

**Distance Learning at the Open University, UK  
Insights for American Educators**

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## Contents

<b>Publisher's Notice</b> .....	<b>3</b>
<b>Acknowledgments</b> .....	<b>4</b>
<b>Preface</b> .....	<b>6</b>
<b>Distance Learning at the Open University</b> .....	<b>7</b>
Anatomy of the Open University.....	7
The Instructional Paradigm.....	7
The Use of Technology.....	9
Course Development Costs and Cost-of-Degree.....	13
Lessons of OU for American Educators.....	14
Teamwork in the OU Instructional Paradigm.....	15
<b>Summary</b> .....	<b>17</b>
<b>Appendix A: Open University and the World's "Mega-Universities"</b>	<b>18</b>
<b>Appendix B: Annotated Bibliography</b> .....	<b>21</b>
<b>About the Author</b> .....	<b>24</b>

## **Preface**

Almost thirty years ago Open University UK was founded to serve students in the United Kingdom who would not otherwise be able to attend college. Since its founding in 1969, Open University has become an international exemplar in open and distance learning.

Despite Open University's extensive practical experience and proven record of success, few American educators are familiar with the institution or the technologies it employs. This paper provides a brief overview of OU for educators interested in introducing open and distance learning techniques to meet the needs of American students. OU differs in significant ways from U.S. colleges and universities, and these differences provide insight into ways in which college and university educators can both serve more students and improve teaching and learning. OU also provides a different paradigm for organizing and delivering higher education in the information age.

This report is based on site visits made by instructional media + magic staff members Erik Ledbetter, Thomas Matt Swingly, and Jim Farmer in December of 1996 and January of 1997. Erik Ledbetter attended the OU professional development training program entitled "Writing Materials for Open and Distance Learning," and consulted with OU faculty. Matt Swingly and Jim Farmer consulted with OU faculty, and undertook research into the institution's experience and practice at the OU library. This document organizes and expands on the impressions garnered during those site visits, and incorporates background material derived from Open University publications.

Those who wish to know more about the Open University should visit its Web page at <http://www.open.ac.uk>, or arrange a visit to the OU central campus in Milton Keynes, Buckinghamshire—a suburb located 60 miles northwest of London. OU books and works by OU authors offer important perspectives for college and university educators and administrators in the United States; an annotated bibliography is included in this report.

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## **Anatomy of the Open University**

Open University U.K. was founded in 1969 with a mandate to expand access to British higher education. From its inception OU has been defined as a “University without Walls,” which would conduct all its instruction via open, distance, and/or flexible learning. Despite its nontraditional means of instruction, Open University course credits are fully transferable within the U.K. university system, and its degrees enjoy the full faith and credit afforded to degrees awarded by traditional universities.<sup>1</sup>

According to the most recent available statistics (1995 calendar year) OU enrolled more than 200,000 students annually. Of this number, 152,998 were undergraduate and graduate students enrolled for credit, and 60,693 were noncredit students auditing courses without access to tutors. OU’s student body profile stands in sharp contrast to the traditional image of the full-time undergraduate student body. More than 70% of OU students hold down full-time jobs while taking instruction at the University. Many employers now offer incentives to employees to continue their education at Open University, and some UK-based companies currently require—and pay for—professional development courses offered by OU as a prerequisite for advancement within the company.<sup>2</sup>

OU’s physical plant is as distinctive as its student body. In addition to a small (by U.S. standards) national campus in Milton Keynes, OU maintains 13 regional centers and 306 extension sites throughout the United Kingdom. These branch campuses and local centers provide meeting space where students may have access to tutors. In addition, many now also offer computer stations from which students may access the OU computer network, and the Internet.

