

The Riddle of Distance Education
*Promise, Problems and Applications
for Development*

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Acronyms

AVU	African Virtual University
CAUT	Canadian Association of University Teachers
CET	Centre for Education and Technology
CIDA	Canadian International Development Agency
CLADES	Latin American Consortium on Agroecology and Development
MIT	Massachusetts Institute of Technology
NGO	non-governmental organization
UCLA	University of California, Los Angeles
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization

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Summary/Résumé/Resumen

Summary

The idea that teaching and learning can successfully take place through electronic communication between teachers and students widely separated by space and time is a concept that has inspired both hope and dismay, excitement and fear. In advanced industrial countries with high rates of literacy and school attendance, and abundant opportunities for post-secondary education, there is a burgeoning literature, most of which touts the “unlimited” possibilities of this “revolution” in education.

At the same time, distance education has its passionate critics, even in societies in which universal access to computer technology is an attainable goal. Far less controversy has attended the projections of wide use of electronic means to bring educational materials to resource-deprived countries. Indeed, a general assumption that distance education represents an unquestionably positive step forward has framed almost all discussion of the use of this technology in education in the developing world.

However, there is presently only a limited critical literature focused on the developing countries that would be comparable to the broad critique of distance education that has emerged in North America. Yet a careful analysis of the prospects for the application of electronic technology to education may show that many of the shortcomings of distance education already identified with respect to advanced industrial countries also apply or, indeed, are likely to appear in even more dramatic forms in developing countries. Moreover, there is a significant range of concerns about the impact and effectiveness of distance education in developing countries that would not be an issue in wealthier countries.

Some of the potential benefits for distance learners in both developed and developing countries include the greater access to education that distance learning offers (above all to what is increasingly referred to as the “non-traditional student”), the flexibility of scheduling, the possibility of proceeding at one’s own pace, and the opportunity to study without having to travel (indeed, without leaving home). In addition, for institutions that manage to persuade or oblige instructors to “bring their course online”, the opportunity to reach distant students holds out the hope of great savings in the construction of classrooms, student housing, parking lots and other physical infrastructure, as well as substantial potential savings on the salaries of teachers.

The advantages of distance education for developing countries are framed in terms of the ever-lower cost of computer technology, and the increasing speed and capacity of computers in relationship to their cost. In the face of the pressure on these countries to join the global information economy, distance education appears to provide the opportunity to train more people better and at lower cost.

At the same time, distance education has some serious drawbacks, even in its application in advanced industrial countries. These include its cost and capital intensiveness, time constraints and other pressures on instructors, the isolation of students from instructors and their peers, instructors' enormous difficulty in adequately evaluating students they never meet face-to-face, and drop-out rates far higher than in classroom-based courses.

Many of these fundamental problems are reproduced when distance programmes are exported to developing countries. The social impact of technological change is difficult to predict or foresee. Often, far from improving the quality of life or expectations of the powerless and the poor, the application of technology functions in strange and unexpected ways to reinforce the worst problems of inequality. The digital divide that polarizes the technological "haves" and "have-nots" separates the "wired world" from that without access to this technology, and, within developing countries, those who have the requisite levels of literacy and computer skills to make use of the Internet and other communications technologies from those who do not. Income, education, age, ethnicity, language and gender separate people who have a reasonable hope of making use of electronic communications from those who have little or no hope whatsoever.

There are various ways to count the costs of providing distance education to students in developing countries. One of the problems is that most calculations based on "per-student" costs fail to take into account the drop-out rates of those initially enrolled. Since there is a huge outlay of funds involved in the production of new courses, some planners propose that the development of distance-learning materials could be offloaded onto a wealthier institution (in an industrialized country). But "packaging" courses raises serious problems of designing culturally appropriate materials and approaches, and may exacerbate existing problems of what is perceived to be cultural domination by Europe and North America. Moreover, because funding for education in the developing countries is not limitless, the channelling of scarce resources into computers as opposed, say, to in-class teacher training, represents a choice that is made and an opportunity foregone.

If face-to-face instruction is a more effective way of reaching (and retaining) students, particularly the most marginalized students, then planners, at some point, may have to set aside their romance with technological solutions and return to the basic task of developing a corps of qualified and dedicated teachers who can reach those who—according to the signs we already see—will inevitably be left behind in the computer revolution. As presently conceived, the demotion of the classroom teacher to an "equipment monitor" who throws the switch to bring someone "better informed" or "more expert" or "more entertaining" into the classroom represents a deskilling of the teaching profession at a time when teachers everywhere—but particularly in developing countries—are suffering a precipitous decline in prestige and respect in their communities, not to mention a fall in real wages. This problem will only be exacerbated by the use of material generated in the industrialized countries. Thus the deskilling of the teacher is a social cost that must be taken into account when determining the appropriate disbursement of funds to education in developing countries.

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Résumé

L'idée que la communication électronique puisse permettre à des professeurs, séparés de leurs élèves par l'espace et le temps, de faire passer avec succès leur enseignement, est un concept a suscité à la fois espoir et tristesse, peur et enthousiasme. Dans les pays industriels avancés où les taux d'alphabétisation et de fréquentation scolaire sont élevés et où les possibilités d'études post-secondaires ne manquent pas, la littérature à ce sujet est en plein essor et la plupart des ouvrages vantent les possibilités "illimitées" de cette "révolution" dans l'éducation.

En même temps, le télé-enseignement a de farouches adversaires, même dans les sociétés où l'accès universel aux techniques informatiques est un but réalisable. Les projections quant à un large emploi des médias électroniques pour apporter du matériel pédagogique aux pays privés de ressources ont suscité beaucoup moins de controverses. En fait, les débats sur l'emploi de ces technologies au bénéfice de l'éducation dans les pays en développement reposent pratiquement tous sur l'idée générale que le télé-enseignement constitue un progrès incontestable.

Cependant, s'il existe une abondante littérature critique du télé-enseignement en Amérique du Nord, celle qui est axée sur les pays en développement est encore très limitée actuellement. Pourtant, une analyse approfondie des perspectives ouvertes par l'application des techniques électroniques à l'éducation pourrait montrer que bien des carences du télé-enseignement, déjà signalées pour les pays industriels avancés, valent aussi pour les pays en développement ou risquent d'y revêtir des formes plus spectaculaires encore. De plus, l'impact et l'efficacité du télé-enseignement dans les pays en développement suscitent diverses préoccupations qui n'ont pas de raison d'être dans les pays riches.

Le télé-enseignement peut présenter plusieurs avantages pour les élèves, tant des pays développés que des pays en développement, notamment celui d'élargir l'accès à l'éducation (surtout pour l'élève ou l'étudiant qui n'entre pas dans les catégories "habituelles"), la flexibilité des horaires, la possibilité d'avancer à son rythme, de faire des études sans avoir à se déplacer (et même sans avoir à sortir de chez soi). De plus, les établissements qui réussissent à persuader ou à obliger les enseignants à "mettre leur cours en ligne" peuvent espérer, en s'adressant à des élèves géographiquement très éloignés, réaliser de grandes économies dans la construction des salles de classe, des logements pour étudiants, des parkings et autres équipements de base, ainsi que de substantielles économies sur les salaires de leurs professeurs.

Les avantages du télé-enseignement pour les pays en développement tiennent au fait que les coûts des techniques informatiques vont en diminuant et que la vitesse et les capacités des ordinateurs ne cessent d'augmenter par rapport à leurs coûts. Pour ces pays qui se voient presser de rejoindre l'économie mondiale de l'information, le télé-enseignement semble permettre de former mieux plus de gens à un moindre coût.

En même temps, même dans les pays industriels avancés, le télé-enseignement a de sérieux inconvénients: il est coûteux et nécessite de gros capitaux; il soumet les enseignants à des contraintes de temps et à d'autres pressions; les élèves sont isolés, coupés à la fois de leurs professeurs et de leurs condisciples; les enseignants ont beaucoup de peine à évaluer correctement des étudiants qu'ils ne rencontrent jamais et les taux d'abandon sont bien plus élevés que pour des cours donnés en classe.

Beaucoup de ces problèmes fondamentaux se retrouvent lorsque les programmes de télé-enseignement sont exportés dans les pays en développement. Les répercussions sociales du changement technologique sont difficiles à prédire ou à prévoir. Souvent, loin d'améliorer la qualité de la vie ou les perspectives des pauvres et des sans-pouvoir, l'emploi des technologies a des effets étranges et inattendus et se traduit par une aggravation des pires problèmes d'inégalité. La fracture numérique, qui oppose les nantis aux démunis de la technologie, sépare aussi le "monde branché" de celui qui n'a pas accès à ces technologies et, à l'intérieur même des pays en développement, ceux qui ont le niveau d'alphabétisation et les connaissances informatiques nécessaires pour se servir de l'Internet et d'autres technologies de communication de ceux qui n'ont pas ce savoir. Selon les revenus, l'éducation, l'âge, l'appartenance ethnique, l'âge et le sexe, certains peuvent raisonnablement espérer pouvoir utiliser la communication électronique, et d'autres pas.

