

# Chapter 1

## THE POTENTIAL OF AUDIO

### Introduction

This chapter offers an introduction to the use of audio for distance education and open learning. Its aim is to start you thinking about the potential roles of radio, audio cassettes and audio-vision as part of the distance and open learning projects and programmes with which you are involved.

The chapter starts, paradoxically perhaps, by looking at the role of printed texts in distance and open learning. It looks at their strengths and weaknesses; and suggests that they can usefully be supplemented and supported by other media – particularly electronic media. It then looks more closely at audio media – especially radio and audio cassettes – and goes on to argue that their impact and effectiveness can be increased by combining them with visual materials.

#### **Six key questions**

The chapter explores six key questions:

- Why is print so widely used in distance education and open learning?
- How can its educational effectiveness be increased by using electronic media?
- What are the main strengths and limitations of radio and audio cassettes?
- What do we mean by 'audio-vision'?
- Why is it particularly useful to distance educators?
- How can audio-vision benefit distance and open learners?

## The power of print

Most distance education and open learning institutions, particularly in their more formal courses, rely on printed texts as their main medium of communication for teaching and learning.

Is this generally true of the institutions you know? If so, why do you think this is? What is it about print that makes it so attractive to distance educators?

There are a number of reasons why printed texts are so widely used in distance and open learning. For instance, from the teachers' point of view:

- Print offers a powerful educational technology. Its use of words, numbers and a range of illustrations, means that you can teach most subjects effectively through print.
- Print is also a familiar medium, which is traditionally associated with education. Most teachers – particularly in secondary and higher education – are experienced and comfortable in expressing themselves through the printed word.
- The technologies for producing print are widely available. And although initial development costs can be high, provided sufficient copies are made, print is also a fairly cheap medium to produce.
- In addition, print is durable. It is relatively easy to store, and fairly cheap and easy to distribute.

Print also has a number of advantages from the students' viewpoint:

- Again, it is a familiar and attractive medium. It is traditionally associated with teaching and learning and it carries with it legitimacy and authority as a means of transmitting and receiving knowledge.
- Print is also widely accessible. Provided the students have an adequate level of literacy – and in some cases numeracy – they can gain access to the learning materials. The use of print does not require any special technology.
- Print can be used flexibly. Although the content and structure are generally fixed, students have a high degree of control over the way they use it. Print can be used when, where and how the student chooses.

For all these reasons – and others you may have thought of – printed texts are an attractive medium for both teachers and students in distance and open learning. But what – if any – are its limitations?

What do you see as the main drawbacks of print as a medium for teaching and learning at a distance? How is its effectiveness limited?

Print imposes a number of limitations on both teachers and learners. For instance, from the teacher's point of view, although printed texts can teach most subjects, there are some subjects which it is either very difficult, or in some cases, almost impossible, to teach effectively using print on its own.

Can you think of subjects or topics that it would be difficult or impossible to teach through print on its own? Are there particular types of learning that require the use of other media?

The classic examples are from subjects in which sound or movement play an essential part. For instance:

- Listening and speaking skills in language teaching
- Appreciation and performance in music, dance and drama
- Topics in science and technology involving dynamic movement

It is also difficult, using print on its own:

- To convey personal experience and human interaction
- To teach subjects involving attitudes, beliefs and values
- To offer students the experience – the sounds and sights – of places and situations with which they are not familiar

No doubt you can think of other more specific examples from your own particular area of experience.

What about the student's perspective? What do you see as the main disadvantages of only studying from printed texts?

First and foremost, access to printed learning materials requires an adequate level of verbal and visual literacy. This is important in the formal sector. It is likely to be even more important – especially in developing countries – for non-formal education and training. However, even for students with an adequate level of literacy and numeracy, print can still present problems. For instance:

- Print is essentially a one-way medium. It offers few opportunities for real dialogue and interaction between teachers and learners.
- Print also tends to be rather impersonal. Many teachers find it difficult to communicate in a relaxed, informal and personal way through text. As a result, many teaching texts tend to be rather formal and uninviting.
- Many students find it difficult to adjust to working with self-instructional text. This is particularly true if they come from mainly oral cultures and have little experience of learning from print. Working on print can be very demanding. Working on print alone, unless it is very well designed, can soon become tiring and tedious.
- Print can also become dated. There are strong economic reasons for not revising teaching texts too often. Major revisions are expensive and time-consuming. Once printed materials have been produced, they tend to be used for a considerable number of years.

