Designing Materials

for Open and Distance Learning

Training toolkit

Designing Open and Distance Learning Materials

Trainers' Kit 002

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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Designing Open and Distance Learning Materials

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 designing open and distance learning materials.

The materials are arranged by topic, ten 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:

> *Example*: A first-year diploma course in nursing practice that requires a great deal of hands-on work, such as practice in giving injections, is more easily delivered face-to-face. However, a post-diploma course in nursing theory or history can be completed very readily at a distance via self-study.

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*: What are your participants' experiences of curriculum planning? How would they define these terms?

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

These materials are not intended as a course in designing open and distance learning materials. 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 materials design; 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 for distance learners; or
- you may be asked to do a workshop on materials design for people who are primarily managers rather than designers or authors, but who need a clearer understanding of what is involved in materials design 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

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.

Keegan, D. *The foundations of distance education*. London: Croom Helm, 1996.

Keegan, D. (ed.) *Theoretical principles of distance education*. London: Routledge, 1993.

Koul, B.N., and J. Jenkins (eds.) *Distance education: a spectrum of case studies*. London: Kogan Page, 1993.

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

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.

Sparkes, J. The problem of creating a discipline of distance education. *Distance Education*, 4:2, pp. 179–86, 1983.

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 and open 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;
- 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 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 University 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 institution

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

Instructional Design

1. Overview

These materials support a discussion on the topic of effective teaching, whether that teaching happens face-to-face or at a distance. The characteristics of good teaching are identified; then the roles of the instructional designer are discussed. These characteristics of good teaching and effective instructional design are generalised to include all good courses and the criteria for identifying and designing them:

- clear and appropriate learning objectives;
- knowledge of target audience;
- appropriate sequencing and segmentation;
- interactivity;

- feedback;
- motivation;
- transferability of skills;
- appropriate media;
- formal and informal assessment; and
- administrative requirements.

These criteria are only introduced at this stage. They are later discussed in considerable more detail as separate topics in this kit.

A practice exercise in which participants assess sample course materials completes the discussion of this topic.

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 Education, Monash University, 1989.

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

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

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 teaching in conventional face-to-face settings and teaching 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. 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 the 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, good teachers remember to:

- communicate clearly;
- organise well;
- 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

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).)

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 teaching methods for particular subject areas; and
- client-centred counsellor.

4.2 Tasks of an 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?

4.3 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 learning 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.

Discussion: Discuss examples of effective collaboration between instructional designers and subject specialists from your own experience and that of your participants.

4.4 Should you use existing materials?

Strategies for materials

Course materials in open and distance learning programmes can be provided in three ways:

- adopt existing materials;
- adapt existing materials; or
- create original materials.

These strategies are set out in the tables on the following pages, together with the benefits they offer, their limitations, and other factors that might affect decision-making. These strategies form a continuum, with adoption at one end, creation at the other, and adaptation somewhere in the middle.

Example: Most courses that are created from the 'ground up' make use of some existing materials, such as textbooks or video cassettes. And almost all courses that are 'adopted' undergo some degree of adaptation.

Adoption Strategies for Providing Course Materials in Distance Education

Strategy	Benefits	Challenges	Other factors
adopting existing materials	• may be less costly • less time consuming • can provide model • no need to pre-test • errors already eliminated • labour saving, less stressful for staff • reduces lead-in time • source of new ideas • opportunities for collaboration • can provide a quality not otherwise possible	• may not be relevant to needs • may not be suitable culturally, contextually • testing for fit may be needed • may kill creativity at local level • deprives local staff of ownership • may omit crucial content areas • may go out of print while you still need copies • may have hidden costs, for example, support structure • may promote dependency • may push planners into premature start	• status and prestige • 'not invented here' syndrome • cost to purchase or lease compared with 'ground-up' production

Adaptation Strategies for Providing Course Materials in Distance Education

Strategy	Benefits	Challenges	Other factors
adapting existing materials	• gives a headstart, reduces lead time • gives models and ideas • may be easy to convert • can select from available materials • cost-saving • can improve by adding components • can increase appropriateness • can update • can improve writers' skills without having to produce whole course	• expert knowledge still needed • may reduce quality by altering • may be self-defeating because of costs and time • does less for developing local capacity • may not assist in developing coherent programme • levels may not match	• accreditation issues • control and ownership of course • issues of copyright • credibility of provider

Creation Strategies for Providing Course Materials in Distance Education

Strategy	Benefits	Challenges	Other factors
creating original materials	• likely to fit target audience more closely • more likely to be culturally relevant • will be up-to-date • will be unique • will build local capacity and self-confidence • will be easier to	• the most expensive option • lead-in time is longer • may put high stress on developers • amount of work may be underestimated • needs trained and skilled staff • need to build up capacity and	• start-up costs • status of enterprise, political agenda

Strategy	Benefits	Challenges	Other factors
	modify if necessary	expertise • need to persuade people it is worth doing • needs adequate resources	

5. Checklists for identifying effective instruction

The criteria for creating effective course materials apply whether courses are being taught face-to-face in the classroom or at a distance. Here is a checklist of questions to ask of any course, regardless of the mode in which it is taught.

Checklist for Identifying Effective Instruction

Have you clearly defined your learning objectives?

- ❑ Are you and your learners clear about where this session of instruction fits into the overall course?
- ❑ Are you and your learners clear about what they are expected to have learned and what they are expected to be able to do once they have completed this session of instruction?
- ❑ Have you identified the conditions under which learners will be expected to perform the task? For example, on an examination, in their practice exercise, or in their workplace.
- ❑ Have you identified the level at which they will be expected to perform the task? With no errors (for example, as with pharmacy students learning to count tablets)? At specified levels (for example, what is required to pass)?

Have you assessed learners' needs and designed the instruction with the characteristics and needs of your learners in mind?

- ❑ What skills, knowledge, and attitudes do your learners bring to the course?
- ❑ What features of their social, cultural, and language background might affect their learning?
- ❑ Why are they taking this course? Out of interest? Or because they have to pass it in order to continue in their programme?

Have you sequenced and segmented the instruction appropriately?

- ❑ Have you dealt with the material in logical order (for example, simple to complex, concrete to abstract, big picture to finer details)?
- ❑ Have you used sufficient advance organisers, to help learners tie what they have already learned to what they will be learning?
- ❑ Have you divided the readings and other activities into segments of about equal size?

- Is the size of each segment appropriate to learners' likely attention span?

Have you prompted learners to interact with the material?

- Do you ask questions frequently, and give learners space in the materials in which to write their answers?
- Do you ask them to pause and reflect on their own experience?
- Do you give them opportunities to practise the skill they are being taught?
- Do you ask them to recall what they have recently worked through?
- Do you suggest they talk with someone about an issue that has been raised, for example, with a colleague, a family member, or their tutor?

Do you provide learners with frequent feedback on how effectively they are comprehending the material or performing some skill?

- Do you provide sample answers to the questions you ask?
- Do you suggest places they can find the answers themselves?
- Do you suggest people they can talk to in order to find the answers?
- Do you let them know that this is a question that has many possible answers, so that they will not be frustrated by not being given an answer?

Do you provide ways of motivating learners to keep going in the course?

- Do you have them complete an exercise or assignment early on in the course at which they are likely to succeed, to give them confidence and encourage them to keep going?
- Do you make constructive comments on their work that reward what they have done well and specify the ways in which they could improve?
- Do you encourage them to relate what they are doing in the course to their daily lives, so that it has some relevance and meaning for them?
- Do you keep the workload reasonable, so that they can actually accomplish it during the time they were told they should have available for this work?

Do you help learners identify and build on their existing skills and knowledge, so that they can transfer them to and use them in this new context?

- Do you build into the course activities that help learners identify what they already know and what they already can do, in relation to the subject matter you are teaching them (for example, pre-tests, diagnostic tests, reviews of past learning)?
- Do you encourage learners to look for opportunities to apply the skills and knowledge they are acquiring to problems and situations outside the course?

Do you provide the course material in a medium or media that is appropriate to the subject matter, and to the learners' skills in using that medium?

- Do you provide a variety of media where possible, so that learners can benefit from both heard and seen material, for example?

- A picture can be worth a thousand words, as they say. Do you use illustrations, line drawings, cartoons, and other visuals, to help get your points across?
- Do you take into account that learners may have low reading skills in dealing with print, for example, or that they may need to learn to use a particular piece of computer software in order to participate effectively in a computer conference?
- Are your print materials lively and readable? Are your audio and video materials well scripted?

Do you provide timely and appropriate opportunities for learners to assess how well they are comprehending the materials?

- Do you provide self-assessment questions in each unit, with appropriate feedback, so that learners can check their comprehension?
- Do you provide opportunities for learners to get feedback from others on their progress, for example, from tutor-marked assignments?
- Do the assignments in the course give learners an opportunity to practise skills or apply knowledge that is directly related to the learning objectives?
- Do the assignments enable learners to practise and build the skills they are going to need in order to sit the examination?

Do you have your administrative processes in order?

- Do learners actually get their materials at the time they need them?
- Do they receive all the materials they need in order to complete the course?
- If not, do they have ready access to the remaining materials they need?
- Do learners know who to contact if they have a problem?
- Do they know how many assignments they are required to complete? When they are required to do them? How long they need to be? Where to send them?
- Do they know where and when the examination is being held? How long it will be? What form it will take? What kinds of questions to prepare for?
- Are learners' queries answered promptly? Are their assignments graded and returned quickly?

6. Practice exercise

6.1 Criteria for effective instruction

Instructions: Provide participants with samples of course materials that are appropriate to their contexts. (If you do not have ready access to sample course materials, COL can assist you to locate appropriate packages.) Ask participants to assess the extent to which the materials meet 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: Allow participants up to an hour to review the sample materials, depending on how extensive they are and how large you make your small groups. Add another 15 minutes to the total time for a general discussion of their findings.

Materials: You will need enough samples of course material to supply one set per small group.

TOPIC 3

Curriculum Development

1. Overview

These materials support a discussion on the topic of developing and evaluating curriculum for a programme of studies.

1.1 Source materials for this topic

Posner, G., and A. Rudnitsky. *Course design: a guide to curriculum development for teachers.* 4th ed. London: Longman, 1994.

Rowntree, D. *Developing courses for students*. London: Paul Chapman, 1985.

2. Terminology

2.1 Curriculum

A *curriculum* is the total structure of knowledge, skills, and educational experiences that make up any one educational system or its component parts.

2.2 Curriculum planning

Curriculum planning is the global term we apply to any systematic process intended to develop this structure.

Curriculum planning is usually carried out by the open and distance learning course development team and includes:

- decisions on the structure as a whole;
- the formulation of aims and objectives;
- decisions on the content to be included;
- the teaching strategy and methods to be used;
- media choice;
- assessment techniques; and
- evaluation.

> *Discussion*: What are your participants' experiences of curriculum planning? How would they define these terms?

2.3 Instructional development

Instructional development, also known as 'instructional design', is a process of designing instruction that usually includes the stage of curriculum design and development. Development is a process of several phases: the initial phase is needs analysis, followed by programme identification, then design of the overall curriculum for the programme, and then by course design and development. Several courses will be designed as part of the curriculum for any given programme.

In designing a course, instructional designers follow a series of steps very similar to those discussed in Curriculum Planning in order to design and develop a programme.

The only difference is that they begin not with the structure of the programme as a whole but with the structure of one particular course as a whole.

3. Initial information gathering

3.1 Stakeholder analysis

A curriculum or programme must ensure as far as possible that the range of topics covered, the structure of the courses, their length, level, workload, teaching approach, and format are what is needed and wanted by the potential learners and other stakeholders. These stakeholders can include:

- the providing institution;
- the funding agency;
- employers;
- writers and designers;
- tutors and course support staff;
- existing learners or trainees; and
- potential learners.

> *Discussion*: You will want to add other stakeholders to this list in relation to the programmes offered in your own and your participants' contexts.

3.2 Identifying learning and training needs

The methods that are available for identifying learning and training needs — often called *needs analysis* — include:

- task group or working party representing the spectrum of interests;

  > *Example*: A small group of key people are typically charged with developing a plan. In the case of the development of a primary teacher upgrading programme, for example, the group is likely to involve Ministry of Education officials and the district supervisors, teacher training colleges, teachers, and community representatives.

- consultation of experts, clients, and target audiences;

  > *Example*: This approach generates high quality information and plenty of it, but those consulted may not be typical of the people whose views and opinions you seek. For example, experts in teaching at the tertiary level may not be appropriate experts to consult even though they are readily accessible.

- quantitative analyses of knowledge and skill shortage areas;

  Example: A researcher may be contracted to conduct a desk study of national trends, other training opportunities, and related developments, using documents that are available from government ministries, think tanks, research institutes, and libraries.

- monitoring and analysis of demand for existing courses;

  Example: You may have data on trends in registration and learner profiles over time available in your own records.

- studies of employers to identify current and anticipated training needs; and

  Example: Existing case studies may be available, or you can conduct your own focus group discussions or surveys, depending on the resources and time you have available.

- studies of existing and potential learners to identify their current and anticipated needs.

  Example: Again, depending on the time and resources you have available you can collect case studies, or conduct focus group discussions or surveys.

See the case study for the Southern Africa Extension Unit, included in this kit, for an example of an institution that worked closely with its stakeholders in designing its curriculum for councillors in local government.

Discussion: How have your participants conducted stakeholder analyses in their own contexts? What examples can you provide from your own experience of curriculum planning?

4. Planning curriculum structure

4.1 On-campus or at a distance?

Open and distance learning courses mean that

- learners do the bulk of their learning through pre-prepared learning materials; and
- learners have little face-to-face contact with tutors or other learners.

On-campus courses mean that

- learners (in theory) meet regularly with their teacher; and
- learners have the advantage (in principle) of being able to learn from each other.

On-campus programmes are increasingly incorporating distance modes. See the case study included in this kit for the University of Lincolnshire and Humberside for an example of such an institution.

> *Discussion*: You may want to refer back to earlier sections for reminders about the advantages of open and distance learning, as a contribution to a discussion of whether face-to-face or distance modes are more appropriate for a particular curriculum.

4.2 What will be taught?

Useful distinctions can be made among:

- knowledge-oriented content;
- skills-based content; and
- mixed courses.

> *Examples*: A course on the history of open and distance learning is primarily knowledge-oriented, whereas a course on how to repair telephone lines is primarily skills-based.
>
> A course on instructional design may be mixed, however, combining learning theory with its application in designing effective pieces of instruction.

4.3 Adapt or adopt existing curriculum?

Out of your needs assessment may emerge the existence of an existing curriculum that you could adopt or adapt.

Rather than give into the 'not-invented-here' syndrome, ask the questions from the following checklist about this curriculum.

Checklist for Evaluating an Existing Curriculum

- ❑ How suitable is it? Are its objectives, methods, and outcomes appropriate to your learners?
- ❑ How effective is it? Does it achieve satisfactory results?
- ❑ How big is it? How much time, staff, and resources does it need? How many subjects? What range of learners?
- ❑ How complete is it? Does it need extra supporting material?
- ❑ How flexible is it? Is there room for innovation and adaptation by teachers and learners?
- ❑ How repeatable is it? Do any special factors such as unusual teachers or local resources hinder repetition elsewhere?

- How compatible is it? Would it interfere or fit in with the rest of the existing system?
- How ready is it? Can it be started this week, this term, or this year?
- How testable is it? Could you give it a trial run and abandon it if unsuccessful? Or would the decision have to be all-or-nothing (for example, if it requires a new computer system to run it, adopting the curriculum is an all-or-nothing proposition)?
- How economical is it? What are the initial costs, installation costs, and running costs?

Discussion: You may wish to supplement this discussion by referring to the tables on strategies for producing course materials that appear in this kit in Topic 10 (Managing Materials Development, Production, and Distribution).

5. Planning the content of the curriculum

Instructional designers use a variety of approaches to plan curriculum with the development team.

5.1 Intuitive approaches to content

Intuitive approaches are relatively informal, unstructured, and non-systematic. Nonetheless they may be highly productive.

They can take many forms:

- sitting and reviewing one's own knowledge of the proposed subject;
- asking other teachers and subject-matter experts;
- analysing similar courses elsewhere;
- reading textbooks aimed at learners working at about the same level as yours will be;
- reading more advanced books and scholarly articles on the subject;
- reviewing films, radio and television tapes, and other media relating to the proposed subject;
- asking prospective learners what topics they would like the course to include;
- discussing with learners their existing conceptions of and attitudes to the key concepts;
- choosing books or other materials around which the curriculum will be organised;
- thinking of essential activities that learners need to engage in as part of the curriculum;
- considering how learner attainment on the course might be most sensibly assessed; and
- studying an examination syllabus, question papers, and examiners' reports from previous years.

5.2 Analytical approaches to content

Analytical approaches are ways of examining, extending, and organising ideas that one has arrived at intuitively by the foregoing methods.

There are three main approaches here:

- *analysis by objectives*: stating as clearly and unambiguously as possible what learners should be able to do as a result of working through the programme;
- *competence analysis*: asking what people competent in the subject matter do; for example, master performers; and
- *concept analysis*: analysing or mapping the concepts that are key to the programme and courses within it.

Each of these methods has a sophisticated methodology attached to it. See Posner and Rudnitsky 1994 for further details.

6. Structuring the curriculum

The word *structure* has at least four important meanings for curriculum development:

- the pedagogical structure;
- the structure of events ;
- the metaphorical structure; and
- the structure of ideas.

6.1 Pedagogical structure

Distance components

- rely heavily on pre-prepared learning materials;
- are structured around the individual learner working through the material;
- use self-assessment and expert assessment techniques;
- require motivational devices and support systems to motivate and guide learners and increase their chances of success; and
- use tutors to provide motivational, remedial, and enrichment teaching.

On-campus components

- place learners in regular contact with each other;
- enable learners to teach each other;
- tend to be structured around regular meetings with teachers and other learners; and
- increasingly incorporate distance modes.