Les coûts liés à la fourniture d'un télé-enseignement à des élèves de pays en développement peuvent se calculer de diverses manières. Malheureusement, la plupart des calculs fondés sur les coûts "par élève" ne tiennent pas compte des taux d'abandon des élèves initialement inscrits. Comme la production de nouveaux cours demande une mise de fonds considérable, certains planificateurs proposent qu'elle incombe à un établissement relativement riche (d'un pays industrialisé). Mais des cours "standards" soulèvent de sérieux problèmes d'adaptation du matériel et de la démarche pédagogique à la culture des élèves et risquent d'exacerber ce qui est déjà perçu comme la domination culturelle de l'Europe et de l'Amérique du Nord. De plus, comme les fonds destinés à l'éducation dans les pays en développement ne sont pas infinis, ceux-ci ne peuvent opter pour un investissement en ordinateurs qu'au détriment d'autres possibilités, comme l'enseignement d'un professeur en classe.

Si l'enseignement face à face est un moyen plus efficace de toucher les élèves et de les garder, surtout les plus marginaux d'entre eux, les planificateurs devront sans doute à un moment donné abandonner leurs rêves de solutions technologiques et revenir au travail de base, constituer un corps enseignant qualifié et dévoué, capable d'atteindre ceux qui, si l'on en croit des signes déjà perceptibles, seront inévitablement dépassés par la révolution informatique. Ramener l'enseignant, comme on le fait actuellement, au rang de "moniteur" qui appuie sur un bouton pour faire entrer dans la classe quelqu'un de "mieux informé", de "plus expert" ou de "plus distrayant", c'est déclasser ses qualifications à un moment où, partout dans le monde mais surtout dans les pays en développement, les enseignants voient considérablement baisser leur prestige et le respect qu'ils inspirent à la population, sans parler de leurs salaires réels. L'emploi de matériel produit dans les pays industrialisés ne fera qu'exacerber ce problème. La

perte de qualifications de l'enseignant est un coût social qui doit être pris en compte dans le calcul des fonds à déboursier pour l'éducation dans les pays en développement.

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Resumen

La idea de que la enseñanza y el aprendizaje puedan llevarse a cabo satisfactoriamente a través de la comunicación electrónica entre profesores y estudiantes separados por el espacio y el tiempo ha inspirado tanto esperanza como desaliento, tanto entusiasmo como temor. En países muy industrializados donde el nivel de alfabetización y asistencia escolar son muy elevados y donde se brindan numerosas oportunidades de educación después de la escuela secundaria, hay una abundante literatura que, en su gran mayoría, promueve las posibilidades "ilimitadas" de esta "revolución" en la enseñanza.

Al mismo tiempo, la educación a distancia tiene vehementes críticos, incluso en sociedades donde el acceso universal a la tecnología informática se considera una meta alcanzable. La amplia utilización de medios electrónicos para hacer llegar el material educativo a los países que carecen de recursos ha sido menos polémica. En efecto, la creencia general de que la educación a distancia constituye indudablemente un paso adelante ha sido el marco de casi todas las discusiones sobre la utilización de esta tecnología en el ámbito de la educación en el mundo en desarrollo.

Sin embargo, en la actualidad hay muy poca literatura crítica centrada en los países en desarrollo que podría equipararse a la amplia crítica de que ha sido objeto recientemente la educación a distancia en América del Norte. No obstante, al estudiar de manera más detenida las perspectivas que ofrece la aplicación de la tecnología electrónica a la educación, pone de manifiesto que muchas desventajas de la educación a distancia ya identificadas con respecto a países muy industrializados también son aplicables o, en efecto, probablemente se manifiesten en formas más drásticas en los países en desarrollo. Además, hay una serie de preocupaciones por las consecuencias y la eficiencia de la educación a distancia en países en desarrollo que no tendrían importancia en países más ricos.

Algunos de los beneficios potenciales de la educación a distancia tanto en los países desarrollados como en desarrollo incluyen el mayor acceso a la educación que ofrece (sobre todo para la categoría de estudiantes que, con más frecuencia, son calificados de "estudiante no tradicional"), la flexibilidad de los programas escolares, la posibilidad de que cada estudiante siga su propio ritmo de aprendizaje, y la oportunidad de estudiar sin necesidad de desplazarse (por cierto, sin salir de casa). Además, para las instituciones que logran convencer u obligan a los instructores a "ofrecer sus cursos en línea", la oportunidad de impartir formación a distancia supone un ahorro notable en gastos de construcción de aulas, lugares de alojamiento para

estudiantes, estacionamientos y otros tipos de infraestructura, así como un considerable ahorro potencial en los salarios de los profesores.

Las ventajas de la educación a distancia para los países en desarrollo se miden en términos de reducción de gastos en tecnología informática, y de la velocidad y capacidad cada vez mayores de los ordenadores en relación con su costo. Ante la presión que estos países resienten para que se integren en la economía de la información mundial, la educación a distancia parece brindarles la oportunidad de ofrecer una mejor educación a más personas y a un costo menor.

Al mismo tiempo, la educación a distancia trae consigo grandes desventajas, incluso al aplicarse en países muy industrializados. Las desventajas incluyen su elevado costo y el gran capital que requiere, las restricciones de tiempo y otras presiones ejercidas sobre los instructores, el aislamiento de los estudiantes de sus instructores y compañeros, las enormes dificultades que tienen los instructores al evaluar adecuadamente a los estudiantes que nunca llegan a conocer personalmente, y un número de estudiantes que abandonan sus estudios mucho más elevado que en el sistema educativo "presencial", o sea el sistema en el que los estudiantes siguen sus enseñantes en el aula.

Muchos de estos problemas fundamentales se multiplican con la exportación de los programas de educación a distancia a países en desarrollo. Las consecuencias sociales del cambio tecnológico son difíciles de predecir o prever. Con frecuencia, lejos de mejorar la calidad de vida o las expectativas de las personas pobres o desvalidas, la aplicación de la tecnología funciona de extrañas e inesperadas maneras que agravan los peores problemas de la desigualdad. La brecha digital polariza a los que tienen acceso a la tecnología de los que no lo tienen y, en los países en desarrollo, a las personas con conocimientos informáticos necesarios para utilizar Internet y otras tecnologías de las comunicaciones de aquellas que carecen de los mismos. Los ingresos, la educación, la edad, la etnia, el idioma y el género separan a las personas que tienen cierta esperanza de utilizar las comunicaciones electrónicas de las que tienen poca o ninguna esperanza.

Existen varias formas de calcular el costo que representa impartir educación a distancia a estudiantes de los países en desarrollo. Uno de los problemas es que la mayoría de los cálculos basados en costo "por estudiante" no toman en cuenta el número de estudiantes que no terminan el curso. En vista de los considerables fondos invertidos en la preparación de nuevos cursos, algunos planificadores proponen que la elaboración de los materiales destinados a la educación a distancia podría delegarse a una institución más acaudalada (con sede en un país industrializado). Pero hacer "paquetes didácticos" plantea graves problemas con respecto al diseño de materiales y métodos culturalmente apropiados, y puede empeorar los problemas actuales que plantea la percepción del dominio cultural de Europa y América del Norte. Además, dado que el financiamiento de la educación en los países en desarrollo es limitado, canalizar los escasos recursos disponibles para la compra de ordenadores, en lugar de invertir en, digamos, la formación de profesores y maestros locales representa una decisión hecha y una oportunidad perdida.

Si la enseñanza basada en una relación personal entre el profesor y el alumno es un método más eficaz para motivar y retener a los estudiantes, particularmente los más marginados; entonces llegará un momento en que los planificadores deberán descartar su utopía de soluciones tecnológicas y acometer nuevamente la tarea de establecer un personal docente calificado y dedicado que motive a aquellos estudiantes que inevitablemente—por lo que ya hemos observado—se quedarán retrasados en la revolución informática. Tal como se concibe actualmente, el descenso del profesor “presencial” a la categoría de “monitor de equipo informático” que cede el control de la clase a alguien “mejor informado”, “más experto” o “más entretenido” supone una descalificación del docente en una época en que los profesores de todo el mundo—particularmente en los países en desarrollo—están perdiendo a pasos agigantados el prestigio y el respeto de sus comunidades; por no mencionar la disminución de sus ingresos reales. El uso de material producido en países industrializados sólo conseguirá empeorar la situación. Por consiguiente, la descalificación del profesor supone un costo social que debe tomarse en cuenta al determinar el desembolso apropiado de los fondos en la educación en los países en desarrollo.

