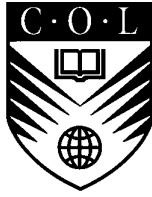


THE COMMONWEALTH *of* LEARNING

PERSPECTIVES ON
DISTANCE EDUCATION

Skills Development through Distance Education



THE COMMONWEALTH *of* LEARNING

PERSPECTIVES ON
DISTANCE EDUCATION

Skills Development through Distance Education

*Arun K. Mishra and
John Bartram, Editors*

Published by
The Commonwealth of Learning, Vancouver, 2002

THE COMMONWEALTH *of* LEARNING

The Commonwealth of Learning (COL) is an intergovernmental organisation created by Commonwealth Heads of Government to encourage the development and sharing of open learning and distance education knowledge, resources and technologies. Part of its mandate is to assist teaching institutions in Commonwealth member countries that wish to apply open, distance and technology-mediated learning methods to vocational education and training. If you would like to consult COL, please contact John Bartram at jbartram@col.org.

© The Commonwealth of Learning, 2002

PERSPECTIVES ON DISTANCE EDUCATION: Skills Development through Distance Education

Arun K. Mishra and John Bartram, Editors

ISBN 1-895369-81-9

Published by:

THE COMMONWEALTH *of* LEARNING
Suite 600
1285 West Broadway
Vancouver, British Columbia
Canada V6H 3X8

Telephone: 604 775 8200
Fax: 604 775 8210
Web: www.col.org
Email: info@col.org

This book is dedicated to Judith Calder.

Judith passed away on 31 March 2002 after a long fight with cancer. She was one of the few writers who advocated the use of open and distance learning to give access to vocational education and training. She was part of the steering committee that put form and shape to this book and who also nominated many of the writers. She herself contributed a chapter.

We are very grateful for her inspiration and her contribution

Arun Mishra John Bartram



CONTENTS

Preface	ix
<i>Gajaraj Dhanarajan</i>	
Introduction	xi
<i>Arun K. Mishra</i>	
The Contributors.....	xv
Chapter 1: Economic development and skills development	1
<i>Arun K. Mishra</i>	
Chapter 2: The key players	9
<i>Judith Calder</i>	
Chapter 3: The potential learners	21
<i>Magnus John</i>	
Chapter 4: The curriculum	31
<i>Keith Dunbar</i>	
Chapter 5: Needs identification and programme evaluation	41
<i>Neville Weal</i>	
Chapter 6: Student support in open and distance learning for TVET.....	51
<i>Ved Goel</i>	
Chapter 7: Delivering the programme.....	63
<i>Carol Hampton and John Bartram</i>	
Chapter 8: Instructional design	71
<i>Dermot Moore, Annemarie Bates and Jean Grundling</i>	
Chapter 9: Teaching practical skills	83
<i>Carol Hampton</i>	
Chapter 10: Quality assurance in the delivery of TVET programmes via ODL: The case of a small island developing state	93
<i>Olabisi Kuboni</i>	

Chapter 11: Mobility and articulation	105
<i>Adrian R. Haas</i>	
Chapter 12: The need for staff training and retraining.....	117
<i>Marvin E. Lamoureux</i>	
Chapter 13: Connecting the dots: Planning and management strategies in TVET	127
<i>Dick Scales</i>	



PREFACE

Reducing poverty is one of the fundamental aims of the internationally agreed-upon Millennium Developmental Goals. Through a variety of mechanisms, nations hope that by the year 2015 the proportion of people whose income is less than \$1 per day and those who suffer from hunger and other deprivations can be drastically reduced to about 50% of present levels. To meet this aim, more than half the world's population requires access to better education and health; safe food and water; and a sustainable environment.

One of the many strategies being actively promoted to achieve this goal is to provide training and retraining for many unskilled workers (many of whom are the sole breadwinners in developing economies) to enable them to move out of low-skill, poor-wage situations and into higher-skilled and higher-wage opportunities. There are some two billion people in the global workplace, and *all* of them need some form of training.

