make computers and Internet links available at learning centres | the costs of equipment and connectivity are dropping, at least in industrialised countries programmes using computer-mediated communication as a main delivery medium can be mounted quickly | the textual nature of the interaction develops written communication skills, enhances in-depth processing, and recall of course material computer-mediated communication is particularly suited to collaborative discussions and peer activities; for example, brainstorming, seminars, small group work, and peer learning fosters active learning, with learners engaged in construction of meaning socialising is possible, enhancing motivation to participate promotes intercultural sharing, since writing in another language is easier than speaking intimate context makes computer-mediated communication suitable for personal counselling | computer-mediated communication is a fully interactive medium |

Limitations of Computer-Mediated Communication

| Accessibility | Costs | Teaching functions | Interactivity |
|---|--|--|---|
| participation in computer-mediated communication requires equipment, software, connectivity, and expertise in keyboarding, uploading and downloading, and so on | costs of equipment and connectivity continue to be prohibitive in the developing world cost of time to learner requiring training and practice in computer and connectivity skills also needs to be considered writing and responding to messages is very time-consuming | writing takes longer to produce and to read than speech less confident learners tend to be dominated by those more confident teachers require social and communications skills and time to facilitate discussion appropriately a poor medium for decision-making processes or convergent thinking lack of focus on personal characteristics can lead to overheated discussions | interactivity is inhibited by lack of keyboard and connectivity skills the much vaunted time for reflection produces no pressure to respond and the silence in many conferences is deafening |

Web-based instruction

Web-based instruction uses the World Wide Web as the medium, utilising the attributes and resources of Web.

The Web involves ‘hypertext’ – (text only) and hypermedia –(sound and pictures) as well. Hypertext and hypermedia are called ‘interactive’ because learners can determine their own path through them, although there is no necessary link with the teacher.

Hypermedia are called ‘integrated media’ also, because the data are integrated in digital form on the same system.

A simple way to think of these media is as specialised, specially arranged databases. The computer is used to store information in many ‘screenfuls’, each linked to others by means of ‘hot links’ or ‘hot buttons’ highlighted in colour on the screen. By ‘pressing’ these buttons (clicking on them with the mouse) the user can browse through the information, choosing a route.

To produce a Web database, the author has to organise into ‘chunks’ or screenfuls the knowledge being taught. This requires the author to decide how to link the chunks, keeping in mind that the user or learner has to navigate among them and is not likely to ‘visit’ them all.

Navigation can be awkward. It takes considerable practice and, if possible, training in effective techniques for using the various Web browsers and other tools available, in order to become comfortable with this process. The process is also much enhanced and facilitated by fast equipment and a broadband, high-speed link with the Internet.

Examples: Many examples of current courses are available on the Web, representing various types of communication and potential interaction between instructors and learners. Examples of overall collections of Web sites highlighting courses with significant Web involvement include:

- The World Lecture Hall
(<http://www.utexas.edu/world/lecture/>)
- Web Based Courses
(<http://ezinfo.ucs.indiana.edu/~smalikow/courses.html>)
- World Wide Web Development Listserv
(<http://www.personal.psu.edu/faculty/wdm2/chap23.htm>)

Examples of Web-based courses:

Situated Cognition, University of Connecticut: A doctoral seminar using the Web as an alternative mode for the distribution of class-based information, including course objectives and requirements, assignments, topic outlines, reading lists.

Educational Technology, San Francisco State University: The instructor uses both dissemination and facilitation techniques to provide an extensive collection of ‘handouts’ for each class session, as well as using electronic mail support and the creation of Web-based forms to solicit learner questions and comments.

Applied Educational On-Line Technologies, University of New Brunswick: This instructional site delivers instruction through a totally on-line, constructivist model. Learners learn by doing through a learner-centred approach, including activities such as submitting proposals via e-mail, developing Web pages, posting projects on the site, and posting reflective learner papers. Communication among learners and faculty is carried out through computer conferencing and a variety of listservs, which also serve as the primary channel of facilitation by the instructor.

The case study for the Open Learning Information Network which is included in this kit describes an organisation that provides courses exclusively on the World Wide Web.

4. Practice exercise

4.1 The Lego® block version of communicating for learning without visual cues

Instructions:

- Divide your participants into pairs.
- Ask each pair to sit with their backs to each other, so they cannot see each other.
- Designate one member of each pair the ‘teacher’ and the other the ‘learner’.
- Provide each pair with identical sets of blocks (about ten blocks per set is usually sufficient).
- The ‘teacher’ of each pair is to construct something using all the bricks he or she has been given, at the same time ‘teaching’ the ‘learner’ how to do it. In other words, as the teacher builds a structure, he or she instructs the learner step-by-step how to build the identical structure.
- Give each pair time to complete their task; about fifteen minutes is usually ample time.
- Then ask each pair to compare the structures they have constructed.
- Debrief by having the group as a whole describe and discuss what they learned about communicating for instruction without visual cues. What strategies work? What strategies do not work?
- The game can be repeated, giving each pair a different set of blocks than they had initially, and asking them to switch ‘teacher–learner’ roles. This time you give them different instructions: only the teacher may talk; the learner may not ask questions or make comments. This task simulates the kind of instruction that happens by radio.

Timeframe: Allow one hour.

Materials: Lego® bricks.

4.2 The paper and pencil version of communicating for learning without visual cues

Instructions:

- Divide your participants into pairs.
- Ask each pair to sit with their backs to each other, so they cannot see each other.
- Designate one member of each pair the ‘teacher’ and the other the ‘learner’.
- Provide the ‘teacher’ of each pair with a photocopy of a sketch of some kind. Some complex geometric shape that is not easily labelled usually works well. Give the ‘learner’ of each pair a piece of paper and a pencil.
- The ‘teacher’ of each pair is to teach the ‘learner’ how to draw the sketch, without the ‘learner’ being able to see the original at any time.

- Give each pair time to complete their task; about fifteen minutes is usually ample time.
- Then ask each pair to compare the results, both with the original and with each other.
- Debrief by having the group as a whole describe and discuss what they learned about communicating for instruction without visual cues. What strategies work? What strategies do not work?
- The game can be repeated, giving each pair a different sketch than they had initially, and asking them to switch 'teacher-learner' roles. This time you can also give them different instructions: only the teacher may talk; the learner may not ask questions or make comments. This task simulates the kind of instruction that happens by radio.

Timeframe: Allow one hour.

Materials: Photocopied sketches with paper and pencils.

TOPIC 5

Media Applications

Overview

Source materials for this topic

Audio

Audio cassettes

Audiovision

Telephone tutoring and audio conferencing

Audiographics

Radio

Educational radio

Video

Video cassettes

Interactive video

Television

Educational television

Video conferencing

Computers

Computer-assisted learning

Computer-mediated communication

Practice exercise

Describing appropriate media applications

1. Overview

These materials support a discussion on the topic of media applications in actual open and distance learning settings. Examples from around the world are presented.

1.1 Source materials for this topic

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2. Audio

2.1 Audio cassettes

University of Waterloo, Waterloo, Canada

The open and distance learning programme at the University of Waterloo, from its beginnings, aimed to make the open and distance learning experience as close as possible to the on-campus experience of a regular learner. Thus Waterloo provided an audio channel, via audio cassette, through which professors could comment on the formal and informal visual material contained in the course packages just as they would in a regular lecture. A one-term course consisted of twenty forty-minute lectures recorded on audio cassettes with a ninety-minute duration (C90 cassettes). In addition to the tapes, course packages contained one study guide for each major topic or segment of the course. The study guides provided overviews and objectives, suggested workloads and schedules; described the contents of the audio cassette; and suggested activities for learners, including assessment questions. Textbooks, reprinted readings, and other resource material were also included as required.

Waterloo still uses audio cassettes, but recently is also making extensive use of computer-mediated communication and video conferencing (Leslie 1986).

Open University, United Kingdom

Tony Bates (1990) describes the audio cassette as ‘the most widely used technology in the Open University, after print’. They are a success story.

To help Open University academics with the use of audio cassettes, Nicola Durbridge assembled a box of materials containing an audio cassette and support materials, including texts, film strips, rock samples, and so on, according to the topic. The box of materials shows 12 different ways in which cassettes have been used at the Open University, and discusses design issues. Over 200 boxes were distributed to course teams, who have now moved on to other media.

2.2 Audiovision

Open University, United Kingdom

The Open University uses audiovision extensively. For example, in an art history course, the audiocassette talks the learner through four or five different texts, some specially designed for use with the course’s audio cassettes. The learner is encouraged to write a précis of the audio comments, in the form of annotations in the margins of these texts.

A more common format, used in mathematics courses for example, is a single source of visual material — a section of the main correspondence text — that has been specially designed for use with the audio cassette. This visual material consists of a sequence of numbered frames or boxes, containing diagrams, text and equations, or both, laid out on the page with plenty of margin, to reduce the density of information. The audio talks the learners through the concepts in the frames, occasionally sounding a musical ‘stopjingle’ and asking them to answer related questions. Sometimes frames are purposely incomplete, with empty ‘clouds’ or boxes in which the answer is meant

to be written to complete a frame. When the learners restart the tape, they hear the teacher's answers, although often the answers are printed in a subsidiary frame, rather than being voiced on the audio (Kuomi 1993).

2.3 Telephone tutoring and audio conferencing

Athabasca University, Canada

Athabasca University uses telephone tutorials as its main medium for learner support. Learners receive a package of course materials through the post, or from a learning centre. In the package is a letter of introduction from the 'telephone tutor' to whom the learner has been assigned, together with the tutor's address, tutor telephone number, and hours of availability. Tutors are available to learners typically three hours per evening or afternoon, usually two evenings per week or an afternoon and an evening. Learners can call their tutor collect from wherever they live in Canada. Tutors are also expected to place at least an 'introductory call' to their learners, at least those living in western Canada. The calls tend to deal with both administrative matters (for example, 'When can I write the exam? When will I get my essay back? Can I get an extension?') and course content-related matters (for example, 'I don't understand the question I've been asked in this assignment'). Several courses contain 'telephone quizzes', which the tutor administers over the telephone. The learner's answers are graded, for credit. The intent is to encourage the learner to contact the tutor regularly.

Crawford (1991) compared two telephone tutorial systems, one that made learner access to tutors easy, and the other that expected tutors to initiate contact. The study found that the energy tutors expended on answering calls *from* learners had a greater impact on course completion than energy they expended making calls *to* learners. A similar Norwegian study showed no difference in achievement between a group offered tutor-initiated calls plus opportunities to phone their tutors, and a group not offered this service, although both tutors and learners said they liked telephone tutoring (Rekkedal, 1989).

Universitas Terbuka, Indonesia

The Universitas Terbuka, the open university in Indonesia, has tried satellite-borne two-way telephone tutoring, with each tutor taking a class equipped with a loudspeaker telephone and microphone. A special low rate was negotiated for use of the system. Telephone lines on the ground were poor, however, resulting in low quality sound (Setijadi 1987).

Open Access College, Australia

The most basic form of electronic media in use at the Open Access College in Australia is the teleconference in which several students may be linked with the teacher by telephone for their weekly lesson. See the case study included with this toolkit.

University of the South Pacific, Fiji

In Fiji, tutors teach management to small groups of nurses in three towns through audio teleconferencing plus printed materials, audio cassettes, and video cassettes, followed by discussion under the guidance of a field tutor in each centre. A one-hour teleconference is organised once every two weeks, using loudspeaker telephones and microphones. During the first year, the dropout rate was zero and all the nurses passed (Nadakitavuki 1992).

University of Wisconsin, United States

One of the largest audio conferencing systems is the Educational Telephone Network, which serves more than 100 centres in the state of Wisconsin. Each centre has a high-fidelity loudspeaker and a set of microphones, providing dialogue among learners and between learners and tutors. In a course on folk music that involved audio conferencing, 36 learners enrolled at 16 of the centres, some of them more than 200 miles from the tutor. Learners were shy at first but soon joined in singing, as well as analysing, discussing, and interpreting folk songs. Many learners talked about their special interests, such as native American folk music. Each learner also had to talk about his or her findings arising from the research assignment set for the course. Learners on the Educational Telephone Network course earned grades as high as those studying face-to-face (Perinchief and Hugdahl 1982).

Deakin University, Australia

In the 1980s, Deakin University ran many teletutorials, each involving one tutor and about nine learners at different locations. But as Thompson (1990) points out, many learners choose open and distance learning so that they are free to study with few of the constraints of face-to-face teaching institutions. Consequently, should tutors intrude into learners' homes via teletutorials? Or, to put it another way, should teletutorials be compulsory? They can be intrusive because learners must prepare for them and ensure that they are free at specific times. See the Deakin University case study in this kit for a current account of Deakin's delivery system and integration of media.

2.4 Audiographics

University of the South Pacific

An early example of the use of audiographics by developing countries was the University of the South Pacific's audiographics by satellite. Academics, administrators, and learners in about a dozen island nations exchanged knowledge, including 'slow scan' graphics, which build up slowly on the screen because of the time it takes to transmit the data by radio on a 'narrowband' channel. (Claire Matthewson, personal communication).

Universiti Sains, Malaysia

In 1987, the Centre for Off-Campus Studies introduced audio conferences as a means of supporting distance learners. They replaced face-to-face tutorials held at regional centres by tutors hired locally. An electronic writing board was incorporated with the

audio conferencing system in 1989, and consisted of a writing pad that displayed handwritten characters or graphics. A built-in floppy disk drive in the control unit enabled data playback. The cost of installing equipment in regional centres and using central academics to tutor the courses is much lower than the cost of employing part-time tutors (Mason 1994).

Brigham Young University, Hawaii

Barker and Goodwin (1992) describe the use of audiographics to deliver in-service courses to teachers in Hawaii. Professors at the Brigham Young University campus on Oahu teach the courses by telephone line to classes 170 miles away on the island of Hawaii. Professors establish rapport with their learners by visiting them and explaining how the system works; then they start teaching. In one year, they had two groups of 15 teachers following courses in teaching methods, curriculum development, critical thinking, and classroom management. Sharing a 'common visual reference', even though the picture was still, not moving, and rather small, seemed to be important for professors and learners alike, and helped them to talk about it over the telephone. Learner reactions were very positive, although they did say they would have preferred face-to-face teaching. Barker and Goodwin recommend a mix of face-to-face teaching and audiographics.

Open Learning Agency, Canada

The Open Learning Agency's secondary school programme offers discipline-based teaching mainly through audiographic learning, but also uses audio learning and e-mail. The Open Learning Agency provides learners throughout the province of British Columbia with lifelong learning and training programmes in all areas, at all levels, and for all ages. Learners have an on-site tutor and can work at their own pace within the specified deadlines of the courses, but are linked to teachers and other learners all over the province. They have audio contact with their teachers about once a week, but supplement this with regular e-mail contact with both teachers and peers (Brindley et al. 1997).

3. Radio

3.1 Educational radio

Caribbean Region

The Jamaica Broadcasting Corporation broadcast to schools every weekday during term-time, until 1990. Radio Jamaica Limited continues to broadcast to farmers every day. Radio Montserrat also broadcasts to farmers, but has no schools broadcasting. Barbados, St Kitts-Nevis, St Lucia, and Dominica now have informal educational programmes only. By contrast, St Vincent and the Grenadines still have schools broadcasting as well as a series for adults. Trinidad and Tobago carries schools programmes, as do Belize and Guyana, on a small scale. Unfortunately many schools throughout the Caribbean have no radios, power, or both. Informal education broadcasts in the region suffer from competition with music and entertainment from commercial stations, which command the airwaves (Deodat 1992).

Radio ECCA, Spain

Radio ECCA operates primarily in the Canary Islands. ECCA's teaching system is based on three elements: print materials, audio, and face-to-face tuition. Every ECCA lesson centres on a lesson master sheet. The 'radio lesson' is a detailed explication of the content of the lesson master sheet, with the learner constantly at the 'blackboard'. The learner is required to respond to the radio teacher by writing on the lesson master sheet during the course of the broadcast. ECCA also produces other types of printed material for its learners, in the form of notes and technical memoranda on difficult topics, complementary texts, and so on. In addition, learners are expected to attend weekly tutorial sessions at nearby learning centres, where they receive help with difficult points, evaluation, motivation, and encouragement.

Ulwazi, South Africa

For millions of South Africans, radio is their main medium of communication with the world, yet it is still a largely under-utilised medium for education on a massive scale. The Ulwazi Educational Radio project was established in 1994 as a pilot project that aims to use radio to provide adults with effective and appropriate basic education. The project sets out to train educational producers, produce models of radio programmes in a range of languages, and evaluate its work in order to increase the body of knowledge of educational radio. In its first phase, the project chose to design radio programmes that could both attract a general audience of adults and, when used in literacy classes in combination with print, serve as valuable supplements to classroom activity. The main educational purpose of the programmes was to serve as 'triggers' for discussion and debate wherever people listen to radio. To achieve these aims, the project chose to work in a radio format not often used for education: it chose to produce feature programmes with real voices of real people, as opposed to experts. The evaluation of this experiment indicated it was a success: two-thirds of listeners liked the programmes better than other programmes on the radio. The use of real voices in particular had an affirming effect on listeners (CASE 1996).

Mozambique

In 1994 the International Broadcasting Audience Research unit of the British Broadcasting Corporation commissioned a project to explore the effectiveness of BBC English programmes among over one thousand learners in different school contexts during the 1994 academic year in Mozambique. Two BBC English series, with ancillary materials, were tested in urban and rural secondary schools with the co-operation of Radio Mozambique. The project, carried out by the Institute of Education, University of London, concluded that exposure to BBC English radio programmes brought significant benefits to listeners in secondary schools, and, that in context with teacher support and ancillary materials, gains were even greater. The programmes were at their most effective in poorly resourced schools, whether urban or rural, that had little previous concern with listening skills. Contrary to expectations, a majority of listeners made more progress in Grammar than in Listening. It is clear that the project had a very marked effect within the Mozambique education system, and a very small outlay produced a creditable improvement in language skills. Many teachers and Radio Mozambique indicated that they would continue utilising BBC English project materials (Flavell and Micallef 1995).

Teacher training

Radio has been widely used for teacher training at a distance. Siaciwena (1984), writing about open and distance learning in Zambia, says that radio can be used to upgrade teachers, to replace teachers temporarily, and to enrich their teaching. Radio is widely available at low cost in all countries.

In Tanzania, trainees were expected to listen to 120 broadcasts in the first year, each lasting 25 minutes and based on the printed correspondence material with the intention of supporting and strengthening the academic and professional content. Friday broadcasts were reserved for questions and answers for the trainees, tutors, parents, and the general public.

In Nepal, radio is vitally important to in-service courses for untrained primary school teachers. Aid-funded projects chose radio, supported by printed booklets and limited face-to-face sessions, because it was the best and cheapest way of reaching most of the country's teachers. These projects were aimed at improving teachers' subject knowledge and teaching skills. Each broadcast consisted of two formal lessons, divided by a non-formal magazine segment. The magazine included the 'Teacher's Corner', a question-and-answer session with a forum for reading and responding to teachers' letters. The broadcasts lasted 30 to 60 minutes, depending on the project, six evenings a week during the school term. Theoretical aspects of teaching were covered in 40 lessons using a discussion format. Maths lessons often included interactive games, riddles, or other activities to which the listeners responded. Dramatic dialogues were used in health lessons. Classroom simulations were introduced in all subjects, to demonstrate techniques such as leading class discussion. In the final examinations, teachers trained by radio were moderately successful. More important, evaluation responses from teachers showed that some were trying specific teaching practices and the majority felt the courses had positive impact on their teaching. Community visits and letters from listeners revealed that teachers not enrolled in the courses were listening too (Perraton 1993).

Adult education listening groups

Counta (1981) describes how the Senegal government, with help from UNESCO, set up Radio Educative Rurale, aimed at farmers, fishers, and other people involved in food production. The broadcasts contained information, about which the groups expressed opinions. Each group had a trained amateur or facilitator and all its members could dictate letters to literate members, who acted as scribes. The letters, which usually aired complaints, were addressed to government officials, even to the country's president. Radio Educative Rurale had an unexpected political impact. A flood of letters poured into government offices. Eventually the president standardised the price of groundnuts and annulled certain peasant debts. The broadcasts expanded, and with them the feedback increased. The amateurs disappeared, and listening groups gave way to large numbers of individual listeners.

Nwaerodu and Thompson (1987) list other educational radio projects in developing countries: for agricultural and rural development (Benin, Ghana, Guatemala, India, Nigeria and Thailand), health (Nicaragua, the Philippines, Sri Lanka, South Korea, Swaziland, Trinidad and Tobago), and literacy (Mali and Mexico). Most of these were operating in the 1960s and 1970s. The radio forum was used widely under

UNESCO's auspices, based on the model of radio discussions broadcast to farmers in Canada from as early as 1941. In India, for example, each village had a group of listeners, meeting twice a week to listen to a 30-minute broadcast and discuss its content. Evaluation showed that they learned a great deal, and illiterates learned as well as literates. Similar projects in Ghana, Benin, and Thailand produced equally good results. It seems doubtful whether educational radio of this direct, non-formal kind can teach individuals by itself, however, without discussion groups. A radio forum includes such groups, which must be organised by field co-ordinators. Once the project ends, no co-ordinators remain and most groups stop meeting.

4. Video

4.1 Video cassettes

The Open University, United Kingdom

Durbridge (1993) discusses problems in designing video material for part of an undergraduate course, *Understanding Music*. Could learners follow when a lecturer wrote out a piece of music in front of the camera? Could they follow the score as he played it, again on camera, on a piano? Did they follow the score better if it was displayed as a 'still', or if the camera panned across the lines of music bar by bar? She found that learners wanted clearer guidance about the purpose of the exercise; they wanted more information and explanation about what was happening, and an opportunity to try music-writing for themselves. They found it helpful when the camera followed the music, bar by bar, as it was played. In fact, they suggested using a split screen: the top half with part of the score; the bottom half showing the lecturer's hands playing the piano keyboard. A split screen would teach well the relationship between the score and the sounds.

Tutored video instruction

Video cassettes have been used both at Stanford University in California and the University of Aston in Britain for 'tutored video instruction'. This entails the centralised production of usually well-illustrated lectures, with the programme being copied on cassette and distributed to local centres (often work-sites), where the programme is watched by a small group of local learners, with a tutor to facilitate the discussion. Sometimes the 'central' tutor is available for questions or discussion by telephone. The important feature is the ability of the group to discuss the teaching material and ask questions, either of the tutor or the central instructor (Bates 1995).

4.2 Interactive video

The Open universiteit, The Netherlands

Beijderwellen (1990) describes why and how the geology course team decided to use interactive video (accessible only at study centres) to replace a planned fieldtrip. He stresses that the video design is integrated with geological textbook theory and is not consciously based on any instructional theory. The geology course team started from scratch, first with the aim of telling the story of how a geologist works in the field. The video includes 12 geological locations in total. The interactive video solution is

cheaper than the fieldtrip alternative for more than 50 learners a year, assuming the geology course is repeated for five years.

King's College London, United Kingdom

The first intake into the distance-taught Masters of Science programme in dental radiology started in January 1990. The course is available to dental practitioners anywhere in the world who have a recognised medical or dental qualification and access to library facilities and simple radiographic equipment. Advantage was taken early on of the newly introduced photo-compact disc players (produced by Kodak Ltd.) for displaying the radiographic images required in the course and, beginning in 1993, all third-year learners were supplied with a photo-CD player out of fee income. From 1994 it was decided to issue the photo-CD players to learners in their second year of study, as the Radiographic Anatomy module was at that point produced on compact disc. The compact disc is proving highly successful (Smith 1995).

5. Television

5.1 Educational television

United States

Over 100 American universities and colleges teach partly by television. For example, at San Francisco State University, a cable carries 40 channels to all the main classrooms, and lecturers can ask for either one of the many broadcast television programmes (received by satellite dish or terrestrially) or a video cassette to be channelled to their classroom at a certain time, for use in teaching. Many American universities and colleges also broadcast to the community by cable.

Open University, United Kingdom

At the Open University, television is used for instruction, although large numbers of the general public watch broadcasts for enrichment, without taking the courses. Each programme uses a wide range of material. 'Talking heads' are the exception, and many of the programmes include segments made 'on location', that is, not in the studio but in places important for the programmes concerned. In other words, the type of televised instruction offered has grown out of the 'documentary' style for which the British Broadcasting Corporation is justly famous.

Chinese Television Universities

Almost all the programmes made for the Chinese Television Universities are recorded lectures. It is rare to see talking heads, however, as the camera is focussed most of the time on the chalkboard. If you were watching, you would probably see a hand moving, writing the Chinese characters, with Arabic numerals and occasionally some scientific notation. And you would also hear the lecturer's voice, explaining what he or she was writing. This pattern appears to stem from Chinese traditions of teaching. Learners copy down the writing, while listening to the teacher's commentary (IEC 1995).

The Sudan

In the Sudan, a series of programmes produced by the Gezira learning centre address rural communities about agricultural and extension activities as well as health education. This rural television medium is serving as a source of educational information, as a catalyst for activities among farmers, and as a mirror of the Gezira province. Some of the programmes are of a magazine type, such as one that follows the calendar of agricultural activities. Others treat special subjects in a systematic way, in serialised programmes. For example, there is a series on health education, mainly concerned with preventative health measures, and another on new agricultural methods or areas of activity, such as poultry raising. In less specialised programmes, such as those on social problems, drama and other forms of entertainment are used, as well as course information and news reporting. The Gezira station transmits for slightly over seven hours per week, of which about two-thirds are devoted to educational and semi-educational programming (Mustafa 1996).

Indira Gandhi National Open University

The Indira Gandhi National Open University broadcasts over the national television network three times a week in regularly allotted time slots. See the case study included in this kit for a detailed account of IGNOU's use of broadcast television.

5.2 Video conferencing

NEC Technical College, Japan

The NEC Technical College is linked by satellite transmissions to nine other centres. Examples of the use of video conferencing include lecture and discussion, in which the lecturer operates a document camera as well as the classroom cameras, one of them focused on herself; she explains topics with the help of overhead projector transparencies, and draws on white paper on the document camera. Learners in distant classrooms see two screens at a time, for which she selects the pictures, and they hear her voice. Individuals answer questions, and are on-screen when they do so. The system is also used for laboratory activity, in which learners themselves give presentations, followed by comments from the instructor and other learners. Sub-instructors are present in the classrooms, because it is almost impossible for the central instructor to deal with individuals' problems. Co-operation between all the instructors is critical (Kurata et al. 1990).

Curtin University, Australia

In the School of Nursing, in-service training was provided for about 85 nurses at three distant sites, using video conferencing for seven two-hour sessions. The evaluation showed that most of the nurses were satisfied with the picture quality but not sound quality. There were some criticisms of the instructors and their aides, though the nurses felt that they had adequate opportunity to question instructors and discuss the content. Their general assessment of video conferencing was strongly positive (Latchem and Rapley 1992).

Korah Collegiate, Sault Ste. Marie, Canada

Learners at Korah Collegiate, a school in a northern Canadian community, used video conferencing to compete in the Canadian Bar Association's mock trial competition. The competition is held annually and is a completely optional extra-curricular activity for advanced secondary school learners, which helps them acquire advanced presentation and debating skills as well as learn about the trial process and legal system. Although secondary learners from anywhere in the province of Ontario are eligible to participate, the competition is held in Toronto and those from the north must travel a considerable distance to compete. In 1996, for the first time, learners in the north were offered the option of participating by video conference. Learners are given notes in advance of the competition and have three months to prepare. The competition is a one-day activity during which teams of six participants compete with one another in presenting both the prosecution and defence for a particular scenario. What participants liked about video conferencing was that it gave them an opportunity that they would not have had otherwise. They also agreed that once they got used to the equipment, they discovered it was quite simple to use and could be employed effectively — as or even more effectively as face-to-face presentation, since learners can see themselves perform in addition to seeing others perform (Brindley et al. 1997).

6. Computers

6.1 Computer-assisted learning

Single-mode open and distance learning institutions

In the Open universiteit of the Netherlands, the British Open University, the FernUniversität in Germany, and the Open Learning Agency in Canada, learners usually have to go to study centres or residential summer schools to access computers or terminals to use computer-assisted learning packages. However, all learners (about 4,000 a year) on the British Open University's Technology Foundation course are required to have an IBM-PC compatible computer, and the course contains a suite of computer-assisted learning materials to provide additional tutorial help for those learners who have difficulty with the numeracy strand of the course. At Athabasca University in Canada, the Writing Skills course team have developed two computer-assisted learning packages for enhancing the writing skills of English learners, one at the most basic level and one at a somewhat more advanced level that is intended to bring learners' skills in grammatical construction and appropriate punctuation to university level. At the Open Learning Institute of Hong Kong, the MT366 course team (Computer and Network Architectures) experimented with computer-assisted learning packages for the two most difficult units with mixed results: learners thought that computer-assisted learning could enhance their learning and arouse their interest in the topics, but they lost interest very quickly because there was too much text and too much duplication of existing hard copy (Lee et al. 1997).

Workplace training

The use of pre-programmed computer-based learning is more common in workplace training. Van der Brande (1993) states that in Europe, the main concentration of

computer-based training is in the area of banking, finance, and insurance, followed by general manufacturing and the public service sector. It is also being increasingly used in the retail sector. For instance, in 1987 B&Q plc placed computer-controlled video disc equipment in most of its home care and garden centre stores in Britain, to train its 12,000 employees. Use for training of professionals is also growing. In Ireland, the National Distance Education Centre, in collaboration with the Institute of Chartered Accountants, has developed a 100-hour programme of self-directed instruction on accounting, which includes 40 hours of practical work on IBM-compatible computers, either at their own work-stations or at 14 study centres across Ireland. Over 2,000 people have participated in this course (Van der Brande 1993).

Adult basic education

In North America, pre-programmed computer-based learning is used in open learning contexts aimed at adults who have not completed high school graduation. For example, the Open Learning Agency has used a system developed by the Jostens Corporation in its learning centres. Learners who need to improve their reading and writing skills can 'drop in' at the local centres and use the system when it suits them. Pathfinder, an integrated learning system that includes direct instruction, reports on learners' progress, and diagnoses of problems, has been used in similar ways by native Indians in First Nations Learning Centres in the province of British Columbia (Friesen 1991).

6.2 Computer-mediated communication

Canada

The Writers in Electronic Residence programme connects learners in Canada with writers, teachers, and one another to discuss and exchange their original writings. The programme began in 1987 with a connection between two schools and has since developed into a national facility with offerings for elementary, middle school, and secondary learners. Learners use word processors to compose their work and their responses to other work. Their messages are then uploaded to the appropriate conference on the host computer at Simon Fraser University in Vancouver. Most schools can connect with a local area call. For example, learners from Baffin Island in Canada's high Arctic can connect with learners from urban centres in the south, and first-generation Vietnamese immigrants, Canadian-born Chinese, and established residents of the city of Toronto mix on the system together with a professional writer or poet (Owen 1993).

Texas A&M University

Murphy et al. report on the analysis of six semester-long computer conferences that took place during a fifteen-week semester at Texas A&M University in late 1994. These conferences were moderated by university learners, and the intent of the analysis was to discover how learners perceived and used the conferences. The two purposes of the conferences were to provide a meaningful, authentic context for pre-service teachers to learn about technology and collaborative learning, and to provide an opportunity for graduate learners to learn to moderate computer conferences. The analysis found that learner moderator roles reflect the influence of both instruction

and personal communication styles, and that participants adopted behaviours that fostered communication in a text-based environment and led to positive attitudes about computer conferencing (Murphy et al. 1996).

United Kingdom

Online Education and Training is a part-time course at the post-graduate level that is offered jointly by the Institute of Education at the University of London and the Institute of Educational Technology at the Open University. The course is aimed at educators and trainers who are interested in using computer conferencing, whether as teachers, network support staff, or course designers. The course is run on the Open University conferencing system and administered by London University. The tutors for the course include staff from both institutions. The printed material to accompany the course varies from presentation to presentation, as the amount of suitable literature on computer conferencing is extensive and growing. On-line advertising has produced an international catchment. The core, however, remains in the United Kingdom, allowing two face-to-face meetings to take place, one at the beginning of the course for training on use of the conferencing system and induction to the course, and the second toward the end of the course. This second meeting has given learners an opportunity to experience video conferencing as well, some by satellite, others in classrooms of the London University interactive video network, LIVE-NET (Mason 1994).

Open Learning Information Network, Canada

The Open Learning Information Network in Newfoundland, Canada, blends traditional resources like textbooks and learning materials with information and communication technology resources like web pages that show the study manual and a computer-conferencing system. See the case study for OLIN for an account of an institution that delivers courses via the World Wide Web.

7. Practice exercise

7.1 Describing appropriate media applications

Instructions: Divide participants into pairs. Ask each participant to describe and explain to his or her partner the kinds of media applications that:

- are currently being used in his or her working context;
- could be used in this context if certain conditions were met, and what these conditions are; and
- could not be used in this context in the foreseeable future, and the reasons why.

Ask participants to list their answers to these questions — preferably in ‘chart’ form — on newsprint sheets for posting around the room, where other participants can read them and ask questions about them.

Timeframe: Approximately one hour.

Materials: Flipchart paper, marker pens.

TOPIC 6

Issues in Distance Delivery

Overview

Source materials for this topic

Models of open and distance learning

Single mode institutions

A department within an existing institution

Co-operative arrangements

Hybrids

Issues in managing open and distance learning programmes

Systems thinking

Staffing

Teamwork

Quality assurance

Practice exercise

Putting management issues in context

1. Overview

These materials support a general as opposed to a detailed discussion of the kinds of issues that confront personnel involved in the delivery of open and distance learning programmes.

The first subsection sets out the various models or ways of setting up an open and distance learning programme:

- single mode institution;
- a department within an existing institution;
- co-operative arrangements; and
- hybrids.

The second subsection opens with a list of similarities between open and distance education programmes and their more conventional counterparts. This list is only a beginning, and could be expanded during discussion with participants about features that are common to all education programmes, regardless of mode of development or delivery.

The remainder of the materials focus on several issues that are of particular concern to those involved in the delivery of open and distance learning programmes:

- analysing system (*systems thinking*);
- staffing;
- teamwork; and
- quality assurance.

1.1 Source materials for this topic

Bates, T. *Technology in open learning and distance education: a guide for decision-makers*. Vancouver: The Commonwealth of Learning and the Open Learning Agency, 1991.

Moore, M., and G. Kearsley. *Distance education: a systems view*. **Belmont:** Wadsworth Publishing Company, 1996.

Mugridge, I. (ed.). *Distance education in single and dual mode universities*. Vancouver: The Commonwealth of Learning, 1992.

Paul, R. *Open learning and open management*. London: Kogan Page, 1990.

Perraton, H. *Administrative structures for distance education*. London: The Commonwealth Secretariat and The Commonwealth of Learning, 1991.

Snowden, B., and J. Daniel. The economics and management of small post-secondary distance education systems. *Distance Education* I:1, 1980.

2. Models of open and distance learning

An open and distance learning programme can be set up in a number of ways. At the risk of over-simplification, these alternatives can be described in terms of the following organisational arrangements.

2.1 Single mode institutions

A *single mode* institution operates with a *free-standing* structure, assuming that the institution will itself undertake most of the following functions:

- designing education programmes, including acquiring and developing teaching material;
- tutoring and counselling;
- awarding credit (in formal education programmes);
- producing, storing, and distributing learning materials;
- keeping records of learners, inventory, and finance;
- providing administration and finance;
- marketing programmes and recruiting learners; and
- evaluating programmes and processes.

The free-standing operational structures of single mode institutions

- are usually autonomous; and
- have open and distance learning as their dominant or sole function.

They can be categorised into two types.

Single purpose, single mode institutions

Some open and distance learning colleges have been set up to teach a single subject, especially for teacher training.

Example: William Pitcher College in Swaziland was established to provide open and distance learning courses for the in-service training of teachers.

Multi-purpose, single mode institutions

Other open and distance learning institutions offer a variety of courses:

- open universities;

Example: Indira Gandhi National Open University in India, the Open University of Sri Lanka, and the Open University in Britain.

- open colleges, which offer courses at a number of levels; and

Example: the Open Access College as discussed in the case study in this kit, the Tanzanian National Correspondence Institute, and the National Extension College in Britain.

- open schools.

Example: the National Open School of India and the Open Access College as discussed in the case study in this kit.