## **The Instructional Paradigm**

When Open University began, the instructional paradigm focused on the use of “study packs.” These study packs included textual materials and, where necessary, equipment and materials for experiments. OU textual materials differed from traditional textbooks by including (1) the materials typically found in a course textbook, but also (2) supplemental texts covering the material traditionally taught in the classroom but not found in the textbook, and (3) other materials, including self-assessments, that a student would

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<sup>1</sup> Lockwood, Fred, “Series Editor’s Forward,” in Derek Rowntree, Preparing Materials for Open, Distance and Flexible Learning, London, 1994.

<sup>2</sup> All statistics drawn from “Basic Facts and Figures,” Open University Web Pages, URL <http://www.open.ac.uk/OU/Intro/FactsAndFigures.html>.

need in order to master the subject area. Because much of the original OU curriculum focused on engineering and the physical sciences, it was also necessary to develop laboratory materials and techniques which could be used by students working at home.

From its early history, OU also supplemented print-based materials with what we would now call technology-assisted learning. The OU paradigm involved a partnership with the British Broadcasting Company (BBC), in which the BBC supplied OU with production expertise and facilities and broadcast OU instructional presentations on radio and television.<sup>3</sup> As VCRs became ubiquitous in the 1980s, OU discovered that many of their students were taping the broadcast presentations and watching them at times more convenient than the original broadcast hour. In response, OU has begun distributing the video component of its courseware directly to students via VCR cassette.

Lastly, OU has long recognized that no matter how well-conceived, distance learning materials will not be always be able to address all student questions and concerns. Most OU courses therefore include an intensive, full-time one-week residency component. OU also provides supplemental real-time or near-real-time tutoring services throughout the duration of its courses. OU tutors have a role similar to that of teaching assistants in U.S. universities who are not responsible for classroom lectures. They are expected to have general knowledge of the course subject area and knowledge of how to learn, but not detailed mastery of the course materials themselves. Where a question arises which the tutor cannot adequately answer, the faculty members who developed the course can be contacted directly (in practice, an infrequent occurrence).

In addition, students are also offered counseling services. Originally, counseling—helping students to determine which courses they should take, and to assess their progress towards a degree or certificate—was conceived to be relatively different from tutoring. In practice, students expressed a preference for seeking such guidance from their tutors, and OU has gradually folded counseling into the tutoring role.

### **The Use of Technology**

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<sup>3</sup> Historically the BBC served as the state-subsidized national broadcasting system of the United Kingdom. During the period when its partnership with OU was at its most active, BBC broadcast two channels of television programming. One of these, BBC-2, was devoted to educational programming, and it was on BBC-2 that the OU programs were scheduled. Since the 1980s, BBC has faced both market competition from independent television networks and governmental pressure to recover more of its programming costs. One result has been a marked shift in BBC programming away from education and toward entertainment.

Offering real-time tutoring remains a high cost/high-value-added component of the OU instructional paradigm. Accordingly, OU has been quick to take advantage of technological innovations which offered the promise of providing students with more flexible access to their tutoring staff at an affordable cost. Initially, the need to offer a physical venue for interaction between students and course tutors led to the creation of the 13 regional centers and 306 outreach centers. At such centers, students could meet face-to-face with a tutor, but only at limited times set long in advance (i.e., “office hours”). With the falling cost of telephony, phone tutoring with expanded access times became an important component of the OU paradigm. Most recently, OU has begun an extensive shift toward tutoring via Internet, including both e-mail and, on an experimental basis, the CU-SeeMe videoconferencing software developed by Cornell University.<sup>4</sup> In December 1996, OU and British Telecom implemented dial-up student access to the OU computer network from anywhere in the UK at the local call phone call billing rate, a development which should greatly accelerate the move toward Internet tutoring and student-faculty consultation.

Simultaneous with the shift toward Internet tutoring, OU has begun requiring students to own or have access to a home computer as a prerequisite for many courses.<sup>5</sup> Students are provided with standard software by OU, and in return are required to use it for all OU communications and coursework. In addition, the OU Training and Support

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<sup>4</sup> CU-SeeMe is an Internet-based videoconferencing system developed specifically for use with desktop personal computers. Cornell University has licensed the software to White Pine Software, Inc., which offers it as a fully-supported commercial product. Recent versions comply with ITU standards, allowing CU-SeeMe to be used in conjunction with other systems to provide a portfolio of videoconferencing solutions.