> *Example*: A first-year diploma course in nursing practice that requires a great deal of hands-on work, such as practice in giving injections, is more easily delivered face-to-face.

However, a post-diploma course in nursing theory or history can be completed very readily at a distance via self-study.

6.2 The structure of events

An event's structure is identified by considering the course's key events or critical happenings:

- breaks;
- examinations;
- field trips;
- deadlines for learner activity;
- projects; and
- laboratory work.

This structure marks the closing and opening of different phases within the course, and more broadly to a programme.

Example: A primary teacher upgrading curriculum could be divided into distance components and face-to-face components on the basis of the 'events' that structure the curriculum. So, for example, in an 'in–out' teacher training curriculum, learners are brought together for an initial face-to-face session to upgrade reading and writing skills. They then have a break, after which they come together for a number of weeks of face-to-face instruction. They are then sent to primary classrooms to observe master teachers at work, after which they return to campus for more face-to-face instruction. Then they are sent back to primary classrooms to do supervised practice teaching. They may also be expected to work through self-study packages of learning material while they are engaged in their practice teaching sessions.

6.3 The metaphorical structure

How do learners and teachers perceive their relationships within the programme? What metaphors or analogies — mental images — do they use?

Some possibilities include:

- *expressive*: personal development;
- *instrumental*: getting a good grade;
- *vocational*: getting a job;
- *academic*: expanding one's mind;
- *personal*: self-development;
- *social*: making friends, having a good time;

- *medical*: remedying deficiencies or problems; and
- *house-building*: teacher the builder and learner the plot of cleared ground.

> *Discussion*: Draw on your own and your participants' experiences for examples of these metaphorical structures, and additional metaphors for curriculum of which you are aware.

6.4 The structure of ideas

A programme can be structured around a sequence of ideas.

There are several varieties of sequence possible:

- *topic-by-topic*: no particular order;
- *chronological*: ordered by time;
- *causal*: ordered by a chain of causation;
- *structural logic*: ordered by the logical structure of the discipline;
- *problem-centred*: focused on some issue or problem;
- *spiral*: same concept encountered over and over but each time at a somewhat higher level; and
- *backward chaining*: returning learners again and again to the 'big picture' of the subject or discipline.

> *Discussion*: Again, draw on your own experience and that of your participants for examples of these ideas-based approaches to structuring a curriculum.

7. Evaluating your curriculum

7.1 Why evaluate?

In practice, open and distance learning providers carry out evaluation for a variety of reasons, including:

- to make informed decisions about the effectiveness of the materials and the process that led to their production;
- to determine whether there is sufficient interest in the course to justify costs; and
- to determine whether learners are achieving a sufficient standard of performance.

7.2 What to evaluate?

The aspects of a curriculum or programme that are typically evaluated include

- the planning process by which the programme materials were produced;
- the proposed aims, objectives, and content of the programme;

- the proposed teaching strategy;
- the materials and facilities that might be used by learners; and
- the institutional setting within which learners will be using the materials.

7.3 Preliminary evaluation

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

Academic credibility

You might want to ask some expert or experts in the subject matter questions such as the following about your 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?
- Should any additional aims and objectives be included?
- Is the content up-to-date?
- Is the content accurate?
- Are there any important omissions?
- Do there seem to be any faults of emphasis or sequence?
- Are the assertions made adequately supported by evidence?
- Do the materials avoid oversimplification or over-generalisation?
- Are the materials true to the nature of the subject or discipline?
- Are the materials balanced, and at pains to present opposing points of view when appropriate?

Likely effectiveness

Here are some questions that can be asked about how educationally effective the materials are likely to be:

- Does the structure seem sensible and coherent, with introductions of previews, and summaries or reviews used when appropriate, and means available for allowing 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 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 when appropriate to develop understanding?
- Are questions, exercises, and activities properly integrated into the text to encourage learners in self-assessment and practice of relevant skills?
- Are non-print media effectively built in when more appropriate than print?
- 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?

7.4 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 or pilots*: using larger numbers of learners (20 to 30) in circumstances as similar as possible to those in which your eventual learners will work.

7.5 Continuous monitoring

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

Mechanisms available for this kind of formative evaluation include:

- *a 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.

7.6 Summative course evaluation

When the course is completed, a summative evaluation of its effectiveness may address questions such as:

- Did the course attract enough learners?
- Were they sufficiently qualified?
- Did most of them complete the course?
- Why did learners drop out or not complete 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*: details of course registrations, revenues and expenditures, completions, and passes.

See the case study included in this kit for Deakin University as an example of an institution that uses regular evaluation as part of its quality assurance process.

8. Practice exercise

8.1 Applying the principles of instructional design

Instructions: Divide participants into small working groups (no more than five per group).

Ask each group to go through the exercise of designing a preliminary curriculum of study for some programme area that is of significance to them.

In this exercise, each working group will be required to provide the following information (in point or outline form only), using the categories and definitions provided in the session:

- the stakeholders;
- the training and learning needs;
- the kind of programme (distance? knowledge-based? unique and needed?);
- the programme content; and
- the programme structure.

Ask each group to be prepared to present their outline to the group as a whole.

Timeframe: One to one-and-a-half hours.

Materials: Newsprint sheets or overhead transparencies and pens for presentations.

TOPIC 4

Target Audience

1. Overview

These materials support a discussion on the topic of learner or target audience characteristics in the form of checklists that course designers will find useful in focusing their materials appropriately.

1.1 Source materials for this topic

Kolb, D. *Learning-style inventory: a self-scoring inventory and interpretation booklet.* Boston: McBer and Co., 1985.

Rowland, M. *Management development for women: a trainer's handbook*. The Commonwealth Secretariat and Government of Papua New Guinea Commission for Higher Education, 1995.

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

Sparkes, J. What type of student do you have to teach? In *Times Higher Education Supplement*, February 6, 1998.

2. Characteristics of open and distance learners

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

> *Discussion*: From your own and your participants' experience, what do you need to know about the learner to design effective learning materials for them?

2.1 Demographic factors

- How many learners are you likely to have?
- What ages are they? Are they children? Adults?
- Are your learners men? Women?
- What is their family status?
- How many children do they have?
- What is their geographic location (for example, rural, urban)?
- What is their previous education?
- What language or languages do they read and speak?
- Do they hold jobs?

2.2 Motivation

- Why are they learning?
- How might your programme relate to their lives or work?
- What do they want from the programme?
- What are their hopes and fears?

2.3 Learning factors

- What are their beliefs about learning?
- What learning styles do they prefer?
- What learning skills do they have (for example, reading ability)?
- What experience do they have of open and distance learning?

2.4 Subject background

- How do they feel about the subject of the programme?
- What knowledge and skills do they already have in that subject?
- What misconceptions or inappropriate habits do they have?
- What personal interests and experience might they have that are relevant?

2.5 Resource factors

- Where, when, and how will they be learning?
- Who will be paying their fees or expenses?
- How much time will they have available for study?
- What access will they have to facilities such as study centres?
- What access will they have to the equipment and media required for the course?
- What access will they have to human support from tutors, mentors, colleagues, and other learners?

2.6 Typical problems of distance learners

- Family pressures;
- Worries about work and money;
- Lack of books and libraries;
- Lack of their own study space;
- Isolation;
- Lack of transport to get to tutorials;
- Lack of confidence;
- No undisturbed study time;
- Low levels of reading ability; and
- Too busy to attend tutorials.

3. Adult learners

In the field of adult learning, *andragogy* — the art and science of helping adults learn - is clearly differentiated from *pedagogy* — the art and science of teaching children.

The andragogical model is based on several assumptions, which have a number of implications for the trainers of adults:

Adults are self-directed.

- The learning climate should be one which causes adults to feel accepted, respected, and supported.
- Learners need to be involved in a process of self-diagnosis of learning needs and in the process of planning their own learning.
- The teaching and learning process is the mutual responsibility of learners and teachers.

Adults have many and varied experiences.

- Tap the experience of learners by using participatory experiential techniques.
- Encourage learners to plan how they are going to apply their learning in their day-to-day lives.
- Incorporate activities that encourage learners to look at their experiences objectively and learn how to learn from them and from each other.

Adults are ready to learn when they recognise the need to know.

- Participants need to know why a particular topic or session is included and why they are expected to learn it.
- Adults learn best with a real world approach, which uses case studies or role plays and allows participants to test strategies to solve realistic problems.
- The concept of developmental readiness should be considered in the way learners are grouped.

Adults prefer problem-centred or performance-centred learning.

- Trainers need to design and develop learning experiences that are relevant to these concerns.
- Learning needs should be sequenced according to problem areas, not subjects.
- Early in any learning session, provide an exercise that allows participants to identify the specific problems they want to be able to deal with more adequately.
- Trainers must enable learners to see that their learning has been successful.

4. Identifying learning styles

Many ways of categorisation and modelling learners' learning styles and of learners themselves have been suggested. Here are two for you and your participants to consider.

4.1 Kolb's theory of learning style

Kolb's is one of the best known approaches to determining ways in which individuals process information and their preferences for ways of learning.

Kolb (1985) proposes four stages in learning:

- *concrete experience*: being involved in a new experience;
- *reflective observation*: observing others in an experience or developing observations about one's own experience;
- *abstract conceptualisation*: creating concepts and theories to explain one's observations; and
- *active experimentation*: using the theories to solve problems and make decisions.

These four stages form a learning cycle through which most people proceed when engaged in learning. Through experience, individuals come to prefer one stage of the learning cycle more than others.

- The *activist* prefers learning through concrete experience. The activist is good at brainstorming, enjoys interacting with people, and likes to explore all possibilities.
- The *reflector* prefers learning through reflection and observation. The reflector will work out a model as a solution. Reflectors learn best by reading, listening, and observing. They like to integrate ideas into models and theories, but are relatively uninterested in applying theory to real life.
- The *theorist* prefers learning through abstract concepts. The theorist will focus quickly on a task, and prefers working with ideas or things rather than people.
- The *pragmatist* prefers learning through active experimentation. Pragmatists will experiment with countless solutions, and prefer to learn by experience. They take risks and perform well when they have to adapt to situations. They prefer trial and error to reading the instructions first.

For example, a nurse may most often learn through the active experimentation stage, whereas an academic may most often learn through abstract conceptualisation.

4.2 Approaches to learning

John Sparkes (1998) suggests that learners may take any number of approaches to learning, to some extent as a matter of preference and to some extent dependent on the task at hand. For example, differences between learners' natural learning styles may not be so significant when skills are being taught, since the appropriate style is determined more by the activity involved than by learners' natural capabilities.

- *Some learners are holists*: They like to take an overview of a subject first and then fill in the details and concepts in their own way. This suggests that learning materials should include signposts, summaries, alternative explanations of difficult concepts, explanatory figure captions, a glossary of terms, a good index, and so on, to help holist learners find their own way through them.
- *Some learners are serialists*: They like to follow a logical progression of a subject, beginning at the beginning. Serialist learners will need step-by-step guidance through a project-type assignment, for example.
- *Some learners are visualisers*: Their learning is helped by the inclusion of diagrams, pictures, flow charts, films, and so on.
- *Some learners are verbalisers*: They prefer to listen, read, discuss, argue, attend tutorials, and write during their conceptual development.
- *Some learners are doers*: They find that overt practical activity is best. The saying that 'to hear is to forget, to see is to remember and to do is to understand' is true for doers, but not necessarily for other types of learners.

With a typical mix of learners, attempts should be made to serve each preferred learning style.

5. Implications for materials design

The characteristics of your learners have implications for the way you design your learning materials. Here are some additional examples.

Complete the sentence ...

If my learners ...	**... then I must ...**
are paying for the package themselves,	then I must try to avoid expensive media.
have a fixed amount of time available for studying the package,	then I must be strict about how much material I include.
will not see any obvious reason why they should study the package,	then I must emphasise how the package might benefit them.
have considerable experience in the subject covered by the package,	then I must appeal to that experience by using examples suggested by learners.
differ from me in the way they use certain key terms and ideas,	then I must begin by laying bare and exploring our differences.
are women and men,	then I must make sure my language and examples are equally welcoming to and inclusive of men and women.
may not be aware when the package has become relevant to their work-related needs,	then I must persuade line managers to introduce the package to learners at the appropriate time.

Discussion: Again, draw on your own and your participants' contexts and experience for further implications and examples. All the case studies provided with this kit contain examples of programmes and materials that have been designed for specific audiences.

6. Practice exercise

6.1 Profiling your target audience

Instructions: You may wish to try the following:

- Have participants select a sample target population (for example, the kinds of learners they expect will be attracted to a programme they are developing).
- For that target population, instruct participants to answer the questions that have been posed in this session. The sets of characteristics can be divided up so that one small group deals with demographic factors, a second with motivation, and so on.
- Have participants chart these characteristics and their implications for the design of the course or programme, and present these to the group as a whole.

Timeframe: Approximately an hour, depending on the size of the group. Small group discussions will take approximately three-quarters of an hour.

Materials: Newsprint sheets and marker pens for charts and reporting back.

TOPIC 5

Writing Aims and Objectives

1. Overview

These materials support a discussion on the topic of writing aims and objectives for open and distance learning materials.

1.1 Source materials for this topic

Gachuhi, D., and B. Matiru (eds.). *Handbook for designing and writing distance education materials.* Bonn: ZED, 1989.

Mager, R. *Preparing instructional objectives*. 2nd ed. London: Kogan Page, 1990.

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

Rowntree, D. *Developing courses for students*. London: Paul Chapman, 1985.

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

2. The relationship between aims and objectives

2.1 Aims

An *aim* is a broad, general statement of either what the learner might learn from a piece of instruction; or what the teacher will do.

2.2 Objectives

An *objective* is a more specific statement about what the learner will be able to do as a result of working through the materials.

> *Example*: The following aims and objectives come from a course on 'Diet and Nutrition'.
>
> *Aims of this course:*
>
> - *Students will learn about healthy eating habits.*
>
> *or*
>
> - *This course will introduce learners to healthy eating habits.*
>
> The objectives of this course:
>
> *Upon completing this course, learners should be able to*
>
> - *list the principal components of a balanced diet;*
> - *describe the function of each component in the body;*
> - *calculate the composition of a given diet given food composition tables; and*
> - *suggest ways to improve their diet.*

3. The elements of a learning objective

3.1 What are learning objectives?

A learning objective is a statement that describes

- what learners should be able to do when they complete a learning activity;
- the conditions under which learners will demonstrate their competency; and
- how this competency will be measured.

These are often called *behavioural objectives* because they indicate the expected changes of behaviour in learners who complete a course of instruction to reach those objectives.

Learning objectives are not descriptions of how the learning will take place. They tell you expected outcomes, not how learners will get to them.

3.2 Task analysis

Doing a task analysis

Worthwhile objectives can only be written after a task analysis has been done. Until you know what needs to be taught, you cannot describe the outcomes expected of the teaching.

A task analysis is the process whereby the skills and knowledge needed by a competent person to complete the task in question are identified to ensure that they are included in the learning process.

Ask yourself what knowledge, skills, and attitudes someone must have or someone would have to acquire in order to be considered competent at doing the task.

Sequencing objectives

It is important to determine the main or *terminal* skill, and then the skills subordinate to it. For example, people learning to perform appendectomies must first be able to do other tasks: decide where to cut, select appropriate instruments, suture blood vessels, and stitch up incisions. Try to write main objectives rather than subordinate objectives; that is, write about the meaningful skills themselves rather than about the steps taken to acquire those skills. Looking at main objectives avoids becoming overwhelmed by objectives and having your objectives called trivial.

To determine the main and subordinate objectives, do the following: after drafting an objective, ask yourself what someone would need to know or be able to do in order to practise the performance stated in the objective. For example, in order to make a pizza, a person must first be able to read a recipe and then make the dough and the sauce, each of which involve skills such as kneading and simmering.

3.3 Performance

The performance part of an objective tells you what the learner should be able to do as an outcome of a learning process.

Performance should be written in words that describe an activity and not a state of mind.

Mind processes such as knowing, understanding, and appreciating are important, but, because they cannot be made visible, they are not helpful in writing objectives. In addition, what is meant by *knowing*, *understanding*, and *appreciating* may be different for different people.

Performance statements say what learners should be able to *do*.

3.4 Conditions

Condition statements describe the conditions under which the performance required is to take place.

> *Examples*: Some examples of 'condition' statements:
>
> Using specified equipment or materials:
>
> - without supervision;
> - within a specified time limit;
> - from the samples provided; and
> - based on particular case studies.

Ask yourself the following questions when writing conditions statements:

- under what conditions do I expect the performance to occur?
- what will the learner be able to use when demonstrating achievement of the objective? For example, drafting tools, logarithmic tables
- what will learners not be able to use or have available? For example, books or notes

3.5 Standards

Standards statements describe how well the learner will be expected to perform. Standards may be expressed in terms of

- accuracy (for example, 100 percent, within 0.5 mm of the specified size);
- speed (for example, 60 words per minute); and
- quality (for example, to the specifications of a company or professional association).

3.6 Advantages of objectives-based materials

- Writing objectives requires teachers to have a thorough understanding of the value and relevance of what will be taught in the course.
- The content can be evaluated to verify that it reflects the needs of the learners doing or intending to do the course.

- Designers have a clear indication of the outcomes expected from the learning materials and procedures they are developing.
- Objectives give a basis for updating and making improvements to a course.
- Teachers and instructors are informed about what must be achieved and assessed.
- Learners can determine what is required of them to successfully complete each part of a course and are able to direct their own activities toward achieving the course objectives.
- Clearly stated objectives allow the development of tests that tell teachers, instructors, and learners whether the objectives have been achieved.