Arguments for a purpose-built system that teaches only at a distance include the following:

- the administrative structures of conventional educational systems are not the most suitable ones for developing and managing open and distance learning systems;
- conventional institutions may regard open and distance learning as a poor relation and consequently be reluctant to allocate it adequate resources;
- the requirements of distance learners are likely to be better served if the institution is wholly dedicated to their needs;
- the characteristics of the target audience are significantly different from those of campus based learners (for example, adults have distinctive approaches to learning compared with young people at the tertiary stage of learning);
- the pedagogy of open and distance learning is different than that of conventional systems; and

- significant innovation is more likely to occur outside the framework of traditional educational institutions.

Example: These distinctions were true of the early days of the open universities of the United Kingdom and the Netherlands.

Discussion: Feel free to disagree with these arguments, or to add to them.

2.2 A department within an existing teaching institution

Many universities or colleges decide to set up a distance learning department that works alongside other departments, specialising in open and distance learning but within an otherwise conventional institution.

Arguments for such *bimodal* or *dual mode* institutions include the following:

- the structured learning materials prepared by course teams provide consistent quality of instruction to both off-campus and on-campus learners;
- self-instructional materials encourage learning through activities and independent learning;
- learners are liberated from the constraints of the traditional lecture and tutorial system, and can move from one mode to another according to their needs;
- learners benefit from the esteem that comes from a conventional university and demonstrated parity of standards; and
- staff are freed to teach in more interactive ways.

Bimodal structures can take two forms.

Subject-oriented departments

Subject-oriented departments teach externally in their own discipline.

Example: At the University of the South Pacific the Department of Education launched the first open and distance learning programmes for teacher education before the university began to teach at a distance in other subjects.

Distance education departments

Distance education departments take the main responsibility for planning and running open and distance learning within a bimodal institution.

Examples: The Distance Education Unit of the University of Botswana, and a number of ‘institutes’, such as the Institute of Distance and Continuing Education of the University of Guyana, the Institute of Distance and Continuing Education at the University of Papua New Guinea, and the Open Learning

Institute of Charles Sturt University, as discussed in the case studies in this kit.

Variants within this structure include:

- distance education departments that are purely administrative with no teaching functions

Example: The University of Zambia can require staff to teach both face to face and at a distance but the specialist department only co-ordinates and distributes materials;

- specialist open and distance learning departments that have a pedagogical function

Example: Murdoch University had at one time a specialist department that did not employ its own subject specialists but had staff with educational skills in open and distance learning who played a role in the development and use of materials that went beyond the purely administrative; and

- external teaching departments with their own subject-specialist staff concerned solely with external learners

Example: The University of Wisconsin Extension has a staff of well over 1000 and a full range of academic departments but exists in parallel with the University of Wisconsin.

2.3 Co-operative arrangements

In a co-operative arrangement for open and distance learning, institutions work together to teach and support learners and distribute the various functions between them.

A distinction can be drawn between two types of co-operative arrangements.

National co-operative structures

- The functions of preparing materials, giving tutorial support to learners, and awarding credit may be carried out by different partners.

Examples: The Chinese Television University produces materials that are used by a federation of universities who provide tutorial support to back the centrally produced courses.

The National Extension College in the United Kingdom produces 'flexi-study' packs of learning materials, which colleges can purchase for their own use, with advice from the NEC on running open and distance learning programmes.

The University of Lincolnshire and Humberside have franchised their courses to other universities.

The Open Learning Foundation is a consortium of tertiary level institutions in the United Kingdom which produces course material packs that are available at a discount to member institutions and at full-price to non-member institutions.

- Co-operative arrangements need not be permanent or all-purpose.

Example: In Australia three universities co-operated on the development and running of a degree-level course in women's studies, in a situation in which it would have been difficult for any one of them to offer the course on its own, and in which the universities were not working together on their whole range of programmes.

International co-operative structures

- Co-operation is also possible across national frontiers.

Example: Commonwealth Heads of Government agreed in 1987 to set up The Commonwealth of Learning in order to promote co-operation in open and distance learning within the Commonwealth and to facilitate the sharing of resources among Commonwealth colleges and universities.

- Several other institutions have been established to promote international co-operation in open and distance learning.

Examples: CIFFAD, the *Consortium international francophone de formation a distance*, set up with support from Canada and France with broadly comparable objectives to those of The Commonwealth of Learning;

CREAD, the *Consortio-red educacion a distancia*, which links open and distance learning organisations throughout the Western Hemisphere; and

EADTU, the European Association of Distance Teaching Universities, working on the sharing and joint development of teaching material.

To date, these organisations are not enrolling learners directly but are providing services to support the work of national institutions.

2.4 Hybrids

The operational structures outlined above are somewhat arbitrary, and there are both possible and actual hybrids among them. For example, in several cases an institution has broader functions than this account of structures might suggest.

Examples: The Indira Gandhi National Open University serves both as an autonomous institution and a co-operative body in that it has co-ordinating and funding responsibilities for the other Indian open universities.

The Lesotho Distance Teaching Centre and the Tanzania National Correspondence Institute are multi-purpose institutions but their teacher education programmes work within a co-operative framework that might be labelled a 'national co-operative' structure.

In addition, an open and distance learning programme may be mounted by an organisation that is quasi-autonomous and free-standing in some ways but not in others because it is one component of a multi-campus, state-wide, or nation-wide institution.

Examples: The Open University of the Philippines is one of six universities that comprise the University of the Philippines as discussed in the case study in this kit.

The Tele-université of Québec is one institution among several that comprise the Université de Québec.

Empire State College in New York is part of the State University of New York (SUNY) system.

Yet another variant is the open and distance learning programme that is not yet institutionalised but is rather organised as a project, usually under the auspices of a government ministry, which may or may not eventually become an established component of the overall provision of education overseen by that ministry.

Examples: Several upgrading schemes for primary teachers are operating under the auspices of ministries of education, as projects funded by donor agencies, and not yet formally institutionalised. Examples include the Northern Integrated Teacher Education Project (NITEP) in Uganda and the Strengthening of Primary Education (SPRED) projects in Kenya, which both offer upgrading schemes for primary teachers.

Athabasca University in Canada operated as a project of the government of the province of Alberta for a number of years before being chartered as the province's fourth university.

Discussion: Are there open and distance learning arrangements in your own and your participants' experience that do not easily fit in any of these categories?

3. Issues in managing open and distance learning programmes

Managers of open and distance learning programmes face the same challenges as the managers of learning programmes delivered in more conventional, face-to-face settings:

- both aim to provide an education that is relevant and of high quality;
- both aim to offer and achieve certain minimum standards of education and training;
- both have administrative systems that enrol learners and register them on their chosen courses; and
- in the case of conventional programmes, both usually require learners to sit examinations before receiving certification.

However, open and distance learning programmes and conventional programmes have several differences. Specifically, open and distance learning programmes:

- often tend to be 'open' programmes, concerned with improving access and with democratising education, as contrasted with maintaining education as a privilege of the elite;
- drop or lower the academic entrance requirements that conventional programmes typically require if they are also open programmes;
- have the same exit or graduation requirements as conventional programmes even though, because of their openness, they may accept learners with fewer formal qualifications, which creates a situation that places even greater demands on those providing tuition and learner support;
- tend to deliver their courses using a mix of technologies and media; they almost always include some print materials, but these are supported by a variety of electronic media, including radio, television, audio and video cassettes, computers, and telecommunications;
- are typically supported by part-time tutors and counsellors who may be employed by conventional institutions;
- frequently require collaboration with other programmes and agencies to provide learning materials, course development and delivery personnel, facilities, or all of these;
- tend to need larger administrative bodies that accommodate a greater diversity of functions; and
- must remain open, flexible, and innovative in response to learner needs, a challenge that is best met by open, flexible, and innovative approaches to management.

Discussion: You will likely want to add other similarities and differences to this list. You might also involve your participants in generating a list of the characteristics that are common to educational programmes in general, and then use that list as a basis for differentiating distance programmes from conventional programmes.

These differences between open and distance learning and more conventional programmes raise a number of issues for managers of open and distance learning programmes:

- analysing systems (*systems thinking*);
- staffing;
- teamwork; and
- quality assurance.

Discussion: This list is intended only as a prompt for discussion. You are welcome and urged to add other management issues.

3.1 Systems thinking

In Topic 1 (Introduction to Open and Distance Learning) of this kit, participants were introduced to the systems approach that characterises open and distance learning provision. A systems approach sets the conditions for proceeding with problem solving in an orderly way, recognising that every component and task is related to every other, and that a change in one component will bring about changes in the others. In Topic 1 these components were described as a series of phases:

analysis → design → development → implementation → evaluation → revision

Managing these tasks is clearly not linear, for the following reasons:

- Programme staff will be involved in several of these tasks at the same time.
- The tasks are interdependent.

Example: Decisions about the type of media to be used will depend partly on costs and partly on instructional appropriateness. Decisions about assessment will have to be made concurrently with materials design and development. Doing the revisions that fall out from the evaluation will involve reworking many or all of these tasks.

For this reason it can be useful to look at these phases as constituting a *management cycle*. The notion of a *management cycle* is based on the following principles:

- that open and distance learning depend equally on co-ordinated academic, administrative, technological, and learner support activities and services;
- that these services must be jointly managed through team management;

- that their effectiveness requires elaborate planning and pre-planning in order to ensure adequate early warning mechanisms;
- that it is possible to produce standardised guidelines and structures as tools to assist this process; and
- that effective communication and data exchange networks are essential for such management.

The discussion that follows collapses into four phases the six phases that were discussed in Topic 1 (Introduction to Open and Distance Learning).

Pre-planning

A new programme or course emerges from within an academic unit or collaboratively from an idea or need identified from an outside agency, such as a government department. This new course idea must then be subjected to scrutiny in comparison with the institution's overall mission, its assessment of its resources according to its strategic plan, and a needs assessment study, taking into account the outside environment into which it will be launched. Only if it still seems feasible in the light of these considerations should the programme or course go ahead.

Planning and development

Two steps must be taken at the planning and development stage. The first step is a detailed preparation of the curriculum and strategy for the programme, which involves a good deal of consultation, between the academic unit and the service departments such as media, printing, and learner support, to explore the technical possibilities and the implications of the curriculum intentions. This step will result in

- a detailed curriculum for the programme;
- a media, print, and tutorial delivery plan; and
- a detailed budget estimate of both expected costs and income from student fees or other sources.

All of this information will be put together into a *development blueprint*, which will be circulated through the appropriate approval processes of the institution.

Once approval has been gained, the second step is to design and develop the materials. This activity is probably the most complex and expensive in the whole cycle. The curriculum must be turned into reality, involving the following stages:

- writers must be identified, recruited, trained, and supported;
- course teams, including editors, instructional designers, and media producers, must be created and sustained;
- schedules must be drawn up and agreed upon;
- the materials must be pre-tested and revised;
- the whole package must be moderated by peer academics to ensure recognised standards are met; and

- the promotional plan must be worked out and put into action.

Tools to assist in these processes include standard contract forms, and instructional design and house style manuals.

When all these tasks have been accomplished, it is necessary for senior management to make a final review to ensure that the original decision to go ahead is still justified several months later.

Production and preparation

After the final go-ahead, the materials need to be reproduced to meet the latest estimate of enrolments, both print and audio-visual. If audio-visuals are to be broadcast, they must be produced in their final form and broadcast schedules must be publicised. Parallel with the reproduction process, the distribution logistics need to be finalised and full tutorial and learner support services put in place. This will include the training of tutors and facilitators.

Delivery and evaluation

It is only at the delivery and evaluation stage that the courses are ready to be presented to learners. It is now that the tutorial and learner support services become the main players in the process. The role of academic and media developers, however, is not over. The programme must be continuously monitored, especially during its first presentation, to identify problems and possible improvements as well as to assess student progress and success. Initial monitoring may well lead to revision before future presentations. Fuller evaluation will be necessary at a later stage to guide decisions by senior management as to whether the programme should go to scale as a long-term programme or whether and when it should be withdrawn.

Discussion: A useful exercise at this point is to have participants map the planning and management cycle as it applies to their own context, indicating the units and individuals within their organisation that are involved in each phase and the ways in which they are interrelated.

In addition, suggest to participants that they read the two case studies included in this kit which discuss in some detail the importance of planning for providers of open and distance learning: the case studies from the Institute of Distance and Continuing Education at the University of Papua New Guinea and the University of Lincolnshire and Humberside.

3.2 Staffing

The staffing mix

The staffing mix required to implement an open and distance learning programme depends on the educational job to be done and the organisational model that has been chosen. To take an extreme example, compare the staffing needs of two completely different open and distance learning programmes.

Example: A non-formal programme of literacy work with adult villagers, supported by radio and regular study circles, will require considerably different personnel than an executive MBA programme of formal study offered by a single mode, distance teaching university.

Nonetheless, personnel will likely fall into the following categories.

Educational staff

Educational staff include:

- subject specialists;
- specialists in the production of materials;
- specialists on tutoring and counselling;
- tutors, especially part-time tutors;
- broadcasting producers; and
- research workers and evaluators.

Example: Both of the open and distance learning programmes in the example require educational staff set out in the following table.

Staffing Needs of Two Different Open and Distance Learning Programmes

| Type of staff | Literacy circle | MBA programme |
|--|---|--|
| subject specialist | in the teaching of reading | in management accounting |
| specialists in the production of materials | in producing effective flannelgraph cut-outs and literacy primers | in producing study guides in management accounting |
| specialists in tutoring and counselling | trainers of study circle facilitators | career advisors |
| tutors, especially part-time tutors | study circle facilitators | tutors communicating with learners via computer conferencing |

| | | |
|------------------------|---------------------------|---|
| broadcasting producers | radio programme producers | video producers for marketing the executive MBA programme and recruiting volunteers |
|------------------------|---------------------------|---|

Materials production staff

Materials production staff include:

- printers;
- copy editors;
- graphic designers;
- broadcasting technicians;
- typists and word processing clerks; and
- desktop publishing specialists.

Administrative staff

Administrative staff include:

- administrators;
- managers;
- personnel staff;
- financial staff;
- records clerks;
- secretaries;
- typists;
- warehousing and dispatch staff; and
- messengers, janitors, drivers.

Training staff

Arrangements will also be necessary for the training of staff, which may be done

- on the job;
- through short courses at the institution;
- by sending learners on full-time or part-time courses; or
- by enrolling them in an appropriate course taught at a distance.

The choice of organisational model will influence the training strategy.

Example: Within a bimodal institution, where a course writer is combining that role with teaching courses face-to-face, sensitivity is needed in arranging courses for experienced university course writers on how to write learning materials for use at a distance.

Within a single mode institution, which contracts course writers from other, conventional institutions, the same kinds of sensitivity will be required in training, as well as even greater flexibility in timing the training sessions so that they fit in with the writers' other commitments.

Discussion: The intent here is to emphasise the similarities and differences in the configuration of 'teaching staff' between conventional and distance programmes.

Seek examples from both your own and your participants' experience.

Monitoring and supporting staff at a distance

The management of open and distance learning programmes will almost always involve managers in the monitoring and support of staff who are at a distance from central office. These staff may include regional centre staff, tutors, and learning materials producers, including writers of print materials and scripts for media production.

It has become somewhat of a truism in open and distance learning that learners need continuing contact with the programme and support from programme personnel as they undertake and work through their studies. Staff at a distance need the same kind of support and contact, especially since they are frequently working under conditions such as the following:

- they tend to be part-time, with major affiliation and commitment to some other institution;
- they tend to be on short-term or annual contracts;
- they likely have no regular face-to-face contact with supervisors and colleagues;
- their roles are frequently diffuse and ill-defined; and
- too often the adage, 'Out of sight, out of mind', means not just isolation but invisibility for distant staff when it comes to decisions on policies and procedures, which tend to be made without due attention to their particular circumstances and needs.

Because of the distance factor, it is even more important with distant staff to practice effective staff relations, by means of:

- clear role descriptions, expectations, and reporting lines;
- clearly defined jurisdictions and responsibilities;
- clear policy directives;

- continual updating on changes in policies and procedures;
- a thorough induction into the programme, its history, goals, policies, and procedures;
- training in the wide variety of skills and knowledge that regional staff will need in order to provide front-line service to learners;
- frequent and effective two-way communication (e-mail is an excellent medium for this where available);
- opportunities for face-to-face meetings;
- frequent performance review and monitoring;
- accurate and efficient records systems;
- opportunities for input into decisions that affect their work;
- allowing regional staff some leeway in decision making, so staff can respond to local needs; and
- engendering a positive attitude in regional staff toward criticisms and complaints from learners, and in central staff toward complaints from the regions.

3.3 Teamwork

Managing project teams

Much of the work of open and distance learning is carried out in teams.

Example: The development and production of a course requires the collaboration of subject matter experts, instructional designers, editors, visual designers, and a variety of support people, including liaison librarians, printers, and so on.

Likewise, the delivery of a course requires the collaboration of tutors, counsellors, librarians, registry personnel, and course materials warehousing and dispatch clerks, among others.

Managing a team places different kinds of demands on managers than does line management:

- time, because you have specified start and finish dates;
- resources, because you need a high degree of financial accountability as projects are more difficult to cost and control than are routine line management functions; and
- personnel, because you tend to work with a cross-functional team of temporary members, some of whom will be in a reporting line to someone other than you.

Effective teamwork depends on a number of variables.

Time

A good deal of time is required to establish and re-establish the common ground that is essential to effective teamwork, which is achieved through shared experience, reflection, and discussion.

Experience and maturity

Experience in team-building among at least some of the team members is a great asset, as is a mature approach to the challenges of interpersonal communication.

Knowledge

Team members ideally should possess knowledge and expertise in a variety of fields that complement and reinforce each other rather than conflict, and that when taken together yield a much more complete and rounded picture than one field alone could produce.

Skills

Each team member needs to have skills he or she can put to direct use in making the team effective. Communication skills in particular include:

- explaining;
- describing;
- categorising;
- articulating;
- listening;
- checking out assumptions;
- attending to feelings;
- facilitating discussion; and
- demonstrating.

A sense of humour is also a valuable asset.

Shared respect

Each team member ideally should respect and admire the competence of the other members and the knowledge and skills of their respective fields or subfields. This respect extends to an eagerness to learn about the others' fields and to use all contributions.

Openness and flexibility

Vital to teamwork, openness and flexibility have several facets:

- making and accepting offers; saying 'yes, and' more often than 'yes, but' or 'no';
- accepting and even welcoming differences and recognising that diversity is strength;
- demonstrating tolerance, raising biases to conscious levels, controlling them, and expressing tolerance out loud;

- sharing rather than trading ideas, experiences, and skills;
- building on each others' learning and ideas to develop something new; and
- being willing to take risks, make errors, and learn from them as natural and useful parts of teamwork.

Desire to learn, curiosity

This variable stretches all the way from simple curiosity about how others might need to adapt our ideas in order to use them to viewing differences as exciting.

Commitment to process

All team members are concerned with efficiency and getting the job done and all get frustrated by the time taken up in meetings. Nonetheless, process is part of the task, and coming to grudging agreements rather than griping ones is vital.

Support and encouragement

Teamwork is exciting and difficult, and support and encouragement are needed in good times and bad, and should be expressed out loud and often.

Sensitivity

Sensitivity emerges in two ways: putting others' needs before one's own, at least some of the time, and paying attention to the emotional content of looks, words, and silences as well as to their intellectual substance.

Trust

Trust emerges as the keystone of teamwork. Without it teams fall apart. Risk is the flip side of trust, and must be accepted as part of the bargain.

Attention to the use of power

No matter how right or good our ideas are, telling others what to do is not the approach of a successful team, or between the team and others with whom the team interacts.

Determination and energy

Determination shines through in resistance to fatigue (headache, what headache?), in the insistence on recapturing focus when group discussion wanders too far off track, and in the continual juggling of tasks and time and other commitments in order to accommodate the needs of the group.

Discussion: Ask participants for examples from their experience of teams that worked and of teams that did not work.

Networking

Creating, expanding, and maintaining relationships with other agencies — popularly known as *networking* — is an important part of the manager's job in an open and distance learning context. As was discussed in Issues in Open and Distance Learning, Topic 2 of this kit, collaboration among educational institutions, agencies, and

programmes is becoming increasingly the order of the day, both in industrialised and less affluent countries, for a number of reasons, among them:

- public funding for education at all levels is decreasing, and governments are requiring institutions to work with each other and in many cases with industry in order to qualify for funding; and
- institutions and agencies are responding to decreasing levels of funding by seeking collaborative arrangements that can make scarce resources go further.

Open and distance learning programmes are far from the only ones affected by these pressures. Nonetheless, open and distance learning programmes are among the foremost seekers and implementers of collaborative arrangements, because of the nature of their work and for various other reasons:

- Learning materials development represents a major cost to distance programmes. Producers of such materials can share costs through co-development arrangements, or recoup costs by sales and leases of materials. Low-resource programmes can save on staffing and other recurrent costs by purchasing materials rather than developing their own.
- Learners are seeking flexibility, especially the ability to apply credits taken in one programme to the completion of requirements for another. Credit transfer arrangements place great demands on institutional collaborative arrangements.
- The technologies used in delivering distance programmes are forcing collaboration, partly because delivery agencies need to share costs, and partly because of the nature of the technologies themselves, which increasingly make distinctions between 'distance' and 'conventional' programmes irrelevant and meaningless.

Examples: Collaborative arrangements in open and distance learning are many and varied. Here are only a few examples.

A number of international organisations have been created to foster course sharing and other kinds of collaboration among their members, including The Commonwealth of Learning, CIFEAD (*Consortium d'institutions francophones de formation a distance*), and the *Consortio-red de educacion a distancia*.

The Open Learning Agency in British Columbia, Canada, collaborates in course sharing arrangements with a number of institutions, including Laurentian University and Athabasca University in Canada and the Open Learning Institute in Hong Kong.

Some postgraduate degrees in open and distance learning have been the results of collaboration, for example between Deakin University and the University of South Australia, and between the University of London Institute of Education, the International Extension College, Deakin University, and the Open Learning Agency.

The Contact North network in northern Ontario, Canada, makes delivery facilities available for a number of institutions to offer secondary and tertiary level programmes to widely scattered populations.

For managers of open and distance learning programmes, this increasing collaboration means a need for the following kinds of skills and knowledge:

- a heightened awareness of and sensitivity to differences in institutional cultures;
- skills in building effective trust relationships; and
- the ability to define, perceive, and monitor mutual benefits in collaborative arrangements.

In many ways these are skills similar to the skills team members need. Thus managers of open and distance learning programmes need skills not only in managing teams but also in being part of them on a wider scale.

Ross Paul in his book, *Open Learning and Open Management* (1990) gives the following advice to programme managers who are involved in collaborative projects:

- ensure that clear benefits from the collaboration are established and understood by all partners;
- ensure that clear and specific objectives and measures of achievement are stated;
- remain open to re-negotiation if necessary;
- keep the number of partners involved to the fewest possible to make the collaborative venture successful;
- delegate clear authority and responsibility to specific partners and individuals;
- take seriously the need to understand differences in corporate cultures;
- scrutinise the collaborative venture on a regular basis and disband if it is no longer meeting its objectives; and
- ensure that agreements have the full support of the executive officers of all the partner institutions.

3.4 Quality assurance

Quality assurance as a management system

Quality assurance is an approach to organising work that ensures that:

- the institution's mission and aims are clear and known to all;
- the systems through which work will be done are well thought out, foolproof, and communicated to everyone;
- it is clear to everyone who is responsible for what;
- what the institution regards as 'quality' is well defined and documented;
- systems are in place to check that everything is working to plan; and

- when things go wrong — and they will — there are agreed ways of putting them right.

The quality assurance approach to management has three essential features:

- a method of checking up on how well the system is being adhered to;
- a method of correcting mistakes; and
- a method of changing the system if it has become out of date.

Quality assurance starts with a clear statement of what the institution exists to achieve or, in other words, its mission. For example, the mission might be:

- to be the best provider of open and distance learning in the region or country;
- to provide access and courses to the most disadvantaged learners; or
- to achieve excellence in research in open and distance learning.

Once the mission statement is agreed, the quality assurance system compels the institution to agree the methods by which things are to be done.

A key part of setting up a quality system is defining a quality policy. This policy document has to be in a form that all staff can use and understand. It might cover:

- who is responsible for setting up and running the quality assurance system;
- how management is to monitor and review the system;
- which functions or tasks will have written, defined procedures;
- how the implementation of these procedures will be monitored; and
- how failure to adhere to the procedures will be corrected.

Evaluating programme performance

The three steps of evaluating can be labelled

- measuring;
- comparing; and
- correcting.

Each presents special problems in an open and distance learning programme.

Measuring

Measuring the learning activity of learners is complicated by distance.

Even determining such apparently straightforward indicators as rates of learner progress or drop-out is surprisingly difficult to do on a continuous basis, especially in programmes that enrol learners throughout the year.

Only in the vital areas of academic quality is measurement in a distance programme easier than in a conventional programme, for the team approach to course

development and services delivery both encourages quality and ensures a wide awareness of any shortcomings.

It is rather ironic that, although the team approach gives distance courses more quality — and usually quantity — than their conventional counterparts, the notion that distance study is substandard dies hard in traditional circles.

Comparing

Comparing the performance of distance programmes with conventional programmes is also problematic.

In the area of economic performance, standards borrowed from conventional education should be used with caution.

Example: Capital-to-operating cost ratios tend to be considerably higher for conventional programmes than for distance programmes (except in cases in which a distance programme has had to make a major investment in technological infrastructure).

In the area of learner performance, especially in terms of retention and graduation rates, comparing distance learners with conventional learners may be difficult given probable differences in entry qualifications and circumstances of study. Even comparing one distance programme with another is difficult, since different programmes tend to adopt different definitions of who counts as a ‘learner’.

Example: Some programmes count as learners all those who have enrolled in a course, whereas others limit the use of the term to those who actually sit the exam, and discount the fact that only a small percentage of those initially registered have actually stayed with the course long enough to write the exam.

Correcting

Because the standards of conventional programmes may often not be appropriate to open and distance learning programmes, the proper response to a gap between the measure and the standard may be to revise the standard rather than to initiate corrective action.

If corrective action is required, however, the highly integrated and complex nature of an open and distance learning programme may make implementation somewhat problematic.

In addition, although open and distance learning programmes tend — and need — to be flexible so that they can respond effectively to learners’ needs and circumstances, this flexibility should not be abused. Staff and learners do not appreciate being part of a continuing experiment in which all the variables are undergoing constant modification.

Finally, the cost implications of corrective action may be more far-reaching in an integrated system of the kind that tends to characterise open and distance learning programmes.

Example: The introduction of a new technology for delivering the teaching component of the programme, even if it is confined to one course in the programme, will have consequences for all aspects of the programme, from recruiting and marketing to staffing and training to developing, producing, and dispatching materials.

4. Practice exercise

4.1 Putting management issues in context

Instructions: Divide the group into a number of small working groups, four if possible.

Assign to each group one of the issues discussed in this section:

- analysing systems (systems thinking);
- staffing;
- teamwork; and
- quality assurance.

Ask each group to discuss and document the following three things:

- examples of the ways in which this set of issues emerges in the programmes in which the group members are involved;
- the ways in which their programmes are dealing with these issues; and
- the level of satisfaction with these responses, and the kinds of problems for which solutions are still being sought.

Ask each group to present their findings to the larger group, for discussion.

Timeframe: Approximately one-and-a-half hours, one half hour for small group discussions, ten minutes for each group report, and twenty minutes for general group discussion.

Materials required: Flipchart paper or overhead transparencies for the reports back to the plenary group.

TOPIC 7

Interaction and Learner Support Systems

Overview

Source materials for this topic

Providing learner support in open and distance learning

Issues

Problems distance learners face

Special needs of distance learners

Key times in the learning cycle

Instructional support

Role of instructional support

Academic advice

Non-instructional support

Admissions and registration

Counselling

Administrative support

Finance

Checklist for successful delivery and support

Guidelines for producing interactive learning materials

Audio cassettes

Teletutorials or audio conferences

Audiographics

Video cassettes

Video conferencing

Computer conferencing

Practice exercise

Arguing for increased learner support

1. Overview

These materials support a discussion on the topic of the issues that confront open and distance learning programmes in providing and managing support to learners. The emphasis in these materials is on those features of providing learner support using the various communications technologies that are available for this purpose. Specific issues such as effective tutoring skills and selection of appropriate tutors and counsellors are covered in greater detail in Trainer's Toolkit COL 006 on Learner Support in Open and Distance Learning.

1.1 Source materials for this topic

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2. Providing learner support in open and distance learning

2.1 Issues

The issues involved in providing support to distance learners emerge in answering questions like the following:

- What are the characteristics of open and distance learning that determine the support needs of distance learners?
- What are the main roles of learner support in the light of these needs?
- What are the different stages in the learning process at which learners require support?
- What are the essential characteristics of a successful support system?

2.2 Problems distance learners face

Open and distance learners face problems that include:

- isolation in that distance learning participants may have little or no opportunity for face-to-face contact with the institution, their tutor, or fellow learners;
- difficulty organising studies and finding sufficient time to study;
- difficulty balancing work, study, and family commitments;
- lack of motivation;
- lack of resources and equipment – in that learners may not have access to specialist libraries or practical equipment needed for studies; and
- difficulties in developing appropriate study techniques such as note taking and essay writing.

Discussion: What problems have distance learners faced in your own and your participants' experience? The case studies that are included in this kit also provide examples of learner support needs and methods.

2.3 Special needs of distance learners

Distance learners have special needs, which include:

- information to help learners relate to the institution and understand its system;
- contact with tutors to help maintain motivation and overcome learning problems;
- institutional identity, which is some means of helping learners identify with a remote institution and to feel that they are part of a body of learners rather than studying in isolation; and
- advice on how to study; as well as that provided within the course itself, learners often need additional support to develop good study techniques.

2.4 Key times in the learning cycle

Some of these support service needs of distance learners are indicated in the following table.

Stages in the Learning Cycle

| Stage in learning cycle | Learner needs |
|--------------------------------|--|
| Pre-enrolment | information about the institution and its courses advice on which courses to choose advice on how to finance studies |
| Enrolment and starting study | more detailed information about the institution and study procedures advice on studying at a distance advice on planning studies |

| | |
|---------------------------|--|
| Completion and graduation | notification of exam results career advice advice on further studies |
|---------------------------|--|

Discussion: Provide an example of a working support system with which you and your participants are familiar. A variety of examples of learner support systems are also contained in the case studies that accompany this kit.

3. Instructional support

3.1 Role of instructional support

Usually the key support function in open and distance learning is that of providing tuition and academic advice. The cost of providing tutorial support often represents a substantial proportion of the unit's overall budget. Careful organisation in this area is therefore important for the efficient running of the unit as a whole.

3.2 Academic advice

All tutorial methods allow learners and tutors to interact, so learners can benefit from the advice of tutors and get the most from their materials.

At a minimum, in all learning systems ways have to be found

- to inform learners of who is their tutor;
- to inform tutors of who their learners are; and
- to enable learners and tutors to communicate.

Because of the differences in the media used for communication, tutorial models have different characteristics, as summarised in these questions:

- Does the tutor–learner dialogue take place synchronously or asynchronously? That is, do the tutor and learner need to interact in real time or can a response be delayed?
- Do learners interact solely with a tutor or do they also interact among themselves?
- Can learners access the tutorial service from home or do they need to travel to an access centre?

See the case studies for the University of Nairobi Distance Education Teachers Programme and the Open Learning Institute, Charles Sturt University, for examples of institutions that are struggling with decisions about provision of face-to-face residential schools and tutorial sessions.

The following table identifies the management requirements for support systems with these characteristics.

Dimensions of Tutorial Models

| Characteristic | Requirements of system |
|---|---|
| <p>Synchrony</p> <p><i>Examples: learners attend scheduled face-to-face or audio conferenced or video conferenced tutorial sessions</i></p> | <p>High requirement for detailed scheduling</p> <p>High need to monitor technical performance of delivery medium as breakdown is a critical problem</p> <p>High need for on-hand technical support</p> <p>High training requirement so learners will master medium</p> |
| <p>Asynchrony</p> <p><i>Examples: learners can telephone or e-mail their tutors individually, or communicate with tutors and other learners via computer conferencing</i></p> | <p>Highly desirable to provide flexible temporal access to system</p> <p>Lower need for monitoring technical performance than for synchronous systems, as downtime can be overcome later and learner can re-enter the system</p> <p>Technical skill or operation of system by learners can be gained over a longer period, because mistakes are not as critical as in synchronous systems</p> |
| <p>Tutor-learner interaction only</p> | <p>Higher need to guarantee learner access to some minimum guaranteed amount of time</p> <p>High need to ensure tutor availability at regular times</p> <p>Lower need to schedule interaction in a precise manner</p> |
| <p>Tutor-learner and learner-learner interaction</p> | <p>Requirement to provide inter-group access</p> <p>High need to schedule group interaction if interaction is also synchronous</p> <p>High need to ensure consistent technical performance of technology being used as downtime will affect multiple users</p> <p>Learner needs to be informed of how and when to access system</p> |
| <p>Access from home</p> | <p>Scheduling is critical if synchronous group interaction is to occur</p> <p>Learner needs to be trained at a distance to use the system</p> |
| <p>Access through study centre</p> | <p>High need to organise a facility at which learners meet</p> <p>High need to schedule group meetings and inform learners</p> <p>High need to ensure performance of technology used</p> |

4. Non-instructional support

Though less visible than instructional support and less central to the actual process of learning, non-instructional support is vital to the smooth operation of distance learning and must be integrated with instructional support.

Generally speaking, the following types of learner support are available.

4.1 Admissions and registration

The admissions and registration support subsystem includes the following functions:

- marketing;
- facilitating applications;
- making offers;
- registering learners; and
- matching learners appropriately with courses by level, subject, and so on.

4.2 Counselling

Learner problems that require referral to counsellors include:

- financial difficulties;
- family problems;
- difficulty in maintaining motivation;
- problems in finding sufficient time to study;
- balancing conflicting commitments; and
- physical difficulties or barriers, including limited mobility, hearing, or sight impairment.

4.3 Administrative support

A teaching unit or institution needs to inform learners of the following kinds of information:

- the office hours;
- the best times to call for advice;
- any days when the office is closed;
- the name of the learner's tutor;
- how to contact the tutor;
- who to write to or telephone about different matters;
- deadlines for sending in tutor-marked assignments; and
- dates of examinations.

Depending on the tutorial system that is in place, other required information may include:

- location and hours of nearest learning centre;
- facilities available at learning centre;
- names and addresses of other learners (with their permission); and
- updates on curriculum changes, procedures, and so on.

4.4 Finance

Part-time learners are typically disadvantaged in awards schemes. Distance learning programmes therefore typically seek scholarship and bursary funds, which entails fundraising as a function.

Discussion: Provide an example of a working support system, preferably one that is familiar to your participants or at least relevant to their situation. The case studies that accompany this training kit also contain brief descriptions of a variety of learner support systems.

5. Checklist for successful delivery and support

If your support system is successful, you should be able to answer ‘Yes’ to the questions in the following checklist.

Checklist for Successful Delivery and Learner Support

- Do you know your learners’ geographical location, age range, access to facilities, academic ability, gender, and so on?
- Are staff sensitive to gender, societal, and cultural differences?
- Are staff sensitive to the frustrations and time constraints adult learners often face?
- Do staff have up-to-date knowledge about the institution and its courses?
- Are your support systems flexible and learner-oriented, available to learners when and where they need them?
- Are the resources allocated to learner support adequate?
- Is there an appropriate balance of resources allocated to the development of materials and subsequent support of learning from those materials?
- Does your support function provide support to the internal functions of the learning unit as well as to learners?
- Is your decision to keep support services centralised, or to manage them on a regional or decentralised basis, appropriate to meeting the needs of your learner population?

- Does your learner record system contain the following information:
 - personal details, including name, address, age, family circumstances, and employment?
 - academic and professional qualifications?
 - special requirements such as specially adapted materials for disabled learners?
 - tutorial record, including dates when assignments were received, grades, and copies of tutor comments?
 - list of materials sent, including date of dispatch?
 - record of attendance at face-to-face sessions?
 - fees paid?
- Are your records detailed, accurate, and up-to-date? Do you ensure that:
 - records systems are regularly monitored to ensure they are functioning efficiently?
 - information is disseminated to the right people at the right time?
 - records are kept in a secure fashion so that only authorised personnel have access to them?
 - legal requirements governing the handling and storage of information are met?