Technical and vocational education and training therefore becomes an important aspect of the Millennium Development Goals. But traditional systems of training individuals for technical and vocational careers often cannot meet the massive need. Among the options available to achieve the targets of the Millennium Development Goals is the application of open and distance learning (ODL) methods. Over the past 30 years, trainers all over the world have come to appreciate the immense value of using ODL methods to provide continuous, "just-in-time" training for workers in a range of fields — from farming to electronics, health to engineering, or animal husbandry to automobile engineering. However given the enormous challenges facing workforce training over the next several years, much more needs to be done. It is in this context that The Commonwealth of Learning wishes to bring to your attention recent experiences in the use of ODL methods for skills development.

In this book, as in all our publications in our Perspectives on Distance Education series, a team of expert practitioners from around the Commonwealth have been drawn together to share their experiences — in this case on skills development through distance education. Their discussion illustrates the very imaginative ways in which skills development is currently delivered throughout the Commonwealth and raises a number of questions relating to quality and relevance of adopting such training methodologies. All those interested in skills development as a continuous lifelong activity will find this publication of immense value.

A book of this kind could not happen but for the dedication and commitment of a number of people, most important of whom are the authors themselves. As always we are grateful to these Commonwealth experts for their dedication and commitment to the task. We are also grateful to the editor Arun Mishra for his patience and understanding

in seeing this project through, despite a few personal challenges. The Commonwealth Secretariat, London made both financial and expert contribution to this work. My colleague John Bartram, through his own enthusiasm, ensured that what we set out to do through this project was accomplished. The Commonwealth of Learning is grateful to all of these people.

This book is dedicated to the memory of a special friend of The Commonwealth of Learning, Professor Judith Calder of the British Open University. Judith, a pioneer in the field, contributed a chapter to this volume. Judith passed away a few months before publication.

Dato' Professor Gajaraj Dhanarajan

*President and Chief Executive Officer
The Commonwealth of Learning*



INTRODUCTION

Arun K. Mishra

The access to knowledge and skills to all people regardless of gender, age, race or location is enormously important. Education and training must be all-inclusive and reflect the vastly diversified present economy and various fields of human-power needs. COL has been striving to meet this goal.

Technical and vocational education and training (TVET) comprehensively includes all forms of technical education, vocational education and technical and vocational training irrespective of stage (excluding higher education). It also covers non-formal courses of adult and continuing education. Given this scope of TVET, just about all learner groups become the clientele for this monograph on skill training for economic development.

Open and distance learning (ODL), similarly, is a comprehensive term for the modality employed, but it naturally leaves outside its fold those programmes of TVET offered in formal education and training institutions through conventional contact schooling practices. While the thrust of ODL for many years has been on various conventional disciplines of liberal education, the growing diversity in various learner groups and advances in educational technology have lead us to accept that the benefits from TVET through ODL are far greater than from other types of courses. Quantitatively the numbers that can be reached are very large, and qualitatively the areas in which this form of education and training are of the unprecedented dimension. Instruction occurring not merely through various distance learning techniques, but also in real-life situation on work sites is more conducive to better learning of theory and skills. The large number of learners who can be reached over several years offsets the overall high initial cost.

However, all the promises of ODL/TVET should not keep us from recognising some of the constraints and limitations. First of all, TVET itself is not a preferred area of learning, and in many countries its status is low and acceptance limited. The current digital divide between the developed and developing world is also an important factor. No doubt the latest information and communication technologies are spreading rapidly, but there are large population segments where their use or even casual familiarity is scarce. E-mail and other interactive modalities such as video and teleconferencing, compact disc or CD-ROM are unheard of. In such situations the quality of instruction suffers and ODL is relegated to print materials and postal delivery modalities.

Many of the different aspects of TVET through ODL are highlighted in the chapters that follow. It is hoped that planners, administrators, teachers, curriculum developers and others concerned will find them useful and persuasive enough to opt for TVET in the ODL system as a priority in policy, planning, financing and other aspects of programme implementation.

Chapter 1, on economic development and skills development, lays down the conceptual framework and sets the stage for the chapters that follow. It highlights the contextual aspects and the current trends in social and economic development that TVET must address. It also attempts to define various terms that are commonly used while recognising the fact that there is overlap and ambiguity in their use and that the dictionary meaning may not be the most accurate. Various desirable policy directions and underlying issues are also given in brief.