3.7 Problems with learning objectives

- In order to reduce ambiguity objectives tend to be expressed in very narrow terms.
- Narrow objectives often identify very limited and at times trivial aspects of learning.
- Attempts to deal with broader, less trivial issues usually lead to general statements of intent which are much less precise.
- Learners often find they can get a better idea of what they have to do by looking at past examination questions rather than at published objectives.
- A statement of objectives is a clear way of letting learners know what is expected of them. They can also be a very dull way of introducing a topic, however.
- In some cases, such as when important new terminology is to be introduced, defined, and discussed, learners will not be able to understand the objectives until after they have studied the materials.
- Narrowly written objectives do not provide much scope for learner creativity or encourage learners to go beyond the material at hand.

3.8 Incorporating constructivist frameworks

The preceding discussion has focused on the writing of behavioural objectives, that is, objectives that state clearly the measurable change in behaviour the learner is to be able to demonstrate upon completing the sequence of instruction provided.

Constructivist frameworks for learning take a different approach, one 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.

Even within constructivist frameworks, however, behavioural objectives can have their uses. For example, assuming frequent and continuous communication between learners and teachers and among learners themselves, learners through this ongoing dialogue can work toward setting their own learning objectives; that is, performance statements with conditions appropriate to their own needs and situations.

Involving the learners in constructing their own learning objectives, within a set of broad goals and aims for the course overall, means enabling them to do their own task analyses and setting their own performance conditions and standards, in collaboration with the instructor and with each other.

Such a process offers the advantages of using learning objectives as a measure of learning performance and overcomes the disadvantages of prescriptiveness and one-way transmission for which behavioural objectives have been criticised.

Discussion: Encourage your participants to provide examples from their own contexts and experience. Have sample course materials available from which to draw examples.

4. The use of action verbs

When writing objectives, learners will more clearly know what is expected of them if this expectation is stated as an action they can perform. Preferably, this action is readily evaluated as having been performed, and to the standard of performance specified. This entails using 'action verbs' in the objective statement.

Some examples follow. You will encounter these verbs, and others, in a slightly different listing at a later point in this section.

Some Common Action Verbs

arrange	relate	estimate	discriminate
cite	reproduce	illustrate	complete
classify	repeat	infer	manipulate
convert	report	modify	move
copy	restate	operate	pick up
define	rewrite	predict	point to
describe	specify	prepare	press
distinguish	summarise	produce	set up
explain	tell	select	activate
express	translate	show	adjust
give examples	underline	sketch	disconnect
identify	apply	use	execute
indicate	assemble	appraise	measure
label	change	assemble	rotate
list	choose	categorise	devise
locate	defend	contrast	fix
match	demonstrate	compare	modify

name	draft	defend	organise
order	draw	devise	plan
outline	employ	differentiate	complete

5. The domains of learning objectives

To help us design objectives appropriate to the kind of material our learners are being given, and the kind of activity in which they are engaging, psychologists of learning have divided learning into a number of ‘domains’ and ‘levels’.

> *Discussion*: Encourage your participants to provide examples from their own contexts and experience. Have sample course materials available from which to draw examples.

5.1 The cognitive domain

The cognitive domain is the domain of activities related to perceiving the world and knowing about it or understanding it. This domain contains six levels:

- *knowledge*: recalling previously learned material;
- *comprehension*: grasping the meaning of material or restating previously learned material in one’s own words;
- *application*: using knowledge in concrete situations;
- *analysis*: breaking down material into its meaningful parts so that the relationship among the parts can be determined;
- *synthesis*: combining parts to form a new whole; and
- *evaluation*: judging the value of the material.

In many cases, it is easier to think of these levels as three broad cognitive categories:

- knowledge and comprehension;
- application; and
- problem solving, including:

  analysis;

  synthesis; and

  evaluation.

The following table lists some ‘action’ verbs according to learning level and domain of learning. The table is taken from D. Gachuhi and B. Matiru, eds. (1989), *Handbook for designing and writing distance education materials*, p. 46.

Action Words for Domains and Levels of Learning

	Knowledge level		Application level		Problem solving level	
Cognitive Domain	arrange cite classify convert copy define describe discuss distinguish explain express give example identify indicate label list locate match	name order outline recall recite record relate reproduce repeat report restate review rewrite specify summarise tell translate underline	apply assemble calculate change choose compute defend demonstrate discover draft dramatise draw employ estimate explain	illustrate infer interpret modify operate practise predict prepare produce relate schedule select show sketch use	analyse appraise argue arrange assemble assess categorise choose combine compare compose conclude construct contrast convert create criticise debate defend devise differentiate discriminate distinguish estimate evaluate examine	experiment explain formulate illustrate infer inspect judge justify manage modify organise plan predict prepare propose question rate relate recognise score select solve support test value write
Affective Domain	accept accumulate ask describe follow give identify	locate name point to respond to select sensitise to use	affirm approve assist choose complete conform describe discuss follow initiate invite	join justify perform practise propose select share study subscribe to work	act adapt change defend display influence	integrate mediate organise revise solve verify
Psychomotor Domain	complete demonstrate distinguish hear identify locate manipulate move pick up point to practise	press pull push see select set up show sort specify touch transport	activate adjust assemble build construct copy demonstrate disassemble disconnect draw duplicate execute load	locate loosen manipulate measure open operate perform remove replace rotate select set slide	adapt combine compose construct convert create design devise	fix generate illustrate modify organise plan repair service

5.2 The affective domain

The affective domain concerns activities to do with feelings or emotions. This domain includes the following levels:

- attending to a specific phenomenon or stimulus;
- responding to the phenomenon or stimulus;
- evaluating the phenomenon or indicating its worth;
- organising the values in relation to each other; and
- generalising or integrating the values into one's value system so that they may guide one's life.

5.3 The psychomotor domain

The psychomotor domain deals with learning physical skills and is normally associated with vocational training. However, many cognitive and affective skills have psychomotor components. This domain is divided into the following stages:

- acquiring knowledge of what should be done;
- executing the responses in a step-by-step manner;
- transferring control from eyes to other senses;
- automating the skill; and
- generalising the skill to a continually greater range of application situations.

6. Appropriate assessment

6.1 Terminology

Assessment is the measurement of aspects of a learner's performance in terms of knowledge, skills, and attitudes.

In open and distance learning, assessment has many dimensions. It can be

- formal or informal;
- carried out by learners themselves, by tutors, or by computers;
- formative or summative;
- immediate or delayed;
- paper- or computer-based;
- on-the-job;
- norm-referenced or criterion-referenced;
- objective or subjective; or
- pre-test and post-test.

Two examples of these dimensions follow.

6.2 Pre-test or entry-level assessment

Pre-tests are tests given to learners before they begin a lesson, module, or course. They serve two purposes:

- they check that the learner has the necessary prior knowledge, skills, and perhaps attitudes to undertake the course; and
- the results obtained can be compared with those obtained in subsequent post-tests to establish how much the learner has learned.

If the required level is not attained in the pre-test, you can

- advise learners where to find the things that need brushing up;
- prepare some remedial or preparatory material; and
- counsel learners on suitable preparatory courses.

6.3 Objective versus subjective testing

Objective tests

- are designed to assess knowledge or skill without requiring the marker to exercise any judgment;
- can be taken whenever a learner is ready, since they can be readily assessed by the learners themselves;
- are cost-effective where large numbers of learners are involved;
- allow for coverage of the content of a course where other forms of assessment may have to be more selective;
- prescribe the alternatives among which the learner must choose (e.g., one of several, ranking, true–false, matching);
- are not easy or quick to set;
- cannot test higher cognitive levels, including power of originality and self-expression;
- tend to lean toward what can most easily be tested; and
- cannot detect whether learners are guessing or getting the right answer for the wrong reasons.

Subjective tests

- require learners to compose their own answers;
- range from requiring answers of a few words to a few thousand words;

- are usually set when we want the learner to present an argument, analysis, interpretation, or evaluation;
- are easier to set but more difficult and time-consuming to grade; and
- are not cost-effective (or even feasible) for very large numbers of learners.

7. Practice exercise

7.1 Developing course objectives

Instructions: Provide participants with the outline of an appropriate course, and give them the following instructions.

You are a member of a newly formed course team, working on the development of a course for open and distance learning materials developers. You have recently been given a draft course outline. This is to be completed and to go before the Mortadellan Board of Education (MBE) next week. (The MBE is the accrediting agency.)

Your task is to develop the objectives for the course.

- Choose a unit from the course.
- Develop draft objectives for the unit you have chosen (no more than six).
- Present your draft objectives, along with a description of the domain and level of the learning entailed in each of them, to your colleagues in the course team.
- Critique each others' objectives and suggest improvements.

Timeframe: Approximately one hour.

Materials: A relevant course outline. One possible source of an outline is to have your participants generate it as an exercise in the preceding unit on curriculum planning.

TOPIC 6

Developing a Study Guide

1. Overview

These materials support a discussion on the topic of developing study guides for open and distance learning.

1.1 Source materials for this topic

Hartley, J. *Designing instructional text*, 3rd ed. London: Kogan Page, 1994.

Jenkins, J. *Course development: a manual for editors of distance-teaching materials*. 2nd ed. Cambridge: International Extension College, 1987.

Kember, D. *Writing study guides.* Bristol: Technical and Educational Services Ltd., 1991.

Lockwood, F. *Activities in self-instructional texts*. London: Kogan Page, 1992.

Lockwood, F. (ed.). *Materials production in open and distance learning*. London: Paul Chapman, 1994.

Parer, M. *Textual design and student learning*, 2nd ed. Churchill, Australia: Centre for Distance Learning, Monash University, 1995.

Rowntree, D. *Teaching through self-instruction.* Rev. ed. London: Kogan Page, 1990.

2. An introduction to study guides

The print materials to be included in a package of learning materials can be prepared using a number of approaches, including the following:

- *interactive textbooks*: course books that are newly created, from the ground up, using a dialogue approach that incorporates a great many activities for the learner to engage in;
- *handbooks*: at the other end of the continuum, handbooks provide information to learners that supplements print or other materials (for example, video) that have been purchased or leased from elsewhere but which need some explanatory notes to fit them to the context of the user institution; and
- *study guides*: somewhere in the middle of the continuum, more substantial than handbooks but less labour intensive than interactive textbooks, since they are used in conjunction with readers of collected articles, set texts, audio cassettes, video cassettes, and broadcast programmes. They are probably the most commonly produced print materials for course packages.

2.1 What is a study guide?

A study guide is part of a self-instructional package. It will probably contain some of the content of the course, but not the main bulk. The bulk of the content comes from textbooks, a collection of readings, audio cassettes, video cassettes, broadcast television and radio, and so on.

A useful metaphor is that the study guide is a tutor sitting alongside a learner who is reading, watching, or listening to the course materials. The study guide should do all the things a tutor might do in this situation.

2.2 Why write a study guide?

You need to decide between developing a self-contained package or producing a study guide to an existing source of content.

Self-contained courses

A self-contained course contains all the content or subject matter as well as the features of self-instructional courses. To produce a self-contained course you have to write everything that would go in a textbook as well as all the activities that would turn it into a tutorial in print.

Advantages

- The content can be tailored precisely to your course.
- Content, examples, and case studies can be chosen that are appropriate for your local situation.
- Everything the learner needs is under your control.

Disadvantages

- Developing a self-contained package of high quality can take 50 hours per hour of learner learning time.
- The expertise of textbook writers is not always easy to match.
- The production standard of textbooks is difficult to match.
- In a self-contained course, produced by an individual, it is difficult to do justice to more than one viewpoint.

> ***Discussion***: Draw examples of appropriate uses of self-contained courses from your own and your participants' experience.

Study guides

The main source of content for study guides comes from other sources. The study guide may also include some content if the writer feels that the source materials do not fully cover some subject areas.

Advantages

- Fewer resources are needed to develop a study guide.
- The best available source materials can be selected.
- By using a variety of sources you can include a variety of opinions and alternative explanations.
- You can take advantage of source materials with high production values.

Disadvantages

- You are unlikely to find sources of content that precisely match your curriculum.
- Textbooks and other source materials can change editions or go out of print, necessitating a complete revision of your study guide.
- The content of the source materials may be oriented to learners in different jobs, contexts, or countries to those of your own learners.
- Books and cassettes must be bought by the learner or supplied by you.
- Copyright permission should normally be obtained on all material included in study guides. This is a time consuming process and some copyright holders charge a fee.

> *Discussion*: It would be helpful at this point to have at least one example each of a self-contained course and a study-guide type course to illustrate what is meant by the terms.

3. Planning media and tutorial support

> *Discussion*: It is useful at this point to have some sample study guides available to illustrate ways in which guides can integrate tutorial approaches and activities.

3.1 Guidelines

Unless media and tutorial support activities are planned at an early stage they are unlikely to be fully integrated into the course. In planning a study guide package you must make two media decisions:

- the media to use for the source of content; and
- the media to use for the study guide.

Study guides are nearly always published as print materials. A few are wholly or partly on audio cassettes, and for courses that draw their source material primarily from the Internet, the study guides will also be available online.

The choice of media is wider for the source of content. You can write study guides to print material or to audio, video, and computer programmes.

The features of various media will be discussed in greater detail as a later topic.

3.2 Tutoring

Tutorials take several forms:

- face-to-face meetings;
- teleconferences;
- one-to-one telephone conversations;
- e-mail;
- computer conferences; and
- postal communication.

A wide variety of activities can be planned, depending on the medium used:

- help with difficulties;
- working through pre-set problems;
- discussion of defined issues;
- debate on set topic;
- presentation of seminar papers given by learners;
- discussion of case studies;
- help with project work; and
- practical work.

It is essential to plan your tutorial approach before writing your study guide, since you will want to incorporate tutorial activities into learners' work as it progresses.

4. Content through activities

4.1 What is an activities approach?

The main role of a study guide is to help learners master the content that has been selected. This help is provided through a series of activities.

Why use an activities approach? Primarily because whatever instruction is provided learners will only learn if they actively engage the presented material. This means interspersing the text material with prompts to action of some kind.

The following table indicates some of the ways in which this activities approach will make your study guide look different from a typical textbook.

Contrasting Textbooks and Study Guides

Textbook	Study Guide
• one-way communication	• two-way communication
• learner is passive	• learner is actively involved
• structure is hidden	• learner is aware of structure

Textbook	Study Guide
• self-directed learning	• learner is guided
• lecture	• dialogue
• impersonal	• friendly and encouraging
• little application of knowledge and skills	• learner applies new knowledge and skills
• activities only at end of chapters	• activities throughout the text
• content in chapters or large blocks	• content divided into small sections
• no assignments	• assignment for self or others' assessment
• no feedback	• feedback provided on learner's progress

4.2 Types of activities

Using different types of activities will make your study guide 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).

Kinds of activities

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

- reflecting on reading;
- consulting dictionary;
- reading a piece of text;
- reflecting on experience;
- listening to a tape;
- performing a calculation;
- carrying out practical work;
- looking at a paragraph;
- describing personal experiences;
- examining experiment results; and
- observing aspects of learners' own surroundings.

Types of responses requested

As to the type of response requested, examples include:

- writing answer in the margin;
- writing answer in the box;
- writing answer in notebook;
- making a summary;
- underlining phrases or statements;
- ticking boxes;
- filling in or completing a table or chart;
- completing a crossword puzzle;
- making glossaries;
- drawing a diagram;
- asking questions of friends or colleagues;
- repeating aloud a phrase on audio cassette; and
- answering aloud a question on audio cassette.

Levels of difficulty

Levels of difficulty or cognition include:

- knowledge (remembering something previously encountered);
- comprehension (understanding without relating to other situations);
- application (using abstractions in concrete situations);
- analysis (breaking down into parts to clarify organisation);
- synthesis (putting elements into a whole); and
- evaluation (judging value for given purpose).

5. Structuring the study guide

Discussion: Again, it is most useful to have some sample study guides available for demonstrating the ways in which they have been structured.

5.1 Basic structure

If you are producing your study guide in print form, here is a typical way of breaking it down into components that learners can readily deal with:

Course

↓

Block

↓

Unit

↓

Introduction or overview

↓

Sections

↓

Summary and conclusions

↓

Glossary

↓

References

↓

Visual aids and signposts

Course

Courses come in all shapes and sizes.

The term *course* can apply to three or four related lessons or sessions or to a whole degree programme lasting several years. Essentially, we are talking about a sequence of structured learning with a time interval between each session and the next. It may stand on its own, or be part of a programme of studies leading to formal qualification.

You will know what counts as a course in your own context.

Block

If courses are very large, say fifteen or sixteen units, they are frequently broken up into ‘blocks’ or approximately equal size.

Blocks are clusters of units that cohere in some way around a particular topic or theme. For example, it might make sense to break up a course on open and distance learning that has sixteen units into four blocks of four units each: introduction to open and distance learning, patterns and variations, promise and performance, and problems and issues.

Each block will have a brief introduction to orient the learner to what is to come.

Clustering units in this way provides learners with manageable and meaningful targets. Making one's way through a block of the course mentioned above, for example, means completing one quarter of the course.

Subdividing into blocks only makes sense if the units cohere in some meaningful way.

Unit

We use the term *unit* to describe a portion of a distance-teaching text that is distinct from other portions.

Units can be separated by topic, or by the time allowed for studying the material, or by a combination of both.

Whatever kind of distinction is used, each unit must be self-contained.

It should contain

- orientation for the learner;
- explanations of the topics covered; and
- exercises and activities.

Introduction or overview

The elements needed for a unit introduction include the following.

- *Aims*: A general statement of purpose and overall direction.
- *Introduction*: An outline or an overview describing the main concepts to be discussed, or simply a contents list. Its function is to attract learner's interest and focus attention. Introduction and aims may sometimes be within the same paragraph. The introduction may often indicate how the content of the present unit relates to others in the course.
- *Study data*: Often learners will need a particular book or equipment for one particular unit. They need to know this before they settle down to work. Some information is often presented in a list or displayed in a frame. When units vary in length, guidance on timing is also needed.
- *Learning outcomes*: A description of learning outcomes will help learners understand what to expect. This is the place for your formal list of objectives. If the list is too long, however (say, more than ten) learners may be intimidated or discouraged. You might want to compress them, or to split the objectives so that two or three of them head each subsection of your unit.
- *Orientation*: Some orientation is included in the description of aims. In addition, learners may need to know certain facts or skills before they begin the unit, and these can be reviewed here, or a preliminary test can be provided to help individuals know where to concentrate their efforts.