6. Guidelines for producing interactive learning materials

Learning materials themselves are an important aspect of providing support to open and distance learners and of promoting their effective interaction with those materials and, where possible, with their tutor or instructor and with other learners. The characteristics of the media available for open and distance learning are described elsewhere in this kit, in Topic 4 (Media Characteristics). The following guidelines focus on how to exploit these characteristics effectively to promote interactivity and foster learning when designing materials and learning activities using the following media.

6.1 Audio cassettes

The hints that follow apply mostly to the production of audio cassettes, but many of them apply equally well to scripting radio broadcasts.

Writing the script

- Write the script for the ear, not the eye: write for the words to be spoken, avoiding wording that might cause the narrator to falter.
- Listeners find it easier to understand short sentences: convert any long sentences into two or more short ones.

- Avoid using words that are difficult to hear or to distinguish from other words because they sound the same (homophones like ‘see’, ‘sea’, and ‘c’); if you can’t avoid them, make sure their meaning is clear from the context.
- Be informal, addressing the listener as ‘you’.

Including visuals and audiovision

- Make sure the audio programme matches your visuals; for example, the audio should say, ‘while listening to this cassette/programme, you should have in front of you...’ and the print material should say which cassette to play or which programme on the schedule the print material applies to.
- If using audiovision, stay close to the words in the frames, but do not duplicate them exactly, otherwise learners may think they could have done better with everything in print.
- From the learners’ point of view, make the visuals and the commentary reinforce each other as much as possible: for example, make the teaching points about a visual when learners are looking at it, not in a wordy introduction while they are looking at the previous visual.
- Give the learners enough time to take in and digest the visuals.
- Make sure your guidance to the listeners about where to look is completely clear.

Stopping the tape

- If you want learners to write some notes on a diagram or pick up an object and examine it, it may be enough to insert a two- or three-second silence, but if the activity will take longer, tell them to stop the tape.
- You can use a music jingle as a signal to stop the tape, so that you do not have to sound authoritarian by frequently ordering them to ‘stop the tape’.
- If the activity needs a lot of prior explanation on the tape, be careful to use wording that will not prompt listeners to stop the tape prematurely: for example, ‘I want you to try the question in section 8. But I need to explain something first...’ might lead them to stop prematurely before you have started to explain. Rather, begin with a postponing phrase, ‘In a moment, I’m going to ask you to try the question in section 8, but I need to explain something first’.
- When you include more than one activity in a ‘tape stop’, help learners’ memories by indicating in print when to restart the tape.
- It is worthwhile mentioning comments about or answers to the activities on tape, after the tape stop, even if they are in print, reminding learners of what they have just done. For example, ‘I hope you found exercise 8 revealing. You should now be able to...’
- Or you could go through the answers, talking about them.
- As a general rule, have at least three sentences between tape stops.

Technical points

- Comments about, or even answers to, the activities can be added in print or on the tape, depending on which seems best. Do the learners need a printed version?
- Often you need to communicate what you have assumed about the learners' previous knowledge and, possibly, where further details on the same topic can be found.
- Long lists of verbal instructions on the tape will overload learners' memories. Where there is a list in the visuals, number the items so that you can refer to them clearly.

6.2 Teletutorials or audio conferences

Teletutorials are most likely to succeed when the following conditions are present.

Course and programme design

- Teletutorials are planned as part of the entire course design and are not a last-minute 'add-on'.
- They are held regularly, at least monthly.
- The same group is retained throughout the series of teletutorials.

Pre-planning

- Prior face-to-face contact or personal communication has been made.
- The tutor has background knowledge of participants, including their teleconferencing experience, and uses that knowledge.
- Learners are made aware of the intended structure of the tutorial.
- Instructions and agendas are clear and comprehensive.
- Learners have prepared for the session by completing assigned readings and other tasks.
- Supportive material like tables and diagrams are sent ahead and clearly annotated.
- The tutor is conversant with the equipment and aware of its capabilities.

Making arrangements

- The tutor and learners are in an environment they find conducive to learning.
- All references are readily available.
- At remote sites, one person serves as local animateur and spokesperson for the group.
- There is backup in case the tutor is unavailable because of illness.
- Adequate advice is given to responsible parties to ensure an accurate call list.
- Learners are given an explanation if the call does not eventuate.

Technical considerations

- All participants are promptly connected.
- They remain connected throughout the tutorial.
- Audio quality is clear and sustained.
- Any problems with equipment or line quality are reported to the telecommunications co-ordinator.

Conducting the tutorial

- The tutor uses connection time to establish introductions and set up a more personal approach.
- The tutor is relaxed.
- The tutor ensures there is variety in task and tone.
- Time is managed to allow for all the planned goals to be achieved.
- An appropriate balance is achieved between conceptual and management issues.
- The tutor manipulates the discussion with tact and sensitivity.
- Silences are allowed for and not seen as threatening.

Involving learners

- Learner participation is monitored and an attempt is made to ensure some parity over several teletutorials.
- In early sessions, learners identify themselves as they make comments.
- Direct exchanges between learners are encouraged.
- Learners contribute readily but not simultaneously.
- Constant attention is given to turn-taking, and maintenance of a courteous and polite atmosphere in which no one is left out or allowed to monopolise the discussion.
- Teachers use frequent questioning, to ensure that each participant is following the session and remaining involved, with use of discussion rather than lectures.
- Any presentations are kept to a maximum of seven minutes.

Follow-up:

- There is willingness to follow up with written material (bibliographies, etc.) where appropriate.
- Tutors are willing to answer individual or complex queries by later call or letter.
- Tutors and learners evaluate their performances and build on this for later teletutorials.

6.3 Audiographics

Here are some conditions for effective use of audiographics in teletutorials.

Class planning and management

- Each session must be carefully planned to ensure all participants are present at the start and the session should include a variety of teaching styles and activities.
- Using a drawing game such as Pictionary® for practice sessions with the technology will generate a few laughs and prompt learners to relax with tools which at first can look quite intimidating.
- The teacher needs excellent class management skills to be able to manage two or more distance classes simultaneously as well as control the equipment.
- Each class needs an animateur who will shoulder organisational, technical and social responsibilities connected with running the class with audiographics and be a spokesperson for the class.

Technical points

- The quality of the sound must be high to enable the teacher to pick up cues from the classes and for learners to be able to concentrate and participate.
- Visuals must be clear, and good pointing or annotation tools must be available, such as underlining, selecting and highlighting, for use by teacher and learners.
- There must be good facilities for spontaneous graphics during the session, in addition to prepared graphics delivered before the session starts, such as through graphics tablets, preferably with different coloured pens for each site.
- Graphics need to be legible and simple as opposed to complex, with a larger print size and drawings and text which complement and supplement what people are talking about rather than conflict with it.

6.4 Video cassettes

A number of kinds of interaction between learners and video are possible, a fact that designers of video cassettes might usefully keep in mind. Some of these depend on whether learners:

- preview the video;
- follow guidance on how to use the video;
- view the video only when instructed to do so, or choose to view the video several times for their own study purposes;
- study the video on its own, or integrate their study of it with their study of the rest of the course;
- use the video search facilities to look systematically for items;

- use questions (in print) to focus on parts of the video;
- stop the video to answer questions asked on it (in print), or watch fairly continuously, trying to remember what the answers are;
- follow instructions on when to stop/start the video, or simply play it right through;
- review segments of the video only for the purpose of answering questions, or rather for general interest and clarification; and
- take notes indexed to the video content.

6.5 Video conferencing

Video conference technology offers the advantage of the visual presence of others who are geographically distant, thereby creating a strong sense of social presence and the possibility of a warm and supportive environment for learning. Here are some hints for how to realise the full potential of this technology.

Planning

- Plan to have a technical facilitator at each site to operate the control pad and, if possible, train these facilitators before the class starts.
- Think about how the different visual resources will be integrated: the learners, videocassette clips, graphs, diagrams, photographs, and slides.
- In designing graphics, use pastel coloured paper, keep messages simple, and use large-sized fonts.

Technical points

- Give some attention to camera use. Experiment with camera angles, shots, and visual inserts so that on-screen images are steady, in focus, well-composed, and interesting. Remember that learners are accustomed to high quality camera work on commercial television.
- If you plan to use graphics, establish two automatic pre-set camera positions, one for the graphics and one for the people.
- Display text material long enough for a slow reader to process, and display non-text material (for example, a cartoon or photograph) for only three or four seconds.
- Vary camera shots judiciously. Some camera shots that work particularly well are mid close-up (begin at waist level), full figure shot (entire body), and wide angle (for a group shot).
- Close-ups do not work well. Although the person may not seem to move much, there is still a lot of motion from the camera's perspective — eyes blinking, hands moving, note taking, shifting in chair, and so on.

- Pay attention to lighting. Fluorescent lighting is usually adequate for educational use. Additional soft lighting which highlights faces and breaks up shadows will improve the image.
- Avoid backgrounds that are too cluttered or have too much white. Also, avoid clothing with stripes or ‘busy’ patterns, as they will cause the camera’s focus to oscillate and the picture will not be clear.

Conducting the video conference

- Behave as naturally as you can. Sit directly in front of the camera and look at it while you are talking.
- Do not move too much or too quickly.
- Review the audio conference guidelines on interpersonal interactions (see previous pages) as they are also fundamental to fostering interaction in videoconferencing.
- Expect to participate in two or three sessions before you feel comfortable.
- Facilitate the technical process by commenting on issues that need to be resolved.

6.6 Computer conferencing

There are a number of specific learning activities for which computer conferencing works very well, if appropriately designed and integrated with other resource materials. These include:

- seminars;
- small group activities;
- role plays;
- debates;
- assignments;
- simulations;
- guest expert visits;
- whole class discussions; and
- problem solving.

Here are some guidelines for preparing and facilitating sessions that will work in these contexts:

Technical points and training

- Ensure that learners have easy and regular access to a computer and modem, as well as to the most cost effective long distance services.
- Train learners to use the software before they deal with the content of the course.
- Ensure that a technician is available for support immediately before, during and after your initial series of conferences.

Facilitating the conference

- Have clear objectives for the interactions. People must feel that their on-line time is well spent.
- Plan a structure of subconferences that focus on specific topics. Organisation helps to keep messages linked.
- Keep your messages concise, on-topic, and preferably no longer than one screen, or 10 lines. One idea per paragraph is the maximum.

Fostering participation

- Introduce yourself and the conference rationale.
- Have learners introduce themselves to each other
- Use informal and courteous responses, directions and questions. They read better than a staccato, formal style.
- Encourage people to keep up with the messages. Information overload can be daunting.
- Use learners' responses constructively. Learners will feel respected and included.
- Use humour only when you know the group very well.

7. Practice exercise

7.1 Arguing for increased learner support

Instructions: Divide the participants into two groups. Describe the following scenario and situation to both groups.

Scenario: An open and distance learning unit has been in operation for eighteen months now at Prestige University. For the past six months there have been three courses actually being delivered by distance means by this unit, using a basic correspondence model. Learners can telephone the unit if they have problems, but no continuous assessment is provided and learner performance is assessed only by the final examination, which learners must sit at the same time – indeed in the same examination hall – as the on-campus learners in the course.

Situation: The director of the open and distance learning unit is meeting with the Pro-Vice Chancellor, Learner Services, to whom she reports, to argue for more funding so that tutors can be paid to support learners during the course using a variety of already available media and facilities (for example, the telephone, and the regional offices) and not just to mark the final examinations.

Task: Group One is the Pro-Vice Chancellor group. Their task is to come up with arguments, from a strictly conventional, campus-based point of view, as to why learners ought not to need this 'special' service. Group Two is the Distance Education Director group. Their task is to come up with arguments from the point of view of the Distance Education unit as to why learners must have the services for which the Director is asking. Ask each group to supply a 'role player' who will play out the meeting situation with his or her counterpart, and argue the case that the group has developed.

Discussion: Draw out some of the issues and problems that confront open and distance learning managers in trying to provide adequate support services to their learners.

Timeframe: Approximately one hour.

Materials: None.

TOPIC 8

Project Planning, Production, and Distribution

Overview

Source materials for this topic

Assumptions

Stages of development

Planning and design

Development and production

Resources

Management

Scheduling

Distribution

Utilisation

Monitoring and evaluation

Practice exercise

Preparing a planning document

1. Overview

These materials support discussion on the topic of the planning process for the development of a media component of a course in open and distance learning. The specific focus is the development of an audio component. However, the key questions that need to be considered and acted upon by those involved in the planning, preparation, development, and delivery of an audio component apply in general terms to other kinds of production as well.

1.1 Source materials for this topic

Kemp, J. *Planning and producing audiovisual materials*. New York: Harper & Row, 1990.

Rowntree, D. *Teaching with audio in open and distance learning*. London: Kogan Page, 1994.

Thomas, J. *Report to SACHED on producing audio for intermediate distance education*. Cambridge: IEC, 1995.

2. Assumptions

The materials that follow assume that

- the main media for teaching and learning will be print-based (for example, correspondence texts, other printed material, or computer-based material); and
- that audio is likely to be used in a ‘supplementary’ or ‘supportive’ role to print.

It is also assumed here that users of this material will be generally familiar with the basic characteristics and approaches of distance and open learning.

Discussion: Check out your own and your participants’ assumptions with the following questions:

- Are these assumptions correct in the participants’ particular situations and contexts?
- If not, what adjustments need to be made?

3. Stages of development

The stages in the development process for audio suggested here are interrelated and overlapping. Nonetheless they are useful in identifying the key questions with which planners need to deal.

3.1 Planning and design

We can think of planning and design at two main levels:

- the overall planning and design of a series or sequence of ‘programmes’ that make up the audio component of a course; and
- the detailed planning and design of an individual programme or segment that is part of the series or sequence.

In this section we are primarily concerned with the first of these two levels.

In approaching the overall planning and design of a series of audio programmes for open and distance learning, the following checklist may be useful:

- audience;
- aims and objectives;
- content and structure;
- form and format; and
- support material.

Audience

Most of the important questions about the characteristics of the target audience have been raised in Topic 3 (Instructional Design). However, it is worth asking here whether there are specific characteristics that relate to the use of audio.

Discussion: Prompt discussion about audience with the following questions:

- What *access* will the learners have to audio equipment — both for playback and recording? Can we assume *individual* access? Or will provisions need to be made for group listening?
- What experience, if any, will the learners have had of learning from audio? What are the implications of this in terms of the presentation of audio materials and the need to develop appropriate study skills?

Aims and objectives

Assuming that print is the main medium of instruction and that audio is playing a supplementary and supportive role, audio can be used in two basic ways:

- to provide tutorial support to learners; or
- to offer supplementary learning material, which can enrich and deepen the learners' experience of learning.

Tutorial support offers an opportunity for open and distance learning tutors to talk directly to their learners:

- to introduce sections of the course;
- to provide help with difficult concepts and ideas;
- to give advice and guidance on how to approach assignments and practical work;
- to offer generalised feedback on the work that learners have been doing;
- to motivate and encourage;
- to provide help with study skills; and
- to compensate for the isolation of the distance learner.

Supplementary material can bring learners a range of experiences that are difficult or impossible to communicate through print or face-to-face contact, including the following:

- voices of national leaders;
- views of people with particular experience and expertise;
- argument and debate on key issues, to stimulate discussion and encourage learners to form their own opinions;
- documentary and drama, through which learners can be transported to real-life or imaginary situations;
- resource material on which they can work; and
- opportunities to apply knowledge and skills and to explore values and attitudes.

The advantages of supplementary materials is that they

- are attractive to learners;
- add a more ‘human’ dimension to learning activities;
- add variety to experience of learning; and
- relieve the potential tedium of working only with print.

Discussion: Use the following questions to explore the aims and objectives of your own and your participants’ programmes:

- What general aims and specific objectives might audio serve for a particular course? What exactly do we want to achieve through the use of audio? How could the medium be used most effectively for the target audience?
- What sort of balance should be struck between tutorial support and supplementary material?
- Can a policy statement be formulated on the use of audio, to be of practical help to those involved in the planning and development of the audio component of a course?

Content and structure

Key questions here are:

- How will the audio material relate to the learners’ work on the printed units?
- What role are the audio materials expected to play in face-to-face contact sessions?

Discussion: Prompt discussion about content and structure with the following questions:

- What subject matter or topics will the programmes deal with?
- In what order should they be presented to the learners?
- How will the audio programmes relate to the printed materials for the course? Should there also be a link between audio and the face-to-face sessions?
- Will audio time be allocated on a roughly equal basis between the modules; for example, 30 minutes of audio per module (that is, three sixty-minute duration cassettes) for the course? Or should the available time be concentrated on particular parts or aspects of the course?
- Is it possible to draw up a ‘series outline’ for the audio, which indicates the main topics to be covered, the order in

which they will be dealt with, and their relationship to other parts of the course?

Form and format

‘Form’ can be defined as a particular type of audio material, including:

- scripted talks;
- unscripted interviews and discussions;
- actuality and commentary;
- archive material;
- music; and
- scripted and improvised drama or simulation.

These forms

- can be presented as they stand; or
- can be combined, for example, in a documentary or ‘magazine’ format or as drama with narration, tutorial commentary, or both.

‘Format’ can be defined as the way in which various forms can be combined in audio presentation.

Even at an early stage it is necessary to think in general terms about the type of programmes that are likely to be needed, since they have important implications for

- resource requirements (human, technical, and financial); and
- the time scales involved and scheduling.

Discussion: Prompt discussion about form and format with the following questions:

- What types of audio material, in terms of form and format, is the project likely to require?
- What resources will be needed to develop and produce this material: human, technical, or financial?
- How long will the process take? What should be the relationship between the schedule for audio and that for print?
- Given the resources and time available to the project, are the emerging plans for audio realistic? Or do they need to be modified to take account of what is practically possible?

Support material

A good deal of evidence suggests that the effectiveness of audio cassette materials can be substantially increased by combining them with specially prepared and carefully integrated print materials. This integration can promote the active involvement of learners in learning from audio. For example:

- *before listening*: to prepare learners for listening;
- *during listening*: to help concentration, promote active listening, and extend the range of subject matter; and
- *after listening*: to reinforce and revise.

3.2 Development and production

The planning and design stage involves working out the main ideas about how to approach the project and defining a framework within which it will operate. The outcome is a 'blueprint' for the development of audio.

The development and production stage involves realising those ideas in the form of a series of audio programmes and associated print materials that can be distributed to learners for use in the course. The outcome is a set of cassettes, with accompanying print materials, that are ready to be sent out to learners.

Three main sets of questions need to be addressed:

- What resources will be needed to develop and produce these materials?
- How can these resources be most effectively organised and managed?
- How long will the process of development and production take?

3.3 Resources

Three main types of resources are required for developing and producing audio and related print materials:

- human;
- technical; and
- financial.

Human resources

You need two main types of people to make good quality audio and print:

- *subject specialists*: people who are knowledgeable and experienced in the subject areas covered by the course. Their roles are to:
 - advise on the content of the programmes and print and text; and
 - contribute to them as writers, presenters, interviewers, panel members for discussions, and so on; and

- *audio production specialists*: people who have knowledge, skills, and experience in the development and production of audio materials and supporting print , especially with reference to education. Their roles are to:
 - work with the subject specialists in the design and development of programmes; and
 - see the audio materials through all the stages of production.

People it is also useful to have access to:

- audio technicians, to assist in the studio recording process;
- graphic designers, to help with the layout of the print materials;
- specialists in developmental testing and formative evaluation; and
- secretarial and administrative support.

Discussion: Prompt discussion about human resources with the following questions:

- What access does the project have to subject specialists within the course team and in the wider open and distance learning community?
- In addition to those who are involved in developing print units, would it also be worth drawing up a list of other distance educators who might have a contribution to make in the realisation of the programmes?
- What access does the project have to educational audio production skills, internally and externally in the immediate region?
- Is there a case for involving producers from outside the organisation in the production process?
- Alternatively, should the project aim to develop in-house production skills through workshops or other means?
- What other skills does the project have access to, for example, in terms of technical support, graphic design, developmental testing, and secretarial and administrative skills? If necessary, can these services be brought in on a part-time basis?
- Are there other ‘human resource’ needs that have not been identified so far?

Technical resources

The main technical resources for an audio project are:

- good quality portable equipment for location recording, including cassette recorders, microphones, leads, and headphones;

- professional or semi-professional fixed equipment for copying from cassette to open-reel tape, for editing open-reel tape, and for producing a master cassette copy from which multiple copies can be made;
- access to a professional audio studio for recording the final version of the programmes;
- access to high-speed high-quality multi-cassette copying equipment; and
- sufficient supplies of consumables for this equipment, including good quality sixty-minute audio cassettes, open reel recording and leader tape, and editing supplies.

Discussion: Prompt discussion about technical resources with the following questions:

- 42What audio equipment does the project possess? Is it in good working order?
- What additional equipment will the project need to acquire? Are there funds available for this purpose?
- What professional studio facilities should the project use? What will they cost?
- Are good quality multi-cassette copying facilities available locally? What does the service cost?
- What volume of ‘consumables’ will the project need? Where are they available from, and at what charge?

Financial resources

Now it should be possible to start developing a budget for the audio component of the project.

On the technical side, estimate:

- the amount of studio time required;
- the volume of multi-copying to be undertaken; and
- the amount of consumables needed for the project.

On the human resource side, estimate:

- whether production will be in-house or contracted out;
- if contracted out, the amount of producer-time required;
- the volume and type of production envisaged;
- whether to pay outside contributors to the programmes; and
- if outside contributors are used, what type of contributions should be paid for and how much.

It may be useful to distinguish between ‘above-line’ and ‘below-line’ costs:

- *below-line costs*: fixed costs that will need to be incurred whether particular programmes are made or not; for example, in-house staff, equipment, and overheads;
- *above-line costs*: variable costs that involve specific expenditures on programmes; for example, studio bookings, contributors’ fees, and travel expenses.

Discussion: Prompt discussion about financial resources with the following questions:

- Given the decisions already made, how far can you go in developing a budget for producing the audio component of the course?
- What costs do you know already? What costs can you estimate? What additional information do you need to complete the budgeting process?
- Are sufficient funds available within the project to allow you to develop and produce the audio in the way currently envisaged? Or will you need to modify your plans to match the financial resources that are available?

3.4 Management

Some sort of ‘course team’ will likely be responsible for developing the learning materials. A course team is a group of people working together to plan, design, develop, and produce learning materials.

One or two of the people from the course team should take on specific professional or managerial responsibilities for the development and production of the audio and print components.

Ideally the person or persons in charge should be generally familiar with open and distance learning and have professional experience and expertise in the production of audio for education. If two people were allocated to this task, one could focus specifically on audio production and the other on the print materials.

The main functions that need to be covered in this area are:

- overall, co-ordinating and managing the development and production of audio material and print;
- initiating, supporting, and supervising all aspects of the audio production process and associated print production;
- assuring ‘quality’ in the production of audio and print materials, both in a professional or technical sense and in terms of their educational effectiveness;
- reporting to the course team on the progress of the audio; and
- ensuring the integration of the audio with the development and production of the print materials.

Discussion: Prompt discussion about management with the following questions:

- Who should take on the main responsibility for the co-ordination and management of the audio component of the course?
- Is there a case for sharing the responsibilities in this area between two people, with one concentrating on audio, and the other on the print? If so, can you identify two such people?

3.5 Scheduling

Scheduling is a difficult area in which to generalise. It depends on

- the type of programmes that are being produced;
- the context in which production is taking place;
- the resources and facilities available to the producer; and
- the producer's involvement, energy, and experience.

One general rule: The process of producing audio materials tends to take longer — and sometimes considerably longer — than optimistic planners anticipate.

One way of approaching scheduling is:

- to identify the sequence of tasks that a producer needs to accomplish to develop and produce an audio programme and print; and then
- to make a rough estimate of how long each task is likely to take; and
- to build in a reasonable allowance for contingencies.

Scheduling Time Estimates for Audio Production

| Task | Description | Time estimate |
|------------------------------|--|--------------------|
| Planning | Finalising the programme outline, including making final decisions on aims and objectives, content and structure, and support material | Half a working day |
| Research | Consulting, identifying, and selecting key contributors and suitable materials for the programme, including writers, interviewers, panel members for discussions, and actuality and archive material | One day |
| Commissioning and collecting | Approaching, contracting, and briefing key contributors; pre-recording and assembling material for programme use | Two working days |

| | | |
|--------------------------------|---|-------------------------|
| Compiling | Selecting, editing, and ordering pre-recorded materials | One to two days |
| Scripting and support material | Drafting the studio presentation script and preparing draft support material to accompany the programme | One to two working days |
| Studio script | Finalising the studio script and support material; duplicating and distributing to those involved in programme, including presenter, contributors, and technician | Half a day |
| Rehearsal and recording | Assembling the final programme in the studio | Half a day |
| Post-production editing | If necessary, modifying the final programme and support material in terms of content, length, or both | Half a day |
| Scrutiny and approval | Submitting the final recorded programme and support material to the course team for information and approval | Hour or two? |
| Copying and packaging | Arranging multi-copying of cassettes from a master tape, labelling, and storing, ready for distribution | Hour or two? |

Roughly between seven and nine working days are needed for one programme plus printed support.

Not all programmes will take the same amount of time:

- a simple 15-minute talk will be quicker to produce than a complex 30-minute documentary;
- experienced producers will work faster than new ones;
- working time is usually spread over a longer period as producers will typically be working on a number of programmes simultaneously; and
- it is wise to add on extra time for unexpected contingencies and developmental testing.

What this means is that

- for fairly simple 15 to 30 minute programmes, with straightforward support material, you should probably allow one producer-week per programme; and
- for more complex programmes requiring a good deal of location recording and tape editing, you should probably allow at least two working weeks per programme.

Very roughly, therefore, if

- a course is producing three sixty-minute cassettes (180 minutes);

- you made one 30-minute programme per module; and
- half were ‘simple’ and half ‘complex’,

then you would need to allow at least nine producer-weeks for production.

As a rough guide, you need to assume that you need about 13 or 14 weeks of a producer’s working time to produce three hours’ worth of good quality audio, with well integrated print materials.

To be on the safe side and to cover unforeseen events, including sickness, family commitments, and equipment breakdown, add another week or two, bringing the total to 15 or 16 weeks, or nearly four months.

In the actual scheduling, two dates are key:

- the date on which you want to distribute the materials to learners (work backwards from that date); and
- the date on which the first draft of print materials that audio is supplementing has been completed (this date is the earliest start date for audio production).

Discussion: A scheduling checklist would include the following questions:

- How long do you think it will take to develop and produce the audio programmes and the printed support material needed for the course?
- What is the latest date by which you need to start development and production?
- What is the earliest date by which it will be possible to start development and production?
- Can you now develop a joint schedule that will combine and integrate the development and production of the main print units for the course, and the audio materials and accompanying print?

3.6 Distribution

The assumption being made is that the audio programmes are to be distributed in the form of cassettes rather than via broadcast (that is, radio). The relative advantages of cassettes and radio broadcasts are set out elsewhere in this kit (see Topic 4, Media characteristics).

The questions here are practical ones:

- How can we get the audio material and accompanying print to learners who are registered on the course?
- How can we get it to them in a form that will be attractive, inviting, and easy to use?

We can explore the questions further, in terms of

- packaging; and
- actual distribution or dispatch.

Packaging

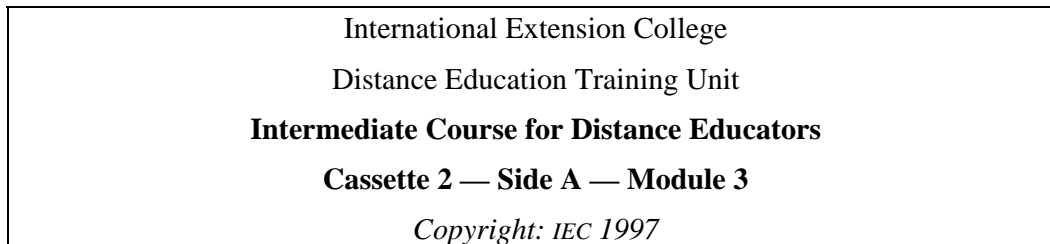
Clear labelling of cassettes is important

- for the image of the institution;
- for the convenience of learners; and
- to make it possible to refer simply and unambiguously to the tape in the printed materials.

The labels need to include

- the name of the providing institution;
- the name of the course;
- the number of the cassette; and
- the part of the course to which it relates.

Sample Audio Cassette Label



Packaging can consist of

- clear plastic boxes;
- inlay cards; or
- some sort of plastic wallet or container to store the cassettes.

Money spent on this sort of packaging will save money on replacement tapes in the long run.

Dispatch

In countries where the postal service is reliable, open and distance learning materials are usually dispatched by mail.

Where the postal service is less reliable, a number of alternative means are used:

- private carriers;

- local bus services; and
- learner collection through local centres.

If local centres are used, there are additional advantages:

- induction sessions can be held face-to-face;
- basic study skills can be offered;
- baseline data can be collected on learners; and
- administrative functions such as registration can be carried out.

Discussion: Prompt discussion about physical production and dispatch with the following questions:

- How will the cassettes be labelled?
- How will they be packaged?
- How will they be dispatched to learners?

3.7 Utilisation

Will the audio material be used by groups or by individuals?

The decision will be guided by

- learners' access to cassette players and sources of power;
- pedagogic considerations, related to the sort of learning experiences the course team wants to stimulate through the use of audio;
- cost implications, in terms of the number of cassettes to be produced and distributed; and
- the possible need for training tutors or group leaders in the use of audio materials.

Individual use

The advantages of having individuals use the audio cassettes are that individual use:

- makes possible integrating very closely the use of audio with the learner's work on the main text. Learners can move freely and at their own pace from work on the text to work on related audio and back to the text;
- makes possible a highly learner-active approach, since learners can control the tape, undertake individual study activities related to what they hear, and listen when, where, how, and as often as they like; and
- exploits the essentially 'personal' qualities of audio material.

Group-based use

The advantages of having groups use the audio cassettes are that:

- learners follow up listening by group discussion and other group-based study activities;
- group listening provides an opportunity to share reactions to the programme, share information and experience, and learn from each other; and
- groups can be tutor-led or peer-support with leader chosen from among group.

Group leaders will need training, also support materials such as the handbook linked to audio materials.

Discussion: Prompt discussion about how the material will be used with the following questions:

- What access are learners likely to have to audio cassette players? Will they have individual access at home? Will some learners need access through study centres?
- What opportunities will be available to learners for face-to-face group meetings linked to the course? Where will these take place? Are such facilities likely to have audio cassette players or will they need to be provided? Is there a budget for this?
- Should the audio programmes be designed for individual listening or for group-based use? What are the pedagogical and practical arguments that need to be considered here?
- What would be the implications of the individual versus group decision in terms of the number of cassettes to be produced, the support materials required, and the need for tutor or group leader training?
- Is there a case for exploring the possibility of producing dual-purpose programmes? What would be the advantages of this? What would be the drawbacks?

3.8 Monitoring and evaluation

Monitoring and evaluation in open and distance learning tend to focus on the quality of materials and their effectiveness in terms of learning outcomes. Here a broader approach is suggested, focusing on

- the learner services that support the materials;
- the materials themselves; and
- the processes through which the materials were developed and produced.

Evaluation is seen not as a one-off event conducted by specialist researchers but as a continuous process undertaken by all those involved:

- senior people at management level;

- writers;
- producers;
- local tutors and co-ordinators; and
- learners.

Planning and design

In the working relationship between subject specialists and media specialists, tension can arise because of different professional interests and perspectives can be harnessed positively by:

- recruiting as media producers people with appropriate academic background;
- training staff in skills of media production;
- involving people with audio expertise at the earliest stage of planning and design;
- evolving broad agreement on areas of responsibility in planning and design, including content and form or format; and
- monitoring, evaluating, and improving process on an ongoing basis.

Development and production testing

It is essential, particularly for the early programmes in a series, that they be developmentally tested with a representative sample of the target audience. During testing, ask the questions in the following checklist.

Development and Production Testing Checklist

- | |
|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> How do learners react to the programmes and their accompanying material? <input type="checkbox"/> What do they like about them? What do they dislike? <input type="checkbox"/> Is the technical quality satisfactory? Can they hear the programmes clearly? Is the print material easy to follow? <input type="checkbox"/> How useful do they find the materials as part of their overall study programme? <input type="checkbox"/> Is the audio and its accompanying print well integrated? How well does the audio fit in with the main print materials? <input type="checkbox"/> How effective is the material in achieving its educational objectives? <input type="checkbox"/> How could it be improved? |
|--|

Distribution testing

The main object of monitoring the distribution is to check that the right materials get to the right learners in good time for them to begin their studies. When testing distribution, ask the questions in the following checklist.

Distribution Testing Checklist

- ❑ How efficient and effective is the system of distribution?
- ❑ What problems were encountered?
- ❑ How could they have been avoided?
- ❑ If different distribution methods were used in different areas, how did they compare?
- ❑ Which type of system seems to be the most efficient and economic?
- ❑ How could the distribution system be improved?

Utilisation testing

In the case of individual use, the questions that need to be asked are essentially those suggested earlier in the discussion of the developmental testing and formative evaluation of the audio materials.

In the case of group-based use, these questions will still be relevant, but additional questions will need to be asked about the context in which the programmes are used, as in the following checklist.

Utilisation Testing Checklist

- ❑ How easy is it for learners to attend the group-based sessions? What proportion of learners attend? Is attendance regular, or is there significant drop-out? Why?
- ❑ Is the organisation and administration of the group meetings satisfactory? Were the necessary materials and equipment available? Could everyone hear the programmes clearly? Was the physical arrangement and atmosphere conducive to effective learning?
- ❑ How useful do learners find this type of group-based learning? Is there evidence that they value and benefit from the opportunities of sharing and exchanging information, ideas, and experience? Do learners in fact seem to learn from each other?
- ❑ What role do the tutors or group leaders play in the learning experience? Are they well-prepared? Do they facilitate and support the distance learning materials? Or do the sessions move toward conventional classroom teaching? Has the training for tutors and group leaders been adequate and appropriate? How might it be improved? Do the tutors or group leaders themselves have adequate support and supervision?
- ❑ How far do these answers go in informing the decision about whether audio should be used on an individual basis or in groups? Is there a case for further exploration in this area?

Monitoring and evaluation

In addition, the process of monitoring and evaluation itself needs to be monitored and evaluated by asking the questions in the following checklist.

Monitoring and Evaluation Testing Checklist

- Is the process producing the sort of information the course team needs?
- Is it being presented in a useful form?
- Is it available at a time when it can be acted upon?
- Or does it come too late for effective action?
- How can the system be improved?

Discussion: Prompt discussion about monitoring and evaluation with the following questions:

- How should we monitor and evaluate our own performance in the planning and design of the audio component for the course?
- What procedures need to be designed to monitor and evaluate the development and production process for audio? How can we encourage and maximise academic credibility, educational effectiveness, and high professional standards in audio production? What can we do to promote efficiency?
- How can we monitor and evaluate the distribution process for audio and accompanying print? Is there a way in which we could compare the efficiency and effectiveness of different distribution methods?
- What methods can we devise to monitor and evaluate the use of audio by learners following the course, either individually or in group situations? How can we measure the effectiveness of the medium, and find out how it can be improved?

More generally:

- Who would be involved in the monitoring and evaluation of the audio component? Can we allocate specific responsibilities to particular people? Should someone be appointed to take overall co-ordinating responsibility for this area?
- How should the findings of the monitoring and evaluation activity be communicated to staff? How can we ensure that

the right people get the right information in the right form at the right time?

- How can the monitoring and evaluation of audio be integrated into the more general processes of evaluation for the course as a whole?
- How can we monitor and evaluate the evaluation process? How can we ensure that it is serving the needs of those involved in developing the course and those who will be following it?

4. Practice exercise

4.1 Preparing a planning document

Instructions: Ask participants, either individually or in teams or pairs as appropriate, to prepare a detailed planning document for the design and development of audio materials and supporting print materials for some course of their choosing. This document should serve a number of functions:

- It should incorporate the main decisions reached on the key questions and issues raised in this section of the kit, and outline the general approach being adopted to the design, development, production, distribution, and proposed use for audio and its accompanying print within the course.
- It should pay particular attention to the relationship between the planning process for audio and related materials, and that for the development and production of the main printed components of the course.
- It should identify key personnel who will take overall responsibility for developing audio and accompanying print materials; outline any training that these people may require if they are in-house personnel; indicate the sources of personnel if they are being contracted from other organisations, or all of the above.
- It should include a preliminary costing estimate for the human, technical, and financial resources that will be required for the project.
- Finally, it should include a preliminary schedule for the planning, development, and production of the materials.