In chapter 2, Judith Calder introduces the readers to the various key players in designing and delivering TVET via ODL through two case studies. The reader is led to realise that there are many key players in the process and that they join hands to provide appropriate TVET programmes. Calder presents a comprehensive account of seven types of providers of TVET instructional materials in terms of development, adaptation, selling or procuring.

In chapter 3, Magnus John discusses potential learners and characterises them as lifelong learners in the context of globalisation as well as the use of technology available in different countries for imparting TVET via ODL. The range of skills needed for economic development of a country has substantial bearing on who the potential learners are in this system. The universal inclusion as opposed to exclusion of certain groups is the crux of the matter.

Keith Dunbar discusses curriculum development in chapter 4. He makes the point that TVET curriculum is always learner centred since it stresses the process of learning by doing. The realities of the working world are at the core of TVET curriculum development. The philosophical approaches to curriculum are presented, followed by a discussion of DACUM. The national standards prevailing in Canada, UK and Australia are covered. The significance of acquiring essential skills such as critical thinking, numbers, communicating, teamwork, etc. are also highlighted.

Neville Weal discusses the identification of needs and programme evaluation in chapter 5. The attributes of a TVET programme have been identified as relevance, flexibility, effectiveness and efficiency, accessibility, sustainability in terms of resource availability, and compatibility with general requirements of the society at large. The course development process includes analysis, design, development, implementation and evaluation. The process of learning needs analysis is discussed in detail including a curriculum development checklist.

Ved Goel, in chapter 6, discusses student support services as a component of ODL for TVET. He presents the academic areas of student support such as study centres and tutoring along with an in-depth discussion of audio-, video-, telephone- and computer-based technologies. Virtual university and online delivery is also discussed.

Carol Hampton and John Bartram explain the important area of delivering the programme in chapter 7. Work-based learning, on-the-job training, adoption of technology, learning centres and delivery strategies in general are covered.

Dermot Moore, Annemarie Bates and Jean Grundling discuss instructional design in chapter 8. The complex process of designing and developing instructional materials is covered using two different models.

The teaching of practical skills holds the key to successful TVET via ODL. This is the subject matter of chapter 9 by Carol Hampton, who presents a number of successful approaches that have recently emerged. Appropriate learning materials are of critical importance. Print, audio, CD-ROMs and online materials are most notable, as they can be used in a variety of learning environments such as mobile classrooms, learning centres and industry work sites. The chapter concludes with assessment.

Olabisi Kuboni has written chapter 10 with particular reference to small island countries. She discusses quality assurance in the delivery of TVET via ODL. These quality assurance parameters, according to Kuboni, are either non-existent or in the early stages of development. The case of Trinidad and Tobago has been chosen for a detailed analysis.

Mobility and articulation of TVET with other stages or areas of study are discussed by Adrian Haas in chapter 11. He defines articulation and highlights its importance. He argues that there are many barriers to proper articulation in several countries and that effective articulation channels have not been put in place. The idea of a skills passport as introduced in Europe is discussed.

Staff training and retraining is the topic of chapter 12 by Marvin Lamoureux. The expanding horizon of TVET places increasing demand on training and retraining of personnel with limited available resources. The use of ODL for initial training as well as retraining is a viable proposition. Lamoureux asserts that sectoral, institutional and local level training and retraining must be given due attention to achieve the goals.

The final chapter by Dick Scales gives an overview of planning and management of TVET in a conventional education institution. He links together many of the concepts of the other chapters of the book to give a process-oriented account. He provides the beginner of TVET via ODL a means of putting various steps together to launch a modest programme of ODL in a conventional institution.

Readers may find some overlap and duplication as they read through the different chapters. As the various authors all have their own perspectives, they have developed their respective chapters accordingly as specialists in their fields. I acknowledge the generous contributions of all the chapter writers who have shared their life experiences.

I hope that this monograph in the series of Perspectives on Distance Education will prove useful to various stakeholders in TVET concerned with its implementation through ODL, and that it successfully meets the needs of vast and diverse clientele for skill development as a prerequisite to economic and social development as well as personal well-being.



THE CONTRIBUTORS

ANNEMARIE BATES has been an instructional designer in the Centre for Courseware Design and Development at Technikon SA since 1995. A particular focus of her work is the design and development of outcomes-based learning resources for distance learners. The knowledge and skills have been very effective in addressing learning facilitation through flexible learning resources for distance learners.

