Doctoral Dissertations 1896 - February 2014

1-1-1982

Towards an instructional design for distance education implications for Venezuelan programs.

Luis Eduardo Díaz-Ramírez
University of Massachusetts Amherst

Follow this and additional works at: https://scholarworks.umass.edu/dissertations_1

Recommended Citation

Díaz-Ramírez, Luis Eduardo, "Towards an instructional design for distance education implications for Venezuelan programs." (1982).
Doctoral Dissertations 1896 - February 2014. 2206.
https://scholarworks.umass.edu/dissertations_1/2206

TOWARDS AN INSTRUCTIONAL DESIGN FOR DISTANCE EDUCATION
IMPLICATIONS FOR VENEZUELAN PROGRAMS

A Dissertation Presented

By

LUIS EDUARDO DIAZ-RAMIREZ

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

September   1982

Education

ii

TOWARDS AN INSTRUCTIONAL DESIGN FOR DISTANCE EDUCATION

IMPLICATIONS FOR VENEZUELAN PROGRAMS

A Dissertation Presented

By

LUIS EDUARDO DIAZ-RAMIREZ

Approved as to style and content by:

_____

Horace Reed, Chairperson of the Committee

_____

David Evans, Member

_____

Jane Loy, Member

_____

Mario D. Fantini, Dean

iii

ACKNOWLEDGMENTS

ABSTRACT

Toward an Instructional Design for Distance Education

Implications for Venezuelan Programs

(September, 1982)

Luis Diaz, B.S., Liceo Andres Bello

M.E., University of Massachusetts

Ed.D., University of Massachusetts

Directed by: Professor Horace Reed

Distance education is becoming a global affair. In the last twenty years the development of educational technology has altered the traditional face-to-face educational system toward the massive use of telecommunications technology to reach and train adult populations in the most remote areas of the world. The 1970s was a period of great development in both the theory and the practice of distance education. The British Open University has been successful in attracting the adult population, but attempts to copy it have not been as successful. The art of distance teaching requires support services and new forms of instructional design and educational management quite different from traditional settings. Although some essentials of effective instruction in distance education are better known today, ensuring the application of what is known is still a problem. This study, divided into four chapters, is

focused on presenting theory about distance education
(Chapter I) and describing how distance education has been
implemented successfully by the British Open University
and the University of Mid-America in the United States
(Chapter II). The development of small distance systems,
inside traditional universities, as two of the Venezuelan
cases presented in this study demonstrate, requires major
research and development of the models implemented. This
is particularly crucial in the area of instructional
designs adapted to Venezuelan conditions (Chapter III).
Specific suggestions for dealing with small distance pro-
jects in the Venezuelan context are presented as the
conclusions of this study (Chapter IV). A look forward to
the 1980s suggests continued growth in distance education
at international and national levels, with both public and
private sectors looking for better opportunities to use
the technology of distance education.

TABLE OF CONTENTS

Chapter

Chapter

LIST OF TABLES

ILLUSTRATIONS

INTRODUCTION

Distance education is a world revolution. Its evolution in print form has taken a century; in radio form, half a century; in video form, thirty years; in multimedia form, about fifteen years and in its most recent satellite-based form, five years. For thousands of years education has been basically a face-to-face relationship, personal, experiential and elitist. Suddenly it has become a distance relation reaching homes, churches, factories and schools. It has moved into integrated community information systems, linking schools, colleges and universities, promoting what is called "life-long learning." The institutionalization of that progressive movement has produced provincial, state, and in a few cases, national distance systems like the British Open University, the Free University of Iran, the Everyman's University of Israel, the Universidad a Distancia of Spain and the Tele-Universite of France. In 1976 the movement took another step when the first of a series of communications satellites enabled the delivery of package information to people in remote areas of Canada, the United States and northern Europe.

The word distance signifies that education systems are altering, that priorities are changing: the adult learner is becoming as important as the child and the need

for practical, continuous job and skill related education is developing rapidly as assumptions about traditional education are changing. In fact, education has moved from the classroom to the telex system, from the chalk board to the satellite, and from the individual to all of humanity in only fifty years.

Traditional institutions have had to adapt to the arrival of distance education. Such adaptations have occurred, as often as not, as responses to local needs and pressures. Although when considered individually these adaptations reflect the characteristics of each institution and the society it serves, when studied globally they reveal common experiences and worldwide patterns. This study attempts to explore common problems in distance education, those issues which challenge every-one and the practices in one institution which may resolve the problems of another.