The questions that are interspersed throughout this section of the kit will serve as useful guidelines and checklists for participants as they work their way through this exercise.

Timeframe: One to two days, depending on complexity of task assigned. The exercise can be carried out as the discussion of this topic goes along, point by point, if desired.

Materials: This kit.

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The Commonwealth of Learning IRC

Glossary of Open and Distance Learning

Access centres: see **learning centres**.

Accountability: holding operating personnel responsible for the estimated costs in their budgets and for expenditures.

Accounts payable: the money you owe to providers of services or products.

Accounts receivable: the money owed to you for services rendered or products sold.

Action verbs: in writing learning objectives, verbs that state expectations of learner behaviour as an action to be performed, which learners and teachers can evaluate as having been performed.

Activities approach: a way of designing learning materials that provides a series of activities to help learners master content, on the assumption that learners will only learn if they actively engage with the material presented.

Administrator: the person who carries out administrative duties on behalf of the development team, liaises with contract writers, assists with copyright clearance, compiles readings and illustrations, ensures production schedules are met, and controls the day-to-day progress of the course.

Adult education: teaching and learning that emphasises the principles of adult learning, often known as **andragogy**, as compared to **pedagogy**, or child-centred learning.

Advance organisers: paragraphs at the beginning of a unit or lesson that are intended to remind learners of what they have already learned, to connect it with what they will learn in this lesson.

Affective domain: in teaching and learning contexts, the domain field of activities relating to feelings or emotions.

Aim: in the context of teaching and learning, a broad, general statement of either what the learner might learn or what the teacher will do.

Analysis: a level of learning that involves breaking down material into its meaningful parts so that the relationship among the parts can be determined.

Analytical approach: an approach to designing a curriculum, for example, which examines the components of that curriculum — such as the learning objectives, key concepts, or the competencies that are desired as outcomes — and organises the curriculum around them.

Ancillary operations: activities that fall outside the core activities of an organisation.

Andragogy: see **adult education**.

Application: a level of learning that involves using knowledge in concrete situations.

Apportioning: the act of assigning fractions of the cost of a shared facility or service to cost centres.

Assessment: the measurement of a learner's performance in terms of knowledge, skills, and attitudes.

Asynchronous: see **networked learning**.

Audio conference: a technological arrangement in which telephones or speakerphones are connected so that people in three or more places can talk to one another.

Audiographic conference: a technological arrangement in which audio conferencing is supplemented by devices that send text or still pictures, such as computers, electronic whiteboards, graphics tablets, and light pens for writing to computer screens, tablets, and whiteboards.

Basic education: the provision of teaching and learning opportunities that enable learners to obtain primary-level skills in reading, writing, and numeracy, so that they can participate fully in society.

Behavioural objectives: learning objectives that indicate the expected changes of behaviour in learners who complete a course of instruction.

Bimodal institution: see **dual-mode institution**.

Broadcast: any transmitted radio or television programme.

Budgeting: a process consisting of a series of steps by which estimates of revenue and expenses and related statistical data are used to compile a plan for expenditure for the next financial period.

Bulletin board system: a small computer system that allows members to exchange messages, maintain discussion groups, and download software.

Cable feed: broadcast material sent via a fixed cable or a community antenna.

Capital budget: money set aside on a recurring basis to meet capital expenditure.

Capital cost: expenditure on the acquisition of fixed assets (land, buildings, machinery, equipment), in which the expenditure is intended to benefit more than one accounting period.

CD-ROM (compact disc–read only memory): a disc that can store a large amount of text, audio, video, and graphic information; a computer needs a special drive and software to display these materials.

Cloze test: a test of reading and comprehension skill that involves the insertion or deletion of appropriate words in a text.

Co-production: the joint production of a course or courses by two or more institutions.

Cognitive domain: in the context of teaching and learning, the domain of learning activities that relate to perceiving the world and knowing about it or understanding it; this domain contains six levels: knowledge, comprehension, application, analysis, synthesis, and evaluation.

Comprehension: a level of learning that involves grasping the meaning of material or restating previously learned material in one's own words.

Computer-assisted learning (CAL): a learning method that uses a computer system to present individualised instructional material.

Computer-based learning (CBL): a generic term for the various kinds of stand-alone (that is, non-networked) learning applications that involve computer software.

Computer conferencing: the use of a central computer to receive, hold, and distribute messages among participants' computers.

Computer-marked assignments: assignments that are scored by computer using optical scanners.

Computer-mediated communication (CMC): in the context of teaching and learning, the use of electronic mail, computer conferencing, and the World Wide Web to deliver learning material and provide learners and teachers with opportunities for interaction; learning via CMC is also called '**networked learning**'.

Condition statements: parts of a learning objective that describe the conditions under which the performance required is to take place, such as 'without supervision' or 'using a calculator'.

Consortium: an arrangement involving a number of organisations in formal partnership, with joint allocation of resources and sometimes an independent managing agent; for example, open and distance learning institutions that set up formal agreements may involve co-production of elements of a course, complete joint course production, joint learner enrolments, or cross accreditation and credit transfer.

Constructivist: frameworks for learning in which learners and teachers work together to construct meanings, rather than having these meanings pre-determined or prescribed in advance for the learner by the teacher.

Continuing education: education that is usually not for credit, but which can be delivered on campus or at a distance.

Copyright: a set of rights granted to an author under the national law on copyright.

Correspondence education: education that relies on print-based, self-study materials with communication through postal services.

Cost: the amount of actual or notional expenditure of money incurred on, or attributed to, a specific object or activity.

Cost-benefit analysis: a systematic comparison of the cost of carrying out the project, with the value of the resulting service, resource, information, or product to any of a possible range of beneficiaries.

Cost centres: the locations, functions, items of equipment, or departments to which costs are attributed; for example, a particular degree programme may be identified as a cost centre within an institution.

Cost unit: a measured amount of a product or service used for the expression of the costs of that product or service.

Counselling: the provision of personal and emotional support to learners.

Course blueprint: a course planning document, containing details of the content, components, and costing of a course that is proposed for development.

Course transfer: the sale, lease, or gift to one institution of a course produced by another institution.

Course writer: the person on the course team who possesses both expertise in the subject matter of the course and the ability to write in a way that communicates effectively with learners at a distance.

Criterion-referenced assessment: the evaluation of a learner's performance in relation to a given standard rather than in relation to the performance of a reference group.

Curriculum: the total structure of knowledge and skills and educational experiences that make up any one educational system or its component parts.

Curriculum planning: the global term applied to any systematic process intended to develop the structure of a **curriculum**.

Database: a collection of data fundamental to an operation, organised in some pre-defined structure; typically held on computer.

Deep learning: an intention on the part of the learner to develop his or her understanding and to challenge ideas; contrast **surface learning**.

Desktop publishing (DTP): the production of printed text using a 'desktop' or personal computer system.

Developmental testing: trying out materials with learners in the hope of developing or improving those materials for the benefit of other or future learners.

Digital: information stored in the form of 0s and 1s; digital information may include video, audio, graphics, and text.

Direct cost: a cost that can be identified with a particular product or service and not with others; these normally comprise the cost of materials, labour, and of expenses directly incurred on the product or service.

Discounted cash flow: the return desired at some time in the future for a payment made now.

Dispatcher: the person who bears responsibility for dispatching materials to the learner in a timely fashion, maintaining inventory and warehousing, and keeping records.

Distance teaching: a term that emphasises the teacher's role in the distance education system.

Distributed learning: a term that emphasises learning rather than the technology used or the separation between teacher and learner; distributed learning makes learning possible beyond the classroom and, when combined with classroom modes, becomes **flexible learning**.

Dual-mode institution: also called **bimodal**; an institution that offers learning opportunities in two modes: one using traditional classroom-based methods, the other using distance methods; the same courses may be offered in both modes, with common examinations, but the two types of learner — on-campus and external — are regarded as distinct.

Editor: the person on the course team who bears responsibility for the clarity and accuracy of the language and the textual presentation of the materials, much as in a traditional publishing house.

Effectiveness: the ability to achieve the objectives set for a project or programme.

Electronic mail (e-mail): the exchange of information from one computer to another using software that is designed to store and forward messages received or sent.

Evaluation: a level of learning that involves judging the value of the material with reference to a specific set of criteria.

External studies: instruction that takes place somewhere other than a central campus, such as a classroom remote from campus, and that includes a variety of delivery options, including home-study and telecommunications.

Feedback: in the context of teaching and learning, the response to or comment on a learner's performance that the learner can use to understand more clearly and improve his or her performance.

Field trials: also called **pilots**; a method of developmental testing learning materials that uses relatively large numbers of learners (20 to 30) in circumstances as similar as possible to those in which eventual learners will work.

Financial year: the year over which costs are measured.

Fixed costs: operating costs that are unaffected by variations in volumes of output; this does not mean that they do not vary over time in response to other cost factors (for example, price increases).

Flexible learning: a term that emphasises the creation of environments for learning that have the following characteristics: convergence of open and distance learning methods, media, and classroom strategies; learner-centred philosophy; recognition of diversity in learning styles and in learners' needs; recognition of the importance of equity in curriculum and pedagogy; use of a variety of learning resources and media; fostering of lifelong learning habits and skills in learners and staff.

Fog index: an index of readability based on a formula that involves the average number of words in a sentence and the average number of syllables per word; basically, the longer the words and the sentences, the 'foggier' or less readable the text.

Formal assessment: the evaluation of learning that is carried out using scheduled assignments or examinations, on which the learner's performance is graded.

Formative assessment: the evaluation of learning that is carried out as the learning activities progress; contrast **summative assessment**, which takes place upon completion of the activities.

Formative evaluation: the assessment of learning that occurs as a project or course is in progress, with the aim of identifying problems and addressing them immediately; contrast **summative evaluation**.

Free-standing institution: see **single-mode institution**.

Full absorption costing: a method of costing used for some purposes — for example, to support pricing decisions and to derive performance measures — but not required for other purposes, as when one is looking at the effect of changes in the volume of output; ask the question, ‘Am I looking at costs as they are now (full absorption costing) or am I seeking to examine the effect on costs of profitability of a change in volume costs (marginal costing)’?

Graphic devices: items in a text design that are used to emphasise a point, direct the reader’s attention, highlight the relationship between ideas, or provide learners with cues as to the activity in which they should be engaged; for example, tables, charts, symbols, shading, borders, textures, and different fonts.

Handbooks: the part of the learning materials package that provides information to learners about other materials (for example, video cassettes) that have been purchased or leased from another institution but that need some explanatory notes so that they fit into the context of the user institution.

Home study: a mode of learning that does not require the learner to leave home in order to study.

House style: a set of guidelines to writers, editors, and visual designers that specify the typefaces to be used; type size; length of lines; size of margins; use of bold, italic, and other variants of the typefaces; treatment of headings, subheadings, footnotes, and so on; position of illustrations and captions in relation to the text; and editing and reference style.

Hypertext mark-up language (HTML): the protocol used to create documents for publication and distribution on the World Wide Web; HTML consists of tags, added to text documents, which format and create links to other WWW resources.

Icon: a visual symbol that resembles the thing it represents, used in learning materials as a signpost or indication to learners that they are to undertake a particular activity; for example, a stylised pencil might be used to indicate to learners that they are to write the answer to a question, or a stylised book might indicate they are to turn to the reading indicated.

Incremental cost: the additional cost arising from an increase in more than one unit of output.

Independent study: a mode of learning in which learners work through their study materials independently of other learners.

Indirect cost: a cost that cannot be identified with any particular product or service, but must be shared over a number of products or services because it is common to or jointly incurred by them.

Informal assessment: assessment of learning that is carried out using discussion with tutors or peers, self-tests, and so on, in which the learner’s performance may be noted but not formally graded.

Information highway: a term developed as a way of describing the joining together of once-separate telephone and television technologies and computing systems into a single global network of networks.

Instructional design: see **instructional development**.

Instructional designer: the person on the course team who understands research in open and distance learning and adult pedagogy, is the collector of wisdom and successful techniques in open and distance learning, and is able to apply this knowledge to the course in question without clashing with the course writer or writers.

Instructional development: also known as **instructional design**; a process of designing instruction in a way that enables learners to learn effectively.

Interaction: two-way communication between tutor and learner, between learners, and between learners and the learning materials.

Interactive radio instruction (IRI): a system of educational radio broadcasts, intended for reinforcing learning in classroom settings, which contain instructions to teachers and learners to engage in some activity related to the broadcast and to actively respond to what they are hearing.

Interactive television: television broadcasts that are combined with some form of telecommunications link to enable viewers to respond to what they are watching.

Interactive textbooks: course books that are created anew, from the ground up, using a dialogue approach that incorporates a great many activities in which the learner may engage.

Interactivity: the ability for the learner to respond in some way to the learning material and obtain feedback on the response; there are two kinds of interactivity: (1) *learning material interactivity*, involving the learners' interaction with the medium, the level, and the immediacy of feedback the medium itself provides, and the extent to which the medium will accommodate learners' own input and direction; and (2) *social interactivity*, the extent to which learners interact with teachers and with each other via a given medium.

Internet: the worldwide collection of computer networks that use a common communications protocol and addressing scheme to share resources with one another; owned by no one, it is maintained collectively by the individual national, regional, commercial, and institutional networks that make up the Internet; it is a learning, information, and business tool.

Intuitive approach: a way of designing curriculum, for example, which relies on one's own experience of and feelings toward the subject, and hence is relatively informal, unstructured, and non-systematic.

Inventory: the stock kept on hand.

ISDN cable: Integrated Services Digital Network cable, allows linkage for video conferencing.

Knowledge: a level of learning activities that involves recalling previously learned material.

Learner-centred education: an educational philosophy in which the integrity and freedom of the individual is primary; therefore, the teaching and learning process provides flexible sequences of study, negotiated objectives and content, negotiated learning methods, negotiated methods of assessment, and a choice of support mechanisms.

Learning centres: sometimes called **access centres** or **regional centres**; offices or buildings maintained by open and distance learning programmes in order to provide localised delivery of learning materials and support to learners.

Lifelong learning: a philosophical concept in which learning is viewed as a long-term process beginning at birth and lasting throughout life; a conceptual framework within which the learning needs of people of all ages and educational and occupational levels may be met, regardless of their circumstances.

Listserv: an e-mail system that automatically sends messages to all subscribers on specific mailing lists, especially interest groups.

Marginal cost: the additional cost of an increase of one unit of output (for example, one additional open and distance learning centre).

Marginal costing: see **full absorption costing**.

Market elasticity: the extent to which the price of a product can be increased without reducing the market for the product.

Media designer: sometimes called the **visual designer**; the person on the course team who bears responsibility for the illustrations, page layout, formatting, and integration of print with other media.

Mediated education: see **technology-based education**.

Merger: the creation of a new entity out of previously independent entities.

Mixed mode institution: an institution that offers learners a wide choice of modes of study, including independent, group-based, face-to-face, mediated, or some combination; mixed mode institutions maximise the flexibility of place and pace of study, and are the result of the convergence of face-to-face and distance modes of study.

Multimedia: learning technologies that involve the whole range of audio, visual, text, and graphics media available, integrated into a package that has been effectively designed from an instructional point of view.

Needs analysis: a process for identifying the learning and training needs of a particular group or population.

Networked learning: a type of learning in which learners and instructors use computers to exchange messages, engage in dialogue, and access resources; the interaction can occur in real-time (**synchronously**) when learners and instructors are communicating at the same time from different places, or in delayed-time (**asynchronously**) when they are not linked at the same time.

Networking: the process of creating, expanding, and maintaining relationships with other agencies.

Non-formal education: education that takes place outside the formal education system on either a regular or an intermittent basis.

Non-recurrent costs: see **one-time costs**.

Norm-referenced assessment: assessment of learning that is based on the learner's performance in a given area in relation to that of some norm or reference group.

Objective: in the context of teaching and learning, a specific statement about what the learner will be able to do when a learning activity is complete, the conditions under which learners will demonstrate their competency, and the way in which this competency will be measured.

Objective assessment: evaluation that is designed as far as possible to exclude the learner's subjectivity; grading is done by presenting a number of factual questions to be answered by one word or a check mark instead of using verbal expression and the organisation of material, requiring a minimum of judgment on the part of the marker.

One-time costs: also called **non-recurrent** costs; costs that do not recur year after year; for example, equipment purchases.

Open access: a way of providing learning opportunities that implies a lack of formal entry requirements, prerequisite credentials, or an entrance examination.

Open and distance learning: a way of providing learning opportunities that is characterised by the separation of teacher and learner in time or place, or both time and place; learning that is certified in some way by an institution or agency; the use of a variety of media, including print and electronic; two-way communications that allow learners and tutors to interact; the possibility of occasional face-to-face meetings; and a specialised division of labour in the production and delivery of courses.

Open learning: an educational philosophy that also emphasises giving learners choices about media, place of study, pace of study, support mechanisms, and entry and exit points.

Operating cost: see **revenue cost**.

Opportunity costs: the notional costs, difficult to quantify, of undertaking one activity rather than another; for example, the project team and other staff involved, as well as materials and equipment, could all have been used in different ways to benefit the institution during the project period.

Overhead cost: the sum of all the indirect costs of a cost centre or cost unit; for example, the cost of a shared telephone exchange, central computer, and utilities.

Pay-back period of return: the length of time it will take to pay back the original investment of staff salaries and other costs.

Pedagogy: child-centred learning.

Peer assessment: a type of assessment of one learner's performance carried on by other learners.

Performance: the part of a learning objective that states what the learner should be able to do as an outcome of a learning process.

Performance indicators: measures for assessing the quantitative performance of a system.

Period of account: the period of time over which costs are measured.

Pilots: see **field trials**.

Post-tests: tests given to learners after they complete a lesson, module, or course, to assess what they have learned; contrast **pre-test**.

Pre-tests: tests given to learners before they begin a lesson, module, or course; they serve two purposes: to check that the learner has the necessary prior knowledge, skills, and perhaps attitudes to undertake the course; and to compare the results obtained with those obtained in subsequent post-tests to establish how much the learner has learned; contrast **post-test**.

Printer: the person who oversees the physical reproduction of learning materials, including collating, binding, and packaging.

Printing: the actual manufacture of printed distance learning materials; the industrial process or processes required to put the production manager's requirements into their final physical form.

Process costing: a method of costing by which expenditures are accumulated into costs of production and allocated to units of the product.

Production: the overall process of taking a manuscript and managing it through to printed, finished copies.

Project costing: a method of costing used when the manufacturing process is not continuous, but is a series of large, special-order contracts.

Psychomotor domain: in the context of teaching and learning, the domain of learning activities that deal with learning physical skills; normally associated with vocational training.

Quality: the fitness for purpose of a product or service according to a set of required standards.

Quality assurance (QA): an approach to organising work that: ensures the institution's mission and aims are clear and known to all; ensures the systems through which work will be done are well thought out, foolproof, and communicated to everyone; ensures everyone's responsibilities are clear and understood; defines and documents the institution's sense of 'quality'; sets in place systems to check that everything is working to plan; and when things go wrong — and they will — there are agreed ways of putting them right.

Quantitative analysis: the process of identifying the discrete components of some phenomenon and the relationships that obtain between them, emphasising entities that can be counted or measured.

Rate of return: the percentage return on the investment.

Recurrent costs: costs that recur year after year (or period of account after period of account).

Regional centres: see **learning centres**.

Relevant range: the range of activities within which fixed operating costs are set.

Revenue cost: also called an **operating cost**; expenditure that is expected to benefit only the current period.

Satellite feed: broadcast material sent via a satellite that is orbiting the earth.

Self-assessment: a type of assessment carried on by the learner him or herself.

Self-contained: a course that contains all the subject material as well as the features of self-instructional courses; to produce a self-contained course one writes everything that would be included in a textbook as well as all the activities and so on that would turn it into a tutorial in print.

Self-instruction: a process in which materials take learners step-by-step through an instructional process; self-assessment exercises are a central feature, and instruction can be paper-based or computer-based.

Single-mode institution: an institution that has been set up solely to offer programmes of study at a distance.

Stakeholders: groups or sometimes individuals who have a significant interest in the successful outcome of some initiative or activity; in the case of an educational institution, stakeholders can include funding agencies, employers of those who eventually graduate, the staff of the institution, and existing and potential learners.

Standards: the parts of a learning objective that describe how well the learner will be expected to perform, expressed in terms of accuracy, speed, or quality.

Stepped fixed cost: a cost that varies with the level of activity, but only has a number of possible values, each of which applies over a relevant range.

Study guides: the part of learning materials that are used in conjunction with collections of articles, textbooks, audio cassettes, video cassettes, and broadcast programmes; they are more substantial than handbooks but less labour intensive than interactive textbooks; they are probably the most commonly produced print materials for course packages.

Subjective assessment: evaluation designed to take into account the learner's own thoughts, feelings, and experiences and ability to express them, rather than factual knowledge alone.

Summative assessment: evaluation of learning that takes place on completion of the learning activity or activities.

Summative evaluation: assessment that occurs at the completion of a course or project, which provides a summary account of its effectiveness and the extent to which it met its goals and objectives; contrast **formative evaluation**.

Surface learning: an intention on the part of the learner to memorise information and to follow instructions rather than to understand and challenge; contrast **deep learning**.

Synchronous: see **networked learning**.

Synthesis: a level of learning activities that involves combining parts to form a new whole.

Systems approach: an approach to organising the tasks required to accomplish one's goals, which sets the conditions for proceeding in an orderly way; a systems approach recognises that all the components of the system are interrelated, so that a change in one component will bring about changes in the others.

Task analysis: the process that identifies the skills and knowledge a competent person needs to complete a task to ensure that they are included in the learning process.

Technical or vocational training: training that is designed to prepare technicians, middle management, and other skilled personnel for one or a group of occupations, trades, or jobs.

Technology-based education: in the context of teaching and learning, a system in which a media other than print has a major role.

Telephone tutoring: the use of the telephone for providing academic help to learners, either one-on-one or in groups (see **audio conference**).

Tendering: the process of calling for bids on a project or supply of products or services.

Total cost: the sum of all the costs attributed to some specific object or activity.

Tutor-marked assignments: assignments marked by the learner's tutor.

Tutorial tryouts: a method of developmental testing that involves testing the materials with one learner or a small group of learners.

Tutoring: the provision of academic assistance to learners in two major forms: (1) stand-alone (for example, computer-assisted learning (CAL), and computer-managed learning (CML)) and (2) conferenced (video, audio, or computer).

Two-way instructional radio: radio broadcasts for educational purposes that are combined with some form of telecommunications or that use two-way radio links to enable learners to interact with teachers and other learners.

Variable costs: costs that vary with volume of output.

Variiances: measures of financial performance derived by comparing actual expenses to original budget plans.

Video conference: a technological arrangement in which television monitors, cameras, and microphones are linked so that people in three or more sites can all see, hear, and speak to one another.

Video disc: a disc on which video and audio signals are recorded for television use; a video disc requires a video player compatible with the video disc.

Visual designer: see **media designer**.

World Wide Web (www): a communication protocol of the Internet that deals with text, audio, video, animation, graphics, and colour — anything that a computer programme can produce.

Deakin University

Prepared by:

Jocelyn Calvert

Brief description of the programme

Located in the State of Victoria, Australia, Deakin University is a multi-campus institution with a major commitment to flexible learning delivered through the use of educational and communications technologies. Headquartered in Geelong, the university operates three campuses in Melbourne, two in Geelong, and one in Warrnambool.

Deakin enrolled 30,191 students in its regular programmes in 1996. A further 30,000 students were enrolled through its commercial arm, Deakin Australia, for a total in excess of 60,000 students. Of the regular students, 13,088 or 43 percent were enrolled off-campus. All Deakin Australia students were off-campus students, making Deakin, with a total of more than 43,000 off-campus students, the largest university off-campus provider in Australia.

Problems encountered

Planning and managing distance education

- The major planning and management issue facing the university over the past six years has been how to integrate the academic programmes and approaches to teaching and learning of the three formerly independent degree granting institutions that merged in the period 1990 to 1992 to form the present Deakin University. Two of these institutions had major pre-merger distance education programmes.

Implementing quality assurance

- The university is committed to the principles of quality management and continuous improvement. Implementing these principles involves both the regular evaluation of teaching materials and the assessment of teaching of academic staff, both of which involve seeking student reactions to their course experience. It has proved difficult to distinguish between student reactions to learning materials and to the performance of teaching staff. The distinction is important because the corrective actions that are needed are very different in each case.

Using and integrating media in distance learning

- The development of the World Wide Web allows Deakin to deliver off-campus programmes in new ways. Used well, the Web provides an easy-to-use, cost-effective, flexible, and powerful medium for the delivery of higher education. Its ease of use, however, presents the university with a serious issue. Academic staff

can quickly learn to ‘mount’ Web courses. They are not always, however, well equipped to take best educational advantage of what the Web offers. The issue facing the university is how, on the one hand, to ensure that all Deakin-based Web offerings reflect university standards and policies, while, on the other hand, allowing academic staff to creatively explore the Web for educational purposes.

- Similarly, a broader issue facing the university is how to develop the skills of teaching staff so that they are able to make the best educational use of new educational media. The increasing reliance of the university on resource-based learning methods has fundamentally changed the nature of academic work in the university with considerable implications for the nature of professional development activities.

Instructional design and production for distance learning

A major issue facing the university is how to cost-effectively maintain an up-to-date archive of all its course materials. Over the last two years, staff have been involved in the development of an ‘electronic warehouse’ of materials. The concept is that all materials will be stored digitally, allowing for both easy revision and reproduction in whichever medium is required.

Another important issue is how to allocate scarce educational development resources for maximum benefit. Should the university allocate significant resources to ‘lighthouse’ projects designed to illuminate and illustrate the art of the possible? Or would it be better to allocate resources more widely to projects that make use of mainstream approaches? This issue is unresolved.

Learner support systems

An important challenge is how to foster the effective use of electronic media for teaching and learning. Many staff and students are new to the educational use of e-mail, bulletin boards, and computer conferencing. Their effective use requires the development of new skills and a willingness, in the case of students, to participate.

Part of the process of higher education is the integration of students into a broader, often discipline-based, academic community of students and scholars. The development of such a community is problematic in distance education programmes such as those at Deakin University, which often do not require students to engage in on-campus or face-to-face activities. Deakin’s response has been to use communication technologies to create electronic communities. The members of this community — academic staff, students, academic support staff, and administrative staff — are linked through an integrated, interactive, electronic communication environment known as the *Deakin Interchange*. The Interchange provides users with access to e-mail, computer conferencing, library and administrative databases and services, and Web services through the use of a consistent, menu-driven, ‘point and click’ user interface. Creating a reliable system that is easy to install, use, and upgrade has been a difficult task. The Interchange, however, as its technological manifestations evolve, will increasingly become the mechanism for the creation of virtual communities of the sort that develop spontaneously in campus settings.

The most important issue: Planning and managing a multi-campus, flexible mode university

At the beginning of 1992, Deakin University, with campuses in the regional communities of Geelong and Warrnambool, merged with three campuses of Victoria College in metropolitan Melbourne. Deakin had a strong tradition of distance education while Victoria College was almost exclusively campus-based. The challenge was to bring together the distinct cultures of the two institutions to create a new Deakin University with a common vision that would be in a position to operate effectively in the new national and international environment of higher education. From the distance education perspective, it was important that, at Geelong and Warrnambool, distance education and on-campus education were integrated in a dual mode model, with more than half the students and 38 percent of equivalent full-time load studying at a distance.

The new university determined early that distance education was one of its strengths and should be spread across its campuses. Several strategic decisions were critical to developments: structural integration; course rationalisation; resource-based learning and technology integration; and industry-based and professional programmes.

Structural integration

Deakin University did not adopt a federated model in which the regional and metropolitan campuses would operate with some degree of independence and duplicated services; instead, it opted for full structural integration. In academic terms, seventeen faculties were reduced to five, each with from two to five schools (or departments). While a small number of schools are based predominantly on one campus, the majority of schools and all faculties have staff spread across different campuses. This means that academic decisions pertaining to distance education, at the faculty and school level and in terms of university policy, engage the entire university rather than a traditional interest group. Administrative and academic service divisions of the university are similarly integrated. In some cases, a particular type of operation is based on one campus; for example, the off-campus library service operates from one of the Geelong campuses but draws on the resources of all campus libraries. In other cases, services of a division or branch are available on a number of campuses; for example, Learning Resources Services, which is responsible for the physical development and production of learning materials, has distributed staff and facilities.

Course rationalisation

Flexible learning options for students required an integrated curriculum with common cross-campus courses (programmes of study) and course units. Academic staff in a particular field or discipline, who may have been based on a number of different campuses, were required to review areas of overlap and develop single course structures; for example, several Bachelor of Business and Bachelor of Commerce degree courses became one Bachelor of Commerce taught on three campuses and off-campus. In fields that typically have fewer required units and more options (for example, history) academic staff were encouraged to review the units of the predecessor institutions and create a coherent selection that would be offered across the university.

Resource-based learning and technology integration

Flexible learning, including cross-campus delivery as well as distance education, could best be served by the development of learning resources for use by all students. This approach had its origins in the Deakin University of the late 1970s when the open campus, with on-campus students using off-campus materials, was conceived as transforming teaching and learning for all students and academic staff. Following the mergers, the university's distance education infrastructure, including educational developers and Learning Resources Services, were deployed in developments and redevelopments across the university. At the same time, the university set a policy of technology integration with particular emphasis on information technology and computer communication. In 1995, Deakin was named Australian University of the Year on the basis of its integration of technology into teaching and learning.

Industry-based and professional programmes

Both predecessor institutions had innovative programmes for students outside the regular government funding structures. Victoria College's Technology Management Programme saw students in major industries use laptop computers to access technical (Technical And Further Education) and university courses year round in a self-paced system. Deakin Geelong's Centre for Management Services provided development and delivery services for professional associations on a contract basis, enabling the associations to offer continuing education at a distance. These activities were merged in Deakin Australia, which continues a successful record of providing distance education services to the professions and industry. Some programmes offered through Deakin Australia are accredited by the university. In one case of co-operation, Deakin University and the Association of Professional Engineers, Scientists, and Managers of Australia offer a joint MBA degree in Australia and internationally using Deakin Australia facilities and services.

Summary

The result is a new type of university that is unrecognisable in the terms of its predecessor institutions. The transformation, of course, is not complete, and never will be in this environment of continuous change in higher education. We believe that Deakin University is in a better position than it would have been without such radical restructuring. In our view, essential ingredients for success in such an endeavour are:

- strong leadership, including appropriate rhetoric about the mission of the university;
- a programme of change management that allows all parts of the institution to understand and accept their new roles; and
- serious commitment to professional development to address the changing nature of academic and administrative work.

External Studies at Murdoch University

Prepared by:

Patrick Guiton

Brief description of the programme

Murdoch is a dual mode university where external study is a viable alternative mode of study that is available to all students rather than a substitute mode of study to accommodate the disadvantaged needs of those who cannot get the 'real thing'. Because more than 70 percent of the university's credit offerings are available for study either on- or off-campus, students exercise their choice of mode on a unit-by-unit basis and many study concurrently in both modes.

Problems encountered

Planning and managing distance education

- Maintaining university commitment to a Centre for Off-campus (External) Studies in the face of policies favouring devolution of managerial and financial responsibility to individual schools of study.
- Allocating systematic workload release time for academic staff engaged in the development of a second (distance education) mode of learning resource materials.

Implementing quality assurance

- Involving academic staff in dual mode teaching to adopt the view that assuring a common curriculum regardless of study mode demands flexibility not identity in delivery method or style.
- Establishing a consistent house style across a large range (250 units per annum) of courses despite a relatively small enrolment (average 30 units).
- Gaining acceptance by staff of quality assurance as a standard course design improvement procedure not as a punitive measure.

Using and integrating media in distance education

- Deciding the point at which it may be assumed that a technological innovation (audio or video cassette; personal computer; and e-mail) has become sufficiently widely diffused to justify its use as a compulsory component of course materials.
- Getting to the point at which academic staff involved in dual mode teaching recognise the value to themselves of modifying their face-to-face teaching by integrating the use of guided independent learning resources into the classroom mode.

- Addressing staff development needs associated with integrating new communication technologies into course design.

Instructional design and production

- Justifying the annual update and production of print and audio resource materials for all courses as a means of ensuring parity of curriculum content both ‘on-campus’ and ‘off-campus’.
- Maintaining a course development and production pattern spread throughout the calendar year rather than bunched around the peaks and troughs of the standard academic calendar.
- Developing and disseminating new instructional design techniques for on-line publication.

Learner support systems

- Gresham’s Law of Organisational Life — ‘Work drives out avoidable work regardless of its relative importance’ — translated to the dual mode context, means getting academic staff to give equal attention to the external student’s mailed assignment or telephone call as to the internal student’s knock on the door.
- Providing realistic and consistent support for isolated students in a geographic context that regularly places a student 200 kilometres from the next student and up to 1,000 kilometres from another enrolment in the same unit of study.

The most important issue: Maintaining university commitment

In calling these issues ‘challenges’ rather than ‘problems’, I suggest that all except maintaining university commitment are, in fact, challenges that anyone setting up and running a Centre for Distance Education in a dual mode university will have to deal with if the enterprise is to succeed. Maintaining university commitment is of a different order in that it reflects the influence of broad economic rationalist thinking from beyond the arena of academic policy and university politics. For that reason, it must be the most important issue.

In dealing with all the other challenges, we argue for acceptance of the distance mode as a viable alternative and equivalent mode not as a poor substitute: in short, we claim it as part of the mainstream of university life. When times get tough and resources get short, those whom we have spent our time convincing are tempted to ‘hoist us with our own petard’. If distance education is a mainstream function, it is argued, then why does the university need to spend significant resources maintaining a specialist organisational centre to handle the distance mode and the needs of its students separate from the mainstream university structures provided by the schools and the registry?

In these hard economic times, a highly professional centre for external or off-campus studies in the dual mode system can all too easily become a victim of its own success. But it is evident enough that success in coping with all the other challenges has always depended on the vigilance, persistence, and single-mindedness of professional distance educators working from a visible and well-recognised centre. So a challenge translates into a problem.

Open Access College

Prepared by:

Marg Beagley

Brief description of the programme

The Open Access College (OAC) opened in January 1991, replacing the former South Australian Correspondence School. The college's vision is to 'recognise, value, and celebrate its uniqueness and the diversity of its people. It is an organisation whose business is teaching and learning ... and as its very title suggests, all of its operations will be founded on the core values of access and openness'.

The teaching and learning programme involves interaction with students using a range of technologies, including high-frequency radio, telephone, facsimile, and electronic classroom techniques, as well as through a visiting programme, mini-schools, camps, and school experience weeks.

The college has the responsibility of redressing the educational disadvantage for children which arises from remoteness and isolation. It provides opportunities for students in metropolitan, rural, and remote areas of South Australia to gain access to a broader curriculum.

What is the Open Access College?

The establishment of the Open Access College was a key strategy in the management and co-ordination of the increased demand for distance education in South Australia. The college is a multi-campus organisation consisting of:

- *Three Schools of Distance Education*
 - reception to year 10 (Marden site, metropolitan Adelaide),
 - senior secondary (Marden), and
 - reception to year 12 (Port Augusta site, 300 kilometres by road from the Marden site);
- *Open Access Materials Unit*
 - responsible for refinement, development, and production of open access course materials; and
- *Outreach Education Services*
 - providing educational support for a range of cultural and scientific institutions, for example, the State Zoo, Museum, Botanical Gardens.

Student profile

Students for whom services are provided by the schools of distance education come from the following groups:

- students in government schools and non-government schools;
- remote and isolated students, including some South Australians who are resident or travelling interstate or overseas;
- post-secondary age students, including prisoners, adult re-entry students, and students in full-time vocational courses; and
- special needs students, including medical-based and student behaviour management enrolments.

Problems encountered

Planning and managing distance education

- Although close liaison between course developers and teachers is needed, it is at times difficult due to different tenure of employment.
- Teaching through course packages is supplemented by telephone, radio lessons, or both; teleconferencing; and visits.
- The range of clients at any given year level is very wide, with a high turnover of students, particularly in the reception to year 10 levels. Continuity and short-term enrolments can present difficulties in the management of learning activities.

