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Edited by
MICHAEL G. MOORE

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Contemporary Issues in American Distance Education

Edited by

MICHAEL G. MOORE

Penn State University, USA

with

Peter Cookson, Joe Donaldson and B. Allan Quigley

Penn State University



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2. Organization and administration of distance education

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3. The literature of management

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Acknowledgement

This book provides a descriptive and a rare distance education in the United States. It is the work of its leading practitioners and scholars who have addressed the researchable questions facing this old field of practice.

Unlike countries such as Great Britain where distance education has been secured by a few dominating national institutions such as the Open University, practice is characterized by an enormous variety of programs, media and pedagogical methods.

In America, distance education is provided by a wide variety of colleges, universities and public schools. It is also provided by the armed forces, broad-based community colleges, and other bodies. As a consequence of this plethora of institutions and the sheer volume of activity, it has been difficult for students of education to obtain an overview of the field. Instructional design, curriculum, and educational technology are occurring as newer communications technologies are introduced into the educational arena. It is the hope of this book that graduate students of education and their advisors will find ideas and information about actual and potential research in this burgeoning field.

In July 1988 a first attempt was made to address the problem of information-gathering and dissemination by bringing leading thinkers and practitioners of distance education to the Pennsylvania State University in University Park for a Research in Distance Education. Part of the project was a special effort was made to gather speakers from a wide range of the field. Financial support for the Synthesis Project, the Annenberg/CPB Project, which exists to promote the application of communications technology to education, was provided.

The Global Electronic University

TAKESHI UTSUMI, PARKER ROSSMAN, STEVEN M. ROSEN
Global Information Services, Inc.

The need for understanding and cooperation among the world's peoples and nations is imperative in order to develop an authentic sense of global citizenship and harmonious cooperation in our global village. It is our belief that hopes for effectively meeting this challenge lie in global education.

To this end, we propose a worldwide educational network, a partnership of universities and businesses; of governmental, nongovernmental and community organizations; of students, workers and individual citizens—the *Global (electronic) University (GU) Consortium*. First steps in this direction have been taken by other distance learning groups in various countries which already are exchanging courses electronically via computer-and-satellite-teleconferencing. GU seeks to serve, facilitate, and complement these enterprises by helping in the development of a cooperative infrastructure for the organic global community of the twenty-first century education.

Background of the project

In 1972 Takeshi Utsumi initiated the GLObal Systems Analysis and Simulation (GLOSAS) Project for global peace gaming (a term he coined in 1971)—a computer simulation venture to help decision-makers construct a *globally distributed decision support system* for positive-sum/win-win alternatives to conflict and war. The idea involves inter-connecting experts via global value added networks (VANs) to discover new solutions to world crises such as the deteriorating ecology of our globe.

Over the past dozen years GLOSAS played a major role in making possible the extension of US data communication networks to various overseas countries, particularly to Japan. In addition, it facilitated the

expansion of American and Japanese markets and the deregulation of Japan for the use of electronic mail and co-Japan public packet-switching lines. demonopolization of Japanese tele-enabling various private terrestrial ar-companies to emerge. This easing of provision allowing the entry of forei-communication markets. The Europ-countries and others have followed su-transcontinental, electronic exchange-communication media.

The most recent phase of the GLO-stration of global-scale peace-gamin-(WFS) "Crisis Management and Co-New York City, in July 1986. Thro-sessions (using voice, slow-scan TV-graphs, and a simulation model), New-Tokyo and Vancouver World's Fair. FUGI computer model of world eco-Noted US economists (Thurow of M-Townsend and Greenspan Compar-ected with Japanese counterparts Shishido of International Universit-assisted negotiations on a crisis scen-and economic issues.

The next demonstration was condu-in Cambridge, Massachusetts, in O-used in conjunction with NHK's Broadcasting Corporation) leased IN-with EIES, the computer conferen-Institution of Technology. In kee-"Education for the Twenty-First Ce-"classroom of tomorrow" with discus-Education Around the Pacific Basin." dispersed locations in the United Stat-bled" to exchange ideas in a "global-so-elists included Takeshi Utsumi from-Technological University (NTU) at Grier Miller, chairman of the Uni-EDUCOM Annual Conference in L-president of the NTU, from San Fran-of the United Nations University f-Henderson, economist and futurist;

expansion of American and Japanese information industries to foreign markets and the deregulation of Japanese telecommunication policies for the use of electronic mail and computer conferencing through US Japan public packet-switching lines. GLOSAS also helped achieve a demonopolization of Japanese telecommunication industries, thus enabling various private terrestrial and satellite communication service companies to emerge. This easing of restrictions includes a statutory provision allowing the entry of foreign enterprises into Japanese telecommunication markets. The European Economic Community (EEC) countries and others have followed suit. The way has been paved for the transcontinental, electronic exchange of courses via various telecommunication media.

The most recent phase of the GLOSAS project began with a demonstration of global-scale peace-gaming at the World Future Society's (WFS) "Crisis Management and Conflict Resolution" Conference in New York City, in July 1986. Through multimedia teleconferencing sessions (using voice, slow-scan TV [SSTV], computer text and data, graphs, and a simulation model), New York was linked with Honolulu, Tokyo and Vancouver World's Fair. The demonstration featured the FUGI computer model of world economy at Japan's Soka University. Noted US economists (Thurow of MIT, Nordhaus of Yale, Johnson of Townsend and Greenspan Company) were electronically interconnected with Japanese counterparts (Onishi of Soka University, and Shishido of International University) for three days of computer-assisted negotiations on a crisis scenario involving US/Japanese trade and economic issues.