The purpose of this study is to explore the possi-bilities of distance education in Venezuela, looking not only at international experience but also at the Venezuelan projects of distance education for some answers in deter-mining what instructional design would be most applicable to the Venezuelan context.

This study is divided into four major chapters. The first chapter is a review of the literature in distance

education in which some concepts are discussed in order to make clear the theoretical framework of distance education and its relation to adult learners as the primary potential population for such a mode of education. At the same time, this initial chapter explores the close interrelation between distance education and telecommunications technology. The second chapter focuses on the study of two relevant and well known models of distance education: The British Open University and the University of Mid-America in the United States. The third chapter provides insight into the development of Venezuelan distance models, making an assessment of the instructional designs used in such models to help distance students in the country. Particular attention is given to a search for the kind of population the current projects are attracting to determine whether they are young (18 to 25) or an adult population (26 and over) as is the case in many other models of distance education in the world. The fourth chapter concludes this study with the proposition of a distance education model making specific suggestions for the development of an instructional design in the Venezuelan context and presenting some alternative options for distance programs in Venezuela.

Although Chapter II presents only two specific models of distance education, it is important to highlight that

the conclusions of this study are indeed the result of
the consultation with and analysis of broader sources
and different cases of distance education. This fact is
reflected not only in the bibliography at the end of this
study but also in the fact that many ideas originating
in the various cases searched have inspired the educa-
tional model proposed in Chapter IV as the conclusions of
this work--an instructional design for distance education
to be applied in the Venezuelan context. For example, the
idea of a wide openness in Venezuelan distance models re-
flects some of the philosophical concepts of democratiza-
tion proposed by the Free University of Iran as mentioned
at the beginning of Chapter I. The ideas about a carefully
planned introductory course to help new distance students
before they get into the regular distance courses are the
result of the inspiration provided by the various intro-
ductory methods suggested in different distance cases and
particularly those used by the University Without Walls at
the University of Massachusetts where the author of this
work searched for about four months in relation to such an
issue. Similarly, many other distance cases from developed
and underdeveloped countries, including current Venezuelan
models, as well as the personal experience of the author
in the creation of the Supervised Studies of Zulia Univer-
sity in Venezuela are reflected in one way or another, in

the final model proposed.

Attached as Appendix A, a general summary of each chapter and the interrelation of chapters is presented with the purpose of facilitating an understanding of this study.

The limitations of this study are as follows. Since this study is largely exploratory, the question-naires designed to be used in interviews with Venezuelan personnel in the various distance projects served primarily as discussion guides for those interviews. The same research scheme was followed in analyzing each of the three cases presented. At the beginning of each case there is a description of the methods utilized to collect data. Major difficulty in collecting data was encountered due to inadequate organization of the available information in most of the projects, and due also to strikes in two of the national universities at the time of this investigation. This study is limited exclusively to distance education systems at the university level.

CHAPTER   I

THE THEORETICAL FRAMEWORK OF DISTANCE EDUCATION:

A LITERATURE REVIEW

Introduction

This chapter deals with some conceptual frameworks
related to the terms and concepts of open learning and
distance learning, and the general principles of these
educational systems. This chapter--a review of the
literature in those areas--provides three tentative ideas
for establishing a theoretical framework for distance
education. The first is that distance education, distance
learning and open learning are concepts closely related,
where the concept of learning as indicating "activity by
the student and a measure of self-direction" is replacing
the idea of the active teacher and the passive taught.
Clarification of such concepts is one of the concerns of
this chapter. The second idea is that these new systems
are intended to allow access to wider sections of the adult
population, to enable students to compensate for lost
opportunities in the past or to acquire new skills and
qualifications for the future. They aim to redress social
or educational inequality and to offer opportunities not
provided by conventional colleges or universities. In this

1

section the chapter will establish the principles and characteristics of open and distance learning related to adult populations. The _third_ idea is that of the relationship between these educational systems and telecommunications technology. Special reference will be made to broadcasting and delivery systems and all the multimedia approaches used by the new technology of adult education.

Section 1: Open and Distance Learning

Open learning. Open learning is an imprecise phrase to which a range of meanings can be attached. Eluding definition, its very imprecision enables it to accommodate many different ideas and aims. The two words of the phrase carry with them emotional overtones that evoked a wide response in the 1950s and 1960s when they came into use, particularly at the later secondary and post-secondary levels with which we are concerned.

The concept of learning as indicating activity by the student and a measure of self-direction is replacing the idea of the active teacher and the passive taught.