Implementing quality assurance

- Quality checks are built in at the course development level — writers are selected on merit; reference groups provide feedback at all stages of course development.
- Feedback and liaison between teachers and course developers are vital parts of the writing process.
- Quality checks are built into the materials production process.

Using and integrating media in distance education

- The use of media varies widely — audio and video are considered integral components of course development.
- The use of other media is optional where possible — videoconferencing, teleconferencing, facsimile, Electronic Classroom™, as facilities for students permit.
- Internet resources are being developed as an option for those students with access.

Instructional design and production for distance education

- Principles for course development include teaching and learning methodologies, course structure, and presentation elements.
- Course structure, design, and layout are based on 12 learning principles developed by the Open Access College.
- Course materials are developed on-site at the Open Access College in the Materials Unit; artists, keyboarders, electronic media studio, printing, and distribution facilities are utilised.

Learner support system

- Learners are provided with high-quality course materials for distance education, supported by teacher contact, and electronic learning strategies. Itinerant teachers visit primary students in remote areas.
- Counselling and resource centre services are available from the Marden site to support students in enrolment, personal concerns, and future option decisions.
- Supervisors work with school- and home-based students, particularly primary students and those in remote areas.

The most important issue: Using and integrating media in distance education

While the print medium is central to the delivery of courses through distance education from reception to year 12 levels, the use of other media is rapidly becoming an integrated part of all course development. It is expected that aural and visual media will be used in all courses so that different styles of learning can be addressed.

- Students are provided with audio and video cassettes to provide stimuli for the work that they do alone or with the assistance of a supervisor.
- Teachers and students have print material from which to work, and this is augmented by aural and oral contact with the teacher through high-frequency radio, telephone links, or both, varying from daily to weekly lessons.
- The most basic form of electronic media is the teleconference in which several students may be linked with the teacher by telephone for their weekly lesson. Interaction between students and teacher is possible, although clearly the group dynamic takes time to establish using this type of communication.
- Where students have access, videoconferencing is possible giving the visual as well as the audio contact; it is generally not available as a multi-point medium but enables closer contact between teacher and student.
- The Electronic Classroom™ allows interactive learning to occur through the use of electronic whiteboard, video, and audio. Using this medium, the teacher and the student are able to exchange work and produce diagrams, maps, and written work in much the same way as they would face to face.

Depending on the availability of student access, each of these electronic media are used daily by teachers in their delivery of lessons to isolated students.

Current developments include the use of the Internet to provide stimulus not previously possible through distance education. The Open Access College has allocated considerable time and resources to the development of its Web site and specific subject pages, enabling course writers to provide Internet options for students who have access to this technology. The range of subjects utilising this medium at present includes the arts, legal studies, social studies, biology, environmental studies, geology, and home economics, as well as languages other than English.

In particular, the languages other than English (French, German, Indonesian, and Spanish) have used this medium to great advantage. Students can be given a selection of Web sites chosen for specific research, or the teacher is able to introduce new

learning materials. For example, a student of Spanish is able to view an exhibition of etchings by Francisco Goya, produced co-operatively with the Art Gallery of South Australia. The student can also search for specific resources on aspects of culture — food, dance, and music — researched by the developer, and included in the subject page. The subject can incorporate a more holistic approach to learning for its student clients and allow them to access current, stimulating events to enhance their learning.

Information on each of the Outreach Education Services provided by the Open Access College as well as on cultural events and activities is also available through the home page.

The inclusion of the Internet resource must be an option at present as many students (particularly those in remote areas) do not have access to the Internet or even, in some case, to telephone communication. Nevertheless, it is a growing area, and one that is providing an exciting and stimulating aspect to distance education in South Australia.

Please visit our home page at http://www.saschools.edu.au/open_acc/open_acc.html

Open Learning Institute Charles Sturt University

Prepared by:

David Meacham

Brief description of the programme

The Open Learning Institute (OLI) of Charles Sturt University (CSU), a multi-campus institution, is located in several cities in inland New South Wales in Eastern Australia.

Charles Sturt University offers a wide range of degree courses, both on-campus and through distance education, using print and electronic instructional media.

The Open Learning Institute is responsible for research and development, learning materials, design, production, student liaison, and academic staff development.

The university is expanding its proportion of off-campus students, with only about 13 percent being recruited directly from high school on the basis of their learning certificate results. An increasing number of overseas students study both at a distance and on-campus. Charles Sturt University is currently the largest single university provider of distance education in Australia and is seeking to expand its market by introducing both greater choice and greater flexibility of learning for its clients, many of whom are young professionals seeking to enhance their careers.

Problems encountered

In a time of rapid social and technological change coupled with government induced destabilisation of universities, many issues are emerging relating to the future role of distance education and its efficient operation in a client focused market, where needs may have to be met with diminishing resources.

Planning and managing distance education

- In a dual mode institution, structures and practices develop primarily to serve on-campus students who are now in the minority. This focus creates problems in introducing new systems for learners who require flexibility and asynchronous teaching. Currently the university is attempting to expand resource-based learning to allow greater flexibility in study time and location, which is problematic in a conventional two-semester system with fixed entry and exit times.
- Structures in the university are based on substantive areas of study, that is, schools, faculties, and centres, and functional divisions (for example, Information Technology and Financial Services). The Open Learning Institute exists to service a particular mode of learning that has become dominant. In addition, there has been considerable devolution of organisation and financial responsibility in an environment of diminishing resources. Consequently it is extremely difficult to

develop a corporate or institutional approach to distance education when large numbers of factions with particular self-interests demand more from severely limited budgets.

- The volatile external political and economic environment makes forward planning difficult. Politically and economically it has become expedient to attempt to increase the level of student support for distance learners, while reducing expenditure. This situation has the potential to precipitate extreme management problems.

Implementing quality assurance

- The Open Learning Institute has begun a comprehensive quality assurance programme, starting with the development of a series of comprehensive procedure manuals. These manuals are proving difficult to update during a time of rapidly changing structures and priorities.
- In the university there is a large degree of scepticism about the effectiveness of industrially derived quality assurance schemes in higher education. In contrast, the political imperative is to develop sophisticated responses to government inspired quality audits that could significantly influence future funding.

Using and integrating media in open learning

- The university has enthusiastically embraced the use of non-print media in distance education. However, there is considerable increase in development costs in continuing to offer print materials with a multimedia alternative, or by using some multimedia to complement print.
- Important equity and marketing issues need to be addressed with regard to the use of integrated multimedia. The technology policy of the university will require new students to access specified personal computer hardware and software, eliminating some potential clients and attracting others, unless alternative provision exists for a while.
- The early stages of transfer to a predominantly electronic medium of distance education have led to some materials being made available that are little more than digital textbooks. More research needs to be done on the value added by various media and their suitability for specific applications.

Instructional design and production for distance education

- The integration of electronic media into distance education resources has required the recruitment of specialist instructional designers who have expertise in video, authorware, and Web design. General instructional designers, whose competence is mainly in the area of print, have become somewhat apprehensive as resources are moved to support emerging technologies.
- Electronic media are being produced by individual teaching staff with limited input from educational designers, making quality control problematical. Print materials are rigorously checked before dispatch, after a comprehensive editorial

process. New technologies are emerging at a rate that outstrips the development of systems to support and control their use.

Learner support systems

- The university has traditionally provided compulsory residential schools for many subjects, where group work and the use of specialised equipment were deemed to be necessary for appropriate understanding and competency development.
- Such provision is currently being challenged on the grounds that residential schools are costly, both for the university and for the student, who has to leave work and often travel long distances. Consequently, alternative, media-based means of support are being developed, sometimes against the views of the traditionalists, who regard face-to-face contact with students as a necessary ingredient for effective learning.

The most important issue: Finding alternatives to face-to-face contact

An important contemporary issue is the university's lack of a structured, informed approach to the offering of residential schools.

The original intention was to require distance education students to attend campus for not more than two weeks per year to obtain intensive instruction, practice in areas in which human interaction or a specialist environment was a precondition for understanding and skill development, or both. Residential schools also provided an assurance to accrediting bodies, employers, and professional associations that distance education was not inferior to conventional teaching. The issue of parity of esteem between on- and off-campus courses was of paramount importance in the early days of distance education in Australia, but has diminished with widespread acceptance of the quality of distance education graduates.

Over the years, differences emerged between the two colleges that amalgamated to form the new university. Historical factors led to one campus offering course-based residential schools on a reduced scale, while another campus offered a greater level of subject-based residential schools. The original intent of residential schools appeared to be diluted, with idiosyncratic, campus-based views dominating. At the same time, emerging technologies capable of providing group interaction and simulations were not promoted and implemented on an institutional basis as an effective substitute for the on-campus instruction residential schools provided.

The Academic Senate of the university issued regulations concerning the conduct of residential schools which were often ignored or circumvented by the substitution of 'optional' residential schools operating under different or even no rules whatsoever.

Consequently, the Senate undertook to review its policy in this area, and adherence to it.

A working party investigated the issue and concluded that decisions about the offering of residential schools should be made on a transparent and rational basis, with such decisions being the responsibility of specific staff members. It also required monitoring and accountability systems to ensure conformance.

In addition, the Open Learning Institute seconded a staff member to research media-based alternatives to face-to-face teaching.

Thus the outcomes in the near future should be:

- the restoration of pedagogic considerations as the prime determinants of the existence of residential schools;
- an improved system of accountability; and
- research upon which to base decisions about appropriate modes of teaching.

It would be presumptuous to believe that procedural change and research will achieve all these improvements. Little has been done to address entrenched attitudes, which differ on the various campuses, and had their genesis in groups working in isolation from one another and in the corporate goals of the university. Scant attention may be given to regulations and recommended practice emanating from outside these groups. For success to be achieved, the benefits of both change and conformity must be clearly conveyed to the stakeholders, unless they are to revert to their comfort zone of familiar practice.

Summary

The following lessons can be learned from this study:

- Instructional design issues can only be resolved satisfactorily in an organisational context.
- The logic of pedagogy may conflict with the requirements of the market, the institution, and individual stockholders.
- Instructional design issues involve innovation and change; therefore, they require changed management components for successful implementation.
- Responses to external pressures on universities may lead to a diminution of the importance of pedagogical considerations.
- The structure and decision making processes of universities make innovation arising from outside the school structure and central administration problematic to deliver and monitor.
- The necessity for face-to-face contact to complement distance education in this context is poorly researched and lacks objective articulation.
- The mere availability of technology does little to ensure its institutionalisation.
- Institutionalisation of changes in teaching methodology is highly problematic in multi-campus institutions with highly devolved decision making and financial process.

**Distance Education Unit
Centre for Continuing Education
University of Botswana**

Prepared by:

J. W. Kamau

Brief description of the programme

The University of Botswana, which hitherto existed as a constituent college of the University of Botswana, Lesotho, and Swaziland (UBLS), became a separate national university in 1982. The university is a dual mode institution that offers on-campus degree programmes through various academic faculties, conducts research through various institutes, and provides off-campus academic and other outreach programmes through the Centre for Continuing Education where the Distance Education Unit is based. The mandate of the Centre for Continuing Education is to provide educational opportunities to adults through distance education, evening and weekend classes, public education conferences, workshops, seminars, and radio programmes on a variety of subjects that are in high demand by the public.

The university's involvement with distance education dates back to the 1970s when radio campaigns, complemented by face-to-face contact, were used to educate the public on issues of national interest such as civic education. Geographically, Botswana is a vast country and radio broadcasts could reach many people simultaneously. Today, the main responsibility of the Distance Education Unit, which conducts its distance education programmes mainly through the print medium, is to increase the university's capacity for distance education and, in collaboration with relevant departments, to identify and develop certificate and non-certificate programmes for delivery at a distance. The Distance Education Unit plans to provide programmes at non-credit, certificate, diploma, degree, and post-graduate levels. Currently, the unit offers a certificate in adult education for people involved in literacy, adult, continuing, and community education programmes. A diploma in primary education commenced in 1998 to upgrade primary teacher's certificate holders in a bid to raise the standards and quality of education at the grassroots level. Plans to launch further programmes are also underway.

The certificate in adult education course development experience

The Distance Education Unit has, in the past, offered a certificate in adult education programme in a semi-distance education mode, with materials developed by consultants and heavy reliance being placed on residential study schools in Gaborone, where most of the teaching has taken place. This programme was reviewed in 1989 and is being revised so that it can be offered completely by distance education.

This exercise has proved to be a useful pilot project, as it has brought to light a number of problems in the area of materials development that the unit will have to address in the future. These problems relate largely to four specific areas of course development: the development of the syllabus, the recruitment of course writers, the submission of a first draft, and the actual development of the materials.

Developing the syllabus

The syllabus outline for each of the five courses was developed as a collaborative effort between the Distance Education Unit and lecturers in the Department of Adult Education who have been teaching the courses. As each course will be taught over a two-semester academic year, courses were divided into two modules, each consisting of 10 to 15 units, but no firm guidelines were set regarding the exact number of units that would comprise each module. The content of each unit was then detailed under several major topic areas. Course writers were thus armed with mutually agreed upon unit outlines to use as the basis for their writing but these were insufficiently detailed.

Recruiting course writers

In the unit's material development process, course writers are recruited mostly from the co-operating departments and colleges that run the on-campus equivalent of the programmes. In the Certificate in Adult Education programme, some of the course writers have been drawn from the Distance Education Unit because of their professional training in adult education. A decision was made that all writers, apart from unit staff, would be paid for their services and that all materials developed would be recognised as academic publications for staff appraisal purposes. Contracts were not signed as they required the approval of university authorities. Thus, course writers have proceeded with their task on the assumption that they will be paid for their efforts in due course. In each course, at least two course writers were appointed and decisions relating to a division of the writing workload was left up to the individuals concerned.

As distance education has not been a significant feature of the University of Botswana in the past, it is understandable that most writers have not had any experience of writing materials for distance learners. As a result, course writing workshops were held to train writers for this specific function. During these workshops, the writers were made aware of the nature of distance education programmes, the features that would be expected in materials, and the reasons for incorporating them. They were advised that a typical unit should be 10 to 15 typed pages in length and consist of an overview, unit objectives, several sections of content divided into subsections, interactive questions, a summary, self-assessment questions on the whole unit, and a list of additional reading materials. They then set off to start writing.

Submitting the first draft

In most cases, materials were not forthcoming as writers were preoccupied with teaching activities and could not find the time to devote to additional tasks. Many manuscripts, when submitted, did not conform to expectations, and in some cases, ignored the guidelines altogether. Consequently, the decision was made to hold a series of writing retreats during which writers were isolated in comfortable surroundings conducive to the activity of writing. Secretaries accompanied the group

to word process materials as they were submitted and there were high expectations that all units for both modules would materialise. In reality, although these retreats have produced units, less than half of the expected output has been achieved.

Once written, units were passed on to the word processors and editor for word processing, formatting, and editing. On the whole, the submission of hand-written manuscripts resulted in unnecessary confusion and delay as word processors struggled to decipher handwriting and instructions. The content was often not divided into subsections with identifiable headings and manuscripts were incomplete as they did not contain all the expected features. Many units did not follow the agreed upon syllabus outline for content and, in some cases, later units were collapsed into previous units and dealt with fleetingly as the agreed range of twelve to fifteen units per module was not met, leading to unequal workloads for students over the semester.

Actually developing the materials

A combination of inexperienced distance education writers and word processors has meant that part-time copy editors had to be employed to work on the initial word processed drafts before they were passed on to the editor. In addition, the volume of work arriving at one time meant that it has not been possible to return a first draft to course writers within a short period of time. The underlying assumption at the time was that hand-written materials would only need word processing and superficial editing and formatting by an editor. The reality has been that this is not the case and that there must be far more concentration on developmental processes if quality standards are to be met. Materials could be improved considerably by the input of instructional design, graphic art, and media staff.

Possible solutions

| Identified Problem | Possible Solution |
|---------------------------------|--|
| Development of syllabus outline | <ul style="list-style-type: none"> • Divide modules into a set number of units. • Develop behavioural objectives for each unit. • Identify and list major topics to be covered in each unit. • Identify and list sub-topics to be covered under major topics in each unit. • Use this detailed unit outline as a framework for writing. |
| Recruitment of course writers | <ul style="list-style-type: none"> • Recruit from a wider pool of potential course writers by advertisement. • Utilise a signed contract stipulating firm submission dates, allowing for |

| Identified Problem | Possible Solution |
|-----------------------------|--|
| | <p>progressive payments and requiring the submission of a model unit for assessment of writer suitability.</p> <ul style="list-style-type: none"> • Be prepared to enforce submission deadlines in terms of the contract. |
| Training of course writers | <ul style="list-style-type: none"> • Provide rigid guidelines stipulating the essential features that will be expected in each unit. • Assess a model unit to determine the course writer's suitability and compliance with requirements. • Extend the training period to permit submission of at least the first two units. • Stress the significance of the team work approach to developing materials and the consequent importance of deadlines. |
| Submission of a first draft | <ul style="list-style-type: none"> • Stipulate and enforce minimum standards for presentation of hand-written drafts. • Accept only hand-written drafts that are complete. |
| Course development process | <ul style="list-style-type: none"> • Recognise the importance of developmental staff and increase their numbers accordingly. • Spread realistic submission dates for units over the whole writing period to avoid developmental congestion. • Provide professional development training for word processors. • Appoint instructional design, graphic art, and media staff to enhance and enrich materials. |

Open Learning and Information Network

Prepared by:

Genevieve Gallant

Brief description of the programme

The Open Learning and Information Network (OLIN), Memorial University of Newfoundland, and the Newfoundland and Labrador Provincial College partnered to design, develop, and implement a Web-based business course for delivery through the World Wide Web. This joint initiative was funded by Human Resources Development Agreement.

The subject of organisational behaviour is included in nine different post-secondary programmes of study, with transfer credit available between the university course and the college equivalents. Consequently, a Web-based course in organisational behaviour was designed by an instructional design team over a three-month period and delivered to 10 university and 40 college students during the winter 1997 semester.

The Web-based course, delivered in an open learning, distance education format, uses a blend of conventional resources (textbook and study manual) and information and communication technology resources (Web pages of the study manual and a computer conferencing system — *Conferencing on the Web*). The computer conferencing system design allows student-to-student and student-to-instructor interaction and collaborative learning at a distance. Class assignments, both individual and group; two on-line quizzes; opportunities to ask questions of the instructor and professor; and peer interaction are supported by the computer conferencing system.

A student orientation session explaining access to and use of the Web pages and computer conferencing system was delivered via audio through multimedia computers to college students while university students received a face-to-face orientation.

Problems encountered

Planning and managing distance education

- Use of a systematic approach to planning distance education is important and must include using experts from each area of instructional design. The collaborative efforts and expertise of instructional designers, content experts, technical specialists, and administrators are necessary. The roles and timelines for each person must be clearly stated at the beginning of the project.
- The Web-based course on organisational behaviour is offered to both university and college students, and the administrative requirements of each institution are similar, yet different. Incorporation of both sets of regulations for registration,

dropping and adding courses, and examination requires communication with both administrative groups.

- Selection of a computer conferencing system to meet the design needs and learning outcomes requires that criteria be established early on in the planning stage.

Using and integrating media in distance education

- Using the Web and a computer conferencing system to deliver a course is relatively new for faculty and students. Instructor and student awareness of how to use the conferencing system to provide quality learning and the need for a different teaching style is an issue.
- An orientation for both instructor and student is necessary to familiarise them with how to use the media, its benefits for learning at a distance, and expectations for both in creating learning.
- The instructor's role changes from one of 'sage' to that of 'facilitator'.

Instructional design and production for distance education

- Using the team approach to developing and implementing a Web-based distance course is advantageous. Experts in instructional design, Web design, graphics, content, and technical operations working together will make for a quality product.
- Access to the Internet, modem connections, and telephone lines are important issues for instructional designers to consider. Slow modem connections and poor telephone lines limit the size and quality of graphics and increase the need for user-friendly, easy-to-navigate systems.
- Web-based courses have philosophical and pedagogical issues — whether to use linear, textual course design or a design that enables interaction among students and instructors. Technology gives us the ability to design distance education courses with more interactivity, thus overcoming the isolation issue in previous distance education practices.
- To ensure that learning occurs, the instructional designer must be aware of learner needs, learning styles, and the limits of the technology.
- Pacing is important. To keep students on-track and on-time, guidelines must be incorporated into the design of the Web pages and the study manual. Scheduling of course assignments and exams must be manageable. Including a printed study manual and Web pages displaying sections of the study manual are used as organisers.

Learner support systems

- Many learners are novices to the computer and the Internet and learner frustration with the new media is to be expected. To decrease frustration and maintain motivation in the course, the use of technical and human support systems is an absolute. An orientation to the new media, telephone contact during the first two weeks for technical assistance, and instructor feedback, especially in the initial

stages, are necessary. These learner support systems must be established before the course starts.

The most important issue: Instructional design and production for distance education

Our experience in dealing with the issue of using ‘teams of experts’ was positive and beneficial. So many times one or two people are responsible for all the design, production, and delivery of a course. However, using new media to deliver a course requires people with expertise in these areas as not everyone has all the expertise needed for design and delivery of Web-based courses.

The Web-based ‘Organisational Behaviour’ course used an instructional design model. Both the university and college offer courses in organisational behaviour; however, the objectives, some content areas, evaluations, and textbooks differ. To have one course that could be used simultaneously by university and college students required an articulation process. The content experts were a university professor with many years of experience teaching in a face-to-face setting and also in the traditional distance education format, and a college instructor with many years of experience delivering this subject in a classroom setting using a self-directed, competency-based learning approach. The instructional designer worked with both to develop course objectives, content, evaluations, and a study manual.

Graphic and Web designers, the next team, working with the instructional designer, were responsible for determining how much text and content should go on the Web pages. They were also responsible for creating the look and feel of the pages so that they are easy to read, visually effective, user-friendly, and can be downloaded in a short time. Designing the entrance areas to the conferencing system to be visually attractive yet self-explanatory was also completed by this team.

The conferencing system was designed by the instructional designer. Attention was paid to the learner needs, different learning styles, and course requirements, as decided by the content experts, and use of collaborative learning techniques.

Technical support was provided by the systems administrator and a technical specialist. The systems administrator was responsible for mounting the computer conferencing system on the server. The technical specialist was involved in the conferencing system selection and the audio capabilities through the computer for students’ orientation session.

Lessons learned

It is important for all members of the instructional team to be part of the process from the beginning. The technical part of the system is as important as the instructional design. The systems administrator must be allowed enough time to mount the conferencing system on the server to give other members of the team the opportunity to become familiar with how it works, make necessary changes, and work out any anomalies.

Determining computer conferencing criteria that makes using the system easy, accessible, and user-friendly is important. For example, the use of word-wrap for posting and replying to discussions is a must. The ability to attach a file from any

word processing software makes for less Internet time, and allows for spelling correction, editing of text, and reflection on a topic.

Using the audio capability of a multimedia computer provides benefits of talking with learners any time, anywhere. It was used to deliver the orientation session but there were problems in hearing the session because of differences in modem rates, bandwidth, and telephone connections. More time must be allowed (two to three days depending on the number of sites) for technical specialists to tune the audio with the different sites to make the multimedia computer usable and achieve its objective.

**Institute for Educational Development and Extension,
The University College of Education of Winneba
Post-Diploma Bachelor of Education (In-Service)
Distance Education Programme**

Prepared by:

S.A. Kadingdi

Brief description of the programme

Until 1992, diploma teachers who wanted to further their education by upgrading themselves to the degree level had to pursue the same four-year courses planned for sixth-formers at the University of Cape Coast. The University College of Education of Winneba (UCEW) was established in 1993 through the amalgamation of seven diploma-awarding teacher training institutions to serve such diploma teachers. The college was therefore established with the overriding purposes of both preparing teachers and other professionals for service to the nation and improving upon the basic education needs of Ghana by concentrating on the training of teachers at both the Diploma and Bachelor of Education degree levels. UCEW therefore carries out its mission by designing and implementing pre-service education programmes for the preparation of teachers and other personnel. Even though the college was set up to recruit more teachers to pursue higher courses, the limited accommodation facilities available militated against the achievement of this noble objective.

To complement the efforts of the university college in meeting the ever-increasing demand for access to its programmes, the Institute for Educational Development and Extension (IEDE) was established as one of seven academic divisions of UCEW to co-ordinate the offering of some of the courses at a distance. The distance education unit, which is by far the largest of the five units of IEDE, is therefore charged to run the Bachelor of Education (In-Service) degree programme for teachers and teacher trainers holding diploma certificates who expect to study part-time without undue disruption of their work schedules. The programme will run alongside the internal two-year post-diploma Bachelor of Education programme and will offer a degree of equivalent status. Like most distance education programmes in developing countries that have been heavily influenced by donor countries, the IEDE received some funding at least in the beginning from the Department for International Development (DFID), formerly known as the Overseas Development Administration (ODA). DFID invested in the initial survey of the learner profile of prospective students to enrol in the Bachelor of Education programme and also helped to address the training of writers of participating departments through consultancies involving workshops that were run jointly by external experts, the DFID subject advisers, and local counterparts (co-ordinators) of the IEDE. Even though IEDE co-ordinates the course material writing of the departments, the participating departments are responsible for the content of the

distance education programme. UCEW is therefore a dual mode distance education institution using departmental course teams and editors. Co-ordinators at IEDE serve in varying roles from simple proof-reading and assisting with artists' briefs and layout to offering advice for the restructuring of study material.

Problems encountered

Planning and managing distance learning

- Academic staff of the participating departments are not provided release time for the writing and review of their course material. This has caused delays in the submission of course material since lecturers have many functions such as lecturing, organising tutorials, and marking their examinations as well as supervising their on-campus students on teaching practice.

Implementing quality assurance

- Lecturers in the participating departments were initially sceptical about the credibility of the programme, taking into consideration the user-friendly language proposed for the writing of distance education course material. However, this scepticism can be explained in light of some lecturers' inexperience with the delivery systems involved in distance education programmes. It should, however, be emphasised here that external assessors have been engaged to read and comment on the course materials and provide supportive feedback to the course writers. Each course has its own editorial team of two or three members who review the materials initially and provide feedback to the authors.

Using and integrating media in distance education

- The use and integration of media in the distance education programme of UCEW leave much to be desired, since the departments engaged in course writing do not have the basic skills or the necessary equipment to enable them to use any medium other than print.

Instructional design and production for distance education

- Instructional design is the sole responsibility of the departments although co-ordinators at IEDE monitor their work and give advice. The production of course materials is facilitated at IEDE with the help of support staff using the equipment purchased by the DFID.

Learner support systems

- Even though the programme has not yet taken off, the institutional response to student enquiries needs improvement. The preparation of course material by the academic staff needs speeding up to avoid the situation in which students enrolled in the programme have to wait long periods for study materials to be delivered and are consequently frustrated and demotivated. Four regional study centres have been established to provide student support through tutorials and library facilities, with the help of tutors and other supporting staff.

The most important issue: Instructional design and production for distance education

The literature on the Open University of the United Kingdom and many other institutions on distance education indicate that for a course to be implemented, an institution requires about 18 months (some even a lot longer, say three years) from the initiation of the writing process to the implementation of the programme. Although the writing of the distance education material at UCEW began in April 1995, only four courses out of a total of twenty-four first-year courses are on the shelves at present. The heavy teaching workloads of the course writers impedes their ability to deliver the study material as planned.

Staff who have found it difficult to prepare their teaching in the distance mode are given close support from the IEDE co-ordinators, who have been trained in distance education. To this end, therefore, the IEDE co-ordinators have always tried to treat writers with respect and courtesy by sharing with them their concerns and encouraging them to pick up from where they left off. In this way, the co-ordinators provide not only guidance in content, style, and format but also give moral support while urging them to make time to write — despite their heavy teaching workloads. The IEDE co-ordinators also ensure that writers are provided with regular feedback on the progress of writing to the respective course teams. Course writers are encouraged to meet regularly with the co-ordinators to discuss their units.

Realising that a good team can exert pressure to achieve deadlines and equally ensure quality output, the IEDE co-ordinating team instituted departmental academic editorial boards of committed and dedicated writers trained in the editing of distance education material to help more specifically with the content editing of materials. During the editorial training, emphasis was laid on the basic principles of distance education material writing procedures.

This step has to some extent speeded up the writing process even though much is still left to be done. At one time it became clear that one reason writers could not deliver the materials on time was that they managed their time poorly. A workshop on time management was organised to enable writers to make the optimum use of their time.

Future plans

To facilitate the production of the course materials on time, it is important that the UCEW establish realistic workloads and, if possible, set up staff support networks to maintain the writers' morale. There is also the need to consider involving a wider development team by contracting external writers and staff from other institutions. Plans are afoot for a series of short one- to three-day writers' workshops to encourage faster planning, drafting, and reviewing of course materials. A 'writers' surgery' session will likely evolve to give writers the opportunity to bring and share their difficulties with their more experienced and successful colleagues.

University of Guyana Institute of Distance and Continuing Education

Prepared by:

Lynette Anderson

Fitzroy Marcus

Elaine Thomas

Brief description of the programme

The Institute of Distance and Continuing Education (IDCE) began in 1976 as the Extramural Department of the University of Guyana's Faculty of Education. Its objective was to take quality education to adults throughout the 10 regions of Guyana. By 1982, the department had increased the scope and reach of its activities so significantly that it was reconstituted as the Institute of Adult and Continuing Education and assigned a status equivalent to that of a faculty. The newly formed institute was mandated to use distance education modalities to extend its reach to remote and deep riverine areas in order to make educational opportunities accessible to the thousands of Guyanese resident in those areas, who previously were denied such opportunities because of the dual constraints of distance and population spread.

In 1992, the institute launched a pre-university distance education programme aimed at increasing the number of learners qualified to enter the university. A concomitant thrust was the consolidation of IDCE's efforts at raising public awareness about distance education, assisting decision makers to see distance education as a viable option for making education accessible to learners in remote areas, and developing a pool of resource persons. The outcomes include a student body of 1,029 learners drawn from the 10 regions of Guyana, various forms of participation by the institute in the development of all other distance education programmes that have been introduced by other agencies, and IDCE's representation on the National Committee for Distance Education. Out of the institution's involvement in distance education has developed not only a commitment by its administration to making distance education an integral part of its activities, but also a commitment by the administration of the University of Guyana to employing dual mode strategies to offer university level programmes to learners who cannot attend classes at its Turkeyen Campus. A corollary has been the current nomenclature of the institute. The renamed institute has the responsibility of facilitating the introduction of the university's distance education activities.

Problems encountered

Planning and managing distance education

- A participatory approach is one of the characteristics of planning and managing distance education at IDCE. This is evident in the strategies employed in conducting needs analyses and in designing, developing, and implementing the programme.
- Another characteristic is flexibility, since support provision is influenced by the human and physical resources available in the student's region. This support operates on the principle of 'equality of concern' rather than 'equality of provision'.

Implementing quality assurance

- IDCE's distance education programme represents a shift from conventional practice to new approaches to learning. The institute therefore views the implementation of quality assurance strategies as essential since a natural resistance to change must be met with the assurance that standards will be maintained if not surpassed. The challenge lies in ensuring that all involved in the provision of distance education, including academic and non-academic staff, recognise this fact and be sufficiently motivated to strive for excellence at all times.

Using and integrating media in distance education

- The institute's integration of media in the course package is based on the principle that in distance education there is a need to serve various learning styles, to help to reinforce learning, to motivate learners, and to minimise their feelings of isolation.
- Print is the basic medium of instruction. Teleconferencing and audio cassettes are meant to provide valuable support. Despite generous assistance from The Commonwealth of Learning during the period 1992 to 1996, problems were encountered. They included:
 - a poor or non-existent communication infrastructure, including an unreliable electricity supply in remote areas;
 - a lack of telephone links; and
 - a shortage of resource persons adequately trained to prepare and produce the audio material.

Instructional design and production for distance education

- When distance education institutions attempt to produce materials without providing adequate finances, difficulties must arise. In the absence of a central budget for materials production, remuneration for course-writing teams, tutor-markers, and other support staff has been inadequate. Furthermore, an inadequate desktop publishing system has added to the challenges.

Learner support systems

- The distance education programme the institute offers is learner-centred. All its components, whether print-based, classroom-based, or audio-based, are oriented toward the provision of learner support. The challenge lies in the management of the programme. Strategies to meet Guyana's unique geographical, cultural, economic, and educational situation must be developed and implemented.
- Support staff accustomed to the conventional system must be trained and retrained for their task of ensuring that students receive the necessary support. This is essential if learners are to complete their courses successfully.

The most important issue: Supporting learners in remote areas

Supporting learners in the remote areas of Guyana presents a significant challenge to IDCE's distance education system. Overseeing the tutorial system and generally providing learner support services are activities dependent on the deployment of competent and highly motivated staff, as well as a good communication infrastructure. Learners are scattered over vast forested areas, some accessible only by aircraft, where few qualified tutors may reside. Sharing of expertise is difficult even in cases in which only a few miles may have to be covered. An underdeveloped communications infrastructure restricts the use of telephones or teleconferencing. Some access to radio links exists but that, however, does not guarantee quality interaction.

The limited finances available to the university contribute to inadequate funding. Some of the energy of staff is devoted to seeking funds from various local and international sources. The presence of the distance education system is largely due to the range of support (advisory and training) extended by the Commonwealth of Learning. The Organisation of American States (OAS) has also contributed directly to the costs of managing our remote support activities.

Despite the constraints, a mobile team is used to provide tutorial support for learners, matching to some extent the pattern of air services provided to these communities. Most flights to remote areas must originate in the capital, making it difficult for staff from our interior locations to service neighbouring locations. Staff based in the coastal areas, however, can and do make direct flights in, at intervals, to give support to students at specific locations. It is also possible to include competent staff from interior locations to be part of the mobile team providing learner support in areas outside their own locations.

Lessons learned

The provision of learning materials and visits by mobile teams to interior areas needs to be further supported by mentoring, which will prove beneficial in enhancing the learner's ability to study through distance strategies. A further benefit inheres in the fact that interaction between learners and a mentor who understands the environs and cultural practices is highly motivating.

There is also a need to sensitise planners, policy makers, and regional officials as a first step to introducing courses in remote areas. This method has resulted in a collaborative approach to the identification of needs and resource persons.

Indira Gandhi National Open University Electronic Media Production Centre

Prepared by:

Jai Chandiram

Brief description of the programme

The Electronic Media Production Centre (EMPC), located in the new Sanchar Kendra at the Maidan Garhi campus of Indira Gandhi National Open University (IGNOU), has a budget of 700,000,000 rupees to produce educational media materials. The distinguishing feature of IGNOU's distance education programme is the extensive and systematic use of educational media in its courses.

Today the EMPC is an advanced centre for the application of media technologies for distance education and training at the national and international level. The primary functions are: programme production; media education; and research.

Programme production

The tasks involved in programme production include:

- producing audio-visual course materials;
- developing and applying communication technology strategies in distance education;
- developing approaches to integrate communication technologies into existing training programmes;
- undertaking pilot projects in the application of new technologies to improve education, training, and the quality of delivery;
- consulting in education communication systems and technologies;
- expanding the infrastructure for training and delivery in distance education;
- developing high quality course materials for media studies;
- providing an audio-visual library and resource centre; and
- marketing and selling EMPC-IGNOU products and facilities.

Media education

At present, the EMPC offers a one-year Post-Graduate Diploma in Journalism and Mass Communication.

The following additional programmes are under development:

- Diploma in Audio-Video Technology;
- Certificate in Audio Programme Production;

- Certificate in Videography; and
- Certificate in Video Editing.

The following short-term or weekend courses have been planned as an open school:

- ‘Art of Video Presentation’;
- ‘Interview Techniques for Television’;
- ‘TV Studio Lighting Techniques’; and
- ‘Evaluation of Educational Television Programmes’.

Research

The EMPC conducts the following research tasks:

- regular feedback studies on programme use; and
- specially designed studies to assess quality, content, and impact are undertaken from time to time.

Facilities

The facilities available at EMPC include:

- Two large video studios equipped with multi-camera set-ups, ENG beta SP camcorders, edit suites, Quantel Paint Box, audio studios with digital audio cassette format equipped with eight-track recording facility, audio dubbing suite, audio edit suites with multi-format editing facility, duplication facilities, including format transfers and high speed audio cassette duplication, audio-visual library with more than 564 video and 646 audio cassettes of curriculum-based programmes.
- The Training and Development Communication Channel, which is a teleconferencing facility comprising a studio with teaching end and up-linking for two-way audio and one-way video through INSAT-2A on the Extended C band being offered jointly with the Indian Space Research Organisation. Presently 23 receiver terminals located all over the county are linked to the teaching-end studio. Another 135 locations have been identified. This facility is being used for counselling and teaching students as well as providing orientation to regional centre personnel.