<sup>5</sup> In this regard OU lags at least ten years behind some comparable U.S. institutions. Stevens Institute of Technology University, for example, is a small New Jersey-based engineering school whose curriculum closely matches the physical science curriculum at OU; Stevens began requiring that its undergraduate students own personal computers as early as 1985. During their site visits, im+m staff commented on this discrepancy to Professor Robin Mason of OU. Professor Mason explained that OU’s late embrace of personal computers derived not from doubts about the technology, but rather from concern over the high cost of computing equipment in the UK. Even now, price checks on several standard PC models in the UK reveal costs up to 40% higher than prices for comparable models in the U.S.: So long as personal computers were expensive both absolutely and relative to their cost in the U.S., OU was reluctant to require their use, lest they inadvertently create a financial barrier to access for some students. Falling costs of computing equipment, the expanded educational value of computers due to multimedia and networking features, and the ubiquity of computers in other workplaces all combined to alleviate these concerns, and impel OU to begin making PCs a mandatory educational tool. Because similar concerns regarding cost and access have been raised about requiring personal computers in the U.S. higher education—particularly at the community college level—OU’s recent change in policy is instructive.

Team offers three-day courses on informational technology at each of the 13 regional centers. These include an introduction to the Windows operating system, and tutoring on productivity applications such as the Microsoft Word word processor, Excel spreadsheet, and Access database. Students are also instructed on accessing the OU mainframe, on communicating with tutors and OU faculty using the Microsoft Mail e-mail client, and on practicing basic computer housekeeping such as virus scanning and protection.

To further assist students with technology-related questions, OU supports three tiers of telephone help desks. The General Enquiry or GE line provides general information about OU information technology facilities and services. The Computer Centre Help Desk handles specialist questions and provides dedicated support for those using the OU mainframe-based services. Finally a Training and Support Team (TST) Help Desk provides support for the home or desktop computer user, including help with the Windows operating system and the OU-mandated software applications. In addition to these three public help desks, there is also a Network Control Desk for communications equipment and hardware problems internal to the OU infrastructure.

Looking towards the future, OU has begun planning a further shift from using computers merely to *support* instruction, toward using them to *deliver* instruction as a central educational medium. Crucial to this shift is a major OU initiative to develop multimedia and computer-based instructional materials to supplement and, in some cases, replace the current generation of text- and video-based materials.

OU faculty member Robin Mason discussed this initiative with im+m staff during their December site visit. According to Professor Mason, computer-based multimedia offers the promise of integrating print, graphics, photographs or still images, sound, and even full-motion video into a single seamless instructional presentation, giving instructional designers a unique freedom.<sup>6</sup> Though we rarely stop to recognize it, traditional instructional techniques privilege the choice of media—the spoken and printed word—over the subject matter being taught. As any experienced classroom lecturer will quickly confirm, much of the art of good traditional teaching lies in adapting the concepts and ideas to be taught to the delivery mechanism of the lecture—regardless of whether the two are a natural fit or not. And, to a great extent, the same is still true even of newer instructional techniques like Interactive Instructional Television, or IITV.

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<sup>6</sup> See also Robin Mason, Using Communications Media in Open and Flexible Learning, Kogan Page Ltd., London, 1994.

In the multimedia instructional paradigm, by contrast, the subject matter to be taught dictates the medium of instruction, rather than vice versa. Instead of being tied to the verbal narration of the lecture or the printed word of the textbook, instructional designers can choose from among the full array of media to select whichever method is best suited to the concept to be taught. The instructor still has recourse to both print and verbal narration, but can and does supplement them with photographs and drawings, video, graphics, recorded sound, and even animation, using whatever method or combination or methods will best explicate the concept to be taught.