> It moves toward a new faith in the student and his capacity for learning on his own, while at the same time providing close and continuing contact between the student and the teacher. It redefines the role of the teacher as a facilitator and co-participant in the planning and design of the student's learning experience.[1]

The term "open" has many meanings, and the aura of most of them seems generous and charismatic--openhanded, open-ended, openhearted, open house, open-choice. Norman MacKenzie et al., have stated:

1. Open as contrasted with closed carried suggestions of the removal of restrictions, of exclusions and of privilege; of demolishing or lowering established barriers between subject areas; of enlarging and enriching the areas of activity and experience graded as educational. It symbolized a shift in the relationship between teacher and pupil towards that of student and adviser.

2. Perhaps the most commonly used sense of open has been the idea of creating opportunities for study for those debarred from it for whatever reasons, be it lack of formal education attainments or shortage of vacancies, poverty, remoteness, employment or domestic necessities.[2]

History of the term open. Openness in education is not a new phenomenon. It has a long, honorable history of pioneer effort of over a hundred years or more. London University was created in 1836, as a body to conduct examinations and award degrees, and by 1858 admitted matriculated candidates from any part of the world. The Work Associations, the Extension Services and the Extramural Departments of Universities are other examples of the same intention. There are parallels in many other countries, perhaps most notably in the Soviet Union where today nearly half of the students in higher education

study on a part-time basis. The use of the term in the
British Open University was mainly due to a change of name:

> The original name "University of the Air" was
> changed to Open University by the planning com-
> mittee set up in 1967. . . . This change of name
> was not due to any substantial change in the
> initial concept, but rather to considerations of
> prudence and publicity. University of the Air
> overemphasized the significance of the broadcast
> media in the learning system planned. A more
> important characteristic was the waiving of formal
> entry qualifications and as open indicated this,
> the new title was adopted.[3]

In any case, the Open University is not open in the
sense that all applicants are admitted. Various limits
are imposed, some because financial constraints restrict
the numbers of places available and some for reasons of
policy. A minimum entry age of 21 was decided upon and
various occupational and geographical quotas imposed. How-
ever, intermittent study is permitted so that a student
once enrolled is entitled to withdraw temporarily and
rejoin.

The idea of openness was more clearly expressed in
the address of the first Chancellor of the Open University
in 1969. He said:

> The Open University would be open, not only as to
> entry, but as to place (no campus), as to method
> (the use of any communication medium that promoted
> its educational purposes) as to ideas (in that it
> would be concerned not only with necessary skills
> and experience, but with all that human under-
> standing can encompass).[4]

In opposition to those restrictions imposed by the

Open University a variety of ideas have emerged. It is
relevant to compare the philosophy of the Free University
of Iran as presented in a paper by A. Ahmadi at the Latin-
American and Caribbean Meeting on New Forms of Post-
Secondary Education, in 1976:

> I believe that what makes a university qualify
> as an open-learning system is its goals and philos-
> ophy towards education, and not the mechanisms
> utilized for learning or delivering knowledge. So
> an institution of learning qualifies as an open
> education system if the goals of the institution
> are to democratize the process of education and
> to be responsive to the changing needs of the
> society. The institution should utilize all the
> existing means and methods for increasing the
> quality of education but must be accountable to
> society for the cost of education in relation to
> the quality of product it produces.
> By democratization of education, I mean
> educating those who are able, willing and want to
> learn. Society is not responsible for educating
> every citizen; rather every citizen has a respon-
> sibility to society to educate himself. This
> concept of open-learning is an appropriate one.[5]

Characteristics of open learning systems. The following
characteristics are what the National Association of
Educational Broadcasters of USA (NAEB; the professional
association linking all educational broadcasting prac-
titioners in the USA) published in 1974 as essential
elements of open learning systems:

1. The system must guide a student by eliciting,
   interpreting and analyzing goals at the begin-
   ning point and throughout the student's contact
   with the program of instruction.

2. The system must formulate learning objectives
    in such a way that they serve as the basis for
    making decisions in instructional design, in-
    cluding evaluation, and in such a way that they
    will be fully known to, accepted by or capable
    of modification by students.

3. The system must facilitate the participation of
    learners without imposing traditional academic
    entry requirements, without the pursuit of an
    academic degree or other certification as the
    exclusive reward.

4. To provide the flexibility required to satisfy
    a variety of individual needs, the system should
    make it operationally possible to employ sound,
    television, film and prints as options for
    mediating learning experiences.