The next demonstration was conducted at the WFS Conference held in Cambridge, Massachusetts, in October 1987. Slow-scan TV was used in conjunction with NHK's (Nihon Hoso Kyokai = Japan Broadcasting Corporation) leased INTELSAT satellite channel; and with EIES, the computer conference network of the New Jersey Institution of Technology. In keeping with the WFS theme of "Education for the Twenty-First Century," GLOSAS previewed the "classroom of tomorrow" with discussion on "Globalization of Higher Education Around the Pacific Basin." Lecturers and students at widely dispersed locations in the United States and around the Pacific "assembled" to exchange ideas in a "global-scale electronic lecture hall." The panelists included Takeshi Utsumi from the headquarters of the National Technological University (NTU) at Colorado State University; James Grier Miller, chairman of the University of the World, from the EDUCOM Annual Conference in Los Angeles; and Lionel Baldwin, president of the NTU, from San Francisco; Robert Muller, chancellor of the United Nations University for Peace in Costa Rica; Hazel Henderson, economist and futurist; Glenn Olds, president of Alaska

Electronic University

STEVEN M. ROSEN

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Japan. In addition, it facilitated the

Pacific University; and Parker Rossman—the last four of them from MIT in Cambridge, Massachusetts.

GLOSAS's third demonstration was during the conference of the Pacific Telecommunications Council in Honolulu, in February 1988, on "Distance Learning Around the Pacific Basin." The teachers in this "global classroom" included J. O. Grantham, founder of the National University Teleconference Network (NUTN); C. Urbanowicz, associate dean of the Center for Regional and Continuing Education, California State University, Chico; J. Southworth, College of Education of the University of Hawaii; R. Mills, assistant vice chancellor of the California State University System; D. Wydra of the Pennsylvania Teleteaching Project; L. Baldwin of NTU; and T. Utsumi of GLOSAS. The global lecture hall encompassed 14 sites ranging from the US East Coast to Korea, from Anchorage, Alaska to Brisbane, Australia, and spanning 14 time zones and two calendar dates. Of particular significance was the use of live, interactive computer conferencing for backstage management of audio and video presentations, questions and answers, etc.

These events showed how academic departments might be linked across national boundaries for joint study, research and global problem-solving. The demonstrations have also helped GLOSAS discover the technical, regulatory, economic and marketing impediments to the creation of a global electronic university system. Here the aim is to show how, by combining a variety of improved and presently more affordable technologies, evidence can be given that global educational exchange via satellite is a feasible endeavor. Finally, we believe that we have helped foster a participatory spirit and sense of transnational identity among the participants.

Statement of aims and principles

In recognition of the wide range of critical problems currently facing humankind (ICIS Forum 1988), the Global University Consortium is directing itself to four essential goals:

1. The globalization of educational opportunities to make possible the highest quality of education for all the world's learners.
2. Support of research and development, including such projects as:
 - (a) globally networked "think tanks" for examining philosophical assumptions, creating new models of educational exchange, and collaborating on problems of global concern;
 - (b) research on new technologies that would improve the quality of educational endeavors; and
 - (c) global coordination of research results and the accomplishments of educators around the world.

3. Use of global-scale tools (Rossman and Utsumi 1986; Utsumi and global village meetings so as to world-order capable of addressing the an interdependent globe (Mische 1988).
4. Globalization of employment opportunities, flexibility and lifestyles of all the world.

In order to clarify the motives and intentions of the proposed endeavor, we next articulate them in relation to a detailed description of the project. They are set forth in the following eight propositions.

1. Transcultural, globalwide initiative

The highest priority of the GU is to launch a global initiative (using modern techniques of communication) and global village meetings so as to world-order capable of addressing the an interdependent globe (Mische 1988). survival, creative growth and constructive development. Indeed, the survival of our globe itself matters. All those who participate in the GU must have a commitment to the goals set forth, and an ongoing vigor. In asking members to attain these aims, we follow the charter of the GU. A lesson may also be learned from disapplying the UN experience. Bearing these in mind, the GU is implementing the stated goals; bridging the gap between practice, long-range plans and short-term realities, future and present realities.

2. The GU to demonstrate moral leadership

The GU has no intention of dictating moral principles or to encourage free and open dialog among nations and outlooks. But, in view of the challenges of this critical juncture in its history, it behoves the GU to demonstrate leadership in the various activities we undertake. In partnership with any applicant plan, the GU is into partnership with any applicant plan, such as the waging of war or the oppression of the weak. The GU is to offer courses, programs, and services with the interests of global understanding in mind. The GU intends to show moral leadership in a

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3. Use of global-scale tools (Rossman 1982) such as peace-gaming (Rossman and Utsumi 1986; Utsumi, Mikes and Rossman 1986) and global village meetings so as to explore new alternatives for a world-order capable of addressing the problems and opportunities of an interdependent globe (Mische 1988:18).
4. Globalization of employment opportunities to enhance the job flexibility and lifestyles of all the world's workers.

In order to clarify the motives and intentions which underlie the proposed endeavor, we next articulate the GU vision before proceeding to a detailed description of the project. The principles of the GU are set forth in the following eight propositions.

1. Transcultural, globalwide initiative

The highest priority of the GU is to launch a transcultural, globalwide initiative (using modern techniques of communication) to promote the kinds of global education that will advance peace, justice, understanding, and human wisdom. The GU seeks to encourage a sense of transnational identity, a feeling of global community which is necessary for the survival, creative growth and constructive transformation of our species. Indeed, the survival of our globe itself may depend on such transformation. All those who participate in the Global University will share a firm commitment to the goals set forth, and pledge to pursue them with ongoing vigor. In asking members to affirm and support our agreed-upon aims, we follow the charter of the United Nations. However a lesson may also be learned from disappointments encountered in the UN experience. Bearing these in mind, we shall address the task of *implementing* the stated goals; bridging the gap between principle and practice, long-range plans and short-term actions, and dreams for the future and present realities.