So how can we respond to these problems? One answer has been to provide distance and open learning students with opportunities for face-to-face contact with tutors and fellow students. This is now a common feature of most distance education and open learning systems. In addition – and more important from the point of view of this handbook – since the early 1970s, distance educators have increasingly tended to supplement and support their use of printed texts with the use of other media. As new technologies have become more widely available, we have tended to move from print-dominated ‘correspondence education’ to an idea of distance and open learning, in which print is still important, but where it is increasingly supported by electronic media.

## **The role of electronic media**

This is not the place for a detailed history of the impact of electronic media on distance and open learning. However, a brief reminder may be of value.

**Electronic media in distance and open learning:  
the briefest of histories**

- **1970s:** Broadcast media – radio and television – were the first to be used by distance educators, linking the print-based tradition of correspondence education with that of formal and non-formal educational broadcasting.
- **1970s and 1980s:** As the technologies became cheaper and more accessible, audio and video cassettes increasingly took over the role of broadcasting, offering greater flexibility and more opportunities for media integration and student-active learning.
- **Late 1980s and 1990s:** Again, as the technology became cheaper, more accessible and more powerful, computers and telecommunications (particularly in combination) became increasingly important, particularly in the more industrialised parts of the world. And this is a trend that is continuing into the 21st century. Also, audio and video tapes were supplemented by high-quality compact disks (CDs), capable of storing large amounts of multi-media material, and by computer-mediated audio via the World Wide Web.

Each of these electronic media can support, supplement and substitute for printed text in various different ways, offering access to a range of new and otherwise inaccessible learning materials and experience:

- **Radio** – offers sound, particularly the human voice. It also offers natural and created sounds. Radio can bring to the learner the sounds of people and places; the sounds of real and imagined situations; sounds designed to stimulate, support, illustrate and enrich the learning process.
- **Television** – provides moving images and colour. It also uses sound and can incorporate text. It offers access to a dynamic world of visual experience. It can take students on visits and field trips; it can demonstrate experiments and practical skills; it can illustrate difficult concepts and abstract ideas. It can also analyse and reconstruct complex processes in time and space; and use its technology to provide microscopic and macroscopic views of the world.
- **Audio and video cassettes, CDs** – have most of the capabilities of radio and television. But they also offer the student a higher level of control over the learning process. You can listen and view

whenever you like. You can stop, start, rewind and fast-forward the tape, and this means you can use the material as often as you like. It also makes it easier to integrate listening and viewing with other learning activities – reading, writing, applying knowledge, practising skills, reflecting on attitudes and values, reviewing progress and sharing ideas.

- **Personal computers and telecommunication networks** – The combination of powerful personal computers, appropriate software and access to telephone lines can in principle serve nearly all the functions outlined above. The technology allows teachers to send a wide range of materials to students – text, sound, still and moving images. It allows students to receive this material and work on it in various ways. It also gives access to a much wider range of information and opinion – e.g. via the Internet and the Web.

More importantly – at least from our experience so far – the technology also offers opportunities for interaction that were not available with earlier electronic media. Broadcasting and cassettes – like print – are essentially one-way means of communication. Computers linked to telephones – and the use of facilities such as electronic mail (e-mail) and various forms of teleconferencing – allow rapid and convenient two-way communication between teachers and students, and also between the students themselves. In this way, they facilitate the type of interaction that is essential to effective education.

## **Audio media**

The focus of this handbook is on radio, audio cassettes and audio-vision. There are three main reasons for this. Of the electronic media discussed above, radio and audio cassettes are:

- The most accessible – to both teachers and students
- The most affordable – in terms of the costs of production, distribution and use
- The most appropriate – for a wide range of teaching and learning purposes

It's true that the audio media can't offer the moving images of television and video. Nor can they provide access to the amount of information, or the opportunities for interaction, available from the combination of computers and telephone networks.