JOHN BARTRAM is currently the Education Specialist in Technical and Vocational Education and Training (TVET) at The Commonwealth of Learning. He works with governments and institutions in Commonwealth member countries to improve access to TVET through the use of open and distance learning. Previously he was the Manager of the UNESCO-UNEVOC Centre for Excellence in Vocational Education, working from the Adelaide Institute of TAFE in South Australia. In that capacity, he worked in the Asia-Pacific region providing a range of programmes to improve access to and the quality of training for employment and for self-employment.

JUDITH CALDER passed away on 31 March 2002. She studied Mathematics and Economics at the University of Wales and undertook her doctoral research on adult learning, change and use of media resources at Wolfson College, Oxford University. At the time of her death she was head of the Open and Distance Education for Lifelong Learning (ODELL) Research Group at the UK Open University, Senior Lecturer in Research Methods in the Student Research Centre of the Institute of Educational Technology and the external evaluator for The Commonwealth of Learning Literacy Project. She was previously head of the Student Research Centre and Deputy Director of the Institute of Educational Technology. She wrote extensively on distance education research and on research methodology at both the undergraduate and post-graduate levels. Her last book, *Open and Flexible Learning in Vocational Education and Training* (with A. McCollum), suggests that a number of different models of delivery are in use which run counter to learners' needs in the way they sequence the use of different media, personal support and modes of study.

KEITH DUNBAR has worked on provincial curriculum development in British Columbia, Canada, since 1985, including serving as the Acting Director of the former Centre for Curriculum and Professional Development for over three years. He also worked in the public post-secondary education system as Associate Director of the Continuing Education Division of Vancouver Community College, providing administration of part-time vocational continuing education courses. He started his career as a community adult educator in the Northwest Territories, where he was responsible for preparing and delivering adult education activities for a predominantly Inuit population. Keith holds his B.A. in Sociology and his M.Ed. in Adult Education from the University of British Columbia, and he is a Past President of the Canadian Vocational Association.

VED GOEL, PH.D. (Science Education, University of Maryland), is the Chief Programme Officer for Science Technology and Mathematics Education in the Commonwealth Secretariat. He is also the Honorary Secretary for the Commonwealth Association of Science Technology and Mathematics Educators. Ved has expertise in different aspects of science education (curriculum development, teacher education, gender issues and assessment) and basic education. He managed a large and complex human resource development component of a UK-funded basic education project in India. He has also taught in India, Nigeria and the US. He is the co-author of many Indian science textbooks and distance learning modules in physics. He led the development of training of laboratory technicians through distance mode in Asia and Africa. Ved has worked as a consultant to bilateral and multilateral organisations on institutional development and teacher education in basic education.

JEAN GRUNDLING is a facilitator of adult and distance learning in the subject field Management Leadership at Technikon SA. She holds an M.Phil. in Adult Education and has 6 years' experience in distance learning. She is currently Executive Assistant to Dermot Moore, where she has insight in the management and administration of higher education institutions.

ADRIAN HAAS trained as an electrical engineer before entering the field of TVET as a teacher in 1972. His interest in comparative TVET educational articulation and lifelong learning issues developed when he was Associate Director International Programs at RMIT University in Melbourne, Australia, where he also had responsibility for the UNESCO UNEVOC Centre at RMIT (1994–1999). He edited the UNESCO-UNEVOC publication *Case Studies in Technical and Vocational Education in Asia and the Pacific* (1995), which looked at TVET initiatives in 13 countries in the Asia/Pacific region, and he is also the author of the UNESCO-UNEVOC *Trends in Articulation Arrangements for Technical and Vocational Education in the South East Asian Region* (1999). He has a Ph.D. in Education from LaTrobe University, Melbourne, and he continues to have an ongoing interest in technician-level engineering education. He is a fellow of the Institution of Engineers Australia and continues to work as an educational consultant.