2. The GU to demonstrate moral leadership

The GU has no intention of dictating morality to its participants. It will encourage free and open dialog among those with differing opinions and outlooks. But, in view of the challenges confronting humankind at this critical juncture in its history, it behooves us to demonstrate moral leadership in the various activities we undertake. The GU will not enter into partnership with any applicant planning to use its power for objectives such as the waging of war or the oppression of its citizens. A policy of the GU is to offer courses, programs, or practices that are compatible with the interests of global understanding and accord. Moreover, the GU intends to show moral leadership in a *positive* manner by promoting

curricula and activities, such as peace-gaming and global village meetings, that will facilitate global harmony directly. The GU hopes to play an active and meaningful role in addressing the manifold difficulties facing humankind—war, pollution, disease, hunger—by fostering an attitude of trust, empathy and compassion, a sense of solidarity and global identity.

3. Priority on academic freedom

In a world now fragmented by hosts of competing special interests, a globe endangered by the tribal rivalries of the nation-states, we affirm our university as a place where teaching and thinking are given free reign to be truly ecological—to address problems and crises global in scope. If the “zero-sum game” is no longer winnable, if the globe is shrinking to the point where a crisis anywhere is a crisis everywhere, we require the latitude to think globally, bound neither by the motives of profit nor power. In short, the GU espouses academic freedom as an essential value. We trust that those who support us will pledge to uphold this cherished principle.

4. The GU to stress quality education

The GU will place an emphasis on quality in all its programs and courses of instruction. It will draw its curriculum from known centers of learning around the world and seek to identify new centers of excellence and creative scholarship. The undertakings of the GU will include the most up-to-date research and methods, the most recent developments and insights in its various fields of study, and will be supported and enhanced by the latest advances in communication technology. To respond to the immediate needs of its students the GU will offer culturally relevant educational experiences not readily available in local institutions, perhaps not available through any other means but an electronic university that is interactive in nature and global in scope.

At the same time, the GU will remain cognizant of the *collective* needs of the globe. Recognizing that the welter of newly generated information and technologies can itself constitute a significant problem for humankind as a whole, the GU will seek to temper the fragmentizing effects of contemporary innovation. The GU will encourage curricula in which the latest facts and newest techniques are grounded and integrated with the wisdom of our *oldest* traditions, holistic and ecological approaches found at the core of every native culture on the globe. Accordingly, the GU will define a “*quality education*” as one which promotes “an integration of the social, economic, political, and spiritual insights of East and West, North and South, masculine and feminine”

(Mische 1986:46)—encompassing the wis
of cultural diversity and the transformati
and future. An education of high quality
powerful tools of thought accessible to
fullest and clearest version of the facts; an
analyzed by the tools, in accordance with
values available. The GU will exhibit resp
giving many cultures the opportunity to e
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5. Initiative to be shared with stude

The GU partnership of universities, busi
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search for ways to make it possible for
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growth on a globalwide basis.

6. Transnational collaboration on r

The GU will work diligently to help ma
significant fields of study to collabora
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(Mische 1986:46)—encompassing the wisdom of the past, the richness of cultural diversity and the transformative potentialities of the present and future. An education of high quality must give students the most powerful tools of thought accessible to them; it must give them the fullest and clearest version of the facts; and it must interpret the facts, as analyzed by the tools, in accordance with the best-articulated system of values available. The GU will exhibit respect for freedom and dignity by giving many cultures the opportunity to express themselves in their own best terms.

5. Initiative to be shared with students

The GU partnership of universities, businesses and governmental, non-governmental, and community organizations will be guided by, and remain fully responsive to, the felt needs and stated aspirations of students, workers and individual citizens around the globe. The GU will search for ways to make it possible for persons of any means in any region of the world to have the opportunity to obtain the highest quality education, as they define it. We dedicate ourselves to the promotion of literacy and lifelong learning, so that global economic equity and employment flexibility may be achieved. Moreover, we pledge our educational resources to the advancement of scholarship and creative growth on a globalwide basis.

6. Transnational collaboration on research

The GU will work diligently to help make it possible for researchers in significant fields of study to collaborate across national boundaries, engaging in joint research projects facilitated by computer, telecommunication and information technologies. A rich new interplay of disciplines and schools of thought is possible through such electronic cooperation and interchange. By bringing many minds together through computer networking and conferencing, our "*collective intelligence*" can be brought to bear in exploring fresh approaches to global issues.

But the global problems to be addressed include widespread human suffering: physical, emotional and spiritual anguish, and distress. This suggests that exchanges between and among researchers, faculty and students must be more than intellectual. An *affective* component seems required. Through intercultural transactions in the arts and humanities, through more intimate interpersonal exchanges, the *heart* must be engaged as well as the mind. If compassion, trust and empathy are to be fostered, if a sense of global solidarity is to be attained, we must be willing to share our feelings as well as our ideas.

7. Commitment to openness

The GU endorses the precept of unrestricted access to all information and educational resources at its disposal. To advance this goal, it will sponsor a space-station library system that will be open to any educational institution, group, network or individual anywhere in the world. The GU will facilitate the free exchange of ideas and insights around the globe and then strive to maintain openness at every level of its own operations.