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Introduction

The idea that teaching and learning can successfully take place through electronic communication between teachers and students widely separated by space and time is a concept that has inspired both hope and dismay, excitement and fear. If we look only at the debates about the utility and effectiveness of distance education that have unfolded in advanced industrial countries with high rates of literacy, school attendance and abundant post-secondary educational opportunities, we find a burgeoning literature, most of which touts the “unlimited” possibilities of this “revolution” in education.

At the same time, distance education has its passionate critics, even in societies in which universal access to computer technology is an attainable goal. To some degree the critique is framed in terms of the loss of the intimacy, spontaneity and interaction between students and teachers and among students themselves that, in the best of circumstances, characterizes the “real”, or the physical, classroom. Another argument against “online courses” centres on the difficulty inherent in maintaining standards and assuring the integrity of grades given for work submitted, when all interactions between students and those who assess their work is “faceless”.

Other criticism focuses on the loss of possession over the production of knowledge that is implied when university professors are expected or even required to bring their courses online. Critics of the commodification of knowledge and the restructuring of the university to meet the needs of corporate capital underscore the role of electronic technology in reinforcing what they generally recognize to be a broader trend: the turning away from knowledge for its own sake to the creation of a curriculum designed to meet the projected requirements of a “globalizing” world dominated by an ever smaller number of multinational corporations.¹

Finally, another series of objections to distance learning has been raised by teachers’ unions and faculty associations, which are concerned with the loss of present and future jobs in education if classroom teachers are going to be replaced by a CD-ROM. The expectation that a very small number of online instructors will suffice to teach large numbers of distance students is at the core of much of the most vehemently expressed opposition to the transformations likely to be produced by the development and growth of distance education.² At the same time, serious pedagogical problems have been underscored by teachers’ organizations, which note that, at a time of scarce and shrinking public funding for education, the resources dedicated to “e-learning” inevitably come at the expense of the “core” operations of teaching institutions (CAUT 2001; Roman 2001:1).

While the promise—or threat—of the spread of distance learning is a contentious issue when discussed in terms of the needs of advanced industrial countries, far less controversy has attended the projections of the wide use of electronic means to bring educational materials to

¹ For this kind of critique, see Noble 1998.

² For examples of these objections, see the Canadian Association of University Teachers (CAUT) 2001:A-6, which articulates CAUT’s critique of a Canadian federal government advisory committee report on “e-learning”.

resource-deprived countries in the developing world. Indeed, a general assumption that distance education represents an unquestionably positive step forward has framed almost all discussion of the use of this technology in education in the developing world. For governments as well as international organizations and non-governmental organizations (NGOs), the application of computer technology to the vast problems of developing human infrastructure in Asia, Africa, Latin America and the Caribbean has held out a promise—if not of a “quick fix”, then at least of a sweeping way in which to address the enormous problems of raising educational levels in these regions of the world.

However, while there is presently only a limited critical literature focused on the developing world that would be comparable to the broad critique of distance education that has emerged in North America, a careful analysis of the prospects for the application of electronic technology to education may show that many of the shortcomings of distance education already identified with respect to advanced industrial countries also apply or, indeed, are likely to appear in even more dramatic forms in developing countries. Moreover, there is a significant range of concerns about the impact and effectiveness of distance education in developing countries that would not be an issue in wealthier countries.

Given the enthusiasm already expressed on the part of international organizations and international aid programmes for the application of computer technology to developing countries, it seems timely to examine very carefully the potential pitfalls as well as the advantages that channelling resources into distance education could bring.

The first section of this paper will highlight the arguments that favour the funding of distance education programmes in both industrialized and developing countries. The second section will examine the limitations and pitfalls of distance education as it is presently implemented in both industrialized and developing countries. The third section will focus more specifically on the problems inherent in the application of this technology in Asia, Africa, Latin America and the Caribbean, noting the shortcomings of distance education that are likely to emerge in poor countries, as distinct from advanced industrialized countries. The final, concluding section will highlight two illustrative cases of distance education planning in Africa and Latin America and will offer recommendations for the future of distance education in the developing world.

Why Distance Education?

The idea that it is possible to learn “outside” the “traditional classroom”, the concept of “breaking down the walls” of the schoolhouse, and “opening” education to greater numbers of people, of various ages and condition who are widely dispersed, are notions that did not spring to life with the revolution in technology that occurred with the development of the computer or the Internet. Rather, these are ideas that have held great appeal, one could argue, for more than a century, and can be traced back to Sir Isaac Pitman, who not only invented shorthand, but also hit upon the brilliant idea of providing instruction to a potentially limitless audience through correspondence courses delivered by mail. In the nineteenth century, correspondence

courses were available to students in Britain, Germany, Japan and the United States, and by the twentieth century they formed a significant part of the educational offerings in the most advanced countries (Matthews 1999).

History

The concept came fully of age with the founding of the Open University in Britain in 1969, and the development of a mixed media approach to teaching. Carefully constructed texts, and audio and video cassettes were supplemented by conventional broadcast radio and television, and a tutor who could be reached by telephone (Matthews 1999). In a period that *predates* the contemporary electronic revolution, the Open University's programme became a kind of template that would be copied around the world, and the combination of broadcasting and written correspondence continues to offer the cheapest method for reaching a large number of students in situations where resources for investment in infrastructure are inadequate (Carty 1999).

Matthews notes that distance education is "first and foremost a movement that sought not so much to challenge or change the structure of higher learning, but to extend the traditional university and to overcome its inherent problems of scarcity and exclusivity" (Matthews 1999). It is important to note that while some of the pioneering work in distance education has been carried out by educators who are critical of what they regarded as the traditional model of the university professor at the lectern—or the "sage on the stage", as its critics ironically refer to this form—most distance education material has been designed by educators who hope to approximate, as closely as possible, the university classroom. Thus, interactive videoconferencing, online registration, electronic distribution of syllabi and course readings, e-mail communication between students and instructors and, in particular, online chat rooms that provide for interaction among the students who take the same distance course, are all features of the most recent and high-tech developments in distance education that seek to reproduce electronically the experience of attending university lectures and seminars.

The range of experiences

Bearing in mind its lengthy history, it is not surprising that the term "distance education" should be used to cover a wide range of different experiences. Winthrop Carty defines it as

all education that delivers training and information between two or more places regardless of whether that education is:

- Synchronous – using same-time communications; usually interactive, as in Internet chats or interactive videoconferencing.
- Asynchronous – communications that do not require participants to exchange information at the same time, such as e-mail or mail correspondence.
- One-way – information delivered from one point to one or many other points with no response capability, such as television broadcasting.
- Two-way – any communication in which the flow is bi-directional, implying but not limited to synchronous, interactive communication.
- Multi-point – information delivered simultaneously from one place to many other places, as in videoconferencing from one classroom to several other remote classrooms.

- Multi-cast – usually consisting of transmission of a video or audio ‘clip’ to the computers of many users (Carty 1999).

The programmes offered in advanced industrialized countries are exceedingly varied and range from modest correspondence courses provided by two-year junior colleges to programmes mounted by some of the most prestigious research institutions in the world, such as the Managed Care course offered by Johns Hopkins University or Duke University’s master’s degree in business administration, available for \$82,500 to students around the world (Potashnik and Capper 1998:43). Most recently, the Massachusetts Institute of Technology (MIT) has confounded the expectations of other top-drawer universities hoping to turn their international prestige into money-making distance programmes by making most of its course materials available online for free. Course lists, lecture notes and even videotaped lectures from more than 2,000 MIT courses ranging from engineering and science to the social sciences, humanities and the arts will become available over the next 10 years. As an MIT spokeswoman explained, “We are trying to share our knowledge. ... Imagine if you want to start giving an engineering course in Africa – well, here’s a template for you” (quoted in Fine 2001:1).

Equally varied is the experience of distance education in the developing world, which includes programmes, large and small, designed to reach students both within countries and across whole regions (Carty 1999). In the order of size of enrolments in their distance degree programmes, the universities in Turkey, China, Indonesia, India, Thailand and the Republic of Korea rank as the six largest in the world (Daniel 1996:30-31). The Chinese TV University, for example, produces more than 100,000 graduates each year with the majority of China’s 92,000 engineering and technology graduates earning their degrees through this programme (Potashnik and Capper 1998:42).