Sections

Even one study unit is normally too much material for a learner to handle readily. Learners will find it helpful to have each unit broken down into smaller sections, which again can be broken down by topic, by length of time for completion, or some combination of both.

Sections can be organised in a number of ways, according to the structure of the subject that is being presented and the learning outcomes that are anticipated. Here is a checklist of items that are useful to include in each section:

- learning outcomes or objectives;
- assigned reading, tape listening, or other activity;
- commentary on the source material (adding to the material where required, connecting it to what has gone before, looking ahead);
- an exercise of some kind to nudge the learner into active engagement (questions to be answered, blanks to be filled in);
- feedback on the answers the learner has provided; and
- summary of the material presented in the section, including checklists if appropriate.

Summary and conclusions

At the end of a unit, much like at the end of an essay, it is necessary to tie together the ideas that have been presented so as to leave learners with a coherent understanding of the material and the essential points to be remembered before they move on to the next unit.

Depending on the subject matter, you might want to include a checklist of important points for the learner to remember.

The end of the unit is also an appropriate place for a self-test or for an assignment that is to be completed and sent to the tutor for grading, so that learners can check their comprehension of the material.

Glossary

In subjects with specialised vocabulary, a glossary of terms used in the unit provides a helpful reference tool for learners. You may prefer to put a glossary for the entire course at the end of the course.

References

In time-honoured scholarly fashion, it is essential to provide a list of those works to which you have explicitly referred or which you have cited in the unit.

If any of your citations is especially lengthy, that is, more than a paragraph, you should probably seek copyright permission for using it.

You might also want to provide a supplementary materials list for learners who want to pursue some particular topic in more detail. That list should also contain information on where the materials in question can be obtained, however.

5.2 Visual aids and signposts

Use visual aids and signposts to guide learners through your study guide.

Headings

Make sure your headings are consistent and clearly differentiated from each other.

> *Example*: Unit headings should be in a typeface different from section headings, and so on.

You can also use numbers and other devices to distinguish headings from each other.

Icons

Signpost the various activities you are asking learners to undertake by using devices like icons in the margins.

> *Examples*: A pencil to indicate that learners are to write now; a book to indicate they are to turn to one of their set readings; a cassette to indicate they are to listen to an audio cassette; a television to indicate they are to watch a video; a big checkmark to indicate a checklist.

Boxes, shading, and italics

You may want to set off certain portions of your text, such as a ‘sidebar’ of additional information, in a box that is shaded differently from the rest of the page.

Or you may want to use a different typeface, such as italics, to provide feedback to the answers learners have provided to the questions they have been asked.

6. Writing to be read and understood

6.1 Managing the concept load

If you teach too much information at once, the learners will not learn it well. Managing the concept load therefore is one way to assist your learners to learn.

Three ways to manage the concept load follow.

Density of information

- Start from the known; move to the unknown.
- Introduce new concepts and words carefully.
- Add a glossary at the end of the unit.

- Make all concepts concrete by giving specific examples.

Succinctness and relevance of information

- Distinguish between what must be learned and what is good or nice to learn.
- Avoid rambling and getting off the point.
- Make your text relevant by providing examples from the learners' own experiences.
- Make sure you include examples that refer to both men's and women's experiences.

Additional stimulation

- Make your text stimulating and thought-provoking by adding questions and activities to think about and do.

> *Examples*: A tape-recorded interview to listen to and reflect upon, two photographs to compare and contrast, a chart from which to seek data for answering a question, or instructions for making an item out of household materials that illustrates the principle being discussed.

6.2 Choosing an appropriate style

When writing open and distance learning materials you are taking the place of a teacher. Therefore it is important to incorporate in the text all the stylistic features of good face-to-face teaching.

Here are some suggestions.

- Use a conversational style.
- Speak to your learners through your style.
- Be friendly and encouraging.
- Engage them in a dialogue with you.
- Involve them in arguments.
- Ask them to consider questions raised and to criticise and supplement what is being provided.
- Use a personal style. Address learners as 'you' and refer to yourself as 'I'.
- Try to develop personal relations between yourself and the learners.
- Let them search for further information and to apply their knowledge and skills.
- Encourage them to raise further questions.
- Match your style to the subject. For example,

  if bookkeeping is your subject, then you will want lists and a step-by-step approach; or

if you are teaching philosophy, however, you will need to use a language that involves the reader in a process of thinking and reflection.

- Use the appropriate language, as follows:

  paragraphs should contain only one main idea or at most two related ones;

  sentences should be short, not more than twenty words each;

  use mostly main clauses since they are easier to follow than subordinate clauses;

  avoid having too many clauses in a sentence;

  avoid having several negatives in one sentence;

  avoid passive verbs; use active, direct, lively verbs;

  use familiar words whenever possible;

  use concrete words;

  convert abstract words into verbs;

  explain all technical terms;

  be sure all your words are used correctly;

  use phrasal verbs and other idioms sparingly;

  tailor what you write to the reading abilities of the learners; and

  make your language inclusive of both genders; for example, use plural nouns and pronouns whenever possible.

- Test for readability:

  read your writing out loud, to see how conversational it sounds; and

  use one of the readability tests; for example, Cloze test, Fog index.

7. Teaching with graphics and pictures

7.1 Graphic devices

We introduce a pictorial element into our teaching as soon as we use the printed page to convey something that could not be spoken with words.

To make your text pictorial you can use graphic devices and pictures like the following:

- prose set out in such a way as to emphasise a point or make sure the reader's attention is drawn to what is vital;
- tables of words that highlight the relationships between ideas;
- charts that do much the same thing;
- tables that do it with figures;
- symbols and icons to provide learners with cues;

- textures and shadings; and
- borders or ‘rules’ that may be used as ‘stoppers’.

Pictures include:

- graphs and charts;
- simple maps;
- cartoons;
- sketches;
- photographs;
- clip-art from your computer software;
- reprints (with permission); and
- adaptations from old, public domain engravings.

Use graphics and pictures for many reasons, including:

- interest;
- amusement;
- expression;
- persuasion;
- illustration;
- description;
- explanation;
- simplification;
- quantification; and
- problem-posing.

7.2 Guidelines

Bear in mind the following useful guidelines when using graphic devices.

- *Explain the function*: Give the reason you have included the graphic or picture.
- *Balance the functions*: Make sure some minor function of the graphic or picture does not work against its major function.
- *Set activities*: If the graphic or picture is vital in developing understanding, base an activity on it.
- *Explain conventions*: Explain the purpose of shading, solid and broken lines, and perspective.
- *Print picture close to text*: Do not expect learners to search for the illustration.

- *Use captions and numbers*: Ensure that your illustrations are numbered, captioned, or both; and
- *Graphic emphasis*: Use a box or some other device to draw learners' attention to the vital point:

  avoid information overload: do not overload your pictures with information;

  remember that pictures do not tell all: learners may also need to experience colour, smell, taste, texture, and weight;

  avoid racism and sexism: do not use pictures that present racial or gender stereotypes;

  seek copyright permission: essential when using other people's pictures or illustrations;

  test your graphics: show them to a sample of learners to see how they respond; and

  build a graphics library: keep a file of graphics that might be useful and note sources.

8. Making your text visually appealing and usable

To make your study guide one that learners will want to use and one they will enjoy reading and using, keep in mind a number of concerns.

8.1 Page size

The page size of printed course materials has to be a compromise between several different factors:

- a size that will accommodate both text and illustrations in a way that makes them easy to read and understand;
- the most economical size, or the size that is most readily available;
- the size of the printing machines;
- the most economical size for packing, warehousing, and dispatch; and
- a large enough size to ensure that the final number of pages in any volume does not make it too bulky to handle.

It is a good idea to look at the publications of other institutions and to try to learn from them.

8.2 Layout and house style

The size of the page and the layout of the material are closely linked.

The layout of the printed page has a direct effect on the ease with which learners can learn from the printed material.

Open and distance learning programmes often use a graphic designer to develop the page layout. He or she may prepare sample double-page spreads of course material and establish a 'house style' for the course. A house style specifies 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 other elements of the text;
- position of illustrations and captions in relation to the text; and
- editing and reference style (for example, American Press Association (APA), Modern Language Association of America *MLA Style Sheet*, University of Chicago Press *Manual of Style*).

Discussion: It is useful at this point to have some sample learning materials available to pass around to participants or simply to show them, depending on numbers, and ask them to compare them for appeal and usability in terms of the questions that follow.

8.3 Study guide visuals checklist

To determine the adequacy of page size and layout, ask yourself the questions in the study guide visuals checklist.

Study Guide Visuals Checklist

- ❑ Does the page look too empty or too crowded?
- ❑ Does the relationship between text and white space seem about right?
- ❑ Is the typeface easy to read? Is it too small or too ornate?
- ❑ Are the lines of type too long?
- ❑ Is there too much or too little variety in the treatment of the text on the page, or has the designer struck a happy medium? Too much slows you down, too little is tedious.
- ❑ Can you differentiate easily between different levels of heading, and do you understand the significance of each?
- ❑ Do you feel that the overall layout helps you or hinders you in your learning?

9. Writer's checklist

As a final check on whether you have attended to the foregoing issues in designing your study guide, ask yourself the questions in the writer's checklist. You might also want to refer participants back to the more extensive checklists that were provided in the Introduction (Section 3) of Topic 2 (Principles of Instructional Design) of this kit.

Writer's Checklist

- ❑ Is the layout and format consistent with the style guidelines?
- ❑ Is an overview of the content included?
- ❑ Is the learner clearly directed on how to use the package?
- ❑ Is there an explanation of the icons used to guide the learner?
- ❑ Is the content in segments of similar length, which learners can manage in one session?
- ❑ Is the material sequenced appropriately?
- ❑ Does the text consist of short and simple words, sentences and paragraphs in a conversational, personal style?
- ❑ Are technical terms explained when they first appear in the text?
- ❑ Is the text free of sexist language?
- ❑ Are illustrations place in or next to the text to which they refer?
- ❑ Are the illustrations numbered, captioned, or both?
- ❑ Are the text and illustrations free of third party copyright? If not, has copyright permission been obtained?
- ❑ Have exercises and activities been included at intervals throughout the text?

10. Practice exercise

10.1 Critiquing a study guide

Instructions:

- Select a sample study guide, one that is relevant to the circumstances and needs of your participants. Have sufficient copies available so each participant, or at least each two participants, can have one.
- Divide participants into small groups (each no more than five people) and ask them to critique the study guide according to the 'Writer's Checklist'.
- Ask each working group to be prepared to present their critique, on newsprint sheets if possible, to the group as a whole.

Timeframe: Approximately one hour.

Materials: Sample study guides, newsprint sheets, and marker pens.

TOPIC 7

Media Selection

1. Overview

These materials support a discussion on the topic of the various media that are used in open and distance learning as well as which media are best suited to defined instructional tasks and organisational settings.

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.

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

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

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

2. Technologies used in open and distance learning

The number of new technologies introduced into open and distance learning and open learning over the last ten years or so has expanded rapidly. These technologies now include:

- print (mechanical and electronic publishing);
- radio (one-way, interactive, and two-way);
- audio cassettes;
- telephone teaching, including audio conferencing;
- television (broadcast, satellite, and cable);
- video cassettes;
- video conferencing;
- computer-mediated communication;
- computer-based learning; and
- multimedia.

2.1 Print

Despite the enormous range of media from which distance educators have to choose, print continues to be the most frequently chosen medium for open and distance learning programmes. Why this predominant position?

Here are some possible reasons:

- Print is less costly to produce than most other media.
- Print requires less time to produce than most other media.

- Print materials are highly portable.
- Print materials require no other device to read them.
- Print materials can be accessed in any order desired.
- Print materials can be read at a pace determined by the reader.
- Print materials can be annotated by the reader.

There are, of course, things books cannot do, which is why distance educators wherever possible tend to integrate other media with print.

> *Discussion*: Ask your participants to provide examples of the kinds of teaching tasks that books and other print materials are not able to perform, such as teaching comprehension and speaking skills in a foreign language, or providing examples of performance in drama, music, or dance.

2.2 Radio

- Radio has proven to be a cost effective medium for education.
- Most radio is one-way transmission. Examples of two-way radio for education do exist, however.

> *Examples*: The well-known outback schools in Australia linked learners and teacher by radio transceivers. See the case study provided with this kit for the Open Access College in Australia, which is still serving this population with high-frequency radio links.
>
> Interactive Radio Instruction (IRI) broadcasts incorporate teacher-led activities with children in the classroom.
>
> Wawatay Communications in northern Ontario, Canada, broadcasts secondary-level course programming to learners in isolated aboriginal communities who listen to the broadcasts while following along with their print materials, and can ask questions of the radio instructor on air by telephone.

- Radio programmes can be expensive to develop, but are cost effective if spread over large enough listening audiences.
- Radio requires adequate transmission and reception, power supply, and air-time.
- Radio is most effective when integrated with print and tutorials.

> *Example*: Radio ECCA in Spain (headquartered in the Canary Islands) and radio schools throughout Latin America employ an effective three-cornered educational format, consisting of regularly scheduled radio broadcasts, printed workbooks and other materials, and weekly, community-based, face-to-face tutorials.

2.3 Audio cassettes

- Audio cassettes are an easy medium to work with, in that they do not inhibit or intrude upon the learning process.
- Cassettes are convenient. They allow learners to choose where and when they will listen.
- Learners can match their listening to their own learning pace.
- Cassette recordings should be designed in a way that takes advantage of the human voice, its modulation, stress, inflection, humour, and sense of 'presence'.
- Cassettes are most effective when integrated with print and other media, especially a guide that outlines the topic and contents of the taped programme.

  > *Example*: Audio taped lessons can help learners develop note-taking skills. The audio teacher demonstrates, the learner shuts off the tape and practises the skill, and then turns the tape back on to listen to the feedback provided by the teacher.

- Audio lessons are a central part of second-language learning in many open and distance learning programmes.

  > *Example:* See the case study in this kit for the University of Guyana, Institute of Distance and Continuing Education, as an example of an institution that uses audio cassettes as part of its learning materials packages.

2.4 Telephone

Use of the telephone in distance teaching takes two main forms:

- one-on-one telephone tutorials; and
- audio conferences that link learners at several sites with each other and with an instructor who may be at any of the sites.

Audiographics technologies add a visual component and a focal point to audio conference sessions, using equipment that is provided at each site. This equipment may consist of items such as:

- computers;
- electronic whiteboards;
- graphics tablets; and
- light pens for writing to computer screens, tablets, or whiteboards.

This equipment is relatively easy to use and operate. It is only as good as the audio link, however, and relies on good telecommunication infrastructure.

The telephone is not recommended for lectures, or for any monologue-type delivery that lasts for more than 10 to 15 minutes.

Example: See the case studies in this kit for the Open Access College in Australia, the University of Guyana, and the Indira Gandhi National Open University for examples of institutions that use audio teleconferencing in their programmes.

2.5 Television

- Educational television can be delivered via:

  broadcasts;

  satellite feed; and

  cable feed.
- Satellite and cable programming can also incorporate interactive elements, such as linking classrooms via video and audio or via one-way video, two-way audio, in which learners watching the programme can ask questions on air by telephone.
- When appropriately designed, educational television programming takes full advantage of all aspects of the medium: sound, motion, text, and colour.
- High-quality programming is expensive to develop and requires a large listening audience to make it cost effective.
- Educational uses of television tend to take second place to entertainment uses. Broadcast slots tend to be at times inconvenient to learners, such as early in the morning or late at night.
- Broadcasts should always be accompanied by print-based topic outlines to guide and focus learners' attention and reduce the need for them to divide their attention between viewing and note-taking.

  Example: See the case study included in this kit for the Indira Gandhi National Open University, as an example of an institution that uses television extensively in its programming.

2.6 Video cassettes

- As with audio cassettes, video cassettes are easy to use and are under the learner's control in terms of pace and place of use.
- Learners with access to video recording equipment tend to record the educational broadcasts that are part of their learning package and watch them at their convenience.
- Most educational programmes that incorporate television into their learning packages make cassettes available to learners who cannot receive the broadcasts.
- Video cassettes, like broadcasts, should always be accompanied by print-based topic outlines to guide and focus learners' attention and reduce the need for them to divide their attention between viewing and note-taking.

2.7 Video conferencing

- Video conferencing takes the linking of classrooms one step further by compressing the video signal so that it can be transmitted over telephone lines.
- In this way learners at a number of sites can be linked via close-to-full motion video (transmission is usually slightly delayed).
- Video conferencing comes closest to replicating the classroom setting at a distance.
- It is also the most expensive conferencing medium, and is most effectively used when the learning situation requires full-motion, synchronous visuals with accompanying audio.
- Video conferencing like audio conferencing relies on a good telecommunications infrastructure.

> *Example*: Learners in a number of colleges in East Anglia are studying massage therapy at a distance via video conferencing.
>
> Four university campuses in Romania are linked via video conferencing to provide professional development for physicians in the latest developments in diagnosis and treatment of a variety of medical conditions.
>
> The Indira Gandhi National Open uses one-way video with two-way audio. See the case study included in this kit for a description.

2.8 Computer-mediated communication

- Computer-mediated communication for education involves primarily electronic mail, computer conferencing, and access to the resources of the World Wide Web.
- Increasingly learning via computer-mediated communication, or CMC, is coming to be labelled ‘networked learning’.
- Electronic mail (e-mail) replaces the telephone and post as a means of connecting learners and teachers.
- Computer conferencing is a basically a sophisticated and dedicated e-mail system that links learners together with each other and with tutors or instructors to share information and discuss issues arising from the learning materials, along with capabilities such as archiving, keyword searching, tracking of messages, and so on.
- Computer conference participants can read others’ contributions and make their own contributions at their own pace and place, without the need to travel to a learning centre. This assumes that they have the appropriate computer hardware, including modem and Internet connection, and software.
- Since computer conference communication is text-based, learners need relatively sophisticated skills in reading and writing, as well as in computer-mediated communication skills such as uploading and downloading messages.