But the costs of producing the visual media (television, video, computer-based learning), and of using them, are very much higher. And access to the technology, particularly in developing countries, and

especially among the poor and educationally disadvantaged, is still very limited, and likely to remain so well beyond the year 2000.

In contrast, radio programmes and audio cassettes are relatively cheap to produce and distribute. Production facilities are widely available. Access to reception, reproduction and playback facilities is widespread. Even in the poorest rural and urban areas – where the need for distance and open learning is often greatest – radio sets are common, and cassette players are increasingly available.

Audio technology is simple, cheap and widely available. The audio media are attractive and popular. They speak directly to their audience in a personal, powerful and persuasive way. They are also extremely effective in terms of teaching and learning – especially when combined and integrated with print and other learning activities.

So what can audio media offer to distance education and open learning? We started to answer this question earlier, in the section on electronic media. Now let's take the discussion further.

## **Radio**

Radio has the major advantage that it can reach large numbers of listeners, spread over a large geographical area, more or less simultaneously, and at relatively little cost. So what can we do with the medium? Here you may find it useful to think of radio as serving the following five main roles or functions. First the list – and then a brief commentary on each of them.

### **Five main roles for radio**

- News and information
- Motivation and mobilisation
- Tutorial support
- Resource material
- Direct teaching

### **News and information**

Radio can bring up-to-date news and information to distance and open learning students:

- About opportunities and options available to them
- About their courses, course materials, assignments and exams
- About the experience of fellow students and trainees
- About issues of common interest and concern

And because radio is a public medium, it can also inform a wider audience of potential students of what opportunities are open to them, what the courses involve, and what they have to do to enrol.

### **Motivation and mobilisation**

Because radio relies mainly on the human voice, it is a very personal and direct medium. It can provide encouragement and support to students at times when they need it most:

- When they lack confidence to embark on a course of studies
- When they first start studying and are anxious about whether they can cope
- When they are facing their first assignment or examination
- When they are finding the work difficult and are tempted to give up

By providing timely encouragement and support, radio can reduce the drop-out rate and increase the rates of course completion.

### **Tutorial support**

Radio can provide tutorial support, both of a general kind and linked specifically to the courses students are studying. For instance:

- Assistance with study skills – organising time, making notes, preparing assignments, revising for and taking exams;
- Introductions to new areas of study and reviews of topics covered;
- Help with key concepts, difficult ideas and new approaches;
- Additional illustrations, examples and explanations, alternative ways of applying knowledge and developing skills;
- Advice, guidance and feedback on study activities and practical work.

In this way, radio tutors can provide the personal contact with a teacher that many distance and open learning students feel they lack

and very much appreciate. It also gives them a sense of being 'real' students, in direct contact with their teachers and the institution.

### **Resource material**

Radio can offer listening and learning experiences that are not readily available through print or face-to-face contact. For instance:

- It can bring students the voices and views of people with particular experience and expertise.
- It can take students to places and situations that they would not normally be able to visit and experience.
- Radio drama can stimulate and excite the imagination; transport students to real and imagined worlds; expose them to ideas and opinions outside their normal experience; explore difficult and sensitive issues; and challenge conventional ways of thinking.

Radio can provide examples and illustrations of the application of knowledge and skills. It can present a range of resource material, which students can analyse and evaluate, and which can serve as a stimulus for reflection, discussion and debate.

### **Direct teaching**

Radio can also be used for direct teaching – as a substitute rather than a support to the use of print or face-to-face contact. All of the roles mentioned above can be combined, to form a rich and varied body of teaching and learning materials.

- This is particularly important when open and distance learners have low levels of literacy, or are finding it difficult to adjust to the demands of using printed texts.
- It is also important when sounds are central to the process of teaching and learning – as in language or music teaching.
- In addition, direct teaching by radio can provide valuable support to conventional teachers. It is particularly useful for subjects in which teachers lack confidence or experience, perhaps because of inadequate training or the introduction of new approaches and subjects into the curriculum.