8. Toward transcultural unity-in-difference

The GU is committed to the goal of counteracting the depersonalizing effects of mass technology. But rather than limiting itself to the aim of meeting the purely personal needs of its participants, its primary aim is transpersonal—it seeks to encourage a sharing of minds and hearts across personal, disciplinary, scientific and cultural barriers. Entailed here is an exploratory process of dialog and compassionate exchange that should lead neither to cultural homogenization nor cultural fragmentation, but to a dynamic *synthesis* of unity and diversity, a transcultural unity-in-difference.

Anticipated organizational structure

The GLOSAS/USA Association is incorporated as a New York, non-profit, educational service organization to assist and enhance the quality and availability of international educational exchange through the use of computer, telecommunication and information technologies. It seeks to create a Global/Pacific (electronic) University (GPU) Consortium around the Pacific rim. The GPU will ultimately become one of three divisions of a Global (electronic) University (GU) Consortium; the others will be Global/Atlantic and Global/Indian in the future (Charp 1988).

Global University in the USA (GU/USA), a divisional activity of GLOSAS/USA, will be the USA organizing group to complete the formation of and become a constituent member of GPU. Similar consortiums are being created in Canada, Japan, Australia, Sri Lanka and other countries. The GPU will consist of the GU in each country around the Pacific rim. It is expected that the GPU will be a "consortium of national consortiums," each responsible for the collaboration of groups in that country; and each will be invited to have an authorized, cooperative, and collaborative relationship with the GU/USA.

Trans-Pacific delivery systems

GPU will seek to provide at nominal cost participating colleges or universities to receive educational resources via satellite. A joint effort of GPU and other institutions to lease international telecommunication services and resources will make it possible for member institutions to reduce their telecommunications costs. The consortium will pool their strengths so that international educational resources become attainable.

Although the uplinking cost to the INTELSAT satellite is on the expensive side and its time-cost are not too expensive, the consortium is currently prohibitive due to the monopoly of the satellite industry. We are now working toward deregulating the industry policies so that the INTELSAT signal can be received by receive-only antennae at school campuses. For example, the Chinese TV University do with their 5000 km satellite.

We also plan to use all *digital* satellite technology. The newly inaugurated INTELSAT Backbone of global telecommunication network transmission will be *one-way*, from the INTELSAT satellite to the Return communications (mainly audio, video, and computer conferencing) are to be made over telephone lines, thus avoiding telecommunication charges for uplinking to the INTELSAT satellite in the various countries. We can expect to lease the IBS satellite transponder over the next few years.

Perhaps fees from member institutions will be used to reduce costs in transmission. Full-motion video programming via satellite clearly does not seem to be very expensive, especially across oceans. For example, "motion video" (Urbanowicz 1987). The consortium is providing experience with *multipoint-to-multipoint teleconferencing*; express (next day) delivery of tapes of instruction for up-linking to domestic and slow-scan teleconferencing; global communication simile for question-and-answer exchange; and other emerging educational technologies such as teleconferencing, etc.

Diversity of membership in the GPU

The Global University Consortium, from various points of view, will require a broad collaboration

unrestricted access to all information disposal. To advance this goal, it will system that will be open to any educational or individual anywhere in the world. change of ideas and insights around the in openness at every level of its own

y-in-difference

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Trans-Pacific delivery systems

GPU will seek to provide at nominal cost a "technology package" for participating colleges or universities to use for accessing educational resources via satellite. A joint effort of GUs in various countries/regions to lease international telecommunications lines and/or satellite transponders will make it possible for members of GPU to obtain discounted telecommunications costs. The consortia in a country can thus unite their strengths so that international educational exchange can readily become attainable.

Although the uplinking cost to the INTELSAT satellite from the US side and its time-cost are not too expensive, the downlinking cost is currently prohibitive due to the monopoly of INTELSAT signatories. We are now working toward deregulating Japanese telecommunications policies so that the INTELSAT signal can be downlinked directly with receive-only antennae at school campuses, just as a million students of the Chinese TV University do with their 5000 receive-only antennae.

We also plan to use all *digital* satellite transmission techniques with the newly inaugurated INTELSAT Business Service (IBS), as the backbone of global telecommunication networks for the GPU. The IBS transmission will be *one-way*, from the US to overseas counterparts. Return communications (mainly audio, slow-scan TV, facsimile, data and computer conferencing) are to be made through ordinary overseas telephone lines, thus avoiding telecommunications policy restrictions for uplinking to the INTELSAT satellite directly from school premises in the various countries. We can expect a much larger advantage if we lease the IBS satellite transponder over the Pacific.

Perhaps fees from member institutions can be justified by negotiated reduced costs in transmission. Full-motion video lines via satellite are very expensive, especially across oceans. However, "though educational programming via satellite clearly does work, *it does not need to be full-motion video*" (Urbanowicz 1987). The GLOSAS demonstrations are providing experience with *multipoint-to-multipoint multimedia interactive teleconferencing*; express (next day) delivery of full-motion color videotapes of instruction for up-linking to domestic/regional satellites; audio and slow-scan teleconferencing; global computer conferencing and facsimile for question-and-answer exchanges; and combinations of many other emerging educational technologies, such as the audiographic techniques, etc.

Diversity of membership in the GPU

The Global University Consortium, enriched by many cultures and points of view, will require a broad collaborative partnership, including

consortia of universities, governments, business organizations, etc. in countries/regions around the Pacific rim. We also urge the participation of the many noninstitutional community, nongovernmental organizations, voluntary networks, individuals and students rising from the grass roots in response to the plethora of problems confronting world society.