By comparison, the Technological Institute of Monterrey in northern Mexico is a relatively small private university. However, its programme, based on television, e-mail and printed material, has gained a foothold in other Latin American countries, and has drawn 13 universities outside of Mexico into its consortium of collaborating institutions to provide distance instruction to 9,000 degree and 35,000 non-degree students in the region (Potashnik and Capper 1998:43). Like the Monterrey programme, the African Virtual University (AVU), based in Nairobi, Kenya, has achieved a regional reach. Funded by the World Bank, the AVU promises to offer Internet and educational software in English, French and Portuguese to students in countries throughout sub-Saharan Africa. Presently in its pilot stage, the AVU is being implemented and tested in 14 English-speaking and eight French-speaking universities. According to the information posted on the World Bank Web site,

[t]he AVU will soon be transitioning to the operational phase when it will begin offering full-fledged degrees in three disciplines of study – Computer Science, Computer Engineering and Electrical Engineering. The AVU also offers professional development training, executive business education, language instruction, information technologies training and remedial instruction.

Nor is distance instruction in developing countries limited to the university level. Mexico's *Telesecundaria* currently uses television to reach more than 700,000 middle school students in remote villages, while radio broadcasts have been employed in Africa since the 1970s "to supplement instruction provided by classroom teachers who have inadequate training and limited learning resources" (Potashnik and Capper 1998:43). And the World Bank is also active in this field of secondary education with its World Links for Development Program, which links "secondary-level students and teachers in developing countries with their counterparts in industrialized countries, via the Internet for two-way teaching and learning".³

Advantages of distance education

A great many potential benefits for distance learners in both developed and developing countries are cited in the literature. Principal among these is the greater access to education that distance learning offers, above all to what is increasingly referred to as the "non-traditional student", generally a person who is not 18 to 25 years old and not able to attend a conventional in-class university course. In this regard, the flexibility of scheduling, the possibility of proceeding at one's own pace, the opportunity to study without having to travel, indeed without leaving home, and, in the best funded programmes, the individualized attention from the instructor are attractive features of distance education that win praise from students and educators.

Education is no longer ivy-trimmed buildings filled with books, professors and students; but rather a computer screen, software, and online chat rooms. Still, upon reflection, how many students have actually had the opportunity to attend universities with ivy-trimmed brick buildings filled with books, professors and other students? Answer—at least according to Andy Rosenfeld, educator and founder of UNext.com, an Internet university—'only about 1% of the world's population has the time, money and opportunity to attend top universities' (J. McCormick, quoted in Rockenbach and Almagno 2000:453).

In addition, for institutions that manage to persuade or oblige instructors to "bring their course online", the opportunity to reach distance students holds out the hope of great savings in the construction of classroom buildings, student housing, parking lots and other physical infrastructure, as well as substantial potential savings in teaching salaries. Moreover, mounting such a programme benefits an institution because it "requires the university to keep abreast of new technology, and signals the public that the institution is forward thinking and technologically advanced" (Matthews 1999).

Benefits of extending distance education to the developing world

With government funding more limited and university education more costly, developing countries cannot rely, as in the past, on sending the best and the brightest, or even the richest, abroad for training so that this educated elite can serve as a conduit of knowledge from the industrialized to the developing world. In the face of the pressure on developing countries to "join the global information economy or perish", many express the hope that distance education will provide the opportunity to train more people better and at lower cost (Carty 1999).

³ See the World Bank Web site, www.worldbank.org.

Thus the advantages of distance education for developing countries are framed in terms of the ever-lower cost of computer technology and the increasing speed and capacity of computers in relationship to their cost, so that “with each passing month it becomes cheaper and more practical to reach geographically wider audiences”. This, Carty argues, creates economies of scale that permit distance education programmes to invest in the highest quality teachers and materials. Moreover, the technological literacy that would be stimulated by using computers in distance education should also promote a computer literacy that should serve developing country students in the kinds of jobs they will need to do in the “information economy” (Carty 1999).

Limitations and Drawbacks of Distance Education in Industrialized Countries

Cost

While the advantages of distance education have been widely acknowledged, distance education has some serious drawbacks, even in its application in industrial countries. Many analyses of shortcomings of distance education centre on its cost. Even as its promoters cite its “cost-cutting” potential or its economies of scale, the reality is that this form of education is capital-intensive (Hall 1996:75–89) and requires heavy investments in computers, central servers, data networks, virtual libraries, and technical and marketing support to make the programme work (Matthews 1999). These infrastructural costs, of course, do not include the development of educational materials suitable to distance students. The idea that conventional classroom courses can easily be translated into distance courses – and money earners – has been a treasured hope of many university administrators over the last decade as the use of home computers in North America has spread geometrically. However, developing materials suitable for distance, as opposed to in-class courses, is a specialized field requiring specialized knowledge; and it is worth noting that at the Open University in the United Kingdom, the “design teams” that develop course offerings involve the collaboration of designers, “content specialists”, production specialists and a team manager who, together, spend “up to three years and as much as £1 million to produce a new course” (Potashnik and Capper 1998:44).

Another cost issue is that students must pay course fees that are generally set by institutions to equal in-class fees, lest the campus courses be undercut by the distance offerings. In addition to fees, however, the students must acquire computer hardware and software. As Rockenbach and Almagno argue,

[y]es, to be sure, technology costs are lowering. And, yes, the required skills are more easily attained. But for many, the dollars needed for the equipment and instruction are simply not there. ... Here we are faced with an inequality which is the real digital divide between the information haves and have-nots...a reality that is one of our most important economic civil (human) rights concerns (Rockenbach and Almagno 2000:458).⁴

⁴ On the equity question, the authors cite Cummings 2000:A5.

Indeed, a recent report commission in the United States by the College Board focuses on the effects of technology on students who lack access to computers and the Internet and emphasizes that “while education is the great equalizer, technology appears to be a new engine of inequality” (Gladieux and Swail 1999).⁵

Time constraints and other pressures on faculty

If electronic delivery of distance education is not a way to save money, nor a guaranteed cash cow, neither is it a way to save time. Like other contemporary “revolutions” in pedagogy – such as the “open classroom” – in any high-quality distance course, instructors need to devote *more*, not *less*, time to their students, so that they can provide detailed feedback via e-mail to students they will never see face-to-face. The labour intensiveness of this approach raises serious questions for faculty who are expected to divide their efforts among the three demands of their jobs: teaching, administration and research. While, ideally, teaching informs research and research strengthens teaching, in practice, there are only so many hours in a day, and evenings spent at a computer responding one by one to online students is very generally perceived as a serious *added* burden by faculty who also feel a commitment (and/or pressure) to carry on research and to publish. In his critique of what he refers to as the “digital diploma mills”, Noble marks as a watershed moment the summer of 1996 when the University of California, Los Angeles (UCLA) “launched its historic ‘Instructional Enhancement Initiative’ requiring computer Web sites for all of its arts and sciences courses by the start of the Fall term, the first time that a major university has made mandatory the use of computer telecommunications technology in the delivery of higher education” (emphasis added). “In recent years,” Noble writes,

[c]hanges in universities, especially in North America, show that we have entered a new era in higher education, one which is rapidly drawing the halls of academe into the age of automation. Automation—the distribution of digitized course material online, without the participation of professors who develop such material—is often justified as an inevitable part of the new ‘knowledge-based’ society. It is assumed to improve learning and increase wider access. In practice, however, such automation is often coercive in nature—being forced upon professors as well as students—with commercial interests in mind (Noble 1998).

The pressure on faculty is increased as well by the fact that distance education calls for a high level of instructor and staff training in the use of technology (Connell 1998 and Hall 1996, cited in Matthews 1999). Thus, Potashnik and Capper observe that “although distance education programmes are reputed to be more cost effective than conventional programmes, studies show this is only true if and when enrollments reach sufficiently high levels relative to expenditures and completion rates” (Potashnik and Capper 1998:44). Similarly, in her survey of distance education in the United States, Matthews notes that the technological infrastructure to support these programmes is often lacking, that equipment failures are frequent and that the development of virtual libraries has lagged well behind the development of online courses. This last problem creates a situation in which many students who are geographically isolated have no access to libraries of any kind.

⁵ An insightful discussion of this report is offered in Blumenstyk and McCollum 1999:A-31.

Isolation

Compounding the physical isolation of students is the difficulty for instructors to maintain sufficient contact with them and provide timely assistance and adequate feedback on their work. Moreover, as Matthews notes,

[d]istance education limits the extent to which students can reflectively browse in their subject matter with their peers and engage in exploratory discussion of their discipline. ... Distance learning might be inadequate for deliberation and discourse among students, their instructors and their peers. There is value in being at a university campus, interacting socially and intellectually with fellow students and teachers (Matthews 1999).