## **Some uses of radio for distance and open learning**

### **The BBC-OU Partnership**

Starting in 1971, the British Open University (OU), in partnership with the BBC, used weekly radio programmes (as well as television) in support of its first four Foundation Courses. The programmes were closely integrated with the printed course materials and were accompanied by specially prepared 'broadcast notes'. The BBC and the OU also ran a weekly radio magazine programme called 'Open Forum', providing news and information for OU students and with an opportunity to share their ideas and experiences as distance learners.

### **BBC Further and Continuing Education**

In preparation for the launch of the OU, the BBC (in collaboration with the British National Extension College) ran three 'gateway' courses ('Reading to Learn', 'Man in Society' and 'Square Two'), using radio and printed materials, preparing for foundation courses in arts, social sciences and mathematics. These offered potential OU students an opportunity to get back to study and to experience what it was like to be a distance learner.

These were followed in the mid-1970s by two further radio-based distance education courses 'Living Decisions' and 'What Right Have you Got?'. The first dealt with decision-making in the family and the community; the second looked at the rights and responsibilities of the citizen in Britain.

Each series consisted of 26 weekly radio programmes, with an accompanying course book. Listeners were invited to join study groups set up by local adult education organisations to follow the series. And for those who wanted a formal qualification, an optional GCE 'O' level exam was available from one of Britain's public examinations boards.

### **Cooperatives in Zambia**

In the early 1980s, the Cooperative College in Lusaka launched the first of its National Cooperative Study Group Campaigns. These followed in the tradition of the Radio Farm Forums, started in Canada in the 1940s, and continued in Ghana and India from the 1950s and 1960s. The aim of the campaigns was to encourage and support the formation of multi-purpose cooperatives, and to promote their efficient organisation and management. The first campaign was entitled 'Together We Fight Poverty'. It consisted of a series of ten dramatised radio programmes, broadcast nationally over a ten-week period in each of Zambia's seven official vernacular languages. The programmes provided stimulus material for a national network of study groups, which met on a weekly basis to follow the series. The participants listened to the programme, discussed its content, and decided what action to take locally. The study groups were supported by a trained group leader and a specially prepared campaign handbook. More than 25,000 people were said to have participated in each annual campaign.

### **English for teachers in Namibia**

In the early 1990s, shortly after Namibia achieved its independence, radio was used as the basis for a one-year course, designed to help Namibian primary school teachers improve their spoken English.

A series of 32 half-hour radio programmes were produced under the title 'Let's Speak English'. The programmes were broadcast weekly over the three terms of the school year. Each programme consisted of a short drama episode, carrying forward the story of Namib School – a typical primary school in the new Namibia – followed by language instruction and opportunities to practise listening and speaking skills.

The programmes were supported by a two-volume course book, which reinforced and extended the material in the programmes, and provided further suggestions for developing listening and speaking skills. Teachers were encouraged to meet in groups once a week, at the end of the school day, to listen to the programmes together, and work on the relevant chapter of the course book. It was

planned that 8,000 teachers should follow the course in its first year – and most of them did. The series also proved popular with a wider audience of Namibians who wanted to improve their English – and the programmes were still being re-broadcast in 1999.

### **Interactive Radio Instruction (IRI)**

Since the 1980s, radio has been used as the main medium of communication for a series of projects designed to improve the quality of teaching in schools, particularly where there is a shortage of skilled teachers and other learning resources. The project was initiated in the US by the Radio Learning Group, with support from international donors. It was used first for the teaching of mathematics in Nicaragua; later for the teaching of English to Grades 1-3 in Kenya; and was subsequently extended to a number of other subjects in a wide range of developing countries.