Members with access to resources will find ways to share some assets; and schools that lack financial resources may be able to provide services or courses of instruction so that a beneficial system of "global barter" might evolve.

In fact, a related idea is already being put into practice: the formation of an educational *exchange cooperative* through which courses and learning experiences are being shared in "sister university" relationships. A current example of this is the 1988-1989 course being taken jointly by students at Tufts and Moscow State Universities (Begley and Starr 1987:103; Gallagher 1987:65; DeLoughry 1988:A11) and Harvard and Boston with Beijing Normal Universities (Chen 1988; DeLoughry 1988:A11). GLOSAS has been working to help link the International University of Japan with Dartmouth College's Amos Tuck School of Business Administration, and with Johns Hopkins University's School of Advanced International Study. Similarly, an electronic link is being proposed between the members of the Association of Christian Universities and Colleges in Asia (ACUCA); between the New York University and the IKIP of Jakarta; between secondary schools in Latin America and Caribbean and in the United States by the Americas Society; between the International University Consortium and colleges of Marshall and Micronesia islands, etc.

Some promising developments also give evidence of concrete results. The National Technological University (NTU) has already indicated its willingness to work with the GPU. NTU is a consortium of engineering departments from some thirty major US universities offering MS degrees to distance learners who take courses via various electronic media. By participating in the GPU, NTU—whose present scope of operations is limited to the United States—will be capable of extending its services to learning centers and individuals in regions around the Pacific where there may be a shortage of trained faculty and resources in technical fields of study. Some video-tapes of NTU's courses have already been translated into Japanese and used by a local government for continuing education of company employees located at the so-called Japan's Silicon Valley in Kumamoto Prefecture of Kyushu Island (Gomi 1988).

Mansfield University (on behalf of the Pennsylvania Distance Learning University in process of formation for the State Systems of Higher Education of the Commonwealth of Pennsylvania) has already

requested formal partnership in the GPU. and of the University of the World are representatives.

Historically, the corporate sector has in employees scattered around the world abroad so that companies can maintain a competitive edge. Corporations may also agree, as partners or advantaged partners in these regions (collectively) to "piggy back" on the established infrastructure. GLOSAS demonstrations by NHK, Telegraph (AT&T), General Telephone and other corporations.

Expected benefits

As a new global institution the GPU can offer other advanced telecommunication media to serve students anywhere in the world before. It can begin by offering courses that specialize in distance education—other Pacific regions/countries across national boundaries, *servicing and complementing* existing institutions with outlets and resources. This will come into existence in three ways: as a structure for a delivery system (educational networks), an educational infrastructure and courses to be offered; and as a financing for giving and receiving funds to and from those who provide them.

Each country's GU consortium will members for the teleconferencing even gateway, the selection/arrangement of international telelearning courses internationally. global scale educational excellence can attract new investments in academic buildings.

By participating in the GPU, institutions currently are limited to one country will be learning centers and learners in regions with both of trained faculty and of resources in study.

Quality international education from provided to students in almost any location on time, resources or available options

ments, business organizations, etc. in Pacific rim. We also urge the participation of community, nongovernmental organizations, individuals and students rising from the plethora of problems confronting world

resources will find ways to share some assets; resources may be able to provide services at a beneficial system of "global barter"

being put into practice: the formation of a cooperative through which courses and resources are shared in "sister university" relationships. This is the 1988-1989 course being taken between Moscow State Universities (Begley and DeLoughry 1987:65; DeLoughry 1988:A11) and Beijing Normal Universities (Chen 1988; GLOSAS has been working to help link the program with Dartmouth College's Amos Tuckman Administration, and with Johns Hopkins University and International Study. Similarly, an exchange between the members of the Association of Colleges in Asia (ACUCA); between the IKIP of Jakarta; between secondary schools in the Caribbean and in the United States by the International University Consortium in the Micronesia islands, etc.

These examples also give evidence of concrete results. The University of North Carolina (NTU) has already indicated its participation in the GPU. NTU is a consortium of engineering and science by major US universities offering MS degrees to those who take courses via various electronic means. The GPU, NTU—whose present scope of activity is limited to the United States—will be capable of extending its services to individuals in regions around the world. A shortage of trained faculty and resources in the Pacific rim. The video-tapes of NTU's courses have been used in Japan and used by a local government to train company employees located at the so-called Yamaguchi Prefecture of Kyushu Island

on behalf of the Pennsylvania Distance Education System (the State Systems of Higher Education of the Commonwealth of Pennsylvania) has already

requested formal partnership in the GPU. The boards of the GU/USA and of the University of the World are also exchanging ex-officio representatives.

Historically, the corporate sector has invested in education to keep employees scattered around the world abreast of technological advances so that companies can maintain a competitive edge. Multinational corporations may also agree, as partners of GPU, to permit their less advantaged partners in these regions (colleges, community groups, etc.) to "piggy back" on the established infrastructure—as was done for GLOSAS demonstrations by NHK, American Telephone and Telegraph (AT&T), General Telephone and Electronics (GTE), and other corporations.

Expected benefits

As a new global institution the GPU can offer courses by satellite and other advanced telecommunication media to help bring quality education to serve students anywhere in the world where it did not exist before. It can begin by offering courses that existing educational institutions—specializing in distance education—are prepared to share with other Pacific regions/countries across national boundaries. The GPU's main activity is to achieve a global electronic education across national boundaries, *servicing and complementing* existing distance learning education institutions with outlets and resources on a global scale. The GPU will come into existence in three ways: as the technological infrastructure for a delivery system (educational satellite and terrestrial networks), an educational infrastructure to identify educational needs and courses to be offered; and as a financial and promotional organization for giving and receiving funds to and from those who use courses and those who provide them.