The system configuration of the Training and Development Communication Channel is as follows: the teaching-end studio (195 square metres and located in the Sanchar Kendra complex) is equipped with two cameras on tripods and a third camera set up as a caption scanner. Audio and video signals from the control room are fed to the Transportable Remote Area Communications Terminal for up-linking to the INSAT-2A satellite. Direct reception sets are located at state open universities, resource centres, and a few remote study centres, as well as at other user institutions. The return communication is through telephone lines and fax.

Services

The services EMPC offers include:

- producing audiovisuals;
- broadcasting and telecasting through national channels;
- teleconferencing;
- conducting research in educational media;
- providing training in media production, research, and technical operations; and
- offering short-term courses and workshops in script writing, presentation techniques, videography, and technical operations.

Output

So far, EMPC's output includes:

- a total of 606 videos and 659 audios to date;
- about 80 to 100 days of live teleconferences, conducted per year by various schools of as well as other users through the Training and Development Communication Channel; and
- regular feedback reports on data gathered pertaining to the utilisation of the teleconferencing.

Problems encountered

Planning and managing distance education

- During the preparation of audio-visual materials, EMPC works with academics in developing audio-visual productions. The academics concentrate predominantly on the print materials and consequently the audio-visual component is often only a supplementary input of the course materials. The strengths of audio-visual media are yet to be fully explored.
- Greater integration of audio-visuals into print materials in the course materials is being attempted in programmes.
- Greater interaction with counsellors and facilitating their utilisation of audio-visual materials, encouraging students and counsellors to use them as part of the learning system.

Implementing quality assurance

The quality of EMPC programmes is assured through:

- training of technical and programme staff
- preview sessions; and
- increasing interaction at the concept development stage.

Using and integrating media in distance education

- Teleconferencing through the Training and Development Communication Channel. The response of students at weekends is more than weekdays when students are not usually available at the study centres. Certain courses have more active responses (for example, those in the School of Nursing and the MBA programme).

Instructional design and production for distance education

- Instructional design essentially comprises of ‘talking heads’ with few print graphics and is more easily accepted by experts. They are yet to experiment with other flexible interactive formats. The cassette mode of audio-visual materials production is yet to evolve.

Learner support systems

- Access to modes of delivery such as lending library system needs to be strengthened.
- Quicker production and timely delivery system are necessary.

The most important issue: Using and integrating media in distance education through the Training and Development Communication Channel

IGNOU has adopted the multimedia approach to reaching out to its student population. A variety of modes, including print, audio and video, face-to-face counselling, as well as mass media are being adapted. The EMPC produces the curricula-based audio-visual programmes that are distributed to more than 256 study centres located all over the country. In addition, they are broadcast or telecast over the national network three times a week in regularly allotted time slots.

Yet a need for greater interactivity is always felt. The Training and Development Communication Channel at IGNOU has added a new dimension, striving to enhance learning by serving as a critical communication bridge. It helps create a ‘virtual classroom’ environment conducive to real-time interaction, lateral learning, immediacy in communications, and participatory decision-making.

The Training and Development Communication Channel has been in operation since 1993. It is a two-way audio, one-way video teleconferencing facility through INSAT-2A on the Extended C-Band offered jointly with the Indian Space Research Organisation. The teaching end is at EMPC-IGNOU, while about 23 receiver ‘nodes’ are located at all state open universities, regional centres, and a few remote study centres. Efforts are underway to set up at least another 135 nodes in the near future. Other ‘user’ institutions such as the All India Management Association, State Bank of India, and National Dairy Development Board have set up 200 receiver nodes of their own. Other major institutional users include the National Open School, National Centre for Education Research and Training (NCERT) the state governments of Karnataka and Gujarat, the Department of Women and Children, the Department of Electronics, and the Confederation of Indian Industry.

Training functions

IGNOU regularly uses the Training and Development Communication Channel for telecounselling and extended counselling with student groups, and for training resource and study centre counsellors and co-ordinators. Different schools at IGNOU are evolving their own strategies in utilising this facility based on the volume of enrolment in their academic programme, duration of the course, profile of the student groups, and availability of experts.

Other user institutions have put the facility to a variety of uses; for example, the All India Management Association conducts regular classes, and the National Open School and the National Centre for Education Research and Training conduct training sessions for their regional functionaries. The Department of Women and Children launched a popular social welfare programme 'Indira Mahila Yojana', to enable all concerned at the state, district, and village levels to interact with the minister in Delhi.

Response

Regular feedback from the Training and Development Communication Channel's receiver nodes is being sought and available data shows that there have been extremely good responses in some of IGNOU's academic programmes in Management, Nursing, Journalism and Mass Communication, Panchayati Raj, and Tourism, and in most sessions held by other institutions such as those in the Department of Women and Child and the NCERT], wherein a lot of participatory processes were planned into the sessions and sufficient advance notice given. Most students of IGNOU seem to prefer after-office hours and weekend sessions. A feedback research study to assess the utilisation of the teleconferencing system by the student sessions is being undertaken and will be completed by year-end.

Other aspects need study, including the policy, technical, co-ordination, and administrative components, as well as the academic, research, and production components that in one way or the other influence the success of the sessions. Better co-ordination at the headquarters, school, EMPC, Indian Space Research Organisation, and resource and study centre levels are being fine tuned. With resources becoming an additional but critical criteria, efforts are underway to balance in-house use with external use, to make it an economically viable activity. However, there is great scope for improvement in the utilisation of the facility.

Strengths

Technical: The Training and Development Communication Channel is a unique facility using modern satellite-based communication technology. It is eminently suited for mass training simultaneously and cost effective.

Learner content: The Training and Development Communication Channel can improve the quality of training as top level experts could be involved. The asynchronous mode of communication is also possible through recording sessions at the teaching and learning ends and using them in other teaching and learning situations.

Shortcomings

Technical: Due to the poor condition of the telecommunication network in the country, the desired quality and level of interaction is affected. The receiver network is still in the process of expansion.

Learner content: From an academic viewpoint, the audio-visual component, including the Training and Development Communication Channel, is not a mandatory part of the students' learning package. The optional and supplementary status accorded for various reasons results in it being given lower priority by the schools and students. They are yet to adapt fully to utilising the technology-aided visual medium with adequate graphic support. They also lack sufficient advance planning of content. The high rate of technology obsolescence is also adding to the problem. A lack of adequate co-ordination among the various departments involved delayed information flow, affecting attendance at the sessions.

Students are faced with mainly logistic problems in attending the sessions as most are working or live at long distances from the venue.

National Open School: The School that Made a Difference

Prepared by:

Professor Mohan B. Menon

Brief description of the programme

The National Open School (NOS) was set up in 1989 as an autonomous institution under the Ministry of Human Resource Development, Government of India. Its objective is to provide continuing and developmental education through distance and open learning to all those outside the formal education system. With a multimedia package of self-instructional print materials, audio-visual support, and face-to-face teaching, NOS has a strong and effective network of about 800 academic, vocational, and special (for disabled and disadvantaged target groups) study centres all over India and the Middle East. The study centres perform a variety of functions, including admitting students, supplying learning materials to learners, providing and evaluating assignments, conducting personal contact classes, and organising laboratory, workshop, and other practical experiences. The special features of open learning in NOS include freedom to choose subjects according to one's needs, interests, and abilities; no upper age limit; course credit accumulation over a period of five years; academic and vocational courses offered separately and in combination; transfer of credits from other national boards; and use modern communication and information technologies.

The academic courses NOS offers include the following:

- the 'Foundation Course', equivalent to grade 8, which serves as a bridge course for joining the secondary level programme;
- the 'Secondary Education Course', leading to the Secondary School Certificate (O level);
- the 'Senior Secondary Education Course', leading to the Senior Secondary School Certificate (A level);
- open vocational education at basic, elementary, secondary, and senior secondary levels;
- life enrichment and continuing education courses, addressed to the general public and those in various area of work;
- the open basic education programme, aimed at providing continuing education to neo-literates 14 years and older; and
- open elementary education, for the benefit of school-age children who are not attending school.

NOS has a diverse student profile, with learners ranging in age from 14 to 89 years, distributed throughout the country. About 94,000 students were enrolled in 1996–97, which increased to an annual enrolment of more than 110,000 students in 1997–98. Most of the students are young adults between the age of 18 and 24 years.

NOS is also an apex institution at the national level, and has the mandate to provide professional and technical support to state (and provincial) governments to set up and maintain quality in the state open schools.

Problems encountered

Planning and managing distance education

- Managing flexibility without affecting the quality of instructional organisation has been a major problem considering the variety of target groups and wide geographical distribution.
- Managing the instructional experiences provided in 800 study centres, which are formal institutions accredited by NOS, is another major issue.

Implementing quality assurance

- While it has been reasonably possible to maintain quality in instructional inputs, it is difficult to ensure that quality is maintained in contact sessions and practical classes.
- As a large number of part-time tutors (more than 8,000) are involved in organising learning support to students, developing the necessary competencies required for the personal contact programme and counselling in them has been difficult.

Using and integrating media in distance education

- NOS does not have production facilities and hence all audio-visual production is done on contract by production and post-production staff, resulting in quantitative and qualitative improvement in media production.
- NOS uses interactive technologies mainly through one-way video and two-way audio conferencing for orienting and training study centre staff. However, the use of interactive technologies for learning support has not been possible due to a lack of infrastructure at the receiving end.
- Audio and video programmes are used as supplementary input to the self-instructional print materials. They have not been integrated into the self-instructional print materials mainly because all learners may not have an access to them.

Instructional design and production for distance education

- Vocational courses vary considerably and are from various sectors of the economy. Developing curriculum and designing instructional strategies for vocational courses has not been easy.
- Flexible instructional designs for different categories of target groups is necessary in the Indian context. Learners with various types of disabilities and social disadvantages require modification in instructional design and learning materials.

Learner support systems

- The use of suitable pedagogy in the personal contact programmes has not been easy, mainly because teachers are from formal schools and are unacquainted with distance education methodology.

The most important issue: Using and integrating media in distance education

NOS caters to the educational needs of a large number of clientele groups who have been out of the formal schools for one reason or another: social, economic, or geographical disadvantages, or physical and mental disabilities. In order to provide quality education to all these groups in a large country like India, the integration of media is extremely important. However, due to many problems, the major component of the instructional system has been self-instructional print materials distributed to students supported by contact classes and practical work arranged at study centres. Use of media in the system has been marginal for many reasons:

- NOS, which was established in 1989, emphasised three main aspects of the print materials. The Media Unit under the Academic Department was visualised only to co-ordinate production of audio-visual programmes using outside contract producers and post-production staff. The media unit developed no further during the eight years NOS has been in existence. At the moment, NOS is looking for funding from international agencies to set up a temporary production facility as internal funding for production infrastructure will not be forthcoming.
- NOS has been using facilities available with Indira Gandhi National Open University (IGNOU) for one-way video and two-way audio conferencing using the Indian communication satellites INSAT-2A and INSAT-2C. The receiving facilities available in the IGNOU regional centres are also hired by NOS. The use has been mainly to orient and train co-ordinators and tutors in the 800 study centres of NOS. This has been extremely successful; however, the facility has not always been available as many institutions are making use of it. NOS is planning to provide about 10 receiving facilities in Delhi and surrounding areas very soon. NOS has about 120 study centres in this region and enrolls about 35,000 students annually. It plans to start academic counselling and tutoring using the up-link facility and the proposed receiving facilities.
- NOS produces about 60 audio-visual programmes for its secondary (O level) and senior secondary (A level) courses. These programmes are all supplementary and not integrated into the self-instructional print materials. During the instructional design of NOS courses it was assumed that not all students would have access to audio-visual programmes and hence the self-instructional print materials were planned to be developed as complete and self-contained from the learning point of view. Such an approach to design can be changed only after ensuring that all students can either watch or listen to video and audio programmes in the study centres or that these are widely broadcast.
- NOS has approached Doordarshan (Indian National Television) for broadcast time, but unsuccessfully. Alternatively, the ministries of Human Resource Development and Information and Broadcasting are planning to launch a dedicated educational television channel, initially through a cable network and subsequently through

terrestrial transmission], using Doordarshan's low-power transmitters. It is expected that NOS, as well as other educational institutions in the country, will get broadcast time for its programmes. However, if this broadcast channel is available only through a cable network its access will be considerably limited. Most of the villages and small towns in India do not have a cable network facility and even in urban areas it is limited to only well-to-do families. Nevertheless, NOS is increasing production, contracting individual producers and institutions so that a substantial number of video programmes are available.

- NOS is also initiating an Indian Open Schooling Network using the Internet. This network will be linked with The Commonwealth of Learning's Commonwealth Electronic Network for School Education. The Indian Open Schooling Network will provide access to the Internet for all schools and students, who register for a nominal fee and take advantage of information updates in school subjects, career information, and, subsequently, on-line NOS courses.

University of Nairobi

Distance Education Teachers' Programme

Prepared by:

J. O. Odumbe

Brief description of the programme

The College of Education and External Studies distance education teachers' programmes started in 1967 with primary teachers' certificate courses and later, in 1986, a Bachelor of Education (B.Ed.) degree programme was introduced, which eventually replaced the certificate programmes. In 1996, the Post-Graduate Diploma in Education (PGDE) was introduced. Currently the college operates a dual mode programme. The admission to the bachelor's programme is by qualification in the national examinations, while admission to the diploma programme is on the basis of a recognised first degree with at least two teaching subjects. The bachelor's programme takes a minimum of six years, while the diploma programme takes two years. Both programmes are offered by the Department of Educational Studies in the Faculty of External Studies.

The learning system uses specially developed print materials as the main medium of instruction, supported by audio cassettes, audio teleconferencing, and limited face-to-face tutorials of up to two weeks' duration, conducted three times in each academic year. The assessment in these programmes is continual through home written and timed tests as well as end-of-year examinations.

Problems encountered

Planning and managing distance education

- Justifying regulations that provide for flexibility to students.
- Justifying payments for the services rendered by the staff from the internal departments to the Department of Education Studies.

Implementing quality assurance

- Allowing sufficient time to field test materials before production for students.
- Budgeting for the cost of transporting university staff for face-to-face tuition to remote study centres instead of using local staff, who are not well received by students.

Using and integrating media in distance education

- Training students to use each medium appropriately for the purpose it is intended.
- Allowing increased costs to the students and the institution.

Instructional design and production

- Overriding the initial reluctance of writers to accept and see the need for developing materials in the distance education format of presentation, which they felt was too much ‘spoon feeding’.
- Providing resources and time to develop all the materials within the workshop setting, especially for undergraduate and post-graduate materials that need more reference and consultation of sources.
- Encouraging writers to work within the deadlines, especially when there is no lead time.

Learner support systems

- Identifying and developing staff with the right skills, approaches, and attitudes to provide adequate counselling and tutorial services at the study centres.
- Standardising the distribution of infrastructure and learning resources, variations of which create disparity and difficulty to students.
- Providing time and opportunity for adequate individual attention.

The most important issue: Providing guidance and face-to-face tutorial services

These learner support issues are closely connected to quality assurance issues. Apart from helping in the learning process, learner support services also reduce isolation, and sustain or create motivation and confidence to students.

To provide the decentralised tutorial services that play a major role in learner support, the faculty identified tutors from the teacher colleges and universities and organised training for them on tutoring in the distance education system. Enough tutors in each subject were found for all 10 study centres in Kenya. Out of two one-week training sessions conducted for the tutors, a tutors’ handbook was developed and made available to all the tutors. It became a useful guide for briefing new tutors who joined later to replace drop-outs.

When the actual tutoring started, some students were tutored by the university’s course lecturers while others were tutored by college tutors. In some subjects the students felt that those being tutored by course lecturers were advantaged. The feeling became so strong that eventually course lecturers and writers were taken around to each study centre in turn, but this approach became too expensive for the institution and too demanding for individual lecturers.

The regional tutorials were discontinued and instead the residential schools were intensified. Regional tutorials were always presented by course lecturers and have been acceptable to students, who often travel long distances to attend and expect a satisfactory learning opportunity.

For general counselling, the faculty uses resident lecturers who are stationed at six extramural centres in the country. However, these centres do not serve low population density and remote parts of the country; plans are underway to increase the distribution of extramural centres to cover most of the country.

A second move which has been undertaken to provide constant support is by installing audio teleconferencing with eight receiving stations. This technology enables the use of course lecturers throughout the country without strain on their time. This arrangement was made possible by assistance from The Commonwealth of Learning (COL), but budgetary arrangements have been inadequate to sustain it.

The third move has been to prepare students for effective tutorials by encouraging them to read the study materials and identify issues they would like the tutor or course lecturer to explain. As well, at the beginning of a residential school, each student is given a briefing sheet that outlines the objectives and strategies to be used during each specific residential session. This advance information tends to make the students more active participants who do not expect lectures but focus on identified issues.

Last, the part-time tutorial staff and the core staff have been encouraged to allow time for personal attention to students outside class.

University of Nairobi

Prepared by:

Judith W. Kamau

Brief description of the programme

The External Degree Programme of the University of Nairobi is conducted in the Faculty of External Studies, College of Education and External Studies.

The establishment of the External Degree Programme of the University of Nairobi in 1986 followed two feasibility studies in 1976 and 1983, which established the need and relevance of such a programme in Kenya. The External Degree Programme was set up to upgrade both professional and academic qualifications of secondary school teachers who had trained to teach the first two classes of secondary school but who, due to a shortage of staff, found themselves teaching O level and A level classes in the secondary school curriculum. Through distance education these teachers would receive in-service training without leaving their families and as they continued to perform their duties. Of the 600 candidates who were selected and admitted to the programme from more than 3,000 applicants, 504 registered for different subjects in the External Bachelor of Education (Arts) programme.

Problems encountered

Planning and managing distance education

The university with its six colleges is a dual mode institution. The fact that the External Degree Programme operates within a dual mode system has its own inherent problems. The programme has a core of academic staff who serve full-time as subject co-ordinators and are in charge of a group of subjects. This core staff, comprised of subject experts, editor, radio and audio lecturer, and a graphic artist, identify, train, and supervise part-time staff, who are engaged to write, review, and edit instructional materials. The radio and audio lecturer, editor, graphic artist, and printer are in charge of the production and distribution of instructional materials under the supervision of the chair of the Department of External Degrees and the dean of the Faculty of External Studies. Both the chair and the dean answer to the principal of the college, the Deputy Vice-Chancellors, and the Vice-Chancellor, in that hierarchy.

The department and its core staff perform duties similar to those of a publishing house. The subject co-ordinators provide academic guidance and counselling to students during residential sessions and also by correspondence. Each subject co-ordinator handles part-time staff in a whole subject area (for example, history), which constitutes a department of its own in the conventional internal programmes of the university. In this arrangement, part-time staff are paid for their services on a piece work basis. The costs of running the programme are met from government subsidy, student fees (the programmes run on a cost recovery basis), and from the sale of

materials to other institutions such as the Open University of Tanzania; Makerere University, Uganda; and the University of Zimbabwe.

The learning system of the External Degree Programme has been mainly the print materials supported by audio and video cassettes, face-to-face tutorials, and supervised teaching practice, with students studying specially developed print materials in each subject. During the four residential sessions held at the University of Nairobi each year in August, November, January, and April, during school holidays and at the six regional study centres which are spread in six major towns, writers and subject specialists introduce course materials to students, revise course content, and mark assignments and give timed tests that form part of student assessment as provided for in the regulations.

The regional study centres are managed by resident lecturers who are core staff within the External Degree Programme.

Management challenges

The management of the External Degree Programme within a dual mode institution has presented a major challenge.

To start with, the students are external. Where choices must be made, the needs of internal students come first and those of external students come second. This problem is particularly common in the sharing of resources. If the timetable of internal programmes is slightly interrupted, for example, then the residential sessions for external students, which are held at the university where accommodation facilities and tutors are based, must be rescheduled. These interruptions sometimes mean re-scheduling supervised tests and examination schedules, causing frustration to students and part-time staff.

The distance education mode of delivery is not quite understood by senior management. The programme managers on the ground have often found it difficult to explain and justify, for example, expending tuition revenues on the production and reproduction (or reprinting and dubbing) of study materials because the term 'tuition' has a different meaning in the conventional mode.

When the programme started in 1986, students attended regional field tutorials once a month, twelve months a year, in addition to three residential sessions at the University of Nairobi. Although very popular with students, the field tutorials were discontinued in 1990 due to the high costs of paying the field tutors and the accompanying supervision constraints due to limited core staff. However, the hours from the field tutorials were recouped into the residential sessions so that students still have the same number of tutor contact hours per subject. While senior management are convinced about the value of frequent student–tutor physical contact, it is difficult to raise funds to pay for the monthly accommodation and transport bills field tutors incur.

Instructional design and production for distance education

Materials development has been another problem area. When the programme was launched in August 1986, only two units (booklets) in Education were written and ready to go to students in a 10-subject External Degree Programme. Consequently, the other materials were developed as students waited, causing frustration to many. By

the time students were ready for their first-year examinations in 1988 only 388 out of the registered 504 students sat for their exams. By 1990 the programme had only 260 regular students who went on to graduate in 1994. This high drop-out rate was partly due to a lack of study materials to maintain and sustain student motivation and progress through the programme because students lacked credibility about the sustainability of the programme. Also, materials development was delayed due to low motivation on the part of writers, reviewers, and editors, which resulted from delayed payment for work completed because of the long part-time claims scrutinisation process by the finance department. After the claims were approved for payment the amount due was subjected to super scale taxation as required by law, leaving the part-time staff dissatisfied with the very small sum of money earned from writing course materials. As a result, the External Degree Programme lost many good and trained part-time staff, thus prolonging the already protracted materials development process.

Possible solutions

| Problem | Suggested Solution |
|--|---|
| External Degree Programme in a dual mode institution | <ul style="list-style-type: none"> • There is need for some degree of autonomy for the progress of the programme. • Management is often too conservative, leaning more towards the conventional mode. They should be sensitised about the needs of external students. • Measures of full-time students equivalent contact hours should be based on the distance mode requirements rather than on on-campus procedures that do not interface with a distance education programme. |
| Materials development | <ul style="list-style-type: none"> • There is no need for lead time to develop or acquire ready to use course materials. • A programme that starts with limited study material should wait for the materials to roll off the press before accepting students. |
| Processing of part-time claims | <ul style="list-style-type: none"> • To avoid delays, the External Degree Programme requires its own budget to process part-time claims and to procure printing and other materials required for the production of study materials. Of course, this budget would be subject to both internal and external audit as is |

| Problem | Suggested Solution |
|--------------------------|--|
| | the rest of the university. |
| Learner support services | <ul style="list-style-type: none"> • Support services are a vital link between students and the institution providing the programme. • Field tutorials should not be substituted with anything else as they provide the maintenance function for learners who are isolated from the providing institution, their tutors, and from fellow learners. • Logistics for implementation costs, who will bear them, and the availability of physical facilities and field tutors should be planned well in advance in order to limit drawbacks after the programme is launched. • However, the programme has now come of age and the regional centres are now available. The arrangements on the ground seem to satisfy the needs of the students and programme providers adequately. |

Conclusion

The External Degree Programme has been a real eye opener. Following successful completion and graduation of the first cohort of 260 students in December 1994, a second cohort of 1,500 students enrolled in August 1995 and the drop-out rate is negligible because most of the study materials required in the Bachelor of Education (Arts) course are now readily available. Study materials from this programme have helped expand education frontiers through distance education to other countries and other institutions in Kenya. In time there has been a cost benefit accrued from the study materials as different cohorts of students use the materials, thus reducing the unit costs substantially.

Massey University Women's Studies Programme Research for Social Change: A Third Year Compulsory Course

Prepared by:

Catherine Bray

Brief description of the programme

At Massey University, the Women's Studies Programme course 'Research for Social Change', compulsory in the third year, is designed to present information about feminist research for social change in Aotearoa (New Zealand). It weaves together three strands: explanation of research skills (methods); evaluation of research methods (methodology and epistemology); and description of particular New Zealand feminist research projects. Students are required to conduct research for social change and to evaluate published research.

Problems encountered

Planning and managing distance education

- This one semester course is based on a similar course developed and delivered at Athabasca University in Canada. Therefore, the major planning consisted of translating from an open environment in which the students operate on their own timeline and are constrained only by the need to complete the project within six months, to a semestered environment in which a student cohort proceeds together and intermediate assignment deadlines are enforced. This translation resulted in changes to the instructional design, described below.

Implementing quality assurance

- Quality controls consist of normal standards of scholarship, adherence to university-wide key performance indicators, assessment by colleagues within women's studies, and student evaluations.

Using and integrating media in distance education

- Delivery methods include post, telephone, and, where available to the students, e-mail.

Instructional design and production for distance education

- The most important design element to include in an upper year skills building course such as 'Research for Social Change' is the opportunity for the students to consult with tutors and other students about their projects as they complete their research. Production is print-based, on the Massey campus, using editorial and educational consultants.

Learner support systems

- Learner support systems include tutors, the international students' office, regional advisers, chaplaincy, disabilities office, English Language Centre, student counselling service, and the Massey University library. The Extramural Students' Society facilitates communication between students by mail and the Centre for University Extramural Studies organises optional regional gatherings for students and tutors.

The most important issue: Instructional design and production

In 1993 I developed Athabasca University's course Women's Studies 444 'Feminist Research Methodology'. This course has been successfully delivered to a small number of fourth year women's studies major Bachelor of Arts students each year. As part of my work at Massey University, I am designing a similar course for the Aotearoa environment. The lessons I have learned through this process include the following.

- Some of the classic material in the field of women's studies seems applicable in 'western' countries around the world. A canon has developed in women's studies as in other fields.
- As a consequence of the need to ground the course in the New Zealand experience, about 40 percent of the teaching materials are new.
- Instructional design is affected by the following differences:
 - Students usually pay for their phone calls to tutors at Massey but not at Athabasca.
 - There are intermediate assignment deadlines at Massey but none at Athabasca.
 - There are more international students at Massey.

Therefore, the study and administration guide at Massey must include more assistance with the process of learning (for example, precise information on note taking, sample quiz answers, more explicit grading guidelines).

Massey University is a 'dual mode' institution, which delivers its courses both extramurally and internally. Because of the more rapid production and revision of courses at Massey than at Athabasca, as well as on-campus teaching, there is less time for lecturers to devote to course writing, and the study guide therefore includes less by way of commentary. Where thoroughgoing synthesis are included in Athabasca study guides, Massey study guides contain shorter questions and commentaries. However, Massey texts and study guides can be more up-to-date because of the more rapid re-development of materials.

The dual mode institution allows the testing of materials in a classroom situation, prior to delivery at a distance, allowing the refinement of commentaries to be included in the study guide. However, distinctive components for extramural delivery must still be created, in keeping with the difference learning process.

University of Papua New Guinea Institute of Distance and Continuing Education

Prepared by:

Harold Markowitz

Brief description of the programme

Distance education began at the University of Papua New Guinea in 1974, with the establishment of the Department of Extension Studies. In 1994, the Institute of Distance and Continuing Education (IDCE) replaced Extension Studies, adopting a broader mission and new funding and reporting processes. Enrolment in the distance education programme has increased continuously in recent years, with growth in all programme areas and at each of the 15 distance education centres in the provinces and on the main campus in the National Capital District. The central activities are the Matriculation Programme (upper high school), the Diploma in Commerce Programme (two-year university diploma in accounting), the Bachelor of Education In-service Programme (for upgrading elementary teachers), and the Non-credit Programme (maths and English review). In 1996 there were approximately 16,000 course enrolments throughout Papua New Guinea (up from 4,000 in 1991), and, in 1997, enrolment is expected to show continued increases.

Problems encountered

Planning and managing distance education

- A lack of planning for growth in distance education is a serious problem. The nation is growing at an annual rate that exceeds most other nations, yet the high school system has increased its intake only slightly by building new schools and the university system has not increased its intake in several years. Increasing enrolments result from the increasing demand for distance education, and increasing enrolments also result from the opening of new centres and new courses, but due to national financial limitations the institution has had repeated cuts in staff and funding.

Using and integrating media

- Courses are based entirely on the printed page and tutoring, and no media have been introduced. The tropical environment and the lack of air conditioning results in prompt growth of mold on the few audio and video cassettes that have been obtained, soon making them unusable. There are no facilities for creating audio or video cassettes, no staffing or funds to do so, and equipment for playing cassettes exists only at a few centres (and then it is typically one machine in the director's office). Most centres have a computer for administrative use, but only in one centre are computers used for education.

The most important issue: The planning environment at the university

Guidelines for IDCE planning are derived primarily from three documents: The national higher education plan, the University of Papua New Guinea's five-year plan, and the plan for the institute. Though these documents assign our mission and provide the best and most comprehensive structure for our activities, problems with each limit their usefulness.

Both the national higher education plan and the University of Papua New Guinea's five-year plan have gone unrevised for several years, well beyond the period they were intended to cover, and thus they reflect the priorities and values of several years ago. An example of an outdated value is the advocacy of goals for IDCE enrolment growth that are so conservative that they were fully achieved six years ago. Current issues and the concerns of the nation and the university have not been woven into the structure of these documents. Examples here are the failure to address the massive change in teacher education and new educational standards, and the failure to reflect major changes in educational emphasis growing out of the restructuring of our national and provincial governments.

Lacking any other guidance, the guidelines provided by the higher education plan and the University of Papua New Guinea's five-year plan have been closely reflected in the plan for the institute. Indeed, the rationale for operation as an institute is presented in the national higher education plan. The national plan also provides the framework within which growth and development of the institute is expected to occur. IDCE has continued to take the derived plan for the institute very seriously, particularly since it has been endorsed by the University Planning Committee, the Academic Board, and the University Council. This document was the basis for recurrent requests for increased staffing and financial resources in the past three years, without any results. In fact, the IDCE central office's annual budget of 140,000 kina in 1994 has been reduced to 23,000 kina in 1997, which is the equivalent of about one United States dollar per course enrolment. Over the past six years we have repeatedly proposed that a standard be adopted for staffing (most recently suggesting a ratio of 1,000 students to each academic, which if accepted would double our staff) but no action has ever been taken. It must be said that there has been no detectable support for the planning process as a basis for resource allocation in the university.

The plan for the institute contains our view of the IDCE's future, and as such it is our guideline for mission accomplishment. For example, in the years ahead our priorities for growth in certain areas and reduction in others will be as outlined in the plan. Similarly, later this year when IDCE occupies the new building constructed for it by the European Union, and when IDCE eventually expands its staff and incorporates new media, the utilisation of these resources will be as described in the plan. If and when the national higher education plan or the university five-year plan is revised in the future, the plan for the institute will then be revised to assure the compatibility and support that is required in an effective planning environment. We have elected to be true to our assigned mission of bringing increasing educational opportunity to a nation that desperately needs it. By franchising our courses to private institutions and by raising and retaining registration fees we have assured operating funds for essential IDCE activities at the main campus. Provinces usually provide budgets for university centres, but some provinces have virtually no money and most centres are in poverty.

We have begun a planned reduction in non-credit (remedial maths and English) courses, reducing non-credit enrolments to offset some of the growth in matriculation and degree programmes. Using collected fees we have recently hired two new staff members, though we may not be able to retain them as the university does not provide benefits such as housing because they are not a part of the regular establishment.

In 1997 an estimated 62 percent of all students in the university will be in the distance education programme, but IDCE has only six academics and two administrators on the main campus and a maximum of two persons at each centre. Funding, already sub-marginal, is expected to decrease by five percent each year for the next three years, disregarding inflation. Staffing has been cut, people who leave are not replaced, and it is difficult to remain confident of our future ability to grade papers much less revise courses. We are at a crossroads, with rapidly increasing demand and massive expectations, and no agreed-upon plan for achieving our assigned goals.

University of the Philippines Open University

Prepared by:

P. Eulalia

L. Saplala

Brief description of the programme

The University of the Philippines Open University (UPOU) is one of six autonomous units of the University of the Philippines system. All the other autonomous units operate in the residential mode; the UPOU alone of the six units is mandated to be the open and distance education institution of the University of the Philippines system. It has its own set of officials headed by a chancellor and it has its own budget. Unlike the other autonomous units, however, it does not have its own faculty. Recognising the rich human resources of the University of the Philippines system, the University of the Philippines Board of Regents in its resolution establishing the University of the Philippines Open University on February 23, 1995, directed the UPOU to draw from the expertise and experience of the University of the Philippines faculty in all the autonomous units.

In each of the autonomous units of the UP system, the UPOU has set up a School for Distance Education headed by a dean. The deans work very closely with the autonomous units, where they are located to develop programmes and courses to be delivered by distance mode by the UPOU. To guide the faculty in developing the course materials for the programmes, the Office of Academic Support and Instructional Services (OASIS) was established under the Office of the Vice-Chancellor for Academic Affairs.

Delivery of instruction is administered by the Office of the Vice-Chancellor for Student Support Services. The UPOU operates its distance education programmes through learning centres distributed throughout the country. These centres are located either in a UP campus or in a non-UP institution, including other state universities and colleges, high schools, or even in government offices which are willing to work with the UPOU as co-operating institutions. Each learning centre is under the charge of a local co-ordinator who works part-time for the UPOU, as do the locally hired tutors who may be members of the faculty of the co-operating institution.

While autonomous, the UPOU is not a stand-alone institution since it works very closely with the faculty of the other autonomous units, both in programme and course development and in the delivery of instruction.

The University of the Philippines plays a critical role in national development, particularly in the improvement of the quality of the country's human resources and the ability to bring about technological changes that would make for a globally competitive economy. However, the University of the Philippines' instructional output has been limited by the bounds of conventional instructional modes. The UPOU

can play a significant role in increasing this output by developing open and distance education programmes which employ modern communication technology for their delivery. These programmes are expected to overcome barriers to access to higher education brought about by geographical constraints, family and work-related responsibilities, and the rigid structures of conventional education.

Only two years old this year 1997, the UPOU now offers eight diploma programmes, six masters' programmes, and one Ph.D. programme. It is developing an undergraduate programme, an associate in arts. It operates 20 learning centres in the country and one abroad, and will set up several more this year in the Philippines, and possibly another one abroad. While employing less than 70 full-time staff, the UPOU has a wider reach in the country than any other educational institution, including the other autonomous units of the University of the Philippines system.

Academic programmes

Academic programmes of UPOU offered in collaboration with the different units of the autonomous universities are set out in the following table.

| Programme | Collaborator |
|---|---|
| Diploma in Science Teaching | <i>College of Arts and Sciences, UP Los Banos</i> |
| Diploma in Agriculture | <i>College of Agriculture, UP Los Banos</i> |
| Diploma in Research and Development Management | <i>College of Economics and Management, UP Los Banos</i> |
| Diploma or Master of Social Work | <i>College of Social Work and Community Development, UP Diliman</i> |
| Diploma or Master in Language Studies Education | <i>College of Education, UP Diliman</i> |
| Diploma or Master in Social Studies Education | <i>College of Education, UP Diliman</i> |
| Diploma in Mathematics Teaching | <i>College of Arts and Sciences, UP Los Banos</i> |
| Diploma in Computer Science | <i>College of Arts and Sciences, UP Los Banos</i> |
| Master in Public Health | <i>College of Public Health, UP Manila</i> |
| Master of Hospital Administration | <i>College of Public Health, UP Manila</i> |
| Master of Arts in Nursing | <i>College of Nursing, UP Manila</i> |
| Ph.D. in Education | <i>College of Education, UP Diliman</i> |

Problems encountered

Planning and managing distance education

- Since the UPOU does not have its own faculty, it must win the support and co-operation of the faculties in the different autonomous units. Because these faculties carry the full load of work in their own autonomous units, work for the UPOU may not be their priority.
- It is important to be able to identify the right co-operating institution where the learning centre is to be located. Since a local co-ordinator and local tutors will be hired for student support, care must be taken in choosing the right people who will work with the UPOU in meeting its objectives.

Implementing quality assurance

- UPOU designates a quality circle course writing team. Finding the best teacher who also knows how to write modules for distance education may be a problem. It is not easy to find the other members of the course writing team — such as the instructional designer, the reader, the editor, and so on — who possess both the qualifications and the time to devote to the development of course materials.
- The other aspect of quality assurance is in the delivery of instruction. Our students go to the learning centres about once a month or about four times in a term to attend study sessions, submit assignments, and sit for examinations. The success of these study sessions depends upon the competence of the tutors. When they are hired, they undergo training in the art of facilitating study sessions and in the content of the course that they will facilitate. While tutors are hired on the strength of their background in the area in which they will serve as tutors, there is no guarantee that they will live up to expectations.