CAROL HAMPTON has worked closely with management and teaching staff to implement alternative teaching and learning strategies at Onkaparinga Institute of TAFE since 1997. As the Manager of the Education Technology Centre, she has encouraged a blended approach to educational practice and has been instrumental in increasing the adoption of a wide range of approaches to enhance flexibility and access to study by adult learners, especially in remote and rural South Australia. Strategies have included the establishment of a strong network of learning centres, the adoption of increased educational technology and wider acceptance of workplace learning. These have required access to and the development of improved self-paced learning materials and extensive professional development for teaching staff. Key factors have been increasing learner satisfaction and learning effectiveness while reducing costs within an environment of contracting educational expenditure. This has occurred during a period of rapid change and increased competition within the Australian TVET sector. Carol is an educator first and foremost with 25 years of teaching experience within technical and further education.

MAGNUS JOHN currently works as Head of the Institute of Library, Information and Communication Studies at Fourah Bay College, University of Sierra Leone. Prior to that, he worked for several years at the UK Open University in Milton Keynes, UK.

OLABISI KUBONI is the Campus Coordinator of the University of the West Indies Distance Education Centre (UWIDEC), St. Augustine campus, Trinidad and Tobago. She also functions as Curriculum Development Specialist. In the latter capacity she heads the course materials development unit within UWIDEC on this campus and works with academic staff to design and develop materials for delivery in the university's distance programme. Prior to her appointment within the Distance Education Centre, she served as educational technologist in the School of Education, St. Augustine, with special responsibility for co-ordinating the School's programme for the training of teachers and other related personnel in the development and production of instructional materials. Olabisi holds an M.A. in Educational Technology from Concordia University, Montreal and a Ph.D. from The Open University, UK.

MARVIN LAMOUREUX was a business administration college instructor in the United States and Canada. He completed his formal post-secondary career as Dean of Instruction at a Canadian community college, and since 1991 he has become involved in both TVET and higher education projects and activities in Canada and internationally. Dr. Lamoureux has worked on projects funded by the World Bank, Asian Development Bank, Canadian International Development Agency, United States Agency for International Development, and The Commonwealth of Learning as well as a host of private and public institutions including Deloitte and Touche Management Consultants (Kenya), SODETEG (France), TADS Education Ltd. (UK), Organisation for Educational Resources and Technology Training (USA) and KPMG/ARA Consulting Group, International Development Research Centre and Eduplus Management Group (Canada). He has had in-country project experience in 24 countries representing the Caribbean, Middle East, North America, East and Southern Africa, Central Europe and Asia. He has authored or co-authored over 80 technical reports and has delivered numerous workshops throughout the world.

ARUN K. MISHRA is a specialist in technical and vocational education with over 20 years' experience in planning and policy formulation in India. He was the founding Director of Pandit Sunderlal Sharma Central Institute of Vocational Education in India from 1993 to 1999. Before that, he was the Head of the Department of Vocationalization of Education of the National Council of Educational Research and Training, New Delhi, which was the precursor of the Central Institute. In these two positions he had an opportunity to contribute significantly to developing a system of vocational education in India inclusive of its philosophy and implementation strategy, course curricula and instructional materials. He also made an impact on the programmes of other organisations such as Indira Gandhi National Open University, National Open School and the University Grants Commission. Arun represented TVET in a number of delegations of the Government of India to different countries and brought the perspective of the developing world to the attention of international organisations such as UNESCO, the World Bank and The Commonwealth of Learning. He also directed a number of their workshops and activities. Arun also served as the Dean (Academic) of the National Council of Educational Research and Training for two terms. He has written extensively on various aspects of TVET both within the country and for UNESCO. In his personal capacity, Arun created two organisations, one working in a backward rural area of Bihar and the other, the Indian Society of Vocational Education, Bhopal.

DERMOT MOORE has 34 years of experience in education at all levels. He has held senior academic and management positions at the University of Fort Hare, the Technikon Witwatersrand and Technikon SA. Currently he is Vice-Principal: Planning and Development at Technikon SA. Based on an extensive interaction with the

international distance education community and a quest for a more equitable and efficient educational system for all South Africans, he has championed a flexible learning system as an alternative to current practices.

NEVILLE WEAL is currently the Manager of the Workplace Learning and Development Group at The Open Polytechnic of New Zealand. Neville joined the Polytechnic as a Horticultural Tutor in 1975, and he has carried out a number of different strategic and academic roles within the Polytechnic since then. His interests include how learning can be recognised wherever it occurs, and how formal and informal innovative learning activities can be used within distance and open learning frameworks.