Each country's GU consortium will also facilitate and train its members for the teleconferencing event, and can coordinate, as a gateway, the selection/arrangement of importable/exportable educational telelearning courses internationally and domestically. Sharing for global scale educational excellence can also reduce the need for huge new investments in academic buildings.

By participating in the GPU, institutions in the Pacific rim that currently are limited to one country will be able to extend their services to learning centers and learners in regions where there may be a shortage both of trained faculty and of resources in technical and other fields of study.

Quality international education from universities can thus be provided to students in almost any location who, because of constraints on time, resources or available options, are unable to go to other

countries to study at regularly scheduled campus-based classes. Students would access some of the world's finest resources with a far greater variety of educational philosophies, courses and instructional styles than they could ever encounter on a single campus, regardless of their circumstances, and without having to leave homeland and workplace. Yet these experiences can include high levels of interaction and feedback (via electronic conferencing) among students and instructors.

The road ahead

Following the 1988 EDUCOM conference in Washington DC, GU/USA held a workshop to further plans to establish GPU. Representatives of business corporations and universities met to plan a larger and more representative conference following the EDUCOM '89. Distance educators emphasized the need for a global education system for citizenship on Earth. They asked for more such workshops, and GPU is planning such a gathering 19 October (noon) to 21 October (noon), 1989 following EDUCOM '89 (16–19 October) at the University of Michigan, involving individuals from education, government, business, the media, and non-institutional community groups from around the Pacific.

The following initiatives are planned by GU/USA in the near future:

1. *Deregulation.* To continue a decade of efforts to secure revision of laws and regulations imposed by local and national governments that presently impede transnational electronic education as mentioned above.
2. *Compilation of international directory.* To facilitate the extension of existing educational programs from country to country around the Pacific region by joining with others to compile an international directory of all presently available distance courses in all countries that students in one country may take, via computer conference or TV, from another country; proposed as a joint effort to the University of the World, the Foundation of International Tele-Education, and others in Canada, Australia, and the UK, etc.
3. *Sister universities.* To encourage "exchange cooperatives" between and among "sister universities" across the Pacific.
4. *Market survey.* To conduct multi-client projects on the market survey of educational services available from North America to Pacific/Asian countries—including employee training of subsidiaries/affiliates of North American organizations. GLOSAS/USA membership is now opened to entitle one to join this multi-client joint project.
5. *Teleconferencing.* To continue staging *multipoint-to-multipoint*,

multimedia, interactive teleconferencing to demonstrate the feasibility of the GPU project.

- (a) At the 1989 August conference of the Inter-American Association in Chile, in demonstrating *MPTV* technology developed by the Ministry of Radio, Film and Television, the technology uses one satellite transponder to broadcast different courses simultaneously in full-colour freeze-frame images, greatly reducing the satellite usage and the possibility of quick delivery of recorded onto video-tapes.
- (b) At the occasion of the "1989 International Media Communication and Education 50th Anniversary celebration in Osaka University, Osaka University, and the University of North Texas, and the African Academies of Science in Africa, the developed packet-radio technology connecting personal computers in Hawaii, Western Samoa, and the Technology Satellite (ATS).

Further teleconferencing demonstrations include: a meeting of the Global Parliamentary Leaders on Human Development. The theses are population, environment, and we have already secured a favorable resolution in this event; the Fifth World Education at Sydney, Australia.

6. *Universal charter for global education.* To discuss ideas and philosophies of global education in a "Charter for Global Education" which will be the charter of GPU. We hope that many countries in global distance education will adopt their own philosophies. GU/USA is working with UNESCO for possible adoption as soon as it completes its task.
7. *Peace gaming.* To discuss "global connections between economic, political, and departments in various countries to explore alternatives to war, with the use of world-order alternatives.

regularly scheduled campus-based classes. The world's finest resources with a far range of philosophies, courses and instructional methods are available on a single campus, regardless of location. This includes not having to leave homeland and work-life balance. It also includes high levels of interaction and learning (including) among students and instructors.

A conference in Washington DC, GU/USA further plans to establish GPU. Corporations and universities met to plan a workshop conference following the EDUCOM '89. They emphasized the need for a global education conference. They asked for more such workshops, including one on 19 October (noon) to 21 October 1989 (16-19 October) at the University of North Texas. Inviting individuals from education, government and non-institutional community groups.

planned by GU/USA in the near future:

a decade of efforts to secure revision of legislation proposed by local and national governments to support international electronic education as men-

and a directory. To facilitate the extension of distance education programs from country to country around the world, we are working with others to compile an international directory of available distance courses in all countries. This directory may take, via computer conference or workshop, the form of a joint effort to the University of North Texas, the Foundation of International Tele-education, Canada, Australia, and the UK, etc. We encourage "exchange cooperatives" between countries across the Pacific.

conduct multi-client projects on the market. Services available from North America to include employee training of subsidia-ry American organizations. GLOSAS/USA is intended to entitle one to join this multi-client

continue staging *multipoint-to-multipoint*,

multimedia, interactive teleconferencing events designed to demonstrate the feasibility of the GPU project such as:

- (a) At the 1989 August conference of the Pacific Science Association in Chile, in demonstrating the *multi-programming TV (MPTV)* technology developed jointly by the Chinese Ministry of Radio, Film and Television and NHK. This technology uses one satellite transponder to transmit as many as 44 different courses simultaneously. Remote students can view a full-colour freeze-frame image with full audio annotation, thus greatly reducing the satellite usage costs and also providing the possibility of quick delivery of course materials which may be recorded onto video-tapes.
- (b) At the occasion of the "1989 International Conference for New Media Communication and Education" at Osaka University's 50th Anniversary celebration in August, connecting New York University, Osaka University, and the IKIP of Jakarta.
- (c) Continuing with the electronic interconnection of the Academies of Science in African countries, using the newly developed packet-radio technique, which was developed at the University of North Texas and already tested, free of charge, in connecting personal computers located in Texas, Florida, Hawaii, Western Samoa, and Tonga via NASA's Applied Technology Satellite (ATS).