- Like the other telecommunications-based technologies, computer conferencing relies on a solid infrastructure, not of telephone lines alone but preferably of high-speed lines that can provide fast and reliable Internet connectivity.

  Example: See the case studies in this kit for Deakin University, which is creating 'electronic communities' using e-mail and computer conferencing, and for Murdoch University, which is integrating telecommunications media into all its programming.

2.9 Computer-based learning

- Computer-based learning (CBL) is a generic term for the various kinds of stand-alone, that is., non-networked, learning applications that involve computer software.

  Examples: Athabasca University in Canada has developed computer-assisted learning packages to provide learners with extra information, as well as drill and practice in English grammar and word usage skills.

  The Faculty of Medicine at Chulalongkorn University in Thailand has a range of computer-based learning packages available in topic-specific areas such as the circulatory and respiratory systems.

- Computer-based learning packages that are effective learning tools and that take full advantage of the text, graphics, and animation capabilities of the authoring software now available are relatively expensive to design, and need to be used by a large number of learners to make them cost-effective.

2.10 Multimedia

- Multimedia learning technologies 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.

  Example: A learning package might include a computer-based learning platform and a CD-ROM that provides full-motion video and high fidelity sound clips along with text and graphics.

  Learners with full access to the World Wide Web can take advantage of the entire range of audio, video, text, graphics, and database information that is being made available via this medium. See the case study included in this pack for the Open Learning and Information Network in Canada, which is using the World Wide Web for its programming.

3. A model for choosing appropriate technologies and media

The salient factors to be considered when deciding on the use of technology for teaching can be summarised in the simple acronym ACTIONS (Bates 1991):

The ACTIONS Model for Selecting Media

A	**Access**	Where will learners learn — at home, at work, at local centres? 'A' also stands for 'availability' and 'affordability'.
C	**Costs**	What are the capital and recurrent costs? Which costs are fixed and variable?
T	**Teaching functions**	What are the presentational requirements of the subject? What teaching and learning approaches are required?
I	**Interaction and user-friendliness**	Do learners and teachers require a great deal of training to use this technology?
O	**Organisation**	What changes in organisation will be required to facilitate the use of a particular technology?
N	**Novelty**	To what extent will the 'trendiness' of this technology stimulate funding and innovation? To what extent will use of this technology enhance learner interest and motivation?
S	**Speed**	How quickly and easily can material be updated and changed? How quickly can new courses be produced using this technology?

3.1 Access

Factors to be considered when evaluating access include the following.

- 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?

3.2 Costs

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/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.

3.3 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 a good understanding of what is required to teach a particular subject, and knowledge of the pedagogic strengths and weaknesses of the different media.

The following chart suggests which of the more common media might best enable your learners to perform a given learning task (adapted from D. Rowntree, *Preparing materials for open, distance, and flexible learning* (1994)).

Which Media Might Best Accomplish Which Learning Goals?

Task	Print	Audio	Video	CAL	Multimedia	Computer conference	Lecture	Face-to-face	Telephone
Provide a carefully argued analysis	x	x					x		
Convey sights, sounds, and spirit of the subject		x	x		x				
Build learners' ideas into the teaching						x		x	x
Ask learners to answer questions about subject	x	x	x	x	x	x		x	x
Enable learners to try things out, physically								x	
Ensure learners get physical feedback from real world								x	
Give learners standardised verbal feedback	x	x			x				
Give each learner unique, personalised feedback						x		x	x
Continuously alter teaching to suit each learner's needs								x	x
Provide learners with a record of the learning experience	x					x			

3.4 Interaction, user-friendliness, and control

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 is the learner's ability 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:

- *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 learners' own input and direction; and
- *social interactivity*: learners' interaction with teachers and with each other via the medium.

The following table categorises different media used in open and distance learning according to whether they offer one-way or two-way communication; that is, social interactivity.

Media Categorised as One-Way or Two-Way Communication

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

3.5 Organisational issues

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.

3.6 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.

3.7 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 time consuming.

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.

4. General points about technology in teaching

A number of generalisations can be made about using technologies in teaching.

- *Media are flexible*: what can be achieved educationally through one medium can usually be achieved through any other medium given enough imagination, time, and resources.
- *Professional production and design are important*: each medium has its own aesthetic, and a different range of production skills necessary to exploit its unique features.

- *There is no 'super-medium'*: all technologies have their strengths and weaknesses.
- *Good teaching is important*: effective instructional design applies to the use of any medium for teaching.
- *Balance variety with economy*: the aim should be to use a limited range of media to maximise learning effectiveness, minimise cost, and a balance of both by convenience and ease of use to both learner and teacher.

> ***Discussion***: Take advantage of the wealth of examples available both from your own and your participants' experience. In addition, have on hand as many examples of the various technologies as are available to you, to share with participants.

5. Media choice checklist

Once you have provisionally selected the media you wish to use, ask yourself the questions in the media choice checklist.

Media Choice Checklist

- ❑ Have you been able to argue a convincing case for your choice of media?
- ❑ Have you considered how media might be combined? For example, print plus audio or class sessions with pre-read material.
- ❑ Do you have the expertise to make worthwhile use of your chosen media? If not, how soon can you develop it?
- ❑ Will you have enough personal control over your media? Or will you have to depend on media professionals?
- ❑ Will your learners be able to use your chosen media conveniently and without undue cost to themselves?
- ❑ Will your learners have positive feelings about your chosen media, and do they have the learning skills to use them?
- ❑ If you plan to use non-print media, have you considered how print material might be used in support?
- ❑ If you plan to use 'human media' (for example, tutors or mentors), are you confident that suitable people will be available and willing to help?
- ❑ If you plan to have your learners do practical work, carry out workplace activities, or pursue projects, can you ensure that they do so safely, conveniently, and effectively?
- ❑ Will your choice of media not require you to cut back on some other, more desirable, aspect of what you might provide for learners?
- ❑ Have you managed to avoid the following:
  - deciding on a medium before you have thought through your learners' needs and the content of the teaching?

- using a medium because it is available or urged upon you by someone else?
- choosing a high-tech medium in the belief that it will automatically be more effective than a simpler one?

6. Practice exercise

6.1 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.

6.2 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 8

Interaction, Feedback, and Assessment

1. Overview

These materials support a discussion on the topic of designing materials that encourage learner interaction, and that provide learners with appropriate and timely feedback on their performance.

1.1 Source materials for this topic

Jenkins, J. *Course development: a manual for editors of distance-teaching materials.* 2nd ed. Cambridge: International Extension College, 1987.

Kember, D. *Writing study guides.* Bristol: Technical and Educational Services Ltd., 1991.

Lockwood, F. *Activities in self-instructional texts*. London: Kogan Page, 1992.

Lockwood, F. (ed.) *Materials production in open and distance learning*. London, Paul Chapman, 1994.

2. Designing for interaction

2.1 What is interaction?

Interaction is an essential aspect of open and distance learning materials, as follows.

- Learners in distance learning courses generally have limited opportunity for interaction with their tutor or other learners, and the course materials must take on some of this role.
- Learners always interact with print materials, simply by reading 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.

2.2 Why is interaction important?

Interaction 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.

2.3 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(as discussed in Topic 2 (Principles of Instructional Design)).

2.4 How do you make learning materials interactive?

Possible methods

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 to encourage learners to make the most of activities include:

- explaining why the activities have been included;
- 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.

2.5 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.

Mechanisms for providing this feedback include:

- incorporating self-assessment exercises with sample answers into 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 prompt written or oral feedback; and
- designing face-to-face tutorial sessions that actively engage learners and provide them with immediate feedback on their performance.

3. Strategies for assessing learner performance

3.1 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.

3.2 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 evaluations*: someone else does the assessment, perhaps a researcher evaluating the course.

3.3 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.

3.4 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 anything significant enough for 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.
- Relate assessment to major sections of content.
- Spread assessment evenly to spread the load and 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.

3.5 How to assess

Learning can be assessed using a number of possible methods, each appropriate for testing certain kinds of aims and objectives.

Assessment Methods

Assessment	Assessed	Advantages	Disadvantages
Essay questions in exams (learners do not see questions before sitting the exam)	Memory for facts, understanding ideas, ability to organise material, ability to develop an argument, original thinking	Easy to set	Time consuming to mark, marking may be unreliable, limited coverage of syllabus, favours fast and fluent writers
Pre-set essay exams (learners are given questions in advance of the exam)	Same as for essay questions. Ability to use references in preparation, sustained reflection	Produces better level of thinking	Same as for essay questions. More difficult to assess validity
Open-book essay exams	Same as for essay questions. Use of reference skills	Reduces emphasis on memorisation	Same as for essay questions. Heavy emphasis on speed
Essay or term paper in mid-course	Same as for essay questions. Use of reference skills	Life-like task if carefully set. Reduces stress on memorisation	Same as for essay questions. Possibility of collusion, plagiarism, or regurgitation
Short-answer written questions	Memory for facts. Understanding of ideas, theories	Broad coverage of syllabus, fast marking, more reliable marking, more feedback to learners	Limited opportunity to show argument or originality
Multiple-choice questions	Memory for facts, understanding of ideas, application of principles, analytic thinking	Fast marking, reliable marking, broad coverage of syllabus, more feedback to learners	Difficult to prepare without faults, cannot assess skills of organising or originality
Oral assessment of tutorial contributions	Oral fluency, assess reasoning behind personal thought, assess personal qualities	Flexible, useful to confirm other assessments, more valid in subjects with oral components	Very time-consuming, low reliability of marking, difficult to standardise questions, ‘halo’ effect introduces bias

Assessment	Assessed	Advantages	Disadvantages
Practical exams	Practical (manual) skills, application of principles	Only valid method for assessing skills	Time-consuming, difficult to standardise questions
Field-work	Field-work skills, application of principles	As for practicals	As for practicals, only more so
Projects, theses	Ability to plan original work, ability to seek relevant information, ability to develop an argument, ability to draw appropriate conclusions	Develops important skills in the learner, reveals depth of thought	Difficult to assess objectively

3.6 What are the external requirements?

As a learning materials designer, decisions in assessment are frequently not in your hands alone. You may also have to take into account:

- *institutional policies and procedures on assessment*: for example, the requirement that an invigilated examination be given for every course
- *requirements of employers*: for example, a requirement for demonstration of competence in some particular skill
- *policies and other requirements of accrediting agencies or associations*: for example, accountancy designations, nursing registration, and teachers' certification
- *examination boards*: for example, in the British context, GCSE (General Certificate in Secondary Education) and 'A' (Advanced) level examination boards, NVQs (National Vocational Qualifications)

Discussion: Ask your participants for examples of external requirements that they may have to meet in assessing their learners' performance.

4. Practice exercise

4.1 Interaction and assessment

Instructions: Divide participants into several small working groups, no more than five to a group. Give each group a sample unit from a course that is relevant to their

circumstances and interests. Ask each group to examine their sample unit and determine:

- the extent to which the unit was designed for interaction;
- the assessment strategies that were used; and
- whether these design features were appropriate and adequate.

Ask each group to be prepared to report their findings to the group as a whole.

Timeframe: Approximately an hour including report back and discussion.

Materials: Sample units.

TOPIC 9

Learner Support Systems

1. Overview

These materials support a discussion on the topic of the kinds and mechanisms of support with which learners are provided.

1.1 Source materials for this topic

The Commonwealth of Learning**.** *Perspectives on distance education: student support services.* Vancouver: COL, 1992.

Evans, T. *Understanding learners in open and distance education*. London: Kogan Page, 1994.

Lewis, R. *Tutoring in open learning*. Lancaster: Framework Press, 1995.

Mills, R., and A. Tait. *Supporting the learner in open and distance learning*. London: Pitman, 1996.

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

2. Types of learner support

2.1 Tuition and counselling

Distance educators should offer two kinds of support to learners:

- academic support, or tuition; and
- organisational and emotional support, or counselling.

2.2 Ways of providing support

Support can be provided in a variety of ways:

- face-to-face, at study centres, residential weekends, and summer schools;
- by telephone;
- by e-mail and computer conference;
- by fax and post; and
- by audio conference, audio cassette, or video conference.

> *Discussion*: Your participants may have examples to provide of types and means of support to add to this list. Each of the case studies included in this pack provides information on the ways in which the institutions featured support their learners.

2.3 Support personnel

In addition, a number of kinds of personnel offer this support:

- part-time tutors;
- full-time academic staff;
- counsellors and advisers;
- learning skills specialists;
- administrative staff;
- staff of collaborating institutions;
- other learners; and
- friends and family.

Discussion: What kinds of support personnel are available in the programmes in which your participants are involved?

2.4 Support structures

Finally, the characteristics of any given programme's support for learners could be plotted along a number of axes, as in the following table.

Characteristics of support structures

Local support from regional or sub-regional centres	↔	Distant support, probably from institutional headquarters
Group support	↔	Individual support
Non-specialised in terms of course and needs	↔	Specialised in terms of course and needs
Face-to-face as well as distance media	↔	Distance media only
Continuity as learner progresses	↔	Discontinuity from course to course
High cost	↔	Low cost

These axes are not independent of each other:

- local support is unlikely to be specialised in terms of either course or needs whereas distant support could be specialised in both course or needs;
- the greater the degree of specialisation in support, the less likely that support will be continuous as learners move through various courses toward their final goal; and
- institutions devise support systems that both reflect their particular situation and attempt to get the best of all possible worlds by compromises such as the use of local part-time staff.

Discussion: You might wish to ask your participants to plot the support structures that characterise their programmes along these axes.

3. Functions of learner support

Regardless of how an institution chooses to organise their learner support services, the two basic functions of learner support apply: tuition and counselling. Both can be broken down further into a number of tasks.

> *Discussion*: Have participants provide examples from their experience of the functions and tasks relating to tuition and counselling, as discussed below.

3.1 Tasks involved in tuition

Those who provide intellectual support to distance learners do so in the understanding that it is the materials that are intended to 'teach'. Their primary task is to facilitate the learning of those materials.

However, teaching and learning are social processes that arise from and are embedded in social structures and systems of values. For this reason no set of materials, no matter how carefully designed, can effectively teach every learner equally successfully.

This generates a number of tasks for those who are providing intellectual support:

- explaining to the learner; for example, clarifying a concept or an instruction;
- exploring issues with the learner; for example, how the course material applies to the learner's own situation and experience; and
- feedback to the learner; for example, commenting on and grading assignments.

3.2 Tasks involved in counselling

Personal and emotional support is as essential to the learning process as intellectual support.

The tasks involved for these staff include:

- giving the learner information; for example, about fees, or the availability of courses;
- giving the learner advice; for example, about appropriate course choice, time management, and study skills;
- exploring an issue with the learner; for example, helping potential learners set their goals;
- taking action to help a learner; for example, arranging transport for a disabled learner; and
- advocacy on behalf of a learner; for example, giving a reference or waiving an institutional rule.

3.3 Qualities required of support personnel

The tasks involved in counselling suggest that distance educators might need the following qualities to succeed in their work of supporting learners:

- *warmth*: the quality in a person that communicates welcome, respect, comfort, and willingness to give time to another;
- *genuineness*: meaning honesty and openness about one's own powers and failings;
- *acceptance*: being able to accept another person for what they are, as someone worthy of respect;
- *empathy*: sensing the hurt or pleasure of another as they sense it;
- *organisational skills*: the ability to manage time well, and to diagnose problems and take appropriate action to solve them;
- *explicatory skills*: the ability to break a problem into its component parts and help the learner see how they fit back together; and
- *listening skills*: the ability to give one's entire attention to another and to respond in ways that do not judge but demonstrate you understand what has been said.

4. Implications for course design

What significance do these dimensions of the learner support system have for the design of learning materials?

These implications can be discussed in terms of the following categories:

- administrative support;
- counselling support;
- tutorial support; and
- peer support.

Discussion: It would be useful to have some sample materials available for demonstrating ways in which learner support functions are acknowledged and integrated.

4.1 Administrative support

In order to learn effectively, learners need to have four kinds of support which administrative systems provide:

- the dispatch of course materials in complete and timely fashion;
- administrative information:

  cost of the course and when fees are to be paid;

  when the course begins and ends;

  who the tutor is, and how to contact him or her;

who to contact when things go wrong;

who to contact for certain kinds of information and services; for example, library;

when and where course tutorials take place;

when and how assignments are to be submitted; and

when and where examinations are scheduled;

- timely assignment turnaround;
- the dispatch of the right examination to the right location at the right time; and
- accurate and complete records keeping.

Much of this administrative information can be readily included in the course materials, if not in the study guide, then in another publication such as a learner handbook.

A learner handbook needs to be designed with the same level of care and instructional clarity as the other learning materials. Accurate written information provided at the beginning of a course can prevent a great number of problems later on.

A number of media can be pressed into service to provide some of this information. For example:

- *letters*: tutors and learners can exchange letters;
- *radio*: tutors can introduce themselves to their learners on radio programmes, and learners can phone into 'chat' shows with questions;
- *audio cassettes*: tutors can use these for introducing themselves;
- *video cassettes*: can show distance learners the building to which they send their queries and some of the key staff with whom they will be dealing;
- *e-mail*: learners can e-mail their queries to administrative staff for responses that are independent of time zones, unlike the telephone, and faster than the post;
- *Web sites*: a growing number of institutions have Web sites on which they post up-to-date information on courses, programmes, fees, and staff. In some cases a Web site may also provide access to the institution's library catalogue; and
- *face-to-face*: still probably the most important medium of contact between learners and institutions around the world, by means of access or learning centres where learners can go for information, advice, and assistance.