This lack of contact with books, with teachers, but above all, with fellow students, is noted with concern, and sometimes even alarm, by numerous observers. For example, David Resnick is convinced that students' isolation from other students seriously undermines the role of education in preparing young people for citizenship participation. He writes,

[e]ven if the academic course work of higher education can be replicated online, what cannot are the organized extracurricular activities which have been a crucial component of a traditional college education. These activities create social capital, prepare students for civic engagement and combat the self-absorbed individualism which undermines democratic society. We would do well to think about their loss and the unintended social consequences which flow from adopting the Virtual University as a model for higher education in the twenty-first century (Resnick 2000).

Along the same lines, Rockenbach and Almagno acknowledge the value of face-to-face interaction among students while underscoring the dangers of the absence of contact. They find that anonymity may breed an ugly insensitivity and a lack of responsibility for one's actions and expressed opinions:

Distance education is great for an individual who more easily/comfortably interacts in an anonymous online environment. ... But this anonymity has its own ethical question. And, in an article on women in cyberspace, Julia Ferganchick-Neufang describes the experiences of women professors teaching online courses. One of the professors interviewed argued that after several online chats (in which students were not required to reveal their identity) discussions were easily side-tracked and often aggressive. The students did not take any responsibility for their online actions because there was no way to hold [them] accountable for their behavior (Rockenbach and Almagno 2000:459).⁶

The loss of direct face-to-face interactions among students and between students and their instructor is certainly one of the most serious drawbacks of the distance formula. To be sure, some, like Margolis, have argued,

as the Internet reaches a global market, local universities no longer need to limit their course instruction to their own—and let's face it—somewhat mediocre faculty. Instead, they can offer choice among the world's greatest instructors online (Margolis 2000, quoted in Rockenbach and Almagno 2000:456).

⁶ Also see Ferganchick-Neufang 1998.

But this trade-off—personal interaction with a run-of-the-mill professor versus electronic exposure to one of the “world’s greatest instructors”—raises an interesting question. Why not just go down to the local public library and check out videotapes of the late Professor Carl Sagan of Cornell University explaining astronomy, or Dr. Jonathan Miller on the human body, or Sister Wendy on history of art, or Sir Yehudi Menuhin on music? These people are all learned and entertaining presenters of knowledge. Moreover, the production values of these PBS (Public Broadcasting Service) series are far higher than almost any online course could aspire to achieve. But few would pretend that exposure to even these exceptionally well-made television shows is the same as acquiring a university education.

In cultural terms, concerns about the lack of human contact in distance programmes is by no means limited to Western educators. Vladimir Dyomkin, director of the Tomsk State’s Institute of Distance Learning in Prokopyevsk, Russia, insists that a programme cannot be “completely disembodied”.

There can be some teaching from a distance. Knowledge can be transferred this way, through the Internet. But what about the formation of the individual? There can’t be development if [the students] just sit in front of a television screen. Then there is no spiritual link. They can’t just have indirect communications with their teachers. They have to see their mimicry, their gestures (quoted in Kishkovsky 2001:34).

The problem of evaluation

Two different issues with respect to evaluation must be raised at this point. The first concerns the reliability of work submitted by students. In an age when “unacademic practices”—as they are euphemistically called—are rampant in universities everywhere, instructors have a difficult enough time picking up on the subtle differences in self-expression between the student they see and hear in the classroom and the same student as the purported author of an essay. With essay-writing services now advertising their wares online, and essays available to download directly from the Internet, it is often only the gap between the student’s power of self-expression in the classroom and the quality of the student’s essay that will alert an instructor to the possibility that work has been plagiarized. As one distance education tutor noted:

I had absolutely no idea whatsoever who was the author of the work that was sent to me. I had no way of knowing. When I tutored in a real classroom, at least I had some sense of students’ way of expressing themselves, their way of using language, and I could compare that with their essays. The distance students could have sent me anything written by anyone they could coax into doing the work and I would have no way of spotting it. It was a totally alienating experience for me.⁷

The second problem of evaluation concerns the quality and effectiveness of the distance education programmes themselves. Potashnik and Capper claim that

⁷ Interview with the author, York University, May 2000.

numerous studies have been conducted assessing the effectiveness of distance education, although they have yet to be conducted on Internet-based training or on the benefits of online communication with students. More than 70 years of research on print-based correspondence courses has consistently documented their effectiveness compared with courses taught in conventional classroom settings (Potashnik and Capper 1998:42).

And Capper's research on the use of prepackaged computer-based training for adults across a broad range of settings has "consistently found that those who learned at a distance on computers learned as well as or better than those who learned in the traditional classrooms, and in some cases the former learned both faster and at substantially lower cost than the latter" (see Capper 1990).

Yet Carl Cuneo, a sociologist who heads a \$4.5 million research project called the Network for the Evaluation of Education and Training Technologies at McMaster University in Hamilton, Ontario, notes that even as universities and colleges around the globe go online and offer a plethora of multimedia educational "products" from CD-ROMs to video connections, "almost none of this material has been developed or tested for its *effectiveness*" (Gooderham 2001:A-10, emphasis added).⁸

How, then, are distance education experts able to make the claims they do regarding the efficacy of their programmes? One reason is that many, if not most of these studies are carried out by researchers who are far from disinterested, neutral observers. Typically, these findings are produced by researchers employed by the institution that is hoping to promote its online courses. For example, York University's Atkinson College, the largest provider of distance education in Canada, commissioned a review of its 10 online courses, comparing them with their in-class equivalents (Wideman and Owston 1999). Not surprisingly, the researchers found that "York students who take Internet courses do as well or better than students who sit in class" (Todd 1999:3). The grades given to students at the end of the course formed the basis for this assertion, and no account was taken of the number of students who dropped out of the course along the way. Indeed, one of the principal researchers expressed surprise when it was suggested to him by this author that it would be important to know if attrition rates were substantially higher in the distance than the in-class courses. And although the figures on "withdrawal" from both in-class and online courses are readily available, the researchers did not think it relevant to compare completion rates for the two.

This failure to incorporate completion rates as an important indicator of the success or failure of an educational offering runs through the evaluation literature. For example, Potashnik and Capper provide the same sort of "as well or better" comparisons between distance and in-class learning as in the York University study, even though she does note that completion rates are generally much lower for distance students. Indeed, she cites drop-out rates "ranging from 19 to

⁸ Gooderham writes: "Dr. Cuneo said that professors' biggest mistake in delivering courses on computer networks is that they simply take their lectures and post them on the World Wide Web. 'It doesn't advance education at all, it just converts lecture notes to a different medium,' he said, dubbing the result 'shovel-ware'".

90 percent and an overall rate of 40 percent” for distance courses (Potashnik and Capper 1998:43).

An even more far-reaching criticism of the ways in which the process of evaluation has been used to underpin institutional preferences for distance learning is what has been called the “No Significant Difference” literature (Weigel 2000:10-16). Weigel argues that much of electronic education is “little more than porting the classroom—including its less-than-successful ritual, the lecture—to the Internet”.

The aim is to reproduce the functionality and the ‘look and feel’ of the classroom in a new operating environment, similar to the reproductions resulting from porting a software program to different platforms. [Understood in these terms] the Web is primarily a delivery system for that which already exists—not a fundamentally new medium with the potential to birth new pedagogical models.

There is no more eloquent or disturbing testimony to the port-the-classroom approach than the so-called ‘No Significant Difference’ literature. ... This body of research maintains that the *learning* outcomes of distance education are the same as those of classroom-based education. ... [But] why hold up lecture-based classroom education as the benchmark for evaluating new educational delivery systems? If there is no significant difference between distance education and classroom-based education, advocates of distance education should hardly trumpet this claim; they should be deeply troubled by it (Weigel 2000).

Problems of Distance Education in Developing Countries

This review of the shortcomings of distance education in industrialized countries is important to bear in mind as we examine the promotion of distance learning technology in developing countries. As we shall see, many of these fundamental problems are reproduced when distance programmes are exported to developing countries. Other grave difficulties arise when electronic technology is applied to the problem of human resource development in Asia, Africa, Latin America and the Caribbean, difficulties that industrial societies are largely spared.

Over the last two decades, the rapid development and spread of computer technology to reach more and more people at lower cost, inspired hope that all kinds of problems in the developing world could be addressed through the use of computers. This faith in technology, of course, is not new. In the nineteenth century Karl Marx was reportedly fascinated by the steam locomotive and would spend hours at London train stations contemplating the power of the steam engine and dreaming of the ways in which this technology could be used to emancipate humankind from backbreaking, alienated labour. The notion that technology can solve a wide multitude of problems in developing countries certainly predates the computer; indeed, the application of scientific research to the specific problems of the developing world found expression a generation earlier in the expectation that science would enable us to solve the problem of hunger in the region through the Green Revolution.