OU faculty and instructional designers are currently heavily engaged in preparing the first round of multimedia-based OU course offerings; and they anticipate that by the year 2000 multimedia CD-ROM will become the primary “study pack’ material for many OU courses.

Changes in technology and the delivery of the various components of the OU course paradigm are tabulated in Table 1.

Table 1 - Open University Instructional Paradigms, 1969-2000

	Beginning (1970s, 80s)	Current	Projected (2000)
Primary Media	Text, Broadcast television	Text, Audio and video tapes	Multimedia CD- ROM
Residency	One week per summer	On week per summer	Limited or none
Tutoring and counseling	Separated	Combined	Combined
Schedule	Fixed annual	Fixed annual Some workshops	Student choice
Rate of learning	Fixed by schedule	Fixed by schedule	Variable
Basic content unit	Course	Course	Course or module
Communication with tutor	Mail	Mail, telephone, regional center	Internet, telephone, regional center
Communication with students	Mail	Mail, Teleconferencing	Internet, Web
Required equipment	none	Multimedia personal computer for some courses	Multimedia PC with Internet access
Technical support	none	Limited, centralized	Centralized
Tutorials	face-to-face	face-to-face	Video- conferencing
Method of Assessment	Tutor-marked assignments	Tutor-marked assignments, Computer-graded tests	On-line tests, Tutor-marked assignments
Focus of content development	Study pack	Study pack	Study pack

## Course Development Costs and Cost-of-Degree

The fundamental unit of the OU curriculum is the individual course. However, an OU course is longer, more intensive, and covers considerably more material than its US equivalent. A 60-unit OU course is equivalent to 15 semester-hours by US measurement. To put it another way, a single OU *course* is the instructional and clock-hour equivalent of an entire *term* for a full-time American college student. Six such 60-unit courses (equivalent to three years' full-time study) constitute the requirement for most OU BA and BS degrees.

Because the entire OU faculty academic and research program is focused on developing instructional materials for distance learning, the entire OU institutional cost structure could be considered "course development" under U.S. standards. Using OU's internal categories, the percentages of resources devoted to course development break out as follows:

Table 2: - OU Course Development Costs, percentages by category

Cost Category	Percentage
Course development (including basic research)	30%
Course [materials] production and distribution	13
Television production (excluding BBC broadcast costs)	6
Tutorial and regional services	25
Administration, facilities, and other	26

The cost of development for a sixty-unit course under this system is \$3.3 million. Translating this figure into American equivalents gives a cost structure of \$660,000 per standard three-credit course. Most of this investment represents the time faculty and outside experts invest in developing written course materials—the "Study Packs." These include not only the equivalent of traditional textbook material, but also self-assessment tests, and assessments of mastery. Other expenses include testing the course before it enters the general catalogue to ensure that it meets its educational objectives, and production costs for any audio, video, multimedia, or experimental course materials.

These numbers may seem intimidating at first, and they do represent a substantial up-front investment. However, once the course has been developed, OU can and does amortize the development cost over several

years' enrollments, drawn from an enormous student body. The result is a dramatic reduction in overall costs per graduated student. The average cost of an OU degree to the government is less than one fourth the average cost of a degree at UK universities as a whole. The capital construction costs for an OU degree are less than 6% of the capital costs for a degree nationwide—even though almost half of the enrollment at OU is in the high cost areas of science, engineering, mathematics, and computing.

These savings are passed on to students: indeed, OU tuition compares favorably not only with the state-subsidized figures for other British universities, but with comparable U.S. figures as well. Two OU courses (i.e., one full-time academic year) including the mandatory one-week residential seminar, cost about \$1,800.00—including books, study packs, postage, and travel expenses. This compares very favorably with the cost of one year's instruction even at an affordable U.S. state university or community college system, much less a private four-year institution.

### **Lessons of OU for American Educators**

OU's favorable cost structure strongly suggests that distance learning can play an important role in delivering high-quality postsecondary instruction at an affordable cost. As American educators begin to develop their own distance learning materials to reap these advantages, they can profit from the accumulated expertise of the OU faculty.