4.2 Counselling support

As with administrative support, a great deal of counselling material can be made available in print or other media. For example, a variety of booklets can be prepared on common problems faced by learners, including:

- making sure distance study is right for you;
- how to choose the course that is right for you;

- how to apply for a course;
- financial assistance and how to apply for it;
- coping successfully with unfamiliar technologies;
- how to write essays;
- study skills;
- time management;
- how to revise for examinations;
- strategies for overcoming exam anxiety; and
- planning for a new career.

Many of these booklets have already been produced (for example, by the United Kingdom Open University) and are sufficiently generic to be applicable to a number of institutions beyond the institution that produced them, or could be readily adapted to suit your particular circumstances.

Again, technologies other than print can be used creatively to provide this support. For example,

- *audio cassettes*: audio cassettes can be used to engage learners in a dialogue about some common problem, its diagnosis, and possible solutions;
- *video cassettes*: some institutions have produced video cassettes of learners talking about their experiences as learners, to let other learners know they are not the only ones who have a particular problem;
- *computer conferences*: computer conferences, both staff- and learner-led, can provide timely and personalised help; in addition, non-participating members of the conferences who read but do not post messages can also benefit from the discussions; and
- *telephone counselling*: the telephone can be a very intimate and personalised medium for discussion of personal problems.

4.3 Tutorial support

Tutors typically have to deal with administrative issues, and also counsel learners. Roles of educators, and especially distance educators, tend to overlap.

In terms of providing intellectual support and facilitating learners' learning, however, it is essential in the learning materials themselves to both provide and to prompt access to this support. For example,

- *tutor contact*: learners need to be prompted in the learning materials to contact their tutor, by whatever means is made available, at frequent intervals, to discuss a particular issue, for example, to plan for a major assignment, to discuss a returned assignment. Icons are useful here; for example, a telephone for telephone contact, or a stamped envelope for correspondence;

- *assignment dispatch and grading*: learners need clear, complete, and accurate information about when and how to submit an assignment, what to submit, where to send it, and how long they can expect to wait before it is returned. Research indicates that 'turnaround' times of two weeks or less have an optimal effect on learner motivation to continue, as does the requirement for submitting an assignment early in the course. Most learners who get over this first hurdle will end up completing the course;
- *grading criteria*: in the learning materials, learners need to be told the criteria by which their assignment will be graded, which aspects of their answer will receive particular emphasis. In turn, the tutors who grade assignments must be explicit in grading according to these guidelines, and provide comments and reasons for their grade that display all the characteristics of effective support: warmth, honesty, empathy, organisation, explication, and the written equivalent of 'listening'. Acceptance is a little more difficult, since the tutor is in this case required to judge performance, but even so such judgments can be communicated in constructive and helpful fashion; and
- *examinations*: the learning materials must also provide clear, complete, and accurate information on when and where learners will be sitting examinations; what kind of examinations these will be: multiple choice, short answer, or essay; what material the examinations will cover; and what the examination grade will contribute to the overall grade for the course.

4.4 Peer support

Learning materials can also point learners toward others in their communities and social networks who can help them — co-workers, friends, family members, and community members.

Some institutions, for example, publish lists of learners and which courses they are taking, along with their telephone numbers, e-mail addresses, and postal addresses. It is essential to obtain the permission of any individual before publishing this kind of information about them, however, since these data are frequently protected by privacy legislation.

Tutorials that involve other learners (for example, at study centres, by audio conference, or by computer conference) can be used as much for purposes of providing peer support as providing intellectual and other kinds of support from the tutor.

Learning materials can even require learners to seek out other learners, to work as a team on a particular assignment, for example.

Learners may also be required to find someone from their immediate social network to interview, for example, or to seek information from in some other way.

5. Learner Support Checklist

When you have completed your learning design, ask yourself the questions in the following learner support checklist to ensure that you have taken adequate account of learner support issues.

Learner Support Checklist

- ❑ Have you used what you know of learners (see Topic 4 (Target Audience) of this kit) to plan what kinds of individual help and support they might need?
- ❑ Have you identified people who will provide this help and support?
- ❑ Have you defined the roles these people will play?
- ❑ Have you identified any support roles for learners themselves; for example, in supporting each other in self-help groups or in carrying out group activities?
- ❑ Have you cued your learners in the materials to sources of help at points at which you think they might need it?
- ❑ Have you provided clear and complete instructions in the materials for who learners may contact for help, when, and how?

6. Practice exercise

6.1 Designing for learner support

Instructions:

- Divide participants into several small working groups, no more than five to a group.
- Give each group a sample unit from a course that is relevant to their circumstances and interests.
- Ask your small groups to try to:

  determine from the sample units they have been given what kinds of support are provided to learners by the institution that produced the units; and

  to assess as far as possible whether that level and kind of support is likely to meet learners' needs.

- Ask each group to be prepared to report their findings to the group as a whole.

Timeframe: Approximately one hour, including report back and discussion.

Materials: Sample units.

TOPIC 10

Managing Materials Development, Production, and Distribution

1. Overview

These materials support a discussion on the topic of managing the processes of planning, designing, producing, and delivering learning materials.

The emphasis in these materials is on print materials, since print continues to be a major component of most open and distance learning programmes. This emphasis may or may not be appropriate for your participants. For management of other media, you may wish to draw on the resources available in another COL kit, *Integrating Media.*

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.

Jenkins, J. *Course development: a manual for editors of distance teaching materials*. 2nd ed. Cambridge: International Extension College, 1987.

Parer, M. (ed.). *Development, design, and distance education.* Churchill, Australia: Centre for Distance Learning, Gippsland Institute, 1989.

Rowntree, D. *Preparing materials for open, distance, and flexible learning: an action guide for teachers and trainers.* London: Kogan Page, 1994.

2. Who and what is involved in management?

2.1 Roles

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. Who bears overall responsibility for the materials development process? In most programmes this responsibility is usually delegated to the chair of the course development team.

In addition to chairing the course team, a number of roles are involved in managing different aspects of the process. The following are the most typical:

- *course writer or writers*: possess expertise in the subject matter of the course and the ability to write in a way that communicates effectively with learners at a distance;
- *instructional designer*: 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 writers;
- *administrator*: 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 keeps control over day-to-day progress of the course;
- *editor*: bears responsibility for the clarity and accuracy of the language and the textual presentation of the materials, much as in a traditional publishing house;
- *media designer*: bears responsibility for the illustrations, page layout, formatting, and the integration of print with other media;
- *printer*: oversees physical reproduction of materials, including collating, binding, and packaging; and
- *dispatcher*: bears responsibility for dispatching materials in a timely fashion, maintaining inventory and warehousing, and record keeping.

In large organisations these roles may be assigned to different people. In small organisations often two or three people share these roles. It is not unusual in small organisations, for example, for the editor to have responsibility for chairing the course team, doing the instructional design, and taking administrative responsibility for the course.

> ***Discussion***: In the organisation in which your participants work, what kinds of staff positions are assigned these roles? See the case study for the University of Botswana for an account of the challenges that face a small open and distance learning unit in training and managing course writers.

2.2 Teamwork, or managing project teams

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

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.

3. Determining institutional strategies: adopt, adapt, or create?

One of the major choices a manager of an open and distance learning programme must make is how to provide the basic course materials for the programme: adopt existing materials outright, adopt existing materials but adapt them somewhat, or create new materials? In reality, these strategies form a continuum, with adoption at one end, creation at the other, and adaptation somewhere in the middle. For example, most courses that are created from the 'ground up' make use of some existing materials, such as textbooks or video cassettes. In addition, almost all courses that are 'adopted' undergo some degree of adaptation.

These strategies are set out below, together with the benefits they offer, their limitations, and other factors that might affect decision-making.

Adoption Strategies for Providing Course Materials in Distance Education

Strategy	Benefits	Challenges	Other factors
adopting existing materials	• may be less costly • less time consuming • can provide model • no need to pre-test • errors already eliminated • labour saving, less stressful for staff • reduces lead-in time • source of new ideas • opportunities for collaboration • can provide a quality not otherwise possible	• may not be relevant to needs • may not be suitable culturally, contextually • testing for fit may be needed • may kill creativity at local level • deprives local staff of ownership • may omit crucial content areas • may go out of print while you still need copies • may have hidden costs, for example, support structure • may promote dependency • may push planners into premature start	• status and prestige • 'not invented here' syndrome • cost to purchase or lease compared with 'ground-up' production

Adaptation Strategies for Providing Course Materials in Distance Education

Strategy	Benefits	Challenges	Other factors
adapting existing materials	• gives a headstart, reduces lead time • gives models and ideas • may be easy to convert	• expert knowledge still needed • may reduce quality by altering • may be self-defeating because	• accreditation issues • control and ownership of course • issues of

	• can select from available materials • cost-saving • can improve by adding components • can increase appropriateness • can update • can improve writers' skills without having to produce whole course	of costs and time • does less for developing local capacity • may not assist in developing coherent programme • levels may not match	copyright • credibility of provider

Creation Strategies for Providing Course Materials in Distance Education

Strategy	Benefits	Challenges	Other factors
creating original materials	• likely to fit target audience more closely • more likely to be culturally relevant • will be up-to-date • will be unique • will build local capacity and self-confidence • will be easier to modify if necessary	• the most expensive option • lead-in time is longer • may put high stress on developers • amount of work may be underestimated • needs trained and skilled staff • need to build up capacity and expertise • need to persuade people it is worth doing • needs adequate resources	• start-up costs • status of enterprise, political agenda

4. Managing course planning and development

4.1 The course development blueprint

The development of a course represents a major commitment of financial and human resources. Because of this, it is useful to ensure that the full extent of the commitment required is determined before the development project begins.

A typical procedure for this planning exercise is the development of a course planning document, sometimes called a *course blueprint*.

The course blueprint is circulated for comment to all units that are concerned with course production and delivery, including registration, tutorial services, academic departments, media and production, warehousing, and dispatch. The academic content may also be sent to other content experts, and to partner organisations and agencies, for review and comment.

Depending on the comments received, the blueprint authors may be asked to revise their proposal. Approval usually rests with someone in the organisation who has budgetary authority to commit the resources involved, such as the dean of a faculty.

Here is an outline for a typical course blueprint.

Course Blueprint Outline

A. Programme-related details

1. Course title
2. Programme
   a. programme or programmes in which the course is intended as a component
   b. compulsory or elective
3. Level
   a. introductory or foundation
   b. intermediate
   c. advanced
   d. postgraduate
4. Credit weighting
   a. number of credit hours assigned to it
5. Semester
   a. semester in which it is to be offered
6. Prerequisites
7. Anticipated annual enrolment
   a. supporting data, including market survey, government statistics, experience from other programmes and courses.

B. Course package components

1. Course components to be produced in-house
   a. study guide or guides
   b. reader
   c. learner handbook
   d. assignment manual
   e. media handbook
   f. tutor manual
   g. radio and television broadcasts
   h. audio and video cassettes
   i. computer software
2. Course components to be purchased or leased textbook or books, software, audio, video rights to broadcast a radio or video series
3. Entire course package

C. Development and production schedule

1. Development personnel involved
   a. course team manager
   b. course writer or writers
   c. instructional designer
   d. editor
   e. illustrator or media producer
   f. internal and external reviewers
2. Projected on-the-shelf date
3. Course development schedule, including all components and all media
4. Course production or reproduction schedule, including all components and all media
5. Anticipated course revision schedule

D. Content and pedagogy

1. Course aims
2. Course structure
   a. block and unit titles
   b. unit-by-unit objectives
   c. readings
   d. types of activities

e. role of audio, video, and television components

f. sample unit

3. Practical work

a. laboratories

b. teaching practice

c. fieldwork

4. Assessment scheme

a. assignments, including their number, timing, format, and markers (number, internal or contracted)

b. examination(s), including their number, timing, format, and markers (number, internal or contracted)

5. Evaluation scheme

a. developmental testing schedule

b. monitoring or formative evaluation scheme, instruments

c. end-of-course or summative evaluation scheme, instruments

E. Delivery plan

1. Tutorial centres

a. number required

b. suggested locations

c. proposed schedule of tutorials

2. Tutors

a. number required

b. qualifications

c. training workshops, including number, duration, and location

3. Residential schools

a. number

b. location

c. schedule

4. Practical work

a. laboratories

b. teaching practice

c. fieldwork

F. Course budget

1. Revenue

a. course fees
b. other sources

2. Costs
   a. course components production
   b. produced in-house
   c. purchased
   d. leased
3. Copyright clearance, with estimates based on
   a. number of articles to be reproduced
   b. sources
   c. total number of pages
   d. print run
   e. course shelf life
4. Development personnel
   a. person-days for in-house staff
   b. fees for contracted external staff
5. Delivery and evaluation
   a. tutorial wages
   b. marker fees
   c. monitoring and evaluation costs

4.2 Costing

Courses can be costed as minimally or as completely as the requirements of the programme and supporting organisation dictate. The costs listed in the preceding course blueprint represent the minimal end of the scale. At the other end is a full costing, which includes all the costs, both direct and indirect, that are involved in planning, designing, developing, presenting, and evaluating a given course. Single mode or free-standing open and distance learning institutions seldom require full costings for a single course. In dual mode organisations, however, open and distance learning programmes frequently are required to ‘pay their way’ and even make money for the host institution. Here is a listing of the items that might have to be included in a full costing.

Course-related costs

A full costing of course-related costs considers the following:

- course design and curriculum development, including meetings, workshops, and external advisers;

- course development, including recruitment and selection of writers, designers, and editors; contracting and training; course team meetings; external reviewers; and pre-testing;
- course production, including copy editing, graphic design, proofreading, paper, printing, and binding;
- media production, including studio time, illustrators, and producers, technicians, editing time, materials, copying, labelling, and packaging;
- distribution, including collation, packaging, storing, postage, transport; and
- monitoring and evaluation, including design and printing of instruments, distribution of instruments, collection of data, analysis and interpretation, reporting and dissemination

Learner-related costs

A full costing of learner-related costs considers the following:

- information and promotion, including advertisements, leaflets, posters, and responding to enquiries;
- admission, including printing forms, selecting learners, informing applicants;
- registering, including printing forms, processing;
- tutorial support, including recruiting and selecting tutors, training, fees and expenses; and
- assessment, including marking fees, printing exam papers, exam board meetings, informing learners of results.

Overheads

A full costing of course-related costs considers the following:

- salaries and allowances, including attribution of salaries of administrative and management staff in other units, such as registry, library, computing; and
- running costs, including space rental, utilities, equipment, supplies, and communication.

4.3 Scheduling course development

Another major part of the manager's job is scheduling, monitoring, and tracking a course from development through production and delivery. The following steps are typically involved in drawing up a schedule for development of a course:

- Establish the date on which the course must be in learners' hands.
- On that basis determine when the course must be in the warehouse ready for dispatch.

- On the basis of the warehouse date, determine how much time needs to be allocated to physical reproduction, binding, and packaging, including media components other than print. Also make sure that purchased or leased components have been ordered in time for their assured arrival by the warehouse date.
- On the basis of the date by which the course must be in the print shop, determine how much time the visual designer or layout technician will need in order to prepare the manuscript for printing, complete the visuals and cover design, and so on.
- On the basis of the date by which the entire manuscript must be in the hands of the visual designer, determine how much time the development team will require to produce the manuscript (experienced course developers are tempted to say, 'And then double it!').

No firm guidelines help you here, except to warn you that the development process, especially the more creative parts of it, are likely to require far more time than you really have available and continual negotiating, wheedling, cajoling, and threatening, or all four, will be required to meet deadlines.

> ***Discussion***: Draw up an actual production schedule, putting in the dates your participants suggest; then discuss how realistic these dates really are, both in terms of their organisation's ability to hold to them and in terms of the pressures on them to have courses ready for delivery.

5. Meeting legal requirements

A number of legal matters are of concern to managers of materials development. The primary ones are copyright, and contracting authors and other part-time staff.

5.1 Copyright

If your materials reproduce any materials — be they words, pictures, or recorded sound — for which someone else holds the copyright, you will need to obtain written permission from the holder of the copyright.

It is wise to assume that any piece of writing is protected by the laws of copyright. The same is true for pictures and for recorded speech or music and moving pictures.

Infringement of copyright generally is deemed to occur when more than a 'substantial part' of a work is reproduced without permission — more than about 50 words as a general guideline.

To obtain permission, you will need to identify the copyright holder (look on the reverse of the title page) and write to that firm or person with the following information:

- full details of the work from which you wish to copy;
- a photocopy of the extracts or illustrations you wish to reproduce;
- any deletions or amendments you might want to make;

- the author, title, and publisher of the work wherein the extract will be published;
- explanation of the use of the work wherein the extract will be published;
- size of print run;
- medium of distribution;
- geographical distribution;
- what you will be charging for the materials; and
- an assurance that you will acknowledge the source appropriately.

It is also sensible to copyright your own work by printing the copyright notice on your work. Be sure to seek guidance from an appropriate authority, since copyright law varies greatly from country to country.

5.2 Contracting writers and editors

In hiring the people who will be working as members of your materials development team, the process is identical to the one you would follow to recruit temporary or contract staff of any kind:

- write the job description;
- write ad copy on the basis of that description;
- advertise in appropriate outlets;
- shortlist candidates from among those who apply;
- interview candidates;
- select the most appropriate candidate;
- negotiate a contract.

In selecting candidates, the following criteria are useful:

- *background and experience*: academic, teaching, writing, and open and distance learning experience and expertise are needed in course writers;
- *reliability*: course writers and editors need to be able to keep to schedules;
- *expectations*: this is a demanding job, which requires some training and an ability to accept criticism;
- *time available*: ask candidates how they will accommodate the time required for this task;
- *accessibility*: travel to course team meetings will be necessary.