The approach involves the intensive use of radio for direct teaching. The programmes are:

- usually 20-30 minutes in length
- broadcast regularly, often daily, throughout the school year
- developed and produced using clear principles of instructional design
- highly interactive, involving frequent student activities in response to the programme material
- supported by specially prepared printed materials for the students
- plus detailed notes for the teachers – on how to prepare the class for listening, what to do during the broadcast, and how the programme material could most effectively be followed up.

IRI pilot projects were carefully monitored and evaluated. Students generally liked using radio and showed significant learning gains. Some teachers were initially sceptical, but grew to value the programmes. However, such programmes were expensive to develop and produce. As a result, although the pilots were generally very successful, in a number of cases governments were unable or unwilling to continue the projects beyond the internationally funded pilot phase.

So far, we've concentrated on the positive side of radio – on its strengths and the unique opportunities it offers to distance and open learners. But what about its drawbacks and disadvantages?

What do you see as the main limitations on the effectiveness of radio as a means of communication in distance education and open learning?

Here's a list of some of the main disadvantages of the medium. You may want to add others:

- Radio programmes are broadcast at fixed times. These may not always be convenient for students. Also, they may not fit in with the student's work on the other media being used in a course.
- Radio reception in some areas may be poor. Some students will not always be able to receive a clear signal.
- Radio is transitory and ephemeral. Its programmes can usually only be heard once and then they disappear. You can of course record the programmes off-air for later listening: but then we're not really talking about radio, but rather audio cassettes. Also, programmes can be repeated: but that reduces the time available for other educational output.
- The pace of radio is dictated by the broadcasters. Students can't pause to think about what they've just heard. They can't stop the programme to apply knowledge or practise skills. They usually have to wait until the programme is finished.
- Radio is essentially a one-way medium. It talks to the student; but it doesn't usually give the student a chance to answer back – to raise questions or ask for further explanation. (This situation is changing with the use of the phone-in and e-mail: but not all students have access to these facilities.)
- Radio transmission time is likely to be limited. Teachers and students may not have as much access to the medium as they need.
- Also, much of the airtime made available to education tends to be at unsociable and inconvenient hours – late at night or early in the morning. And as more radio stations are being privatised, educational broadcasting is becoming much more expensive.
- And of course, radio is a sound-only medium. It lacks the visual dimension that will be very important in many types of teaching and learning.

Can you suggest how some of these problems can be overcome? What can be done to maximise the effectiveness of radio and minimise its drawbacks?

To some extent, we can overcome these limitations through good planning and design. We can choose to use radio for appropriate audiences, and for purposes to which it is well suited. We can design radio programmes in such a way that it's easy to learn from them. And we can provide printed materials – specially prepared radio notes – to support the programmes. There will be more on effective planning and good design in the next chapter.

But these are only partial solutions. They can only overcome some of the problems. As we suggested earlier, since the 1970s, distance educators have increasingly responded to the limitations of radio by shifting their attention (and their resources) to the production and use of audio cassettes.

## **Audio cassettes**

As we noted earlier, audio cassettes have most of the capabilities of radio. They're probably not as good as radio for news and information; but they can certainly fulfil the other four roles – motivation and mobilisation, tutorial support, resource material and direct teaching – as well or better. However, audio cassettes also have a number of added advantages.

- Audio cassettes offer students a much higher level of control over the way they use the material. Provided they have access, either individually or in groups, to cassette players and sources of power, students can listen when, where, how and as often as they like.
- The technology also allows students to stop, start, re-wind and fast-forward the tape. This makes it much easier to integrate the use of audio with other learning materials (e.g. printed texts), and learning activities (e.g. reading, writing, applying what they've learned, practising skills, sharing and discussing ideas and experience).
- Audio cassettes are also generally no more expensive to produce and distribute than radio, unless very large numbers of students are involved. Initial production costs for radio and audio cassettes are likely to be more or less the same. Multi-copying, packaging and distribution of cassettes will involve additional expense; but these costs are generally offset by the fact that radio stations are increasingly tending to charge educational institutions for the transmission of radio programmes. But even if audio cassettes do

cost more, this is usually more than justified by their increased educational effectiveness.