Among the OU educators' most important discoveries is the importance of assessment as a tool for providing feedback to students in open and distance learning. Every OU course is broken down during its development phase into discrete instructional units. Each of the units begins with clearly-defined instructional objectives—definitions setting out what the student is to learn. Following the teaching materials for the unit, the student is immediately offered an assessment mechanism—a quiz, or exercise, or test—to help the student ensure that he or she has mastered the material. By integrating assessment seamlessly into instruction at every level of the course, OU faculty thus encourage their students to switch constantly between two modes of learning— between *absorption* of new materials and *application* of the knowledge learned. The resulting feedback between assessment and instruction in OU's courses thus duplicates to a remarkable degree the feedback supplied by questions-and-answer in traditional face-to-face or “synchronous” instruction.<sup>7</sup>

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<sup>7</sup> As a result of my discussions with the OU faculty, I believe these lessons are especially adaptable to the Community College sector of the U.S. higher education system. Like the

These assessment-based teaching techniques can make distance instruction a teaching tool of enormous power—especially if they are combined with the enhanced instructional vocabulary available through computer-based multimedia. However, developing such teaching materials will require a different perspective on assessment on the part of the faculty. In the traditional U.S. college course, whether delivered via a classroom, TV, or some other means, assessment takes the form of major set-piece exercises: the midterm and final exam, for example. Not only is assessment infrequent in this model, it is also poorly articulated with instruction. By contrast, the OU experience suggests that assessment in high-quality distance-learning instruction must be integrated seamlessly with the instructional materials to provide students with the feedback they cannot give by interacting directly with the teacher or instructional designer.

### **Teamwork in the OU Instructional Paradigm**

In addition to new levels of planning and assessment, OU's paradigm for distance instruction also requires that the faculty member function as a member of a team which works together to produce instruction.

To a degree unequaled in nearly any other American workplace, the college teacher is still a solo worker. The average faculty member preparing a course designs, writes, and delivers the instruction working alone, in total control of the entire process from beginning to end. By contrast, the OU faculty member works as part of an instructional team. Faculty members work side by side with graphic designers, video producers, assessment experts, and others to define the instructional items, devise the assessment scheme, and craft the complete instructional package.

Teamwork is becoming even more the foundation of the OU approach to course development as the institution transitions from print to multimedia-based instructional materials. The richness of the multimedia environment and the special demands of the computer programming or "authoring" systems used to create the instruction make creating a multimedia course a process more akin to making a motion picture than to preparing a traditional syllabus. It is unreasonable to expect that most instructors will become masters of the techniques of multimedia design, programming and production as well as of their own fields of expertise. Therefore, faculty

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American community college, Open University is a teaching-centered institution in a higher education system dominated by a research-centered paradigm. Exploration of these points of comparison was among the most intriguing results of the January 1997 OU seminar on "Writing Materials for Distance Learning."

members working to prepare materials for multimedia distance learning can expect to partner with computer instructional specialists, including producers, sound and video editors, programmers, and others, to produce the finished course.

OU's experience strongly suggests that the ability to function as a member of a creative team will be at premium for American faculty who wish to explore the promise inherent in multimedia-based open learning. Moreover, OU faculty suggest that working in an alternative, team-oriented setting can be one of the most rewarding aspects of the open-learning experience for the faculty members involved.

## Summary

Because of its unique history, Open University has developed a style of instructional development which is very different from current American practice. Yet the success of the Open University methodology speaks for itself. Over its nearly thirty years of experience, Open University has demonstrated that:

- Open and distance learning can provide access to higher education for students who otherwise would not be able to take instruction due to economic, geographic, or scheduling barriers.
- Open and distance learning students can complete their academic programs at rates comparable to those achieved by traditional institutions.
- Open and distance learning is cost effective, and can be markedly less expensive than traditional classroom instruction.