But as with these other “solutions”, the social impact of technological change is difficult to predict or foresee, and far from improving the quality of life or expectations of the powerless and the poor, the application of technology often functions in strange and unexpected ways to reinforce the worst problems of inequality. Bearing this in mind, we will look at a number of general problems that are already manifest in the application of computer technology in developing countries, and most specifically, at the reliance on electronic communication to provide distance education.

Lack of access to the technology: The “digital divide” worldwide

Although all-computer based distance education programmes presuppose some kind of individual or collective access to electronic communication, in fact the idea that we now live in a “wired world” is very naive. Not every place is wired, and not all people in all places have access.

The United Nations Development Programme’s (UNDP) *Human Development Report* compiled at the turn of the millennium appropriately asks whether the “information revolution” is leading to globalization or to polarization between the haves and have-nots (UNDP 1999:61). While, according to UNDP, 50 million households in the United States and almost 50 million in Europe have at least one computer, and by 2001 an estimated 700 million were projected to be connecting to the Internet (UNDP 1999:58), we are still very far from living in a world of widespread or equal access to information technology. Access to the Internet or e-mail requires a telephone hookup and, while in a country like Monaco there are 99 telephones for every 100 people, one-fourth of countries worldwide—many in sub-Saharan Africa—have not achieved a “teledensity” of even 1 phone for every 100 people (the commonly accepted measure of basic access to telecommunications). Moreover,

[b]eyond basic landline connections, the disparities are even more stark. In mid-1998 industrial countries—home to less than 15% of people—had 88% of Internet users. North America alone—with less than 5% of all people—had more than 50% of Internet users. By contrast, South Asia is home to over 20% of all people but had less than 1% of the world’s Internet users. ... There are more Internet hosts in Bulgaria than in sub-Saharan Africa (excluding South Africa). The United States has more computers than the rest of the world combined and more computers per capita than any other country. Just 55 countries account for 99% of global spending on information technology (UNDP 1999:62).

Moreover, even if telecommunication systems are available, few in developing countries may have the requisite levels of literacy and computer skills to make use of the Internet and other forms of communication. The UNDP notes,

[i]n 1995 adult literacy was less than 40% in 16 countries, and primary school enrolments less than 80% in 24 countries. In Benin, for example, more than 60% of the population is illiterate, so the possibilities of expanding access beyond today’s 2,000 Internet users are heavily constrained (UNDP 1999:62).

Thus, accessibility is also a skills issue; those who lack basic literacy and computer skills simply cannot make good use of the equipment.

Furthermore, not only is there a huge disparity in access between the industrialized countries and the developing world, but within the developing world, there is an even more skewed distribution of access between those who have “stepped into the global loop”—who, worldwide, constitute only 2 percent of humankind—and a substantial number of their fellow citizens who could no sooner access computer technology than fly to the moon. As the UNDP report notes, income, education, age, ethnicity, language and gender separate people in developing countries who have a reasonable hope of making use of electronic communication from those who have little or no hope whatsoever (UNDP 1999).

Another case of “betting on the strong”, further disadvantaging the already disadvantaged

Under the circumstances, any examination of the prospects for distance learning in developing countries must necessarily take into account disparities internal to those societies. While communication technologies are often represented as promising a breakthrough for the downtrodden and deprived, this conceptualization of possibilities corresponds to a world view in which the only inequalities are *between* countries, rather than between and among categories of people *within* countries. In reality, the digital divide *within* developing countries manifests in a series of dichotomies:

- literate/illiterate;
- urban/rural;
- mobile/immobile;
- men/women;
- powerful/powerless;
- rich/poor; and
- young/old.

Thus, the UNDP report notes:

Geographic barriers may have fallen for communications, but now a new barrier has emerged, an invisible barrier that, true to its name, is like a world wide web, embracing the connected and silently—almost imperceptibly—excluding the rest. The typical Internet user worldwide is male, under 35 years old, with a college education and high income, urban-based and English-speaking—a member of a very elite minority worldwide (UNDP 1999:63).

Gajaraj Dhanarajan points out that, while reading through the United Nations Educational, Scientific and Cultural Organization (UNESCO) survey of distance education in Asia (National Institute of Multimedia Education 1992), one is struck by the degree to which the open universities of the poorest countries serve more or less the same sector of the population that was previously privileged to receive university education. “Students,” he says, “are mostly urban, male, middle class, have substantial prior learning, and are white collar workers” (Dhanarajan 2001:63).

There are minimal provisions to provide ease of access for those who do not fall within this newly privileged group, and where such provisions exist there is almost no support for them. Gandhe (1999) went as far as to say that

in India [no distance learning programmes] have made any significant impact among the rural poor, marginalized communities and women, despite some 50 or 60 providers of open and distance learning. Most of them had basically become sub-servers to conventional providers.⁹

So, too, the UNDP survey notes the disparities between the electronic haves and have-nots, with Internet users in developing countries predominantly those who hold at least one university degree (60 percent in China and 67 percent in Mexico), with men vastly outnumbering women (who account for only 25 percent in Brazil, 7 percent in China and 4 percent in the Arab states), and the great majority of the “connected” coming from the uppermost income groups. For example, the report notes that the average South African Internet user has an income seven times the national average, while 90 percent of all users in Latin America come from the upper class (UNDP 1999:62).

Indeed, looking at Latin Americans, Ricardo Gómez estimates that although 5.3 million were connecting to the Internet by the end of 1999, this figure represents only 1.5 percent of all Latin Americans, and accounts for just 3.2 percent of the 165 million worldwide users (Gómez 2000:72). Moreover, Fernández (1999:1) and Correa (1999:4) cite data from the Mirror on the Americas poll¹⁰ on the “penetration of information technology” in urban areas across Latin America. They found that only 16 percent of Latin Americans had a computer in their home (compared with just under 70 per cent in the United States) and 12 per cent of Latin Americans accessed the Internet at least once a week (compared with 56 per cent in the United States). Computer use was lowest in Peru and Paraguay, where three-quarters of respondents said they had never used one. They also noted that the figures for computer and Internet use for the 11 countries surveyed would have been even lower, had the study included rural areas rather than surveying only cities with populations of 50,000 or more. As in the 1999 UNDP report, the findings show that the profile of the “wired” Latin American was someone “upper or upper middle class (67 per cent), university-educated (65 per cent), male (58 per cent) and under 30 years of age (42 per cent)”.

In this respect, language is one of the most important determinants of Internet access and use. Although Web sites in Spanish are expanding, this growth is negligible when compared to the exponential growth of information available in English, and the majority of Internet users speak English as their mother tongue. Under the circumstances, between 70 and 80 percent of all content continues to be presented in English and only 1.5 percent is in Spanish (Gómez 2000:72). Thus, throughout the developing world, it is those who read English who are likely to benefit from electronic communication, a category that overlaps significantly with the most privileged sectors of those societies.

⁹ Gandhe 1999. Also see National Institute of Multimedia Education 1992 (both cited in Dhanarajan 2001:63).

¹⁰ The Mirror on the Americas poll, which surveyed nearly 13,000 people in 15 countries on major political and economic issues in the hemisphere, was published by The Wall Street Journal Americas in April 1998.

Certification, accreditation and evaluation problems

In setting up a distance programme aimed at students in developing countries, poor quality of instruction, inadequate materials or inadequate understanding of who will be learning are all shortcomings that can easily undercut the value to the students of the degrees they have earned. Although it is widely agreed that distance courses demand greater self-discipline from students and that solid teacher support is imperative, in practice distance programmes around the world are characterized by a vast array of support systems that range from completely adequate to totally inadequate. Learner support, for example, is very high for the Open University in the United Kingdom. The Virtual University of the Technological Institute of Monterrey, on the other hand, only “assigns one full-time professor for each course and an assistant for every 50 students enrolled in the course” (Potashnik and Capper 1998:44), a ratio of students to instructor that compares unfavourably even with mass state and provincial universities in the United States and Canada, not to speak of small liberal arts colleges or elite universities. In other programmes in the developing world, and particularly in Africa, support and feedback for the students is minimal, and drop-out rates are correspondingly high.

Under the circumstances, quality control is essential. However, while there is very broad agreement that distance education in developing countries will require some kind of global certification and review if the achievements of those who take these courses are to receive full recognition and be awarded proper credentials, there is little agreement about how such a process can be carried out. According to what standards is it possible to certify or accredit an institution, or the distance education programme of an institution, when it is very clear that even within a single institution, in a single country, colleagues in the same department cannot agree on the value and legitimacy of the education provided in distance, as opposed to in-class, courses?