Radio still has a role to play, especially in communicating fairly simple messages to large numbers. It is still important in most countries as a source of news and information. Radio is also likely to be important for mass education campaigns and for courses with very large student enrolments. But for most other purposes, the advantages of audio cassettes, even if they involve additional costs, are likely to be overwhelming. And, as we shall see later, the problem of costs can be addressed by exploring the possibilities of the group-based use of audio cassette technology.

### **Audio cassettes for formal and non-formal distance education**

#### **The British Open University**

From the 1980s on, the British OU increasingly switched from the use of radio to audio cassettes. This was partly because, as the number of its courses grew, it became more difficult to secure adequate transmission time, and in any case it was difficult to justify using radio for the smaller numbers of students taking each of the more advanced and specialised courses. In addition, however, there was a growing awareness of the educational effectiveness of audio cassettes, particularly in combination with printed and other visual material – what came to be known as ‘audio-vision’.

#### **Teacher education in Kenya**

In the 1980s, many of Kenya’s secondary teachers were non-graduates. The government of Kenya decided that all those teaching in secondary schools should have a university degree. Since it was not possible for all non-graduate serving teachers to return to full-time education, the University of Nairobi decided to offer its BEd degree as a part-time distance education programme.

The materials for the programme – printed course books and integrated audio cassettes (used primarily for tutorial support and additional resource material) – were based mainly on conventional BEd courses being taught at Nairobi and Kenyatta Universities. They were developed in a series of workshops held in the late 1980s and early 1990s. In addition to being used in

Kenya, they were also used during the 1990s at Makerere University in Uganda and at the Open University of Tanzania in Dar es Salaam.

#### **Training primary teachers in Uganda**

Audio cassettes were also used successfully in the 1990s for a three-year programme of in-service training for 3,000 untrained primary teachers in war-torn northern Uganda. The Northern Integrated Teacher Education Project (NITEP), based in Gulu, used audio cassettes in support of its extensive printed materials. The tapes were produced in workshops by project staff. They were accompanied by specially prepared notes for students and tutors, and used in the group tutorial sessions which were held every two weeks. The tapes were warmly welcomed by the trainees, many of whom found working on the printed materials very difficult. They were also welcomed by tutors, for whom the tapes served as useful resource material, particularly on subjects in which they had not specialised in their own training.

#### **Non-formal education and training in Pakistan**

In the early 1980s, the Allama Iqbal Open University (AIOU) in Pakistan launched FEPR – the Functional Education Project for Rural Areas. This was a pilot project designed to test the feasibility of delivering basic functional education and training to rural communities using audio cassettes, flip-charts and village-based study groups.

The project operated in a number of villages in the Punjab. Courses were offered in subjects such as vegetable growing, poultry keeping, animal husbandry and first aid. Each course consisted of a series of audio cassette programmes in Urdu, with accompanying flip-chart illustrations. The programmes were listened to and discussed in groups of about 20 villagers. Each group selected its own group leader and secretary. After receiving a brief training, they were responsible for arranging and facilitating group meetings. The project was carefully monitored and evaluated, and has since become a regular part of AIOU's non-formal educational provision.

### **Similar non-formal projects in Africa**

Similar approaches to those developed in Pakistan were used in various parts of Africa during the late 1980s and 1990s:

- **Tanzania:** In the Lake Regions of western Tanzania, the HESAWA project (Health through Sanitation and Water) used dramatised audio cassettes (in Kiswahili), with flip-charts and illustrated manuals, for a series of ten-session water and health campaigns in the late 1980s. Study groups of about 20 participants met regularly in about 200 villages, listening to the drama, discussing the issues and applying what they had learned in community-based projects.
- **South Africa:** In the mid-1990s, the Adult Basic Education Project (ABEP) at the University of Fort Hare used audio cassettes (in the Xhosa language) and flip-charts to extend its services to mainly non-literate rural communities in the Eastern Cape. Working with other university departments, ABEP offered a series of short practical courses on subjects chosen by the local communities – such as first aid, poultry keeping and vegetable growing. The project was later absorbed into the university's regular adult education programme.
- **Sudan:** In the mid-1990s, the Sudan Open Learning Organisation (SOLO) used drama on audio cassettes for health education among Ethiopian and Eritrean refugees in eastern Sudan. Two series were produced: 'Health Begins at Home' (on personal hygiene and environmental sanitation) and 'First Steps on the Road to Health' (on maternal and child health). The tapes were produced in Tigrinya and Arabic; reached several thousand refugees through a network of study groups; and were said to have had a significant impact on health practices. The tapes were also broadcast on local radio for the benefit of the local Sudanese community. Plans were in hand to extend the project to the settlements of displaced Sudanese around Khartoum and Omdurman.