For American educators interested in adapting Open University's expertise to the U.S. context, OU's experience suggests that:

- Effective distance learning materials depend on good instructional designs.
- Faculty working in distance learning can expect to partner with specialists in course design, content development, production, and assessment and evaluation, or to become specialists in one of these areas themselves. In either instance, faculty will develop course materials as part of an instructional design team.
- Technology-assisted learning and computer-based instruction will be increasingly important modes of instructional delivery, which will be effective with many different types of students studying many different subjects.

As they become better known, OU's achievements will likely become benchmarks against which similar efforts in the United States—including, for example, The Western Governors' University, Mind Extension University, and SUNY: Empire State University—will be measured. For these reasons, American educators would do well to study the lessons of OU as they move to implement open and distance learning in the United States.

## Appendix A

### Open University and the Distance Learning “Mega-Universities”

Two of the most striking aspects of the Open University paradigm are the large sums of money invested in course development, and the low tuition cost of an OU course. The apparent contradiction is explained by economies of scale. Because OU invests heavily in developing specialized distance learning course designs which include fully integrated self-assessment, assessment of mastery, and the use of instructional technologies, its course development budgets are considerably higher than those at a traditional British or American university. However, because those development costs are amortized over very large numbers of enrolled students during the lifetime of the course, the cost of an OU course per student is sharply lower than that of a course at a traditional institution.

These economies of scale have not gone unnoticed, and have fueled the growth world-wide of what OU Chief Executive Officer Sir John Daniel calls “mega-universities”: institutions with enrollments of 100,000 or more, which do all their teaching through open and distance learning. OU itself has been a significant force behind this growth. Through partnerships and cooperative agreements Open University has licensed its course materials, techniques, and organizational strategies to support the growth of similar institutions in other nations. Institutions modeled directly on Open University UK and using licensed OU materials include the Sukhothai Thanmathiral Open University of Thailand, the Indira Gandhi National Open University in India, and the Anadolu University of Turkey. Other large open universities have no explicit ties to Open University UK, but have adopted in whole or in part OU methods, course development strategies, and logistics

Table 3 provides a survey of the open learning “Mega-Universities” worldwide, including enrollment figures, the cost of a graduate expressed as a percentage of the cost of a graduate from the traditional university system of the country, and completion rates expressed as a percentage of enrollments.

Table 3 - Enrollment in the Mega-Universities

University	Enrollment	Cost Ratio	Graduates per Year	Graduates per 1000 Students
Anadoli University (Turkey)	567,000	10%	14,000	25
China TV University System	530,000	40	101,000	191
Universitas Terbuka (Indonesia)	353,000	15	3,000	8
Sukhothai Thanmathiral Open University	300,000	30	13,000	43
Indira Gandhi National Open University	242,000	35	8,000	33
Korea National Open University	196,000	10	10,000	51
Centre National d'Enseignement a Distance	184,000	50	n/a	n/a
United Kingdom Open University	150,000	50	17,000	113
University of South Africa	130,000	50	10,000	77
Universidad Nacional de Educacion a Distancia	110,000	40	1,500	14
Totals	2,195,000		163,500	
Weighted Average and Average		33%		81

Notes: Enrollment for 1994 or 1995.

Cost ratios are the cost of a graduate compared to the cost of a graduate at a traditional college or university in that country.

Source: Sir John S. Daniel, "The Mega-Universities and the Knowledge Media," Open University, Milton Keynes, November 1995.

To date, no U.S. institution has invested in open and distance learning to the extent that these overseas “mega-universities” have. Yet as these tables indicate, the size of the “mega-universities” gives them substantial economies of scale over their U.S. counterparts—economies which have not gone unnoticed by American university administrators and governors. Open University UK is now beginning to develop partnerships with several U.S. institutions interested in adding distance learning programs to their instructional portfolio, and has concluded agreements to license course materials to at least two U.S. university systems.<sup>8</sup>

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<sup>8</sup> OU UK reports agreements with Florida State University for graduate courses in education, and with the California State University system courses in a number of different fields. Partnerships with additional U.S. institutions are currently under development.