Further teleconferencing demonstrations proposed for 1990 may include: a meeting of the Global Forum of Spiritual and Parliamentary Leaders on Human Survival conference in Moscow. The theses are population, environment and global education, and we have already secured a favorable indication of NHK's cooperation in this event; the Fifth World Conference on Computers in Education at Sydney, Australia.

6. *Universal charter for global education.* To explore essential principles, ideas and philosophies of global education—to develop a "Universal Charter for Global Education" which will hopefully become the charter of GPU. We hope that many other organizations engaged in global distance education will adopt this charter as a basis for their own philosophies. GU/USA will submit the charter to UNESCO for possible adoption as soon as the working group completes its task.
7. *Peace gaming.* To discuss "global-scale tools and peace gaming" connections between economic, sociology and political science departments in various countries to explore conflict resolution and alternatives to war, with the use of global teleconferencing for new world-order alternatives.

8. *Development of consortia and local chapters.* To encourage the development of other consortia and related organizations and groups of every kind, urging them to pool their resources and energies, to work together on a regional and local basis, as well as nationally and globally. To form learning centers by local chapters at various cities and towns in North America and in Pacific/Asian countries/regions.
9. *A global mentor system.* To interconnect young students of the world with volunteered professionals and educators (off-duty time or retired) via GPU's telecommunication infrastructure for their counseling, tutoring and life guidance.
10. *Project DAWN.* This project will make a feasibility study/market survey, experimenting for one year with the extension of American educational services to those countries/regions via inexpensive telecommunication networks. Project members are of two types; (1) providers of educational services, and (2) users or receivers. GU/USA, jointly with interested parties, will prepare an application to the Project ACCESS of INTELSAT which offers a narrow band service (for audio, data, facsimile, slow-scan TV, graphics, etc.) for free satellite time. GPU will experiment with extension (via Project ACCESS) of various American educational services to the receivers' countries/regions at much lower rates than otherwise possible. (GTE/Telenet has already provided us with free use of their data communication network in the contiguous US.)
11. *Space-station library system.* To propose the establishment of a three space-station library system serving the entire globe, each interlinked by laser beam. Each station at a geo-synchronous orbit will be equipped with erasable compact optical disc memory and computers. Hundreds of thousands of these could be stored in space to be accessed by a jukebox-type unit. Videos of educational services (courses, seminars, conferences, etc.), as well as all kinds of information, can be uplinked to the nearby station and stored in the memory and computers. Individual students, with small dish antennae anywhere in the world, could receive educational excellence available from any other part of the world. In this regard a GLOSAS/USA colleague is now advocating the establishment of the World Space Agency in the United Nations with his Chinese counterparts. Dr Robert Muller, former assistant to the Secretary-General of the United Nations, suggested that we advocate the establishment of the *International Year of Global Education*.
12. *Publications.* To work on a newsletter about upcoming projects and developments; and also to develop articles, papers and books to promote the above activities, not just for GPU but for all the schools and institutions interested in global electronic education.

13. *Fund raising.* To continue seeking support from all those in harmony with the GPU, especially from multinational corporations, to provide continuing training to the Asian/Pacific regions.

Conclusions

The overseas exchange of courses will help bring together among young people of the wisdom and values of different cultures. The GPU will engage not only in traditional educational services, but will also be part of a wide initiative to increase human understanding through the virtue and love—a process needed by existing educational structures.

The creation of a global electronic university is a noble endeavor, one far too complex for any one group to undertake. Nor would it be desirable to place this responsibility upon itself. The GPU has no full-scale precedent. It can now take the first steps and many kinds of initiatives in matters of universally *shared* responsibility, a matter of genuine collaboration, in an enterprise that is truly global.

The GPU initiative is but one among many efforts currently burgeoning around the globe. In this context the proposal of a global university stands as one of the ways humankind is responding to the challenges that confront it at this unique moment in time—true—the world is shrinking. We are becoming more and more interconnected and more and more dependent upon each other; the potential for conflict is steadily escalating. It is greater to find a way of realizing the ancient Chinese saying, "Onaji Kama no Meshi wo Ku-u"—"to eat together," to do so in harmony. See *Learning together and working together* for more on peace.

Biographical Note

Steven M. Rosen, Ph.D., is Professor of Psychology at City University of New York. After receiving his Ph.D. from City University in 1971 he began to explore the field of becoming interdisciplinary and philosophical in nature on topics pertaining to science, parascience and spirituality. He has appeared in a variety of journals and books, and is currently exploring the theme of human transformation or ex-

local chapters. To encourage the development of related organizations and groups of individuals to pool their resources and energies, to work on a national and local basis, as well as nationally through existing centers by local chapters at various locations in America and in Pacific/Asian countries/

interconnect young students of the world through electronic means and educators (off-duty time or through communication infrastructure for their mutual benefit and guidance.