In negotiating a contract with the successful candidate, you will need to ensure the following:

- that the institution is protected if, for example, the writer does not produce the materials by the given date; arrange an appropriate schedule;

- that rights and responsibilities are made clear in terms of who holds copyright and whose responsibility it is to clear copyright;
- that the writer knows when and for what he or she will be paid, how much, and under what conditions;
- what happens if the contractor decides not to publish the materials;
- what happens in case of disputes; and
- that there is clarity regarding who pays expenses such as travel, telephone, postage, and so on.

The contractor must guard against paying for unsatisfactory work, but writers and editors need some protection too. Here is a sample contract, with comments on what the various clauses imply.

Sample contract

Contract wording	**Interpretation**
AN AGREEMENT Date 19 made between (the College) of (address) and (the author) of (address) WHEREBY IT IS AGREED as follows:	The contract starts with the date, and the names of those agreeing. A separate contract needs to be signed by each writer, if there are several.
1. The Author shall write a course (defined in the Schedule) and shall deliver the typescript/disk to the College on or before the day of 19 .	*Clause 1* A full description of the writing job is given in the Schedule at the end. The writer is specifically asked to deliver material in a particular format, and the deadline for delivery is given.
2. The Author hereby warrants that he/she has not granted any licences or rights in respect of the course unit to any person, company or firm and that he/she is the owner of the copyright of any illustrations or material in any medium provided in accordance with this agreement.	*Clause 2* asks the writer to affirm that he or she has not given permission for anyone else to use the material, and has not used anyone else's material. This means that if the institution comes across the materials published elsewhere, they can accuse the publisher of infringing copyright. If, on the other hand, the writer is dishonest and 'borrows' large amounts of material from another publication, then the institution can say that the writer is responsible and the institution published the material in good faith.
3. In consideration of the sum of $.....	*Clause 3* specifies the fee and says it will

to be paid by the College to the Author after approval of the completed typescript/disk by the College the Author assigns to the College the copyright in the course units for all purposes.	only be paid after the typescript/disk has been approved (not just received). Once it is approved, the copyright belongs to the institution.
4. The Author shall not publish or license the publication in any form of the course units or any of them or any part of them after they have been approved by the College in accordance with Clause 3.	*Clause 4* complements clause 2 and covers copyright after approval of the writing.
5. The College or such other person as may be authorised by the College may make such alterations to the course units by way of editing punctuation, spelling, abbreviations, grammar, or otherwise as the College or such person in his/her discretion shall think fit.	*Clause 5* allows the editor or anyone else appointed by the College to change the text, without necessarily having the writer's approval.
6. The Author shall at no expense to the College on receipt from the College of the proofs of the course units check the proofs for errors or omissions and shall return them to the College within ..... days signed.	*Clause 6* asks the author to check the proofs for no extra fee, and implies that if the proofs are not returned by a given date, the writer will have no right to complain about errors.
7. The Author will at the request of the College and at his own expense make such changes or corrections in the course unit as the College may require PROVIDED that such request is made within a period of 12 months from the acceptance of the course unit by the College.	*Clause 7* says that the writer must revise the units as necessary, and for no extra fee, provided the request is made within a year after the acceptance of the units.
8. The College will at its own cost reproduce, circulate, and distribute the course.	*Clause 8* says the institution will pay for printing and distribution, but the clause does not oblige the institution to go ahead with the printing. It only says it will pay if it does print.
9. The College will bear the reasonable travelling and subsistence expenses for any journeys the Author undertakes at the request of the College.	*Clause 9* says that expenses are paid only if the institution has approved the journey in advance.
10. No fee shall be payable whether by way of quantum meruit or otherwise for any course units delivered after the date stated in paragraph 1.	*Clause 10* says if you are late with your units, you do not get paid.

THE SCHEDULE Subject matter: Number and description of units: Illustrations: Learners' work and assignments: Other teaching aids:	*The schedule* is filled in to include all the material the writer must provide. This contract omits a heading for work on course planning and outline (the course blueprint), which may be the subject of a separate contract.
Signed ..... for .....(College) Date ..... Signed (writer)..... Date	

Discussion: Ask your participants to discuss the pros and cons of this contract, for the institution and for the writer. What protections does it offer the institution? the writer? Is the contract clear enough on questions of legal responsibility? What about libel and other forms of misrepresentation? What about royalties? the procedure for approval? payment schedule? dispute resolution? And so on. Emphasise the importance of the form a contract takes, and the difficulty of writing a satisfactory contract.

6. Managing course production and delivery

6.1 Course production

Definitions

The term *production* is used here to describe the overall process of taking a manuscript and managing it through to printed, finished copies.

- It involves drawing up a specification and production schedule, obtaining and comparing prices from different suppliers, placing orders, and supervising manufacture and delivery.
- It involves understanding the needs of course planners, developers, authors, illustrators, and editors, as well as the needs of learners.

The term *printing* is used to describe the actual manufacture of printed distance learning materials. Printing is the industrial process or processes required to realize the production manager's requirements in their final physical form.

The Process

The course production process involves a number of stages, as follows:

Generating text and illustrations

Most text is now word processed. Desktop publishing makes it possible

- to integrate text and illustrations;
- prepare text in a wide variety of typefaces; and
- see the complete pages on the computer screen in exactly their printed form.

Writers typically submit disks, prepared in accordance with the house style.

Editors work with these disks and submit the entire edited text to the desktop publishing specialist to produce the specified design.

Designing materials

Design involves a number of decisions, particularly about:

- page size;
- layout and house style; and
- cover design.

Preparing materials for the printer

Course materials can be put together in their final form and sent for printing in various ways, including:

- *camera-ready copy*: complete pages, with final text and illustrations in place;
- outputting text directly on to film, or to the printer; and
- *paste-up*: necessary if illustrations and text are prepared separately.

Printing the materials

The choice of printing processes includes:

- photocopying;
- laser printing;
- stencil duplicating;
- small offset printing;
- sheet-fed offset printing; and
- web-fed offset printing.

The decision will depend on

- the equipment available;
- the number of copies of the text required; and
- the prices submitted by the printers who are asked to give quotations.

Finishing the materials

The term used to describe the various processes involved in turning the printed sheets into a finished text is ‘finishing’. These processes include

binding: saddle-stitched, side stabbed, perfect binding, loose-leaf, wire, or comb;

cover: board, either laminated, or varnished; and

packing: bulk packing up to 15 kg maximum for easy handling.

Management issues

Issues involved in managing the production process include the following.

Estimating, costing, and financial control

Increasing the size of print runs is tempting, because of the lower unit costs that result. Other factors to be kept in mind, however, include:

- warehousing costs;
- the cost of money;
- the sales pattern for each title; and
- the timetable for updating each title.

Scheduling and controlling production

When a new course is planned, a rough schedule should be drawn up, with dates:

- by which authors should submit manuscripts;
- for the completion of each round of proofs; and
- for trial testing.

It is wise to build in a substantial contingency allowance, as emphasised in earlier discussion.

Warehousing and stock control

Holding stock leads to a number of costs:

- the storage space itself;
- wastage through deterioration or loss;
- over-producing stock that is not actually needed;

- money tied up in stock; and
- staffing to monitor and control stock.

6.2 Distribution

Management issues

Compared to conventional institutions, open and distance learning presents some unique challenges in providing learners with instructional materials. When learners attend classes, they normally purchase or borrow books and other equipment from a bookstore or other centralised distribution system. For distance learners, other methods of distribution need to be set up.

The three most common methods of distribution are:

- *learners collecting materials for themselves* (for example, using local centres): are learners close enough? do you have enough staff?
- *using the postal system*: how reliable is the postal system? how long will materials take to reach learners by post? will learners be at home to receive them? do they need to be registered or insured?
- *using courier services*: couriers provide faster delivery and door-to-door service but cost substantially more than the postal system.

If media other than print are included in the course, other issues arise:

- Are there deadlines by which learners must receive materials (for example, broadcast schedule start dates)?
- Are you loaning equipment to learners (for example, computers, video cassette recorders, video cassettes) so they can complete the course successfully?

Finally, questions arise from enrolment and assessment policies:

- Do you have fixed enrolment dates? If so, shipping materials in bulk at specific times of the year may reduce your costs.
- Do you have continuous enrolment? If so, you will be striving towards continuous distribution.
- Do you intend to send all materials at once or will you stagger delivery according to a schedule? How will this affect learner motivation? your resources? your materials inventory? What is your refund and returns policy?
- Are your learners required to complete assignments by specific dates? Are examinations scheduled at specific times or locations? If so, you may need to use a distribution system with a high reliability rating and guaranteed delivery, even though the cost may be higher.

6.3 Technological innovations

For open and distance learning programmes that use computer-mediated communication extensively in their delivery system, the possibility exists to forego the production of 'hard copy' materials altogether, whether in print, cassette, or other forms, and rely exclusively on electronic delivery for materials dispatch.

For example, course materials can be supplied to learners on a CD, from which learners can print out hard (paper) copy if they wish or work entirely from their computer screens.

Another possibility is for learners to download course materials directly from e-mail or the World Wide Web, again to a paper or electronic file.

These 'paperless' modes of materials dispatch offer a number of advantages:

- decreased need for warehousing space and warehousing and dispatch staff;
- reduced postage or transport costs;
- flexibility for the learner in terms of what portions to print and which to leave in electronic form;
- 'just-in-time' delivery to the learner, since learners can access the learning materials they need just when and where they need them;
- integration of a variety of media — text, graphics, pictures, video, audio — on CD-ROM and World Wide Web courseware;
- in the case of the World Wide Web, access to material from hundreds of thousands of other sites, some of which can be linked directly to the original access site; and
- integration of communication links to tutors and other learners via the Web site.

As with every choice of medium in open and distance learning, constraints also apply. These include:

- the need to train staff in developing materials appropriate for these media;
- the need to train staff to use the technologies effectively to support learners;
- the need to train learners in using the media effectively, or alternatively, to designate this expertise as a prerequisite for entry into the programme;
- reliable and affordable access by staff and learners to the technologies required; and
- the need to continue to support staff, and perhaps learners, in the use of these technologies (although a programme may also make clear to learners that they are expected to solve their own technical problems in using the hardware and software).

7. Practice exercise

7.1 Management role play

Instructions: Develop a number of scenarios for role-playing by different groups of participants (picking names out of a hat may be the fairest way of selecting the 'actors' for each role play if there are no ready volunteers). Debriefing follows each 'play' to determine how the situations could have been more effectively handled by all those involved.

Scenario One: Four players are needed for this role-play: two to be interviewers and two to be interviewed. The two interviewers are the department head and the instructional designer. Two people are interviewed separately for a post as a course writer (you choose the course subject). Before they interview the candidates, the two interviewers have the task of determining the nature of the job and the qualities they are seeking, then interviewing each candidate. The first candidate makes the most of the interview. The second candidate does the opposite — is not forthcoming with answers, appears not to be qualified, vacillates excessively, and so on.

Scenario Two: A meeting of the course team: instructional designer, editor, course writer, and visual designer. The course writer is behind in his or her deadlines and the team seriously disagrees what to do about it.

Scenario Three: A departmental meeting: the instructional designer, who has responsibility for getting five courses ready for delivery by September, is trying to explain to the department head and the dean and a senior professor why only one course is going to be ready on time, and what he or she proposes to do about it.

Timeframe: Each role-play may take 15 – 20 minutes with additional time for comments and discussion.

Materials: None required.

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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.

Variances: 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	• 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	• 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
	progressive payments and requiring the submission of a model unit for assessment of writer suitability. • Be prepared to enforce submission deadlines in terms of the contract.
Training of course writers	• 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	• Stipulate and enforce minimum standards for presentation of hand-written drafts. • Accept only hand-written drafts that are complete.
Course development process	• 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 Tommonwealth 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 enrols 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	• 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	• 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	• 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	• 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 Philippine's 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	*College of Arts and Sciences, UP Los Banos*
Diploma in Agriculture	*College of Agriculture, UP Los Banos*
Diploma in Research and Development Management	*College of Economics and Management, UP Los Banos*
Diploma or Master of Social Work	*College of Social Work and Community Development, UP Diliman*
Diploma or Master in Language Studies Education	*College of Education, UP Diliman*
Diploma or Master in Social Studies Education	*College of Education, UP Diliman*
Diploma in Mathematics Teaching	*College of Arts and Sciences, UP Los Banos*
Diploma in Computer Science	*College of Arts and Sciences, UP Los Banos*
Master in Public Health	*College of Public Health, UP Manila*
Master of Hospital Administration	*College of Public Health, UP Manila*
Master of Arts in Nursing	*College of Nursing, UP Manila*
Ph.D. in Education	*College of Education, UP Diliman*

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. Egino 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

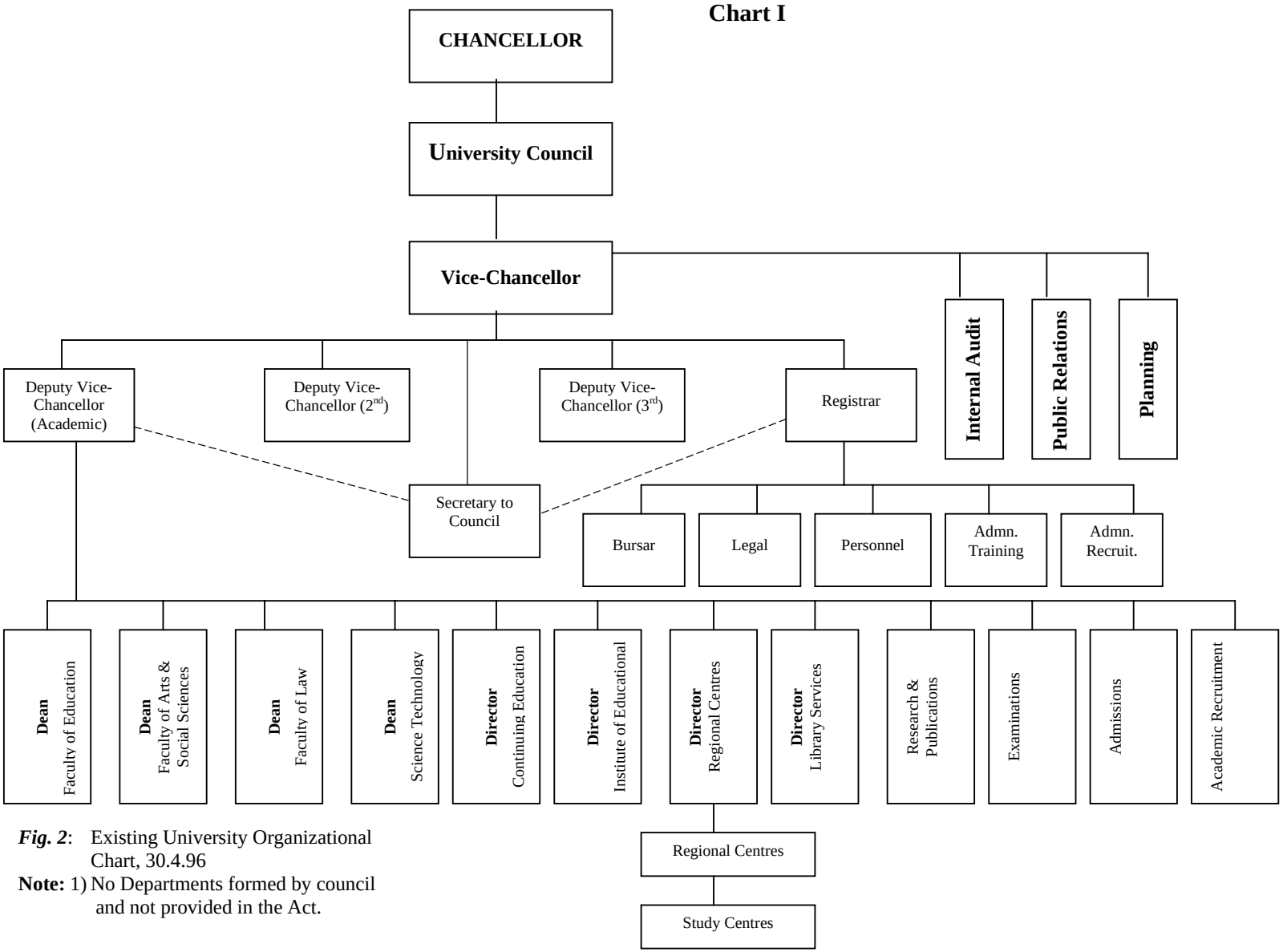


Fig. 2: Existing University Organizational Chart, 30.4.96

Note: 1) No Departments formed by council and not provided in the Act.