## Appendix B

### Annotated Bibliography

Daniels, Sir John, Mega-Universities and Knowledge Media. London: Kogan-Page, Ltd., 1996.

Argues that technology-assisted learning in the form of “knowledge media”—the convergence of computing, telecommunications, and cognitive science—will change both teaching and learning. The new paradigm will require major investment in the development of learning materials—an investment that can be made by research universities through cross-subsidy, or by mega-universities through economies of scale. Discusses the crucial role logistics and automation play in the success of such mega-universities.

Field, Michael, APL: Developing More Flexible Colleges. London: Routledge, 1993.

The author argues that Accreditation of Prior Learning of APL is a crucial yet often-overlooked element of a well-conceived distance learning curriculum. Distance learning appeals strongly to nontraditional students, including older students and students holding full-time employment; assessing these student’s prior learning and providing accreditation for life and professional experience can help craft an educational program which suits their needs. 129 pages, with index.

Laurillard, Diana, Rethinking University Teaching: A Framework for the Effective Use of Educational Technology. London: Routledge, 1993.

An extensive critical investigation of three major questions surrounding the use of technology in instruction: what students need from instructional technology, what media are available, and how does one use technology effectively in crafting an instructional design. 284 pages, with lists of relevant journals and lists of additional resources included as appendices, and an index.

Lockwood, Fred, ed., Materials Production in Open and Distance Learning. London: Paul Chapman Publishing, Ltd., 1994.

Provides a survey of “best practices” developed by Open University faculty during their 25 years of developing materials for college-level distance education. The course development cycle is broken down into three core processes—planning, production, and presentation—with each stage of these core processes considered in detail by a specialist contributing author from the OU faculty. 206 pages, with references and citations included for each chapter.

Mason, Robin, Using Communications Media in Open and Flexible Learning. London: Kogan-Page, Ltd., 1994.

Intensive examination of the use of telecommunications technologies to support open and distance learners. Introductory chapters provide an overview of rapidly evolving telecommunications technologies, an orientation to terms and concepts, and an overall analysis of the implications of telecommunications technologies for communities of learners. Individual chapters are devoted to computer networking, audio networking and conference calling, and videoconferencing. Numerous case studies explicate the promise and potential pitfalls of each technology in actual distance learning applications. 139 pages, including glossary, annotated bibliography, and index.

Rowntree, Derek, Preparing Materials for Open, Distance and Flexible Learning. London: Kogan-Page, Ltd., 1994.

An action-oriented guide to writing materials for distance learning, including audio and/or multimedia as well as text delivery. Includes such topics as selecting delivery media, locating examples and graphics, and devising assessment and feedback mechanisms. 168 pages; including sample materials, bibliography, and index.

Rowntree, Derek, Teaching Through Self-Instruction, revised edition. London: Kogan-Page, Ltd., 1990.

Covers much the topics as Preparing Materials for Open, Distance, and Flexible Learning, but includes a much more detailed consideration of the theory of open learning, the characteristics of distance learners, and the development of assessment and feedback mechanisms. 1990 publication date leaves the book dated in terms of its coverage of telecommunications and computer-based multimedia; text and examples are heavily oriented toward traditional print-based instructional delivery. 389 pages, including examples and index but no bibliographic resources.

## **About the Author**

Erik Ledbetter is a producer for instructional media + magic, a Washington DC-based multimedia company which specializes in the development of computer-based course materials for higher education. He is presently working as part of the production team developing "The Arizona Constitution," an Internet-delivered interactive distance learning course for Northland Pioneer College in Holbrook, AZ.

In addition to his current work in distance learning, Erik holds graduate degrees in History from Johns Hopkins and Yale Universities, and has taught undergraduate history courses at Yale University and the University of Baltimore.