Project will make a feasibility study/market analysis in one year with the extension of American educational services to other countries/regions via inexpensive telecommunication. Project members are of two types; (1) providers, and (2) users or receivers. GPU/Project parties, will prepare an application to the National Aeronautics and Space Administration (NASA) which offers a narrow band service (e.g., satellite, slow-scan TV, graphics, etc.) for an experiment with extension (via Project members) of American educational services to the receiving countries at much lower rates than otherwise possible. The project is provided us with free use of their data and facilities in the contiguous US.)

To propose the establishment of a three-dimensional network serving the entire globe, each international station at a geo-synchronous orbit will use compact optical disc memory and command systems of these could be stored in space to provide a type unit. Videos of educational services (e.g., lectures, etc.), as well as all kinds of information, to be transmitted to the nearby station and stored in the local memory. Individual students, with small dish antennas, could receive educational excellence from any part of the world. In this regard a project is now advocating the establishment of a global network in the United Nations with his Chinese colleagues. Dr. Rosen, former assistant to the Secretary-General, suggested that we advocate the establishment of an International Year of Global Education.

Project will make a feasibility study/market analysis in one year with the extension of American educational services to other countries/regions via inexpensive telecommunication. Project members are of two types; (1) providers, and (2) users or receivers. GPU/Project parties, will prepare an application to the National Aeronautics and Space Administration (NASA) which offers a narrow band service (e.g., satellite, slow-scan TV, graphics, etc.) for an experiment with extension (via Project members) of American educational services to the receiving countries at much lower rates than otherwise possible. The project is provided us with free use of their data and facilities in the contiguous US.)

13. *Fund raising.* To continue seeking support for all GPU's programs from all those in harmony with the aims and philosophy of the GPU, especially from multinational corporations that wish to provide continuing training to their overseas employees now in Asian/Pacific regions.

Conclusions

The overseas exchange of courses will help promote a global perception among young people of the wisdom and experiences of the world's cultures. The GPU will engage not only in the export/import of traditional educational services, but will also pursue a transcultural, global-wide initiative to increase human understanding, promote wisdom, virtue and love—a process needed by established traditions and institutional structures.

The creation of a global electronic university consortium is a formidable endeavor, one far too complex for any single agency, organization or group to undertake. Nor would it be desirable for a single group to take this responsibility upon itself. The GPU is an evolutionary concept with no full-scale precedent. It can now take shape gradually through parallel steps and many kinds of initiatives in many regions, encouraging a sense of universally *shared* responsibility, a spirit of participation and of genuine collaboration, in an enterprise truly global in scope.

The GPU initiative is but one among many similar spontaneous efforts currently burgeoning around the globe. Seen in the broadest context the proposal of a global university consortium may be understood as one of the ways humankind is responding to the critical challenges that confront it at this unique moment in its history. Trite but true—the world is shrinking. We are becoming more and more interconnected and more and more dependent upon one another; in the process the potential for conflict is steadily escalating. Never has the need been greater to find a way of realizing the wisdom of the Japanese saying: "Onaji Kama no Meshi wo Ku-u"—to "live under the same roof together," to do so in harmony. Senator Fulbright once said that *learning together and working together* are the first steps toward world peace.

Biographical Note

Steven M. Rosen, Ph.D., is Professor of Psychology at the College of Staten Island of the City University of New York. After receiving his Ph.D. in experimental psychology from the City University in 1971 he began to explore the foundations and frontiers of science, his work becoming interdisciplinary and philosophical in nature. Dr Rosen has lectured internationally on topics pertaining to science, parascience and consciousness. His numerous essays have appeared in a variety of journals and books, and he is author of *The Moebius Seed*, a novel exploring the theme of human transformation or extinction.

Parker Rossman, Ph.D., author and lecturer, is former Dean of the Ecumenical Continuing Education Center at Yale. His many published books include *Computers: Bridges to the future* (Judson Press, 1985), which includes sections on the potential impact of forthcoming fifth generation computer intellectual tools on research, the shape of thought, institutions, and global action for peace and justice. His articles in *The Futurist* include "The coming great electronic encyclopedia", and he is now writing a book for the lay reader on the coming global electronic university and using global-scale technology (proposed by Utsumi) for large-scale peace gaming.

Takeshi Utsumi, Ph.D., P.E., is President of Global Information Services, a firm which assists businesses in various countries, and especially Japan, to access computer information via global value added networks (VANs). He is Technical Director of the GLOSAS/Japan (GLObal Systems Analysis and Simulation) Association, responsible for using advanced computers, telecommunications, systems analysis and simulation technology to seek solutions to worldwide problems. Among his over 100 related scientific papers are many presentations, for example, to the Summer Computer Simulation Conferences which he created and named. He is a member of Japanese and American societies for computer simulation, as well as other scientific groups, and is now completing a technical book in the area of this proposal.

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PART TWO

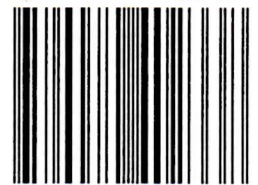
The learner, learning learner support

CONTEMPORARY
ISSUES IN
AMERICAN
DISTANCE
EDUCATION

Distance education in America is characterized by an enormous variety of institutions, programs, media and pedagogical methods. This book attempts to draw together an overall picture of the rapid growth and achievements in the field of American distance education and the problems and issues that confront it.

The book is aimed primarily at the university and college teacher and student, and particularly at graduate students in adult and distance education and other related fields. It aims to provide a cross-sectional view of the administrative and policy issues, the questions about learners and instruction, the problems of curriculum and course design and the new conceptual and theoretical concerns of some of the country's foremost practitioners and thinkers.

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