So how can we make the most of this technology? How can we best exploit its potential for distance education and open learning? One answer is to add a visual dimension to the medium: to go beyond the sound-only capacity of radio and audio cassettes, and to move into the richer and more rewarding world of audio-vision.

## **Audio-vision**

By audio-vision, we simply mean the combination of audio media – radio and particularly audio cassettes – with visual material. The visual materials are usually in printed form – e.g. specially prepared notes, worksheets, flip-chart illustrations, posters, etc. But they can also be in the form of slides, film strips, models or real objects, either specially provided for the student, or available in the local environment.

### **An example from the British Open University**

A geology course from the British OU illustrates the range of visual materials that can be used with audio cassettes. In addition to the printed course materials and audio cassette, students are provided with:

- A film strip with illustrations of different types of rock
- A simple (and cheap) film strip viewer
- A small sample of rock
- A small plastic magnifying glass

The tutor talks to the individual students on the cassette. From time to time, he asks them to look at an illustration in their printed material, or to view a particular frame on the film strip. At one point, the students are asked to inspect a particular surface of the rock sample with the magnifying glass and say what they can see. Then, as they continue to look at the rock sample, the tutor talks them through its distinctive characteristics.

### **Three main advantages of audio-vision**

From the teacher's point of view, the combination of audio and visual materials offers at least three major advantages:

- First, it extends the scope and increases the effectiveness of audio. More subjects can be taught more effectively using audio with visual support.

- Secondly, audio-vision promotes student-active learning. This can happen both when the tape is running and when it's been stopped. As well as listening, students are encouraged to look at illustrations, analyse and interpret visual material, and undertake a range of other activities which reinforce learning.
- Third, visual materials also help students concentrate on the audio. Many students find it difficult to concentrate on sound-only material, particularly if they're new to studying with audio. Well designed visuals help students focus their attention on the sounds, and help them get more out of the experience of listening.

These three advantages can also be seen as benefits from the students' point of view. Audio-vision means students can be offered audio-based learning on a wider range of subject matter. It encourages greater interaction with the audio materials, with opportunities to apply what they're learning, develop and practise skills, explore attitudes and values, and learn more effectively. Audio-vision also helps them focus on what they're listening to and get more out of it. Students also find that the visual material is often useful as a summary of the audio and an aid to revision. And perhaps most important, most students seem to enjoy using audio-vision. It adds variety and interest to their experience of learning at a distance.

For all these reasons, there's a strong case for considering audio-vision as part of the learning package offered to distance and open learners. Once this decision has been made in principle, the next question is what needs to be done to put it into practice. That is what the rest of this handbook is about. It looks at the main skills involved in the planning, design, development and production of audio and audio-vision materials. It also looks at the way they are used by students and how the effectiveness of the materials can be monitored and evaluated. But before you go on to these later chapters, you might find it useful to review what we've covered so far.

### **Checklist on the potential of audio**

Having worked through this chapter, you should now be able to answer the following questions:

- What do you see as the main limitations of printed texts as a medium of communication in distance education and open learning?
- What are the main options available to the distance educator in terms of using electronic media? How can they help to overcome the limitations of print?

- What are the particular strengths of radio, audio cassettes and audio-vision as teaching and learning media for distance education and open learning students?

When you are satisfied that you can answer the questions in the checklist, then it's time to move on to the next chapter, which suggests how you can set about planning and designing effective audio materials for distance and open learning.