Using and integrating media in distance education

- Print is the major medium in the UPOU's distance education courses. However, the university has begun to develop courses for on-line offering using the Internet, and video lessons for broadcast (having obtained a time slot in a major television channel), or for learning centres. The cost in terms of staffing requirements, equipment, and other production aspects is very high. Video conferencing, for example, is very expensive. High costs will continue to be a limiting factor in the use of technology.
- The plus factor in the use of technology is that, as in the case of television, its audience reach is very wide. The UPOU would be serving not only its own students, it would be helping to bring educational programmes into the homes of many Filipinos.

Instructional design and production for distance education

- The training of the faculty in course development is a continuing programme of the UPOU, but it has a limited number of people competent enough to handle the training programmes and to shepherd the faculty through the difficult task of writing course materials. As it is, development and production is still on a very

small scale, but when the number of students and the number of programmes increase, as they increase every year, the UPOU, with its limited funds, will have to find ways of coping with the volume of work.

Learning support systems

- The lack of a communication system linking the learning centres with the UPOU offices hampers the efficient delivery of student support. An audio conferencing system will soon be installed but it will not yet cover all the learning centres. A telephone network to include Internet use is being designed in co-operation with a private service provider.
- There is an acute need for library resources. Orders for foreign publications take weeks, maybe even months to arrive. Of course funding is a problem because UPOU must provide library resources not to one or two centres but to 20 or later 30 or perhaps even 50 centres.
- With the lack of communication facilities, faculty or tutors are not within easy reach of the students. To meet a tutor, students must go to the learning centre, which may not be close to home and will require the student to travel some distance. While counselling services are available, they are on a very limited scale. Aside from the lack of communication facilities, the tutors and even the learning centre co-ordinator serve only on a part-time basis and have a limited time to serve the students.

The most important issue: Planning and managing distance education

Because of its unique structure in the University of the Philippines system, the UPOU is autonomous but at the same time must work very closely with each of the other autonomous units. Administratively, this situation may give rise to rather complex procedures. Papers must be routed not only through one set of officials within an autonomous unit but as well through the other autonomous unit whose faculty are involved in distance education programmes. The UPOU finds itself therefore involved with five other sets of officials in addition to its own officials, which can become very complicated. Programmes must be approved in the autonomous unit from which they originate, and then go through the UPOU machinery. The same is true of appointments of course writers, appointments to course teams, and appointments as faculty-in-charge of courses offered by the UPOU; even the offering of courses must be synchronised with the autonomous unit colleges since faculty credit load must be cleared with their deans.

Undoubtedly, the UPOU has increased the workload of the faculty in the residential colleges by adding distance education responsibilities. Conflict therefore may arise in terms of which takes priority: work for the mother unit (the residential college), or work for the UPOU. While the faculty may be willing to put in their time for UPOU responsibilities, their administrators may believe otherwise and require that the mother units have first priority. When this happens, the UPOU of course finds itself in a difficult situation accomplishing the task to be done.

Solutions

Several approaches have been initiated to address the situation.

- To remove the issue of ownership of programmes and therefore of who can or should initiate any action with regard to programmes, the UPOU is embarking on using a different approach to programme and course development. UPOU will take a proactive stance and take the lead within and outside of the University of the Philippines system, and will seek to include those who have retired from active service in the university to help develop the programmes and instructional materials.
- Since serving in the programmes of the UPOU increases the load of the faculty in the other units, the UPOU must help the colleges of these units with funds to allow them to hire additional faculty for better distribution of workload.
- UPOU will start to hire its own faculty to serve as a core faculty for each programme. It will then have full-time academics to run its programme.

Open University of Sri Lanka

Prepared by:

B. Weerasinghe

Brief description of the programme

The Open University of Sri Lanka (OUSL) was established in 1980 to provide greater access to higher learning for the employed and adults. Today it has an enrolment of nearly 20,000 students spread across three faculties of study: Engineering Technology, Humanities and Social Studies, and Natural Science. The programmes offered vary from one-year certificates and two-year diplomas, to three- and four-year degree programmes. Students can extend the duration of study at their convenience. OUSL also offers reading for post-graduate diplomas and degrees.

The distance education strategy involves the distribution to learners of study material in print, supplemented occasionally with audio cassettes. Limited video material is available for viewing at regional centres and study centres.

Regional centres are larger resource bases than study centres in terms of physical space, facilities, and staff availability. Currently four regional centres and 16 study centres are spread across the country. Day schools offer limited face-to-face interaction between staff and students at these centres. Laboratory facilities are more concentrated at the Colombo regional centre with limited access at other regional centres.

Student performance is assessed through continuous assessments and a final exam.

Problems encountered

Planning and managing distance education

- The study programmes and their conduct are planned by individual faculties and implemented with the approval of the university Senate. Management of activities related to the conduct of programmes are done according to a master plan by the director of operations. The OUSL is currently formulating a three-year corporate plan to enhance planning and management.

Implementing quality assurance

- There has been no quality assurance system in place until recently. OUSL has now developed its own house style. The British Overseas Development Administration (ODA) Project to improve distance education at the OUSL (1996 to 1999) has both a material production and a desktop publishing component which, by its completion, would have quality assurance systems in place for study material in print. Quality assurance for audio-visual material is yet to be formulated. The Senate has approved recently a scheme to award merit points for audio-visual productions to teachers involved in their production, which would develop into a

quality assurance system. Currently, research surveys are being conducted to assess the quality of delivery mechanisms.

Using and integrating media in distance education

- Yet to achieve a satisfactory level, the use of media in distance education is limited to regular workshops conducted for academic staff, which focus on the need to enhance print material with other media components and the need for integration. One drawback seems to be the availability of staff time for the exercise.

Instructional design and production for distance education

- OUSL has developed a manual called *Distance Writing: Bridging the Gap*, which guides lesson writers in important aspects of distance writing. However, the consensus is that OUSL material could improve both in instructional design and enhancement with media. The material production component of the ODA project may, within the next three years, contribute extensively to the transformation of existing material.

Learner support systems

- A guidebook distributed to students at registration now helps to induct students to the system of distance education at the OUSL. Further activities to orient students are being planned, including a video programme for student viewing at registration. Such orientation is crucial for success, especially for younger students. Student counselling is available easily for those who desire such help. The Regional Education Service (RES), functioning under a director, looks after the student support activities in the network of regional and study centres. RES provides facilities and staff to support student registration; issue course material; facilitate day schools, laboratory work, and continuous assessments and examinations; and provide library services and dormitory facilities for overnight stays at regional centres. Currently, a conscious effort is being made to improve student support at every level of operation. However, budgetary constraints and overload of the human network imposes certain restrictions in resolving issues as they surface.
- Activities related to the printing and dispatch of material are looked after by the director of operations. A new building complex for the university press and storage of material was nearing completion in 1997. Consequently, an upgrading of services in this area should result.

The most important issue: Using and integrating media in distance education

In the beginning, the majority of teachers at OUSL came from the conventional university system, their experiences rich in the use of print and face-to-face teaching. To most, use of other media components as well as distance writing itself has been an alien experience. The initial pressure to gather together course material to launch programmes in the early phase of development, within specified deadlines, had resulted in a first cycle of course material in need of much improvement to suit the distance mode. Adopting an appropriate 'media mix' had also suffered drawbacks for

the same reasons. Instructional design and media integration were at a low ebb. This scenario is apparently not unique to OUSL. Other institutions in the region and elsewhere have undergone similar experiences during their formative years.

With nearly 15 years of experience, in 1997 the OUSL has paused and is looking back with a hope of consolidating its future. In 1993, the government of Japan donated a US\$8.5 million project to establish a state-of-the-art audio-visual production centre. Since then the OUSL has been training academic staff in the use of audio-visuals to enhance study material. Nearly 100 academic staff have now been trained at several in-house workshops of one month's duration in which project work demands the completion of a print-related audio and a video programme. A long term Japanese International Cupertino Agency (JICA) expert has been helping the training for the last four years. However, the completion rate has been affected by the heavy workloads of academic staff who after their return from the workshop mostly fail to find time for media inputs. The OUSL at present has no staff positions comparable to 'producers' and depends on input by academic staff and a competent team of technical staff to carry out productions.

The university Senate has recently approved a merit point scheme to award merit points for audio-visual productions that would be considered as career promotion exercises for academic staff. This strategy to motivate staff participation in audio-visual productions is pending University Grants Commission approval at present. Its effectiveness in overcoming the constraints mentioned earlier is yet to be proven.

A positive outcome of all these activities is the awareness and consensus among academics that media components are very desirable to enhance learning. It is a personal belief that achieving this end in itself has been extremely important.

This is only a beginning. A longer journey waits to reach the goal of an adequate level of media component production to enhance all study material at OUSL.

Open University of Sri Lanka Post-Graduate Diploma in Education Programme

Prepared by:

G. D. Lekamge

Brief description of the programme

The OUSL started the two-year Post-Graduate Diploma in Education Programme (PGDE) in 1980 in collaboration with the Ministry of Education of Sri Lanka. The main objective of the programme is to provide professional training for graduate teachers employed in government schools, pirtvenas (community schools) private schools, and teachers' colleges. A few years ago selection to the programme was based on teachers' seniority and the marks obtained in the qualifying test. Now it is open to all graduates of recognised universities.

The curriculum of the programme consists of nine components: eight theory subjects and one practical component. Students complete four theory subjects in each academic year as shown in the following table. Teaching practice, which is the only practical component of the programme, is arranged under the supervision of master teachers and carried out for eight to 10 weeks at the end of the second academic year.

The main medium of imparting instruction is print material. They are supported by occasional day schools, tutorials and a few audio and video programmes. In 1995–96, 3,200 students were enrolled in both Parts I and II of the programme. Several studies have been carried out by OUSL academics with the view of improving the quality of material and instruction, minimising drop-out rates, and increasing the effectiveness of the programme.

| PGDE Programme — Part I Courses | PGDE Programme — Part II Courses |
|---|---|
| ESP 1305 — 'Principles of Education' | ESP 2305 — 'Teaching Practice' |
| ESP 1306 — 'Educational Psychology' | ESP 2306 — 'Techniques of Teaching' |
| ESP 1307 — 'Evaluation of Educational Outcomes' | ESP 2207 — 'Curriculum, School and Society' |
| ESP 1308 — 'Student Adjustment and Counselling' | ESP 2208 — 'Comparative Education and Educational Problems' |
| | ESP 2209 — 'Educational Administration and Management' |

Problems encountered

Planning and managing distance education

- Monitoring and co-ordination of master teachers activities is difficult because of the large numbers involved (250 master teachers) and their placement in dispersed locations.
- Meeting schedules is difficult: even though the PGDE is a two-year programme, academic activities last for six months in each year. Therefore marking assignments and giving eligibility have always been delayed.

Implementing quality assurance

- Because of the involvement of large numbers and pressure put on meeting eligibility schedules, it is difficult to maintain quality in marking assignments. Discrepancies among marking examiners are noted.
- Updating material is not economical.

Using and integrating media in distance education

- Audio-visual programmes are not popular among teacher trainees. They prefer face-to-face instructors to audio-visual programmes.
- Academic staff is heavily burdened with other activities (planning, management, writing, marking, and conducting day schools), so it is very difficult to find time to produce good quality audio-visual material.

Instructional design and production for distance education

- It is difficult to simplify material while maintaining the quality of teacher training.
- Academics who have worked in the conventional university system have little faith in distance methods.

Learner support systems

- Participation in day schools and tutorials has been limited due to personal difficulties and geographical barriers.
- Decentralisation of academic and other support is difficult due to lack of facilities.

The most important issue: Monitoring and co-ordinating teaching practice

The OUSL recruits nearly 250 master teachers from all over the country to conduct teaching practice during the second year of the programme. They are full-time employees of other institutions like government schools, teachers' colleges, training colleges, or technical colleges. Therefore they tend to maintain their own schedule of involvement in the distance education programme so that it will not affect their day-to-day activities. Due to the enrolment of large numbers and geographical barriers, proper monitoring and co-ordination procedures cannot be maintained. This situation has led to the following problems:

- variability in guidance;
- difficulty in meeting deadlines;
- poor quality of supervision and guidance;
- practical difficulties faced by the students; and
- negligence of the supervisory role (they tend to act as evaluators but not as supervisors).

Solutions

On the basis of recent research findings and the experience of academic staff of the Department of Education, the following procedures were launched as solutions to the above problems:

- conduct workshops and seminars for master teachers;
- conduct demonstration lessons for student teachers in small groups; and
- the significance accorded master teachers' evaluation was reduced from 50 percent to 30 percent and a decision was made to consider it a continuous assessment of teaching practice.

Suggestions were also made to allocate 10 to 15 master teachers to each academic member of the Department of Education to monitor their activities. However, many problems remain unsettled.

University of Tanzania

Prepared by:

Dr. Eginu M. Chale

Brief description of the programme

University status

The Open University of Tanzania (OUT) is a pioneering tertiary level distance education institution. It is the third public university in Tanzania, but with a difference.

The Open University of Tanzania was set up after a history of more than half a century following the adoption of open and distance education as a strategy of increasing access to education in Tanzania. It is against this experienced context that the university came to be established by Act of Parliament No. 17 of 1992. The Act became effective on March 1, 1993, and the activities of the university were inaugurated in January 1994 when the first Chancellor was installed.

The university is a forerunner not so much in adopting the multimedia distance education approach, for even conventional universities are increasingly becoming dual mode, but in having been set up constitutionally as a single mode university. Apart from being independent, it is meant to be innovative, comprehensive in its programmes, as well as exclusive in its use of distance education, as certified by the Higher Education Accreditation Council of Tanzania (1996).

Location, boundaries, and mission

The three public universities in Tanzania to date are meant to serve the whole of the United Republic of Tanzania with a total population of about 30 million (1988) spread within 245,000 square kilometres.

While efforts have been in progress to grant the Open University of Tanzania a permanent home, for expediency, it began in temporary offices let by another institution. Finding those offices eminently suitable, the university has scheduled them to become their permanent home. They are located in Msasani township in Kinondoni, which is about seven and one-half kilometres from the Dar es Salaam city centre.

Despite being headquartered in Dar es Salaam, the university's campus in practical terms needs to be conceived as the whole of Tanzania and beyond on account of its out-reach delivery provisions of distance education, namely, print, broadcast, and occasional face-to-face contact at study centres. Thus, in order to be accessed, the complete address of both the head office and the out-reach regional and study centres need to be known.

The university's objectives and functions as provided for in the Act are two pronged. On the one hand it must offer the opportunity for formal courses to youth and adults leading to pre-degree, degree, and post-graduate awards, and on the other hand, it must provide continuing (non-formal) education programmes which do not necessarily lead to awards or qualifications. It is thus open to all students 18 years and older and from all walks of life. The university serves mostly working adults with or without full-time employment where and when they wish and at a pace that suits individual needs.

Organisational structure, decision-making machinery, and academic processes

Although at face value the university's organisational structure is elusively similar to a campus-based university, in practical terms the Open University of Tanzania's organisational structure provided for a considerable administrative flexibility inherent in multimedia distance education. The organisational structure takes into account the central responsibility of providing high quality education through such processes as the development and production of course materials, technology, integration in teaching, their distribution and storage, and the delivery of back-up services. It thus has a dual structure: it is partly centralised and partly, if not largely decentralised through the establishment of regional and study centres. While this duality defines power relations between the headquarters and periphery, it also defines delivery processes: specifically, course development, media technology integration, publishing and production, pedagogy and teaching, and student services. All these processes need to be conceived as integral components. Two separate charts are provided to illustrate structural relations and processes.

Chart I

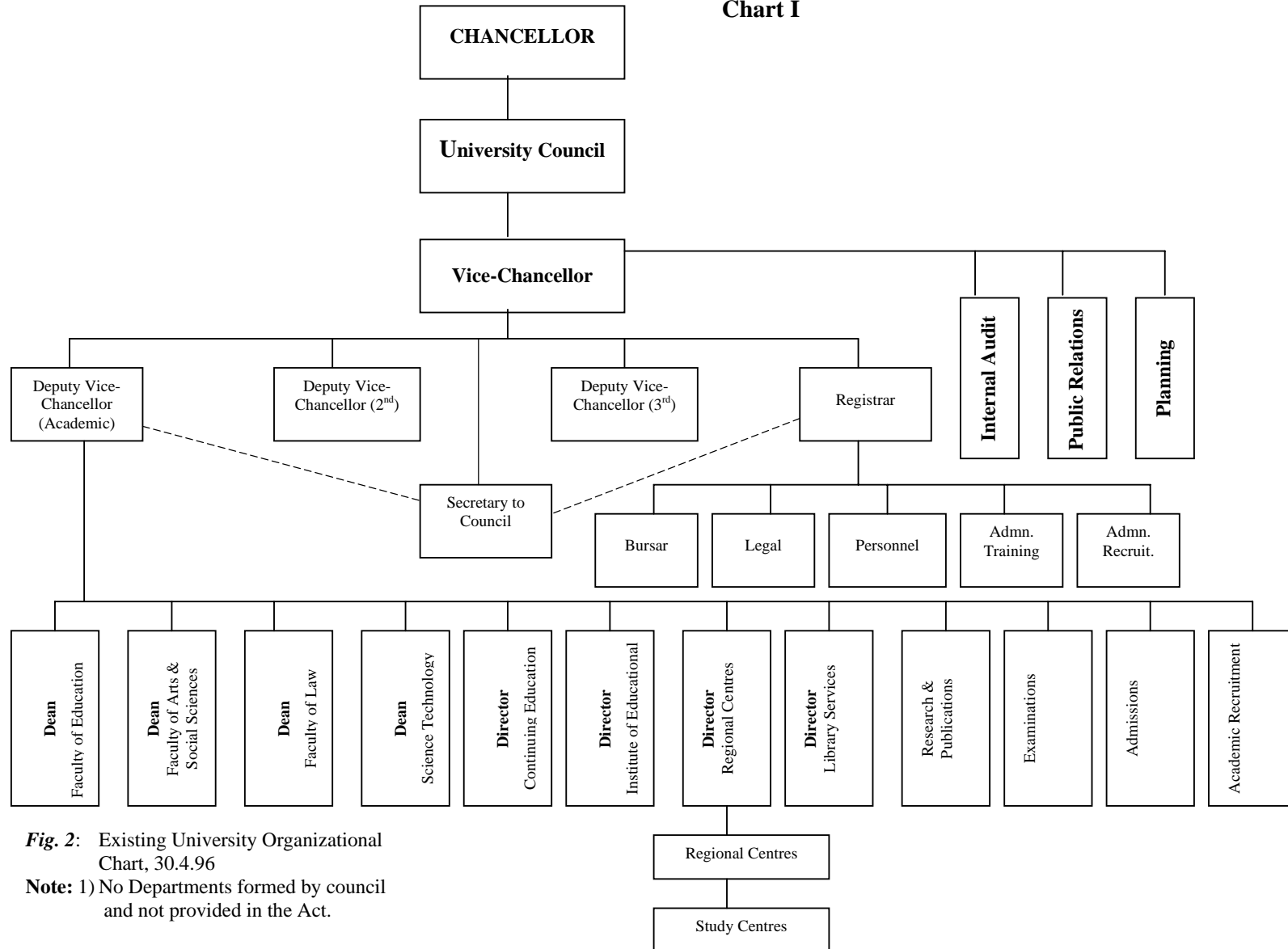


Fig. 2: Existing University Organizational Chart, 30.4.96

Note: 1) No Departments formed by council and not provided in the Act.

Chart II

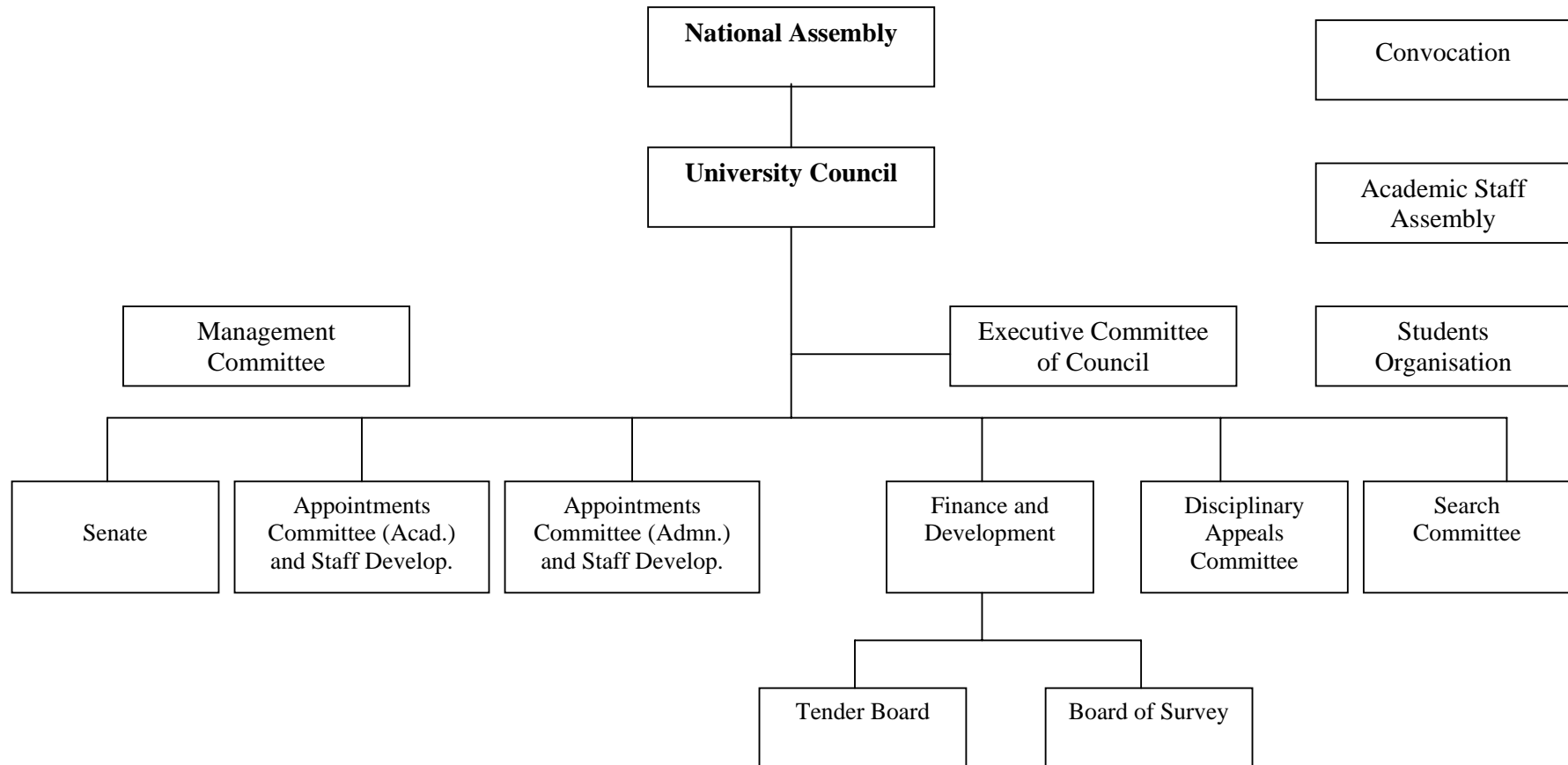


Figure 1: Existing University Decision Making Machinery April 30, 1996.

- NOTES:
- (1) No Departmental meetings are provided for in the Act now approved by Council.
 - (2) No Workers Council has been established or provided for in the Act by the Council.

The conically defined structure at the head office with the Chancellor on the apex as the head is the university administrative expediency designed to take into account of the national policies applicable to public institutions. The next in line is the Vice-Chancellor. He or she is the chief executive answerable to the Chancellor through the University Council, which is the supreme statutory institutional authority. Parallel to Council but in the academic arena, the top-most authority is the Senate. It is responsible for all academic matters. Below the dual authorities are both statutory and non-statutory organs, including the committees of the council, faculties, institutes, and boards. The Vice-Chancellor is assisted by three Deputy Vice-Chancellors and the Registrar (Finance and Administration). All of these four officers are responsible and accountable to the Vice-Chancellor.

The Open University of Tanzania's decentralised structure facilitates access to open and distance education for dispersed students who may on occasion be convened at regional or study centres. The regional centres are thus designed to co-ordinate and supervise the Open University of Tanzania's activities for students, tutors, and the public.

Staffing

With the priority given academic administration, the university is designed to operate with a proportionately small core of full-time officers (35 to date) and a large number of part-time staff (95). To accomplish its mission, objectives are made feasible through the rational use of contracted expertise and facilities of other public institutions. Currently there are five categories of full-time officers: executive, academic, administrative and management, technical, and operational or ancillary. Part-time staff, on the other hand, are of a wide range, both academic and non-academic. They are formally co-opted or contracted on a piece work basis as the need arises to perform behind-the-scene functions such as to writing study materials; reviewing them; setting assignments, tests, and examinations; and handling the production and distribution of learning materials. Thus the terms and conditions of service of the two principal categories of officers — full-time and part-time — are different in statutory terms. On the whole the qualifications prescribed by campus-based university for their staff are enforced here too.

Programmes, mode of study, and academic calendar

On its commencement in 1994 the Open University of Tanzania started with four degree programmes. The following year, three similar programmes were added and, in 1996, one more programme was brought up. Thus the Open University of Tanzania has a total of eight programmes on completion of its first three-year cycle: the Foundation Programme, Bachelor of Arts, Bachelor of Arts with Education, Bachelor of Science, Bachelor of Science with Education, Bachelor of Commerce, Bachelor of Commerce with Education, and the Bachelor of Laws. This array may appear to be quite ambitious but it is believed the range of under-graduate programmes reflect the great need for higher education in Tanzania.

For the mode of study, the degree programme is arranged in three parts, with each part corresponding to one academic year at a residential full-time university. All candidates for the Open University of Tanzania degree programme are meant to take

their courses by distance study methods. The main medium of instruction is through print materials. The main study materials for each of the subjects are called ‘units’, with each unit covering content materials equivalent to 35 one-hour lecture materials. Students are expected to spend a minimum of 70 hours studying each unit, spread over 10 weeks. Student support services are provided in the form of face-to-face teaching, audio cassettes, library services, and other learning media, laboratory exercises for science subjects organised at designated institutions, and teaching practice or field work for others as the disciplines may dictate. Theoretically, the pace of learning for Open University of Tanzania students (who are considered part-time learners) is designed at half the pace of the full-time candidates in the same course taught at the conventional universities.

To qualify for the award of the degree a candidate is supposed to have successfully completed study for the degree extending over a period of not less than six academic years. A study may take a maximum of two years on any one part provided that he or she does not exceed eight years in total. Earlier completion is possible for students who can set aside more time for their studies and whose progress from year to year is satisfactory.

In summary, the Open University of Tanzania as a national university is established to offer academic programmes to students throughout Tanzania. Its distance education method allows students all over the country to pursue higher education whenever and wherever convenient without interfering with their other personal, occupational, and vocational obligations. The institution attempts to offer an intricate and integrated distance education system that combines expertly formulated study materials and text books, 35 full-time staff and 95 part-time staff, a growing number of study centres throughout Tanzania, an exacting range of tutors as well as self-marked assignments, exams, and a multimedia programme of educational supplements. The flexible method of study effectively surmounts the obstacles of distance and time, making academic studies available to additional youth and adults hitherto prevented from studies by technical difficulties.

Problems encountered

Implementing quality assurance

The university has adopted and adapted various processes that enhance quality assurance. Alongside the development of its own study materials the university has made use of transferred materials produced by other open universities. On the other hand the development of its own materials has been accompanied by training workshops, completed either individually or by course teams. Completed draft learning materials are expediently taken to external course reviewers in place of subjecting them to trials by students.

The production of such materials also counts in one’s academic advancement as well as promotion. The university also liaises with all tertiary institutions in the country in order to benefit from their human and material resources. It has also established links with local business organisations, external universities, The Commonwealth of Learning (COL), the Association of Commonwealth Universities (ACU), Association of African Universities (AAU) and Association of Eastern and Southern African

Universities (AESAU). The Open University of Tanzania is thus keen in fostering close collaboration with relevant institutions, organisations, and agencies at regional, sub-regional, and international levels. It has built into its programmes formative and summative evaluation so that regularly the performance of the institution itself, its working tools and its products (students) are systemically determined through external examining. Thus, despite flexible entry qualifications, the university enforces vigorous quality assurance mechanisms and tight control over the standards.

Using and integrating media in distance education

Adoption of a multimedia approach is statutorily provided for in the university. Print has hitherto been the ‘master medium’ for teaching. It is supported by radio, audio cassettes, field work, and face-to-face sessions. Plans are underway to make use of television on completion of the establishment of a national network in the country. Interim plans in the regular use of the national radio broadcasting services initially thought to be free of charge has suffered a setback after its being transformed into a self-financing agency. Study centres are meant to be the focal point for student-to-student interactive learning and common listening and viewing of audio taped and video taped educational materials.

Instructional design and production for distance education

The didactic design of the university materials, in keeping with the central theory and practice of distance education, is marked with provisions of two-way communication. Their instructional design, unlike textbooks that smack of one-way instruction, reflect the dialogue and interaction processes of both teaching and learning.

Arising out of the instructional design is the convergence of two types of tutors: the course writer and the provider of student support services (that is, the course tutor). The two terms: ‘course writer’ and ‘tutor’ as used by people in higher echelons of distance education are but conceptual constructs that are mutually related. Regrettably, however, research to date in a number of distance education institutions seems to suggest that the training of the distance tutor is not given as much prominence as that of the course developer and producer.

The materials’ design and development are actuated through both individual and team approaches all the way through the planning, writing, reviewing, testing, typesetting, and editing. Their final production is done by appointed printing agencies. By and large this task is handled by both core and part-time members of the university.

Learner support systems

Provision of learner support services is embedded in the centralised and decentralised organisation of the university and staffing levels. It is designed to have a small but highly competent cadre of permanent academic, administrative, and technical staff at the headquarters and at the regional centres. Some decision-making processes should devolve to the periphery, where regional centres are used for such activities as face-to-face sessions, laboratory and field work, time-tests, and for final examinations. As discussed earlier, the centres are designed to be pivotal in the learners’ interactive activities. They constitute learning communities.

Up to the Open University of Tanzania's fourth year (1997), about 4,000 adult learners have seized the opportunity to benefit from its wide range of professional, business, and other courses at pre-degree and degree levels designed to meet the challenges of tomorrow. Post-graduate programmes are in the offing. By the end of 1998 about 1,000 students are expected to receive their degrees. Their spread is set out in the following table, which shows student distribution by: programme; year; and gender.

| Programme | 1994 | | 1995 | | 1996 | | 1997 | | 1998 | | Sub-total | | Total |
|-------------------|------------|-----------|------------|-----------|-------------|------------|------------|------------|------------|------------|-------------|------------|-------------|
| | M | F | M | F | M | F | M | F | M | F | M | F | |
| B.A. | 173 | 15 | 47 | 4 | 54 | 7 | 45 | 5 | 50 | 5 | 369 | 36 | 405 |
| B.A. Ed. | 318 | 41 | 104 | 23 | 167 | 25 | 115 | 18 | 112 | 24 | 816 | 131 | 947 |
| B.Com. | 184 | 11 | 90 | 5 | 149 | 12 | 92 | 13 | 79 | 8 | 594 | 49 | 643 |
| B.Com. Ed. | 24 | 0 | 17 | 0 | 32 | 7 | 16 | 2 | 20 | 3 | 9109 | 12 | 131 |
| LL.B. | - | - | 329 | 26 | 445 | 36 | 300 | 33 | 260 | 35 | 1334 | 130 | 1464 |
| B.Sc. | - | - | 30 | 2 | 67 | 7 | 63 | 7 | 77 | 10 | 237 | 26 | 263 |
| B.Sc. Ed. | - | - | 51 | 10 | 85 | 8 | 38 | 8 | 50 | 13 | 224 | 39 | 263 |
| Found. | - | - | - | - | 194 | 34 | 182 | 41 | 189 | 60 | 565 | 135 | 700 |
| TOTAL | 699 | 67 | 668 | 70 | 1193 | 136 | 851 | 127 | 837 | 158 | 4248 | 558 | 4806 |

The most important issue: Learner support systems

Institutionalisation of student support systems at the university, as has been the case in a number of the Commonwealth member countries (The Open University of Tanzania (November 1993) *OUT Financial Regulations*, The Open University of Tanzania, Dar es Salaam, p. 1) has been threatened with relegation. This seems to have arisen out of an uncalled for traditional dichotomy between academic and administrative roles of such institutions. While course development, media incorporation, and the setting of assessments are taken as core academic activities, traditional student concerns such as admissions, registrations, study assistance, and the provision of learning materials and equipment as well as marking of assignments and provision of feedback tend to be probably inadvertently dismissed as of lower or less academic importance.

Instead of driving a wedge between integrated academic processes, institutions should strive to be held accountable for the whole of the academic administration. One of the most recent challenges the university has had to cope with is a daunting student:staff ratio on the average of 1:200, with correspondingly large submissions of assignments, tests, and examinations. This rise in student:staff ratio followed the government's adoption of a retrenchment policy (The Open University of Tanzania (1995) *OUT Staff Regulation*, The Open University of Tanzania, Dar es Salaam, p. 96) and a temporary freeze on employment that irrationally affected the nascent university. Faced with this challenge the Open University of Tanzania's officers put aside the accepted

dichotomy and addressed the problem related to the student record and management system with the view to improve and track the students while enrolled at the university to forestall drop-outs, withdrawals, and pushouts. In keeping with the university's commitment to excellence in teaching, scholarship, and public service, the student record management system project demonstrates the Open University of Tanzania's dedication to developing and supporting sustainable high quality courses and programmes.

Southern Africa Extension Unit

Prepared by:

M. J. Mntangi

Brief description of the programme

The Southern Africa Extension Unit (SAEU) is a distance education institution. Initiated as a project during the 1983 Commonwealth Heads of Government Meeting, the unit was set up in Dar es Salaam, Tanzania, in November 1984, to serve the educational and training needs of South African youths and adults living in exile in Eastern and Southern Africa. SAEU courses for the exiles focused on the foundation and secondary levels of education.

The SAEU took the following three transformational steps between 1990 and 1994 to cope with the repatriation of its traditional target group:

- introduced vocational courses to the students;
- extended the courses to the returnees in South Africa; and
- reviewed the future role of the target group to other refugees and non-refugees. The Local Government Councillors' Distance Training Programme is one radical outcome of the SAEU's transformation process.

The Local Government Councillors' Distance Training Programme targeted 3,700 local councillors scattered throughout mainland Tanzania. The main aim of the training was to enable the councillors to carry out their functions effectively under the newly introduced political system of multi-party democracy. The decision to appoint the SAEU to implement a distance education programme in the area of local government was prompted by the track record and the potentials of the unit in running other programmes that demanded the following features of innovative distance education institutions:

- ability to extend services to a large target group which is also widely heterogeneous and scattered across a wide area of territory;
- ability to deliver a quality-conscious course relatively quickly and at minimal costs; and
- flexibility of the institution and its training packages in building a resource base for adopting the skills and course materials developed for training other groups.

Problems encountered

Planning and managing distance education

- How to organise the training so that it could promptly reach a target group that was large, showed diverse characteristics, and was scattered over a large area of territory (four times as large as Ghana).

- How to produce course materials that could be accepted by councillors from several political parties using an unfamiliar teaching approach.
- How to get and maintain constant support for the main stakeholders of local government (that is, the central government, the local councils, individual councillors, professionals in the field of local government, and funding agencies); for example, how to solicit their co-operation by reviewing the project schedule against other divergent schedules and, in the light of long bureaucratic procedures observed, by some of the stakeholders.
- How to organise a huge training project with limited financial resources.
- How to design and make operable a learner support system making use of existing government structures.
- How to cope with difficulties of communication in the process of co-ordination and monitoring of course progress.

Implementing quality assurance

All the challenges encountered while planning and managing distance education can be considered to re-occur under the theme of implementing quality assurance. Others include:

- How to ensure that there will be maximum enrolment and minimal drop-outs.
- How to organise effective learner support services.