Commenting on the efforts of the African Virtual University to bring eight African countries to some agreement on standards, a British expert observed:

We find it very difficult to get three to four universities to set up joint courses (“virtual campuses” – to use the jargon) within Scotland where we have very good infrastructure, a high ratio of machines to students, shared cultural background and common degree structures. Do we really expect eight different countries in Africa to pick up course output from the US/Ireland?¹¹

Thus accreditation, regulation and evaluation of what is learned in brick-and-mortar universities is complex enough, but for distance education the problem grows ever more complicated. In a sense, the evaluation of distance education in developing countries can be seen as a “subset” of evaluation of development projects in general, or evaluation of electronic learning overall; it suffers from the problem noted earlier, which is that rarely are the evaluators disinterested analysts. Usually they are people whose personal financial and professional future is tied – one way or the other – to the perception of a project’s “success”.

¹¹ Personal communication with the author.

Cost effectiveness

As in any policy-making exercise, there are various ways to count the costs of providing distance education to students in developing countries. One of the problems is that most calculations based on per-student costs fail to take into account the drop-out rates of those initially enrolled. If we look at the 11 largest distance education programmes of the so-called “mega-universities” that provide them (that is, China, France, India, Indonesia, Iran, the Republic of Korea, South Africa, Spain, Thailand, Turkey and the United Kingdom), these institutions reach altogether 2.8 million people at a cost of “only \$350 each”.¹² However, if students’ drop-out rates are brought into the equation, all the figures would have to be adjusted to count the cost per student who graduates, or at least the cost per student who completes the course. This, to be sure, would be quite a different figure when we consider that drop-out rates run as high as 90 percent in some programmes! Thus, with respect to the savings to be realized through distance education, Richard Guy has observed,

[m]any third world countries have uncritically accepted positivistic claims about distance education, such as its cost advantages...its ability to satisfy the demands of large numbers of students, who cannot otherwise be catered for in conventional educational settings through technological innovations...and that it makes better use of scarce educational resources...despite the evidence which suggests that this is not always the case (Guy 1990:49).

In their consideration of the price of distance education in the developing world, Potashnik and Capper note that the two factors that determine the cost effectiveness of distance programmes are the number of students enrolled and the level of support provided to the students. The higher the enrolments, the lower the per-student costs per course, while the ratio is reversed for providing instructional support to students, a figure that increases with larger enrolments. Limiting the number of courses also reduces expenditures, “since course development is often considerably more expensive for distance education than for traditional courses” (Potashnik and Capper 1998:44).

Since there is a huge outlay of funds involved in the production of new courses—as noted earlier in the discussion of the courses developed by the Open University in the United Kingdom—this leads some planners to propose that the development of course materials for developing country students could be offloaded onto some institution with more abundant resources in the developed world. But, then, would the courses be designed for developing-country students and their reality? Or would the distance curriculum consist simply of a packaged Harvard or MIT course that these students would follow as best they can? This question, together with the issue of increasing dependency of developing countries on the technology and content developed in Europe and North America, leads us to a consideration of the problem of “cultural fit”.

¹² Daniel 1996, “Table 1: Mega-universities: Basic Data”, cited in Potashnik and Capper 1998:44.

Inappropriateness of packaged courses generated in industrialized country institutions

The “packaging” of courses for distribution in developing countries raises what are probably the most profound of the questions posed by the entire project of distance learning. To begin, we need to ask if the acrimonious debates that characterize the curriculum content wars in industrialized countries will simply be exported to the rest of the world. Much of the discussion about educational packages presuppose that “we” will send “them” materials that are somehow neutral, or at least non-controversial “scientific materials”. Leaving aside, for the moment, the question of whether the “hard” or natural sciences are, can be, or should be “neutral”, we might still want to inquire whether the humanities and social sciences are also supposed to be part of the package and if so, whose history, literature and social reality will be at the centre of the curriculum? Will it be Western approaches in the social sciences, Western historiography and Western literature that will be exported around the world? In many cases, distance education can only exacerbate the existing problems associated with what is perceived in the developing world to be cultural domination by Europe and North America.

Indeed, in looking at development priorities in Kenya, Wangechi Muthui and Patricia Gachiengo argue that while electronic communication may work well to establish contact between people, “it is also an instrument for potentially perpetuating and even deepening the dependency relationship between developing and developed countries” (Muthui and Gachiengo 1999:26) since the delivery systems, as well as the content that is delivered, are products of the industrialized countries. Even when the distance educational materials are distributed for free, as should be the case for the MIT courses, we still need to ask: For whom is this curriculum appropriate? Who will take these courses? In whose image will these distance students be shaped? Who will benefit from claiming a degree from MIT as opposed to the national university? Above all, what *values* are embodied in the teaching materials that are “packaged”?

An advantage often seen for distance education is that it may open the way for the sharing of course content, research methodology and pedagogy “across two, three, or hundreds of universities”, and thus enhance the potential for rapid transfer of technology. “These exchanges,” Carty writes optimistically, “need not be limited to transferring knowledge from the developed to the developing world”. Developing country experts on tropical ecology, for example, would be in a position to “export” their teaching and research to advanced industrialized countries (Carty 1999).

However, as a Commonwealth of Learning report put it, “the development of virtual institutions is still experimental, rather unfocused and not necessarily matched to clientele learning needs” (Farrell 1999:3). Indeed, Carty also notes the poor fit between distance courses and the cultural values of societies where oral communication is paramount, face-to-face interaction is prized and people distrust those whom they cannot look in the eye. In these cases the impersonal nature of computer-based learning clashes with the cultural orientation of the students. By the same token, in many parts of the developing world, education traditionally

involves rote learning and memorization, styles that “clash with distance education’s more learner-centred, autonomous, and investigative practices” (Carty 1999).

These cultural differences, of course, have some serious implications when it comes to sorting out the priorities for the funding of programmes designed for developing countries. In North American schools and universities, great emphasis is placed on independent and critical thinking and having students weigh in with an opinion on the subject under discussion. Indeed, a teacher’s failure to elicit the students’ views is often seen as evidence of the worst kind of authoritarian, dogmatic, rote pedagogy. Under the circumstances, it may seem to the distance education planner in Europe or North America that it is worth allotting the extra funds to assure that interactive technology is in place to facilitate discussion. But this, too, is an unexamined cultural value. In this regard, the observations of a West Indian tutor working at a Canadian university are revealing:

In my first year of teaching, I was dumbstruck by the students’ insistence that their thoughts, or even their feelings, on a subject were very important and should occupy the greater part of our tutorial hour. They were forever pronouncing on subjects about which they had no knowledge...only ‘feelings’ and strongly-held opinions. Eventually, I learned that this kind of expression of views had been encouraged throughout their earlier education and was rewarded with high marks whether it was informed by the course readings – which was very rare – or were purely remarks off the top of their heads. In the schools where I studied it would have been unthinkable for a student to offer commentary of this sort.¹³

Given the vast differences between and among societies with respect to the values that underpin their educational practices, it is not surprising that as individual instructors and educational institutions begin to experiment with distance education they confront not only technical, administrative and pedagogical problems, but also

some rather difficult-to-define problems and, perhaps, misunderstandings between the people they teach and themselves that appear to originate in differences in perspectives, differences in values, and even differences in the significance given to certain words. Sometimes foreign students appear to resist what U.S. distance educators are offering. ... Calling for individual, personal responses, for example, usually leads to competitive behavior among the U.S. students and an unenthusiastic reaction from international students (Moore 1994:189).

Bearing in mind such cultural differences, Guy argues that while conventional education practices have been widely critiqued over the last two decades, distance education has largely escaped this rethinking (Guy 1990:49). Under the circumstances, the assumptions and the models of distance education that emphasize independence and autonomy need to be examined critically:

¹³ Interview with the author.

Theories and practices in distance education have emanated from industrialized countries and the metaphors that are used signify the attitudes and values, and the modes of thinking which are highly representative of those countries. Terms such as individual learning, personal work...a plurality of scholarly positions...individualisation, self-pacing, evaluation, apartness and autonomy...represent much of the thinking about distance education in the developed world at present, and contain specific ideologies which may not be consistent or appropriate in third world cultures (Guy 1990:58).

In contrast, for many societies in the developing world, the appropriate metaphors of distance education “might better be thought of as community, relationships, support, practical knowledge and action, and the theorising about distance education in such a context may emphasise collectivism, group learning, dialogue, co-operative and agreed forms of knowledge” (Guy 1990:58).

Corresponding neglect of the classroom

If resources for education in the developing world were limitless, it would be hard to argue that we should not pursue many different approaches to meeting the needs of developing country students. On the contrary, it would make perfect sense simultaneously to explore in-class, correspondence, radio-, television-, and computer-based forms, and both interactive and one-way instruction. However, in the real world, funds for education are limited and the channelling of scarce resources into computers as opposed, say, to in-class teacher training, represents a choice that is made and *an opportunity foregone*.