Chart II

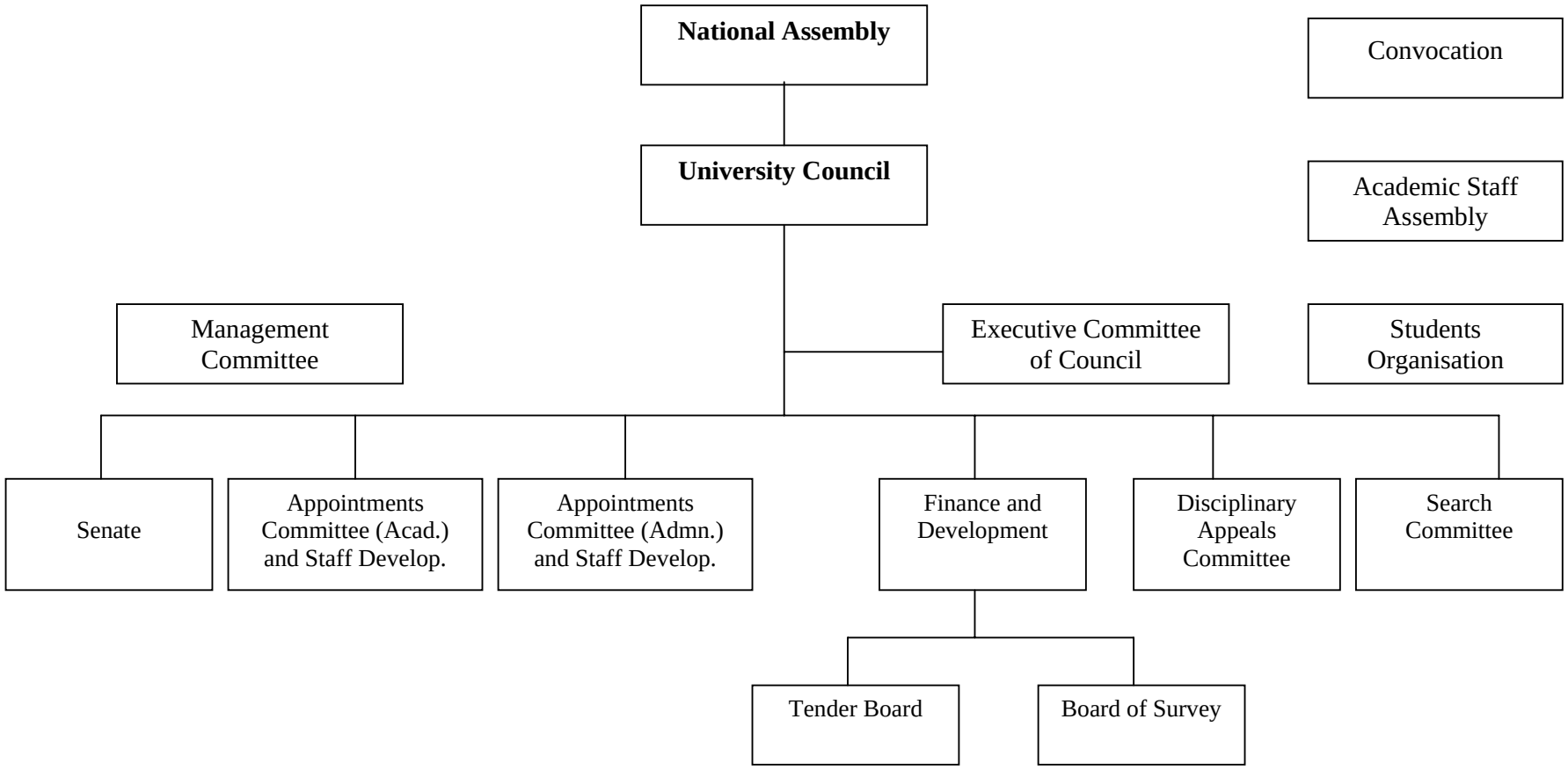


Figure 1: **Existing University Decision Making Machinery April 30, 1996.**

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-odinators 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 leaner 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

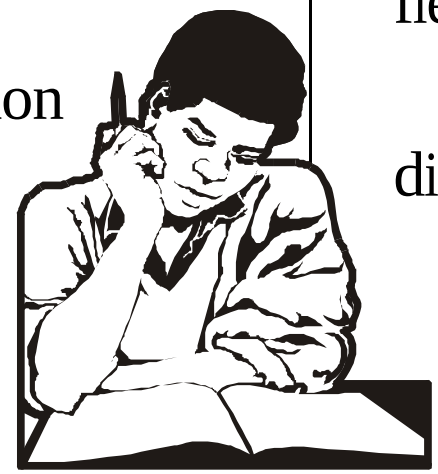
learner-centred education

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

Criteria for Identifying Effective Instruction

- clear and appropriate learning objectives
- knowledge of target audience
- appropriate sequencing and segmentation
- interactivity
- feedback
- motivation
- transferability of skills
- appropriate media
- formal and informal assessment
- administrative requirements

Steps in Curriculum Development

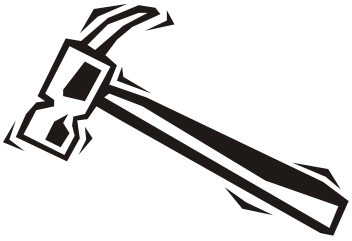
decisions on programme structure

formulation of aims and objectives

decisions on content

teaching strategy and methods

media choice



assessment techniques

evaluation

Decisions on Curriculum Design

- stakeholder analysis
- identifying learning and training needs
- program structure
  - on-campus or at a distance?
  - content orientation?
  - adopt or adapt existing material?
- approaches to programme structure
  - pedagogical
  - key events
  - metaphorical
  - ideas

Summative Course Evaluation

- Did the course attract enough learners?
- Were they sufficiently qualified?
- Did most of them complete the course?
- Why did learners drop out or not complete 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
  - course registrations
  - expenditures
  - revenues and completions
  - passes or fails

Characteristics of Open and Distance Education Learners

demographic factors

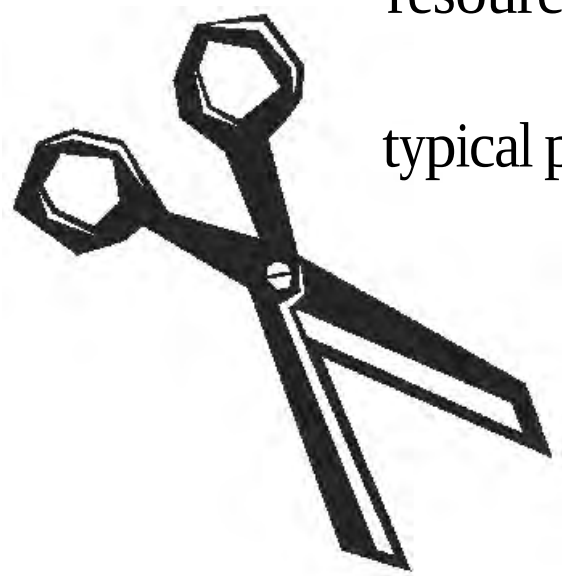
motivation

learning factors

subject background

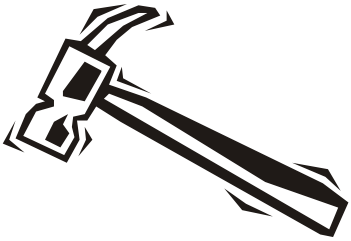
resource factors

typical problems

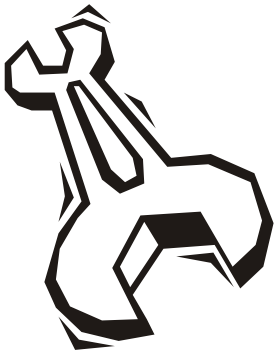


Demographic Factors

- How many learners are you likely to have?
- What ages are they? Are they children? Adults?
- Are your learners men? women?
- What is their family status?



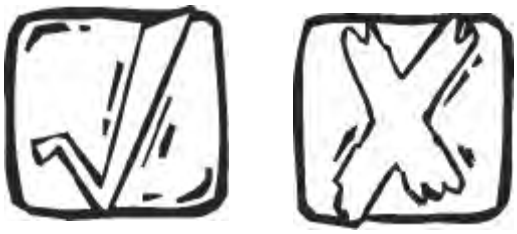
- How many children do they have?



- What is their geographic location (for example, rural or urban)?
- What is their previous education?
- What language or languages do they read and speak?
- Do they hold jobs?

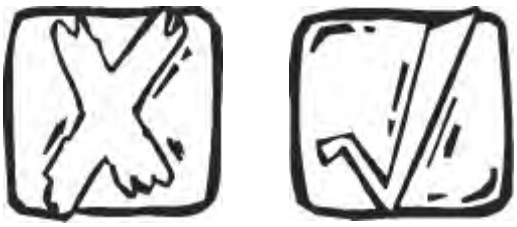
Motivational Factors

- Why are they learning?
- How does the programme relate to life and work?
- What do they want from the 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 that 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 Distance Learners

family pressures

worries about work and money

lack of books and libraries

lack of their own study space

isolation from other learners

lack of transport

lack of confidence

no undisturbed study time

low levels of reading ability

too busy to attend tutorials

Characteristics of Adult Learners

Adults are **self-directed**

Adults have many and varied **experiences**

Adults are **ready to learn** when they recognise the need to know

Adults prefer **problem-centred** or **performance-centred** learning

Kolb's Stages in Learning

concrete experience — the activist

reflective observation — the reflector

abstract conceptualisation — the theorist

active experimentation — the pragmatist

Approaches to Learning

holists

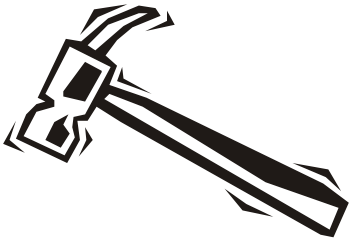
serialists

visualisers

verbalisers

doers

Elements of a Learning Objective



task analysis

performance

conditions

standards

Advantages of Objectives-based Materials

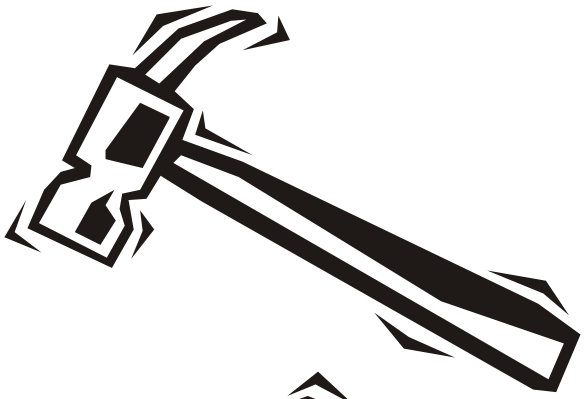
- thorough understanding of value and relevance required
- content can be readily evaluated
- clear indication of expected outcomes
- basis for updating and making improvements
- clear guidelines for instructors
- clear guidelines for learners
- basis for development of assessment procedures

Problems with Learning Objectives

- frequently too narrow
- can limit and trivialise
- can also overgeneralise
- past exams may be better guide to expectations
- clear but dull way of introducing a topic
- learners may need to study material to understand objectives
- may limit scope for learner creativity

Domains of Learning Objectives

cognitive domain



knowledge

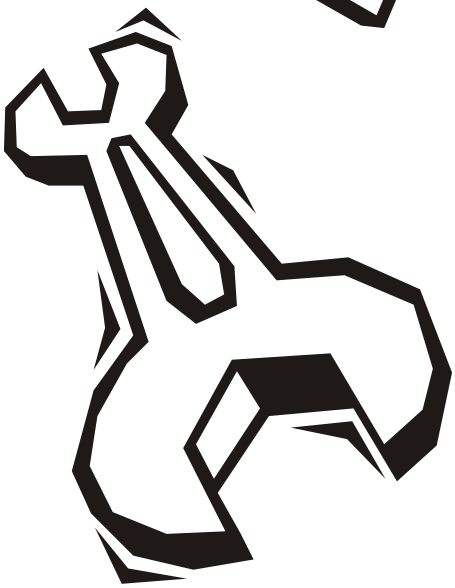
comprehension

application

analysis

synthesis

evaluation



affective domain

attending to a stimulus

responding to the stimulus

evaluating worth

organising values

generalising and integrating values

psychomotor domain

acquiring knowledge of what should be done

executing the responses step-by-step

transferring control to other senses

automating the skill

generalising the skill

Textbook Features

- one-way communication
- learner is passive
- structure is hidden
- self-directed learning
- lecture format
- impersonal
- little application of knowledge and skills
- activities only at end of chapters
- content in chapters or large blocks
- no assignments
- no feedback

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 and skills
- activities throughout text
- content divided into small sections
- assignments for self or others' feedback
- feedback provided on progress

Study Guide Structure

course

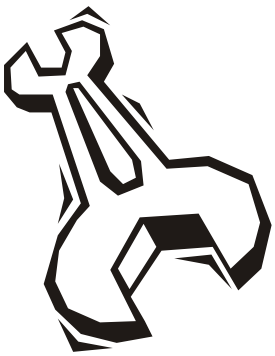
block

unit

introduction and overview

sections

summary and conclusions



glossary

references

visual aids and signposts

Writer's Checklist

- layout and format consistent?
- overview of content included?
- learner clearly directed on how to use package?
- explanation of icons?
- 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?

Technologies Used in Open and Distance Learning

- print (mechanical and electronic publishing)
- radio (one-way, interactive and two-way)
- audio cassettes
- telephone teaching, including audio conferencing
- television (broadcast, satellite and cable)
- video cassettes
- video conferencing
- computer-based learning

- computer-mediated communication
- cd-rom
- multimedia

- integrated services digital network or ISDN

The ACTIONS Model

A	Access
C	Costs
T	Teaching functions
I	Interaction and user-friendliness
O	Organisation
N	Novelty
S	Speed

Learning Goals for Media Applications

- provide a carefully argued analysis

- convey sights, sounds, and spirit of the subject
- build learners' ideas into teaching

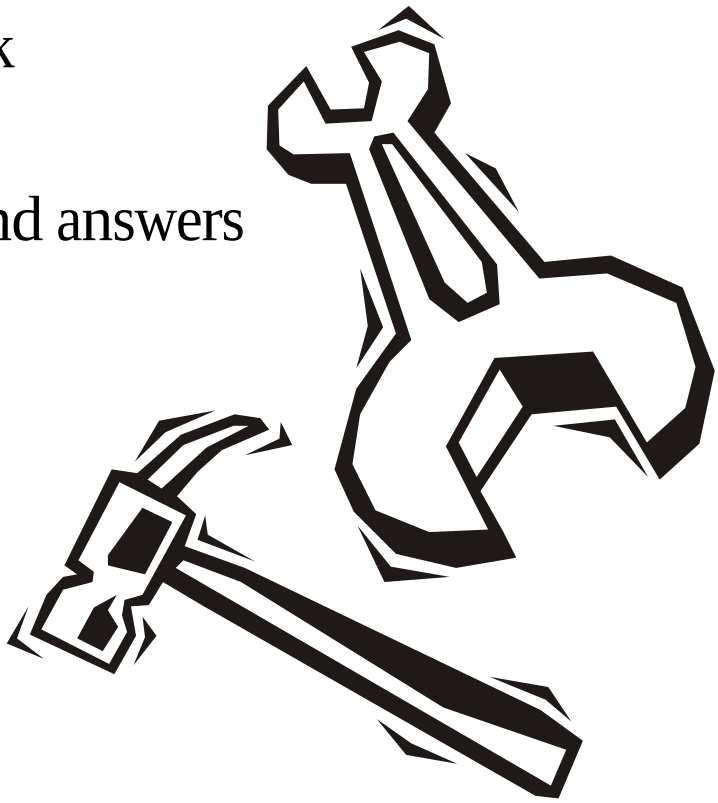
- ask learners to answer questions
- enable learners to try things out
- ensure learners get physical feedback from real world

- give learners standardised verbal feedback
- give each learner unique, personalised feedback

- continuously alter teaching to suit learners' needs
- provide learners with record of learning experience

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 that learners contact tutor to discuss answers
- asking learners to send answers to tutor
- designing face-to-face tutorial sessions

Assessment Strategies

formative

summative

evaluation

self-assessment

peer assessment

tutor-marked assignments

examinations

course evaluations

Ways of Providing Learner Support

face-to-face

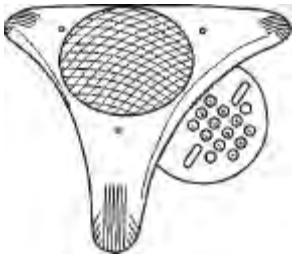
by telephone

by e-mail

by computer conference

by fax

by post



by audio conference

by video conference

by audio cassette

Learner Support Structures

Local support ⟷ Distant support

Group support ⟷ Individual support

Non-specialised ⟷ Specialised

Face-to-face ⟷ Distance media only

Continuity ⟷ Discontinuity

High cost ⟷ Low cost

Dimensions of Learner Support

administrative support

counselling support

tutorial support

peer support

Course Planning Blueprint

- Programme-related details

  course title

  programme

  compulsory or elective

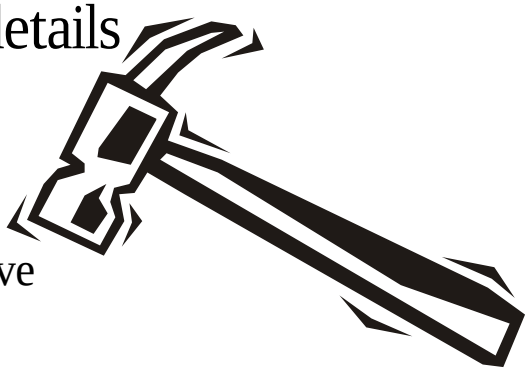
  level of course

  credit weighting

  semester

  prerequisites

  anticipated annual enrolment



- Course package components

  components produced in-house

  components purchased or leased

  copyright clearance

- Development and production schedule

  development personnel involved

  projected delivery date

  course development schedule

  course production schedule

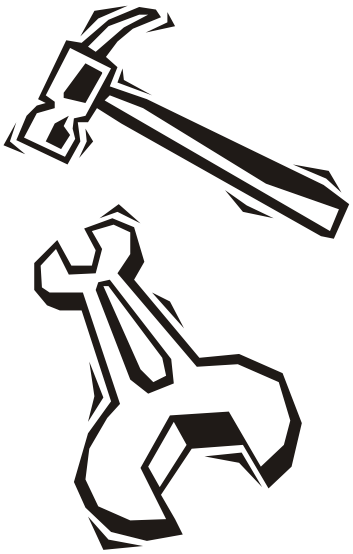
  anticipated shelf-life

Course Planning Blueprint (continued)

- Content and pedagogy
  - course aims
  - course structure
  - practical work
  - assessment scheme
  - evaluation scheme

- Delivery plan
  - study centres
  - tutors
  - residential schools
  - laboratory work and teaching practice

- Course budget
  - revenue
  - costs



Factors in Copyright Costs

end product's use

geographical distribution

amount of material

size of print run

period of availability

type of organisation holding copyright

medium of reproduction

Stages of the Course Production Process

generating text and illustrations

designing materials

preparing materials for printer

printing materials

collating materials