Using and integrating media in distance learning

- How to reconcile the inevitable bias on the print media and difficulties that would face councillors who are barely literate and those who cannot be easily reached by other simple media.
- How to get optimal benefits from face-to-face tutorials without causing excessive costs to the project.
- How the radio programmes could be utilised effectively to assist councillors; in situations in which reception was poor along the borders remote from Dar es Salaam, councillors' initial and subsequent training could not be paced.

Instructional design and production for distance education

- How to cope with the extreme range of educational levels of the target group (some councillors possess post-graduate level qualifications while others have barely completed primary education), as well as their wide age groups.
- How to make the course materials adequately interesting, resourceful, and acceptable to such a diverse target group.
- How to distribute large quantities of course materials over long distances with a relatively poor network of communication.

Learner support systems

- How to take advantage of the benefits of face-to-face tutorials but minimise unit costs in the light of the high costs of organising councillors' meetings.
- How to locate study centres for face-to-face tutorials in rural councils where some wards are several hundred kilometres apart or separated by difficult physical barriers.
- How to ensure standardised scales for assessing councillors' assignments whereby the number of part-time tutors is large (more than 300) and their professional backgrounds differ significantly.

The two most important issues

Experiences dealing with challenges in planning and managing distance education

- Two basic strategies were set up in order to deal effectively with the process of operation of the project and ensuring a smooth flow of information among the stakeholders. The first was the setting up of a Project Consultative and Advisory Committee and the other was to decentralise the management and training functions to the regional and district and council level.
- All the major activities of the project planned and carried out by the implementing agency (the SAEU), including course design, identification of course writers and editors, course pilot and review, support services and funding were presented to the Project Consultative and Advisory Committee for input and final approval. The members of the committee were drawn as follows:
 - Prime Minister's Office, as the Ministry responsible for local government and regional administration;
 - Association of Local Authorities of Tanzania (ALAT);
 - Local Government Service Commission (LGSC);
 - Local Government Training Institute, Hombolo;
 - Commonwealth Local Government Forum (CLGF); and
 - Southern Africa Extension Unit (SAEU).

The committee was expected to meet on a quarterly basis and whenever there was an issue requiring its decision. The committee facilitated the flow of information to the relevant authorities of the government as well as to the grassroots levels, including the target group.

- SAEU played a significant role in training the trainers and co-ordinators of the programme. Trainers for this programme were located at three levels — the SAEU head office, regional local government offices, and the district and council level.

As a result of the large number of trainers required (more than 300) at the regional local government and district and council levels and the extreme dispersion of their working stations across the territory, the training of trainers task was partly decentralised as a cost-cutting measure.

The SAEU conducted short, intensive training for the regional co-ordinators in national level workshops. The regional co-ordinators and tutors subsequently conducted training workshops for the council co-ordinators and tutors in their regions after reviewing with the SAEU the peculiarities of their councils.

- Management operations of the project were also decentralised on the basis of the national administrative blocks into 20 regions each co-ordinated by a regional local government officer, and 110 districts councils, each co-ordinated by a district executive director and course tutors. All the staff at regional and council levels worked on a part-time basis as project tutors as well as project co-ordinators at their own levels of operation. The district level was expected also to assist in the sustenance of the project by meeting part of the costs of the tutorial support services from the council sources.

Experiences dealing with challenges in implementing quality assurance

The following measures were taken to promote the quality of the services and materials rendered to the project:

- accommodating a wide range of experiences in the preparation of the course materials and in the organisation of support services;
- appreciating the special role of sensitisation and initial training in promoting enrolment, minimising drop-outs and contributing to the sustenance of the project;
- focusing on the course materials and support services sharply onto the target group — some councillors were at an advanced age, other councillors had a poor educational background;
- making optimum use of the pilot study — course materials and the network of support services were improved on the basis of experiences gained from the pilot study; and
- conducting close monitoring and evaluation of progress including maintaining constant liaison with the field staff.

The following three issues illustrate the approaches taken by the SAEU in promoting quality in the implementation of the project. The issues focus on experience sharing, pilot study, and sensitisation initial training — only two cases will be explained.

Experience sharing

- The main forum for sharing experiences in the project was during the meetings of the Consultative and Advisory Committee. Other opportunities for experience sharing were achieved during the editors and review workshops, training seminars for the regional local government officers, and training seminars for district and council level co-ordinators and tutors and the councillors.
- Experiences from outside Tanzania were accommodated by incorporating a member of staff from the Local Government Training Institute, Mombasa-Kenya, in a workshop that reviewed drafts of the course materials in September 1995.

- As a result of effective sensitisation, adequate inputs were made by the field staff during the pilot study. Inputs made during the pilot study provided important guidelines for improving the course materials and the support services.

Sensitisation

The processes of sensitisation and initial training were intended to achieve the following goals:

- make the relevant people clearly aware of the project objectives and demands expected of them;
- promote enrolment level; and
- minimise drop-out level.

Sensitisation was achieved through the following means:

- meetings of the Consultative Committee;
- meeting with the relevant authorities of the local and central government;
- presenting papers during meetings organised by the Association of Local Authorities of Tanzania (December 1995 and December 1996) and in forums discussing training in local government; and
- preparing and transmitting radio programmes.

Initial training

Initial training seminars and workshops were organised for the regional and district or council level project co-ordinators, tutors, and for the councillors in order to:

- sensitise them on the project; and
- give them adequate background about the course materials and the distance education approach.

Makerere University

Prepared by:

Juliana R. Bbuye and Jessica N. Aguti

Brief description of the programme

Makerere University is a dual mode university running two external degree programmes (Bachelor of Education and Bachelor of Commerce). These courses are run by the Department of Distance Education, which is part of the Institute of Adult and Continuing Education. These programmes are run in collaboration with the Faculty of Commerce (for the Bachelor of Commerce) and the School of Education (for the Bachelor of Education). The two faculties are responsible for the academic component, while the institute is responsible for the administrative component.

The External Degree Programme (EDP) is governed by the general regulations of the university. No special regulations were drawn to govern the External Degree Programme, an arrangement that has ensured the External Degree students receive the same quality of course content as internal students. However, without regulations that fully consider the needs of the external student, the programme has been affected by bureaucracy. As a result, the pace of various activities required for the smooth running of the programme has sometimes been slow.

The External Degree Programme study package consists of:

- print materials;
- face-to-face sessions;
- assignments and tests and quizzes;
- student study groups; and
- audio cassettes.

The External Degree Programme admits students every academic year and at present has 2,200 students.

For administrative purposes, the Department of Distance Education is divided into three units: Materials Development Unit, Tutoring Unit, and Support Services Unit. Each of these units is headed by a lecturer. The Department's major concern is the provision of External Degree Programmes but it is also in the process of developing short courses which include 'Skills for Research Assistant', 'Writing and Publishing', 'Marketing', and 'Income Generating Activities'. Written materials for these courses are being developed now.

Problems encountered

Planning and managing distance education

The planning and management of distance education programmes in Makerere University is greatly affected by a lack of clear policies on the running of distance education programmes. Neither are there clear policies on staff recruitment and development, student registration, or library and support services for students. Instead, all are governed by the general university regulations, disregarding the special needs of distanced education programmes and students.

Implementing quality assurance

Makerere University is a dual mode university. The university therefore feels that to ensure quality, students in the External Degree Programme must sit the same examination as internal students at the same time. This has particularly been the case for the Bachelor of Commerce programme.

Course delivery and course assessment structure for the external students is not yet satisfactory. There is a general lack of reading materials, insufficient contact with tutors, and lack of a personal tutor scheme.

The tutors participating in the External Degree Programme are lecturers in the internal programmes. They already have full loads and see the activities of the External Degree Programme as an extra load. Consequently, the assignments and tests given tend to be easy to mark and do not encourage in-depth study and research. These assignments and tests end up examining mainly surface learning.

Using and integrating media in distance education

Integration of media in the Makerere External Degree Programme has been a problem, caused by the delay in the production of print materials. A situation has therefore arisen in which the cassettes accompanying print materials are ready but, due to delays in publishing the print materials, they cannot be used. To a large extent students still depend on print materials. Radio and computer-based learning are difficult to integrate because of a scarcity of resources.

Instructional design and production for distance education

The process of instructional design and production has been very slow. The causes of this slackness are:

- inadequate staffing;
- lecturers who are supposed to develop and review materials are busy;
- lack of sub-editors to assist the principal editor;
- delays at the publishing stage due particularly to the long process of procuring funds; and
- delays by the publishing firms.

Learner support systems

There is no clear learner support system in the External Degree Programme. The programme began with no clear system and, due to a lack of resources, is evolving very slowly. Student study centres are being started in the different regions as a response to student demands rather than as part of a clear scheme.

The two most important issues: Developing a learner support system and developing study materials

Developing a learner support system

Learner support systems in Makerere Distance Education Programmes have not yet been fully developed. At the planning stage of the programme the role of the extramural centres, for example, which were supposed to play a vital role in the support system, was not fully defined. As a result, administrators, tutors, and students of the programme have failed to utilise fully the potential offered by these centres. Support is therefore very much centralised despite the scattered nature of students, who come from all over Uganda.

The scarcity of funds has made the personal tutor arrangement difficult to implement. The radio and television services have not yet been effectively used because many of the students, especially those who live in remote areas, cannot afford the accessories. It has also been difficult to use a multimedia approach to provide student support, largely due to inadequate staff and funds. For example, counselling on the telephone is almost non-existent since it is expensive and telephone services are not available in most remote areas. Students are therefore left to study mostly on their own with little support.

Support available to students

Learner support in Makerere University is provided in a variety of ways.

- On admission, students receive information about the programme through the prospectus and the study guide. They receive two weeks of orientation, which enables them to receive more information concerning the programme, guidance on subject combinations and study skills, and to interact with each other. It is also mostly during that orientation week that they form their study groups.
- The university main library and all off-campus library branches offer library services. The department also operates a small collection of rare books.
- Study groups have also been started, are located in existing education institutions, and meet mostly on weekends.
- Other groups meet in the evenings on campus to solicit the services of tutors.
- Hand-outs and other references are provided to students.
- Occasional visits are made by members of the Department of Distance Education to some of the study centres to meet with the students and to obtain feedback on their progress. The visits assist the department in the planning of materials distribution and preparation for face-to-face sessions.

Student study groups

Mainly because of a lack of study materials and the problems associated with remoteness from the centre, students have organised themselves into strong study groups. The study groups meet mostly on weekends to review previous work and discuss difficult assignments. Ongoing research has shown that groups are mainly found in areas where there is a concentration of students, not necessarily at the extramural centres. The radius of these clusters is as great as 50 kilometres so the department is encouraging students to form groups based on these clusters. This will assist the department to provide services to the students by establishing convenient centres where materials can be kept and students can go to read. These may later be developed into resource centres.

Personal tutors

Students have expressed their need for personal tutors. The department has also realised the urgency of establishing a strong network of personal tutors who will assist students in academic and socially related problems. Centralised support services are insufficient to cater to the large number of students. The total population of students on the External Degree Programme is more than 2,000.

The personal tutor scheme, it should be noted, has not been implemented in Makerere because of a lack of funds. A cheaper scheme can possibly be designed, for example, one in which the principals of teacher training colleges and qualified staff in other institutions and banks can be involved on a part-time basis in assisting students. They would, however, need training in handling distance learners.

Developing study materials for the External Degree Programme

The External Degree Programme was launched in 1991 and at that time no study materials had been developed. Instead, through financial assistance of The Commonwealth of Learning (COL), Makerere was able to purchase written materials from Nairobi University and from the Open College UK. This acquisition of study materials was a 'stop gap measure' that enabled the programme to take off.

Purchasing materials from other institutions is good as a 'stop gap measure' but in the long run it has proven too expensive. The department has not been able to continue doing this. Also, courses can be deceptively similar on the surface, giving the impression that they are identical when there could actually be deep set differences. Where materials are purchased, there may be need for the institution buying these materials to develop supplementary materials that would ensure the students needs are fully met.

In the External Degree Programme, written materials were viewed as the core of the learning package, so to ensure that Makerere University produces its own materials COL funded the initial writers' workshops. Since then, the Department of Distance Education has run a number of other writers' workshops. As a result a total of 40 units are at different stages of development with only five published so far. Clearly, this is far below the needs of the External Degree Programme and so the shortage of study materials is still acute.

To deal with this, the department has chosen a number of options, as follows.

Handouts

In nearly all the subjects, but more especially in subjects for which no written materials have been developed, students are given handouts. These may be handouts developed by the lecturers but which are not written in the distance education mode or they may be extracts from texts. Handouts are important but should be seen as either another 'stop gap measure' or supplementary reading material. To meet the needs of the distance learner it is still imperative that materials written for the distance learner be developed.

Face-to-face sessions

Face-to-face sessions should be part of the study package but, because of inadequate study materials, a lot of time is allotted to them, which is expensive to both the students and the department. Also, there is the danger of the External Degree Programme students beginning to rely entirely on these sessions even in subjects in which study materials are available.

Student study groups

Student study groups are also part of the study package but, like the face-to-face sessions, they have taken on a different meaning, particularly in the Bachelor of Commerce programme, where the shortage of materials is worse. The students now rely so much on the student study groups that sometimes meetings are held daily as though they were a conventional evening programme.

Conclusion

In any distance education programme, there is no replacement for study materials. Ideally, they should be developed even before the programme is launched and, where this is not possible, production should be guaranteed. If materials must be purchased, then care is needed in the selection and, where necessary, supplementary materials should be developed.

University of Lincolnshire and Humberside

Prepared by:

David Lippiatt

Brief description of the programme

The University of Lincolnshire and Humberside has some 13,000 students attending full-time and part-time courses on-campus but, since 1993, the university has been franchising some courses off-campus. In order to promote assurance of quality in these courses, the university supplies comprehensive sets of materials to support lecturers in other institutions. Building on this experience in materials provision, in 1994 the university began to develop distance education materials for 'top-up' courses that would enable students with a diploma level qualification to study for an honours degree.

Following the well-researched identification of a potential market, academic design of the course was quickly followed by design of the form that such distance education provision would take. Now in 1997 the course is up and running with some 800 students using the materials through a network of approved centres both in the United Kingdom and overseas.

Problems encountered

Planning and managing distance education

- Although there is now widespread experience of matters relating to the planning and management of distance education, in fact, given the organisational structures within which we originally undertook this development, with advisors in one department and producers in another, the early stages of the project were fraught with difficulties. Part of the difficulty resided in the fact that directions were being given at an awkward distance; serious progress only began when 'management by leadership' was introduced and a managing editor was given direct responsibility for 'producing the goods'.

Implementing quality assurance

- In line with commonly understood standards and procedures, a quality assurance system had been created but to some extent this was theoretical, and experience showed the importance of drawing up such procedures in the light of local capabilities and particular market requirements. There is no point in designing idealised quality systems which in practical fact do not fit with customer requirements nor institutional capabilities.

Using and integrating media in distance education

- Given the academic design of the course in business and management, some ready-made materials were available in a variety of media, but their principal weakness was that they could only have been adapted to meet the requirements of the course at uneconomical expense. There was the requirement that ‘distant students’ should be receiving university brand materials not substitute materials however good they might be. Print-based technology was adopted because it was manageable by both the supplier and consumer with the expectation that use of further media would be adopted at a later point as the need arose and as economic returns justified its use.

Instructional design and production for distance education

- Materials were developed for each unit of the course in the form of study guides centred on published core texts. This model permitted lecturers to depend on the texts for conveying content with motivating and explanatory text of their own in the study guides. Local arrangements with a book retailer who in turn made arrangements with publishers spread the cost of assuring access to large supplies of textbooks and ensured sufficient ‘buffer’ to guarantee at least six months’ life ahead for any one unit. The book retailer got the business and the university had assurance of a safe life for its units.

Learner support systems

- The best of materials do not support themselves so that local tutorial arrangements with approved centres were, and are, vital to the success of this distance education provision. Following the development of staff in centres, the maintenance and cultivation by the university of good relations with centre staff is as important a part of the process as the direct relation they have with the student.

The most important issue: Developing learning materials

The most important issue is difficult to isolate, but time and time again the difficulties encountered in the development of materials are purely the result of rushing things at the planning stages. It is not that the problems are overlooked or unforeseen at the outset but that pressures to start delivering the goods force the course developer to keep on using up safety spaces built into the project plan. This is not so much the result of not knowing how long it is likely to take to carry out a particular task nor of making a mistake in allowing for its duration. In fact, it is ironically the case that since the originally scheduled project is working, other commitments come to be made which, in effect, overlay the first plan. Success might breed success but it also breeds the pressure to succeed even more.

From one management point of view, this is understandable because few of us are working within fixed project time scales. We are frequently working within very fluid markets where flexible responses are required — reallocating resources on an almost daily basis so that project management is about redefining projects every day. The difficulty is to keep on managing things in such a way as to maintain confidence by fulfilling commitments made at one point while constantly readjusting dates to accommodate new projects.

But there are limits beyond which quality is in danger of being compromised and so, from another management point of view, one of the most important issues is to recognise those limits and refuse to cross them.

Napier University

Prepared by:

Sally Anderson

Brief description of the programme

Napier is one of the largest universities in Scotland, with more than 11,000 students. The university is organised into five faculties: Arts and Social Science, Engineering, Health Studies, Science, and the Napier Business School. The university takes its name from John Napier, inventor of logarithms, who was born in the Tower of Merchiston in 1550. The Tower is now an integral part of the Merchiston campus.

From its early days as the Napier College of Science and Technology, which opened in 1964, Napier has grown steadily, in 1974 merging with another institution to become the Napier College of Commerce and Technology and later becoming a polytechnic. In 1992, in recognition of its achievements, the polytechnic was given consent to adopt the title Napier University.

Delivery in Mauritius

Napier University is offering a number of courses in Mauritius in areas such as Economics, Computer Studies, and Management. These courses cover a range of levels, including the higher national certificate, a full Bachelor of Arts (Honours) in Economics, and a post-graduate diploma in computer studies.

It is an important feature of all Napier's flexible learning projects that the courses are owned and delivered by the relevant academic department, rather than by a central unit. There is, however, a central support team who work with the academic department by providing advice, editorial and production assistance, project management expertise and staff development and training where required. Quality assurance procedures for distant courses follow the same route within the university as does any conventionally delivered course. The media used for delivering flexible learning in the university are varied, and are chosen with careful investigation of what is available to students. In the case of Mauritius, print-based delivery was the most accessible, with some limited computer and software usage.

For students at such a distance, with cultural and language differences from the delivery institution, support was of some concern, and a comprehensive strategy was developed.

- To establish a local base, we work with the Ministry of Education and related organisations (such as the National Computing and Information Technology Resource Centre) and for each course a local administrator acts as a liaison with Napier.

- Local tutors are recruited in accordance with requirements laid down by Napier, and they provide frequent and regular tutorials throughout the year. E-mail and fax allow local tutors and the local administrator relatively easy contact with Napier staff in Scotland.
- Napier staff travel to Mauritius at least twice per academic year. Not only do they work with students there, more importantly, they provide training and assistance to local tutors.
- All study materials are scrutinised by the project consultant, who is both a member of Napier staff and a Mauritian national, to ensure their applicability culturally and with regard to language level.

So, the course runs as follows: students attend a summer school at which they meet local tutors and Napier staff. This is an opportunity for students to explore exactly how they will study and develop some study skills appropriate for flexible learning, as well as to cover some initial content. They then study by means of flexible learning study materials prepared and supplied by Napier, with regular tutorials and opportunities to use computer facilities. A winter school with Napier staff and local tutors allows examination revision and clarification of problems. Formative assessment is done by local tutors with Napier moderating a random selection of written assignments, and final assessment is set and marked by Napier staff.

This model has proved very effective and a number of cohorts have graduated successfully.

The University of Zambia

Prepared by:

Richard Siaciwena

Brief description of the programme

The University of Zambia is a conventional university that has been operating a comparatively small scale distance education programme since it was established in 1966. Distance student enrolments vary from year to year. In the 1995–96 academic year, for example, 381 distance students (326 male and 55 female) were enrolled, constituting 9.8 percent of the total university enrolment of 3,980 (that is, full-time, part-time, and distance studies).

There are 68 first- and second-year level semester courses offered to distance students by the schools (faculties) of Education, Humanities and Social Sciences, and Natural Sciences. These lead to the award of the Bachelor of Arts, Bachelor of Arts with Education, and the Diploma in Adult Education. However, students who enrol for the Bachelor of Arts and the Bachelor of Arts with Education degree programmes must transfer to full-time study for their final two years. The Diploma in Adult Education can be completed entirely by distance education.

Problems encountered

Planning and managing distance education

- In the past the distance education programme has suffered from the lack of a clear and comprehensive policy, inadequate funding, and long bureaucratic procedures through which matters relating to distance education are referred to the university's policy- and decision-making bodies. An additional problem is that the Directorate of Distance Education does not always find it easy to establish its authority over the overworked teaching staff, who are inclined to regard requests and instructions from the directorate as carrying less weight than those given by their teaching departments relating to internal teaching.

Implementing quality assurance

- There is neither a policy nor mechanisms or strategies for implementing or assessing quality in distance education, a phenomenon that has made distance education more variable in quality than should be the case. In the past, this has been compounded by the lack of trained staff (in distance education) and the difficulty in retraining teaching staff so that they become more proficient in distance teaching.

Using and integrating media in distance education

- Print materials are the predominant medium of instruction complemented by a four-week intensive face-to-face teaching programme. The comparatively under-developed telecommunications technologies make it difficult to use and integrate other media in distance education, resulting in a weak two-way communication system.

Instructional design and production for distance education

- There is no uniform policy or practice on instructional design or course presentation and there is very little input into course design from experts and professionals in the Directorate of Distance Education. The course production capacity of the Directorate of Distance Education is very limited and, therefore, it is not capable of supporting and facilitating efficient production and speedy delivery of study materials to the learners.

Learner support systems

- Some of the support services offered by different departments and units are not fully integrated into the distance education system as a whole and the Directorate of Distance Education can exercise no sanction for any failure on the part of various providers to offer efficient support services to distance learners. Most of the support services are centralised and the comparatively under-developed telecommunications infrastructure limits the range of learner-support services and the media through which they are provided.

The most important issue: Planning and managing distance education

Some policy and organisational changes instituted in the 1990s have helped to minimise a number of problems that, over the years, have affected the planning and management of the distance education programme.

- Unlike the report on the establishment of a university in Zambia which provided broad aims, the University of Zambia's *Strategic Plan: 1994–98* offers more specific and more comprehensive policy provisions for the development of distance education.
- Distance education, once part of the Centre for Continuing Education, was transformed into an autonomous Directorate of Distance Education in 1994. Its director, like deans of schools and faculties, is accountable to the Vice-Chancellor, and is a member of the Senate and its various committees. A Senate Committee on Distance Education, chaired by the Deputy Vice-Chancellor, was established as part of the new structure of distance education. Its main functions are to consider and formulate policy on distance education and recommend to the Senate, rules and regulations governing the distance education programme.

Solutions

These changes have not only improved the decision-making process but have also enhanced the status and visibility of distance education in the university.

- Distance teaching staff are now paid allowances for: all work on study materials prepared; every hour of lectures and tutorials during the residential school; and for

each assignment and examination script marked. Although the current levels of allowances are not commensurate with the distance teaching responsibilities of the affected staff, they have had, in general, a positive effect on the running of the distance education programme.

- It has been realised that it is important and necessary for the Director of Distance Education and staff to meet regularly with distance education staff. Unlike Boards of Studies meetings (which also discuss matters relating to distance teaching) meetings with the distance teaching staff are more focused. Decisions or recommendations from these meetings can be referred direct to the Senate or to the Senate Committee on Distance Education.

Perhaps one important lesson to be learned from the experience of the University of Zambia is that, in a dual mode university, the administrative and financial autonomy as well as various incentives for teaching staff are crucially important. A lot more has yet to be done in these areas at the University of Zambia.

Characteristics of Open and Distance Learning

separation of teacher and learner

institutional accreditation

use of mixed-media courseware

two-way communication

possibility of face-to-face meetings

use of industrialised processes



Distinguishing the Types of Open and Distance Learning

correspondence
education

home study

independent study

external studies

continuing education

distance teaching

self-instruction

adult education

technology-based or
mediated education

learner-centred
education

open learning

open access

flexible learning

distributed learning



Scenarios for Open and Distance Learning

| | Same Time | Different Time |
|-----------------|-----------|----------------|
| Same Place | 1 | 2 |
| Different Place | 3 | 4 |



Barriers that Open and Distance Learning Overcome



physical distance

time or scheduling problems

limited number of places available

low or dispersed enrolments

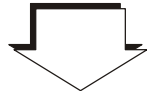
limited number of teachers available

cultural, religious and political considerations

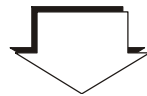


A Systems Approach to Open and Distance Learning

analyse



design



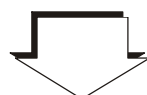
develop



implement



evaluate



revise

Functions of Open and Distance Learning

- obtaining and managing resources
- developing or acquiring programmes
- recruiting and promoting
- producing, storing and disseminating materials
- enrolling and registering
- delivering programmes and courses
- providing learner support
- examining, crediting and granting credentials
- evaluating and revising processes and programmes
- training and developing staff



Terminology

- medium
- open learning
- distance education
- open and distance learning
- enrichment
- instruction
- integrated media

Media Characteristics

symbolic characteristics

access characteristics

control characteristics



General Teaching Functions of Media

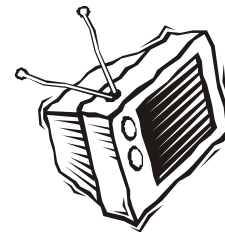
- increase learners' identification with materials
- reduce time required for mastery
- pace learning
- prompt and promote discussion
- model behaviour
- make the inaccessible accessible
- recruit and attract new learners
- establish academic credibility



Specific Teaching Functions of Media



- demonstrate experiments
- illustrate principles involving dynamic movement
- illustrate the abstract through models
- illustrate two, three or n-dimensional space
- demonstrate changes in time
- substitute for field trip
- present primary resource material
- demonstrate decision-making processes
- change attitudes
- perform dramatic production
- analyse music
- demonstrate use of tools, instruments
- record specific events or places that may disappear
- explain or demonstrate practical activities
- condense or synthesise a wide range of information



A Systems Approach to Media Choice

- identifying audiences and defining educational needs



- access to media: learners, institution



- choosing among alternatives

- development and production



The ACTIONS Model for Selecting Media

A Accessibility

C Cost

T Teaching ability

I Interactivity and user-friendliness

O Organisation

N Novelty

S Speed

Criteria for Identifying Effective Instruction

- clear and appropriate learning objectives
- knowledge of target audience
- appropriate sequencing and segmentation
- interactivity
- feedback
- motivation
- transferability of skills
- formal and informal assessment
- appropriate media
- administrative requirements



Needs Assessment of Target Audiences

demographic factors

motivation

learning factors

subject background

resource factors

typical problems of open and distance learners



Demographic Factors

- How many learners?
- What are their ages?
- Are they men or women?
- What is their family status?
- How many children?
- What is their geographic location?
- What is their previous education?
- What languages do they read and speak?
- Do they hold jobs?



Motivational Factors

- Why are they learning?
- How does programme relate to life and work?
- What do they want from programme?
- What are their hopes and fears?



Learning Factors

- What are their beliefs about learning?
- What learning styles do they prefer?
- What learning skills do they have?
- What experience do they have of open and distance learning?



Subject Background

- How do they feel about the subject?
- What knowledge and skills do they have in the subject?
- What misconceptions or inappropriate habits do they have?
- What personal interests and experience are relevant?



Resource Factors

- Where, when and how will they be learning?
- Who will be paying their fees and expenses?
- How much time will they have for study?
- What access will they have to facilities?
- What access will they have to equipment?
- What access will they have to support from tutors and other learners?



Typical Problems of Open and Distance Learners

- What are their family pressures?
- Do they face worries about work and money?
- Are books and libraries lacking?
- Do they lack their own study space?
- Are they isolated from other learners?
- Do they lack transport?
- Do they lack confidence?
- Have they no undisturbed study time?
- Is their reading ability at a low level?
- Are they too busy to attend tutorials?



Study Guide Features

- two-way communication
- learner is actively involved
- learner is aware of structure
- learner is guided
- dialogue
- friendly and encouraging
- learner applies new knowledge, skills
- activities throughout text
- content divided into small chunks
- assignments for self- or others' feedback
- feedback provided on progress



Learning Materials Checklist



- layout and format consistent?
- overview of content included?
- learner clearly directed on how to use package?
- icons explained?
- content in segments of similar length?
- material sequenced appropriately?
- conversational, personal style?
- technical terms explained?
- inclusive language?
- illustrations next to text?
- illustrations numbered or captioned?
- copyright permissions obtained?
- exercises and activities throughout?

Strategies for Making Text Interactive

- activities that focus a learner's attention on the subject
- activities that encourage learners to reflect on their existing knowledge and experience
- activities that suggest ways to apply learning
- problem solving activities
- project work
- questions and answers



Feedback Mechanisms

- providing sample answers
- providing page numbers of set texts where questions are answered
- providing sample answers on audio cassette
- suggesting learners contact tutor to discuss answers
- asking learners to send answers to tutor for oral feedback
- designing face-to-face tutorial sessions



Assessment Strategies



formative

summative

overall evaluation process

self-assessment



peer assessment

tutor-marked assignments



examinations

course evaluations



Materials Development Process

- choosing appropriate media
- costing process accurately
- recruiting, contracting staff
- staff training
- motivating staff
- setting performance targets, 'Just-In-Time' outputs, monitoring
- ensuring integration of development with other functions
- adhering to legal requirements



Summative Course Evaluation

- Did the course attract enough learners?
- Were they sufficiently qualified?
- Did enough of them last the course?
- Was the standard high enough?
- Was the course cost-effective?
- Were the learners satisfied?
- Were other stakeholders satisfied?
- What needs to be changed?



Means of Evaluating Courses

questionnaires

interviews

records of course registrations, revenues,
expenditures, completions, and passes



Learning Tasks for Media Applications

- providing carefully argued analysis
- conveying sights, sounds, spirit
- building learners' ideas into teaching
- asking learners to answer questions
- enabling learners to try things out
- ensuring learners get physical feedback
- giving learners standardised verbal feedback
- giving learners unique, personalised feedback
- continuously altering teaching to suit learners' needs
- providing learners with record of learning experience

Media Characteristics

accessibility

costs

teaching functions

interactivity



Media for Open and Distance Learning

AUDIO

audio cassettes
audiovision
telephone tutoring
audio conferencing
audiographics



RADIO

educational radio
two-way instructional radio



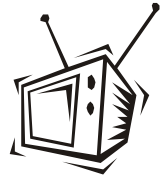
VIDEO

video cassettes
video discs
video clubs
interactive video



TELEVISION

educational television
video conferencing
interactive television



COMPUTERS

games
computer-assisted learning
databases
bulletin boards
web-based instruction
computer-mediated
communication
computer conference



Structures of Open and Distance Learning

- single mode or free-standing

- single purpose
- multi-purpose



- department within existing teaching institution

- subject-oriented department
- distance education department



- co-operative arrangements

- national co-operative structures
- international co-operative structures



- hybrids

Issues in Managing Distance Delivery

- analysing systems (systems thinking)
- staffing
 - training
 - decentralisation
- teamwork
 - managing project teams
 - networking
- quality assurance
 - quality assurance as a management system
 - evaluating programme performance



Monitoring and Supporting Staff at a Distance

- clear role descriptions
- clear jurisdictions and responsibilities
- clear policy directives
- updating policies and procedures
- thorough induction
- training
- effective communication
- face-to-face meetings
- frequent performance review and monitoring
- accurate and efficient records
- opportunities for input
- leeway in decision making
- positive attitude to complaints



Factors in Effective Teamwork

- time
- experience and maturity
- knowledge
- skills
- shared respect
- openness and flexibility
- desire to learn, curiosity
- commitment to process
- support and encouragement
- sensitivity
- trust
- attention to the use of power
- determination and energy



Advantages of Regional Networks

localised, personalised service

strengthened local identity

marketing tool

reduced turnaround time

enhanced support

sites for meetings and tutorials

direct feedback on programme



Essential Features of Quality Assurance

checking and monitoring

correcting mistakes

changing system if necessary



Evaluating Programme Performance

measuring

comparing

correcting



Problems Distance Learners Face

- isolation
- difficulty organising studies, study space
- difficulty finding sufficient time to study
- difficulty balancing work, study and family
- lack of motivation
- lack of resources and equipment
- poor study techniques



Special Needs of Distance Learners

information

contact

institutional identity

advice on how to study



Stages in the Learning Cycle

pre-enrolment

enrolment and starting study

during study

completion and graduation



Dimensions of Tutorial Models

synchrony



asynchrony

tutor–learner
interaction



learner–learner
interaction

access from
home



access through
study centre



Types of Non-Instructional Support

admissions and registration

- marketing
- facilitating applications
- making offers
- registering learners
- matching learners with courses

counselling

- financial
- family
- motivation
- time
- balancing commitments
- physical barriers



administrative

- office hours
- name of tutor
- who to contact with problems
- deadlines
- examination dates

finance

- scholarships and loans

? Checking Assumptions

Are these assumptions correct in your situation?

If not, what adjustments need to be made?



Audience

What access will learners have to equipment?
Individual access? Group access?

What experience do learners have of learning from
this medium? What implications does this have for
study skills training?

Aims and Objectives

What general aims and specific objectives might this medium serve for a course? What do we want to achieve? How could medium be used most effectively?

What sort of balance between tutorial support and supplementary material?

Can policy statement on use of this medium be formulated that would be of practical help in the planning and development process?



Content and Structure

What subject matter will additional programmes deal with?

In what order should they be presented?

How will additional programmes relate to print material? Link with face-to-face sessions?

Will additional programmes be of equal length?
Divided equally among course modules?

Can a series outline be prepared?



Form and Format

What types of material will project require?

What resources will be needed?

human

technical

financial

How long will process take? Relationship with production schedule for other media?

Are plans realistic given resources available?

Modifications needed?





Human Resources

What access does project have to subject specialists?

Which other distance educators could contribute?

What access does project have to production skills?
Internally? Externally?

Is there a case for involving another organisation?

Should project develop in-house skills?

What other skills does project have access to:

- technical support
- graphic design
- developmental testing
- secretarial and administrative skills

What other human resource needs can be identified?

Technical Resources

What equipment does project possess?
In working order?

What additional equipment will project need to
acquire? Funds available?

What professional studio facilities are available?
Costs?

What high-quality copying facilities are available?
Costs?

What volume of consumables will project need?
Where are they available? Costs?



Financial Resources

Given the decisions already made, how far can you go in developing budget?

What costs do you know already? Which can you estimate? What additional information do you need?

Are sufficient funds available? Modifications to plan needed?



Management

Who should take main responsibility for co-ordination and management?

Is there a case for sharing responsibility?
Can you identify the people to be involved?



Scheduling Steps

planning

research

commissioning and collecting

compiling

scripting and support material

studio script

rehearsal and recording

post-production editing

scrutiny and approval

copying and packaging





Scheduling Checklist

How long will it take to develop and produce programmes and support material?

What is the latest date by which you need to start development and production?

What is earliest date by which it will be possible to start?

Can you develop a joint schedule that will combine and integrate development of various media components?

Physical Production and Dispatch

How will cassettes be labelled?



How will they be packaged?

How will they be dispatched to students?



Uses of Programmes

What access are students likely to have to playback equipment? Home? Workplace? Learning centres?

What opportunities for face-to-face meetings?
Where? Equipment available? Budget?

Are you designing materials for individual or group-based use? Pedagogical arguments?
Practical arguments?

Implications for number of cassettes to be produced? For support materials required?
For tutor or group leader training?

Is there a case for dual-purpose programmes?
Advantages? Drawbacks?

Monitoring and Evaluation Process

How should we monitor and evaluate our own performance?

What procedures need to be designed to monitor and evaluate process? How to promote
academic credibility
educational effectiveness
high professional standards
efficiency

How to monitor distribution process? Possible to compare different methods?

How to monitor and evaluate student use of media?
Measure effectiveness? Make improvements?



Monitoring and Evaluation Process More Generally

Who should be involved in the monitoring and evaluation process?

How should findings be communicated?

How can monitoring and evaluation be integrated into more general processes of evaluation?

How can we monitor and evaluate the process of evaluation itself? How to ensure it is serving needs?