If face-to-face instruction is a more effective way of reaching (and retaining) students, particularly the most marginalized students, then planners, at some point, may have to set aside their romance with technological solutions and return to the basic task of developing a corps of qualified and dedicated teachers who can reach those who—according to the signs we already see—will inevitably be left behind in the computer revolution. As presently conceived, the demotion of the classroom teacher to an “equipment monitor” who throws the switch to bring someone “better informed” or “more expert” or “more entertaining” into the classroom represents a *deskilling* of the teaching profession at a time when teachers everywhere—particularly in developing countries—are suffering a precipitous decline in prestige and respect in their communities, not to mention a drop in real wages.¹⁴ Obviously this problem can only be exacerbated by the use of material generated in the industrialized countries. Thus the deskilling of the teacher is a social cost that must be taken into account when determining the appropriate dispersal of funds to education in developing countries.

To What End?

Any consideration of the advantages and disadvantages of distance education in developing countries leads inevitably to the conclusion that the materials created for education in the developing world must be designed with the particular needs of particular countries in mind. To be sure, once we recognize the crucial importance of shaping courses for developing country

¹⁴ For a teacher’s first-hand description of these trends, see Hellman 1994:201-204.

students that take into account their culture, their specific educational needs, and the setting in which the materials will be delivered, the argument that electronic courses and virtual universities can be built with economies of scale is seriously undermined. If “one size” does not, in fact, “fit all” then it becomes necessary to invest more in specialized programmes that reflect a greater appreciation of the cultural predisposition and the needs of the developing country distance students who will take the courses.

At the same time, there is now a growing recognition that there are various ways to “deliver” educational material and that computer-based programmes may not be the best option for many parts of the developing world. As Carty argues, rather than focus on the kind of computer programmes that were developed for the AVU, a return to written correspondence courses, or “one-way television and radio broadcasting along the lines of China TV University” may make more sense. Since synchronous formats are the most expensive, “one of the most important elements in determining the appropriate ‘mix’ for any budget and setting is the value placed on interaction, both student-teacher and student-student”, which helps determine how “interactive” the technology is going to have to be. Given that interactive technology is a lot more expensive than non-interactive delivery, such as one-way television programmes “that don’t include response mechanisms or communication among students”, this calculation must necessarily be brought into the equation (Carty 1999).

However, beyond the rethinking of the technical decisions that should be part of the planning process to bring educational opportunities to students in developing countries, it is crucial to ask the basic question: For what purpose? To what end should these programmes be put in place? To be sure, the models of distance education currently available represent a vast range of possibilities in terms of their scope, the number of students they hope to reach, their sources of funding, the degree to which they are expected to be economically self-sustaining and, very significantly, the foundation on which they rest, that is, the level of development of the countries in which they are put into effect. Above all, programmes differ in fundamental ways with respect to the results they are designed to achieve.

To illustrate this point it is useful to consider two distance education programmes that present a study in contrasts. The first is the AVU, which, as of 1999, was up and running in 16 countries in sub-Saharan Africa with a total of 22 partner institutions. By the turn of the millennium, the AVU had broadcast from US and Irish universities more than 2,000 hours of instruction to 9,000 students. The materials for these courses were developed in Europe and the United States, and lectures were delivered by instructors in front of a television camera in their own classroom. The video was then carried by means of a link in Washington, DC, that beams the signal via satellite to Africa.¹⁵

¹⁵ Materi 2001. Although Materi offers a critique of the AVU model, it is striking that when she turns to the knotty question of evaluating the *results* of distance instruction offered by the AVU, her summary is based on the very same criterion as the York University assessment of the impact of its own distance courses, a standard that does *not* factor drop-out rates into the equation. She writes,

Student performance seems good. The percentage of students earning passing grades is equal to those taking regular courses, and in some cases is higher than average. ... For example, in one third-

According to the information supplied on the AVU's Web site, the World Bank established the AVU in 1997 with the explicit expectation of offering "simple cost-effective solutions" through an international network for sharing digital satellite and computer-based academic resources. The original goal was to create a multi-donor initiative, but the World Bank became the principal contributor to the programme. By 2001 the AVU had become a \$1.2 million project reaching students in 25 sites in Kenya, Ethiopia, Ghana, Tanzania, Uganda, Zimbabwe, with plans in place to extend the service to Namibia, plus another nine satellite terminals in seven French-speaking countries, and three more sites in Portuguese speaking countries.¹⁶ While the World Bank originally donated the computer hardware and software necessary to establish the programme, the Bank's stated goal is to turn the AVU into

a full commercial operation, funded by student and institutional fees, foundation grants and contributions from private partners like multinational companies. These firms could use the AVU's infrastructure to train frontline and midlevel employees in Africa. ... By offering courses in many countries, the AVU hopes to achieve economies of scale that will justify its initial investment (Materi 2001).¹⁷

At the opposite end of the spectrum from a mega-project model like the AVU is the Temuco Project, a collaborative project between the Catholic University of Temuco in Chile and York University in Toronto. At the Catholic University of Temuco, only one developed country, Canada, is involved in the funding and collaborative planning of the distance education project. Moreover, the country targeted for educational assistance is relatively advanced in both human and physical infrastructure, with rates of literacy, school attendance and telecommunications that are higher than even the most advanced of the 16 African countries involved in the AVU. For example, according to UNDP data on "information flows", Chile is listed among the "high human development" countries because for every 1,000 Chileans, there are 156 main telephone lines, 277 televisions, 45 personal computers and two Internet hosts. In contrast, Kenya, which has a communications infrastructure typical of the countries reached by the AVU, has eight main telephone lines, 19 televisions, 1.6 personal computers, and 0.04 Internet hosts per 1,000 people. Another example is Nigeria with only four telephone lines, 55 televisions, 0.7 personal computers and no Internet hosts (UNDP 1999:53).

Funded by the Canadian International Development Agency (CIDA), Canadian collaborators in the Temuco project work through a Chilean NGO, the Centre for Education and Technology (CET), to prepare technicians and professionals in the poorest rural regions of Chile to address problems of rural poverty, gender inequality and environmental degradation (Catholic University of Temuco and York University 1999:1). Thus the Temuco project has created a "remote post-graduate programme via Internet for certification in rural development and sustainable agriculture", using materials generated by CET and by the Latin American Consortium on Agroecology and Development (CLADES), a network of NGOs in Latin

year calculus course, 70% of the AVU students passed, in contrast to the normal pass rate in most African countries of 25-40%.

¹⁶ See the World Bank Web site, www.worldbank.org.

¹⁷ Also see Chale and Michaud 1997, and African Virtual University 1997.

America that seeks to develop sustainable solutions for rural poverty throughout the region (Catholic University of Temuco and York University 1999).

The project is a strategic alliance designed to prepare professionals in rural development in an “agroecological” approach. These techniques should enable those trained to apply methods appropriate for small peasant cultivation, that is, organic agriculture as it can be practiced in small rural communities. Electronic communication is employed in the project to exchange learning materials and information among Latin American experts in the use of sustainable practices.

The master’s programme in rural development has a very specific application. Indeed, the entire project is targeted to a specific group of students: professionals in Latin America working in rural settings, including sociologists, agronomists, government officials and social workers. In this respect it is an elite programme, designed to enhance the training of people who have already received university education. Eighty percent of the instruction is distance education; however the isolation of distance education is supposed to be overcome by bringing the trainees to the Temuco campus for two months of study where they live on campus and work together in the classroom.¹⁸

Thus Temuco and the African Virtual University, two projects which – ironically – enjoy similar levels of funding, illustrate two very different approaches to distance education. On one hand, there is a true “mega-project” designed to educate great masses of learners in Africa, and on the other, a far more modest endeavour where training is provided to those who will go on to train others. Yet the most dramatic contrast between the two efforts concerns their goals. While the AVU has concentrated instruction in the use of computer technology, calculus, physics, and introduction to statistics – all courses intended to equip African students for individual participation in the internationalized sector of their country’s economy – the Chilean/Canadian project at the Catholic University of Temuco is designed to upgrade the teaching skills of the faculty, and the emphasis is on rural development in small peasant communities, and meeting basic human needs in the poorest corners of the countryside in Latin America.

Neither programme is presented here as a model for other distance education programmes. Rather, examining the two in comparative perspective highlights the fact that any consideration of the promise and shortcomings of distance education must necessarily take into account the *values* underlying the effort to bring advanced education to people in the developing world. In short, we need to look critically not only at the many technical and pedagogical issues raised by the *means* employed in distance education, but also at the *ends* to which distance education is dedicated.

¹⁸ Interview with Ricardo Grinspun, co-ordinator of the Temuco project, York University, Toronto, March 2001.

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