5. The system should use testing and evaluation
    principally to diagnose and analyse the extent
    to which specified learning objectives have
    been accomplished. In other words, the system
    should be competence-based.

6. The system must be able to accommodate distance
    between the instructional staff resources and
    the learner, employing the distance as a
    positive element in the development of indepen-
    dence of learning.[6]

In the main text the report stated:

We are speaking of a fundamentally new institutional
concept of education. It is not simply a variation
on traditional academic tunes or relaxed entry
requirements. Open education is not a variant form
of traditional education, but the opposite of it.[7]

The NAEB drew much of its inspiration for these con-

cepts from the thinking and experimentation conducted in the

United States since 1960 which had been exploring non-

traditional forms of post-secondary education. The history,

structure and traditions of post-secondary education in the

United States provided a context different from that based

on the European tradition. They had produced more diver-
sified procedures such as the accumulation and transfer
of credit between institutions, which is another form of
openness.

For the purpose of this paper, the term open learn-
ing will be understood to be the concept developed by
Samuel Gould and Jerome Lord respectively. Samuel Gould,
chairman of the Commission on Non-traditional Study stated:

> Most of us agreed that non-traditional study is more
> an attitude than a system and thus can never be
> defined except tangentially. This attitude puts
> the students first and the institution second,
> concentrates more on the former's need than the
> latter's convenience, encourages diversity of
> individual opportunity rather than uniform
> prescription, and de-emphasizes time, space,
> and even course requirements in favor of com-
> petence and, where applicable, performance. It
> has concern for learners of any age and circum-
> stance, for the degree aspirant as well as the
> person who finds sufficient reward in enriching
> life through constant, periodic or occasional
> study. This attitude is not new; it is simply
> more prevalent than it used to be.[8]

Jerome Lord expressed similar ideas when he stated:

> Open learning represents three shifts. One is from
> teacher based education to learner based education.
> A second is a shift from school based education to
> environment based education. The third is a shift
> from the passive learning process (I am taught) to
> a more active mode (I learn, I teach, I teach
> myself).[9]

Those shifts are for the most part gradual, and
sometimes imperceptible. Some of them are hidden in the
traditional education system, and are now taken for
granted. In this report Lord said:

> . . . what is new about open learning for adults is
> not simply the rehabilitation of the creed of
> non-traditional education among most American
> post-secondary institutions. That creed never
> grew comatose, though it did fall out of
> legitimate fashion for a while. What is new is
> the desired though not the demonstrated need, to
> establish non-institutional foci and systems of
> non-traditional education.10

What is distance education? As was stated, one of the

characteristics of the open learning systems seems to be

the distance. For the sake of clarity, distance educa-

tion is described as the simple physical separation be-

tween teacher and student which distinguishes it from

the conventional classroom situation. Distance teaching

may draw an increasingly wide range of methods and tech-

nological equipment in its attempt to support the

isolated student; by and large, however, we can group

these methods into four elements, which appear in dis-

tance teaching programs in a variety of combinations.[11]

The first, and usually the central element, is the

correspondence lesson. This lesson may be presented in

the form of specially edited lectures prepared originally

for students within the university, or of the study guides

which aim to help students find the way through the lit-

erature, or specially written course books designed to

form the basis of a course followed exclusively by students

working on their own. The correspondence element generally

requires the student to complete an assignment of some sort
which is marked by tutors and returned with the sort of com-
ments which an internal student might expect from his
tutor. This two-way communication can also be achieved in
the form of taped, rather than written correspondence.
Tapes have certain advantages, especially in language
teaching. They can record messages from teacher and from
student on one tape, and they can be reused; they can
transmit spoken, as opposed to written, teaching material,
with additional emphatic content.

The second element is broadcasting. It is in some
ways a more specialized medium than correspondence in
that it presents students with voices and faces, and can
thus help to make up for the lack of frequent face-to-face
contact. Yet it is not sent to the individual student
directly but is simply made available to the student to
turn on if he or she is so inclined. It goes over the
air for anyone with an appropriate set to receive. More-
over, it makes no provision for the recipient to reply,
though it may encourage him or her to further action.

The face-to-face element may at first seem in-
appropriate to a discussion of distance teaching, where
the student's situation is essentially one of physical
isolation from the tutor; yet it is precisely because of
this isolation that personal meetings with the tutor,

and with other students, are of enormous benefit to the
distance student. Open systems frequently stress the
importance of this personal contact in some form, no
matter how slight, and moreover stress the importance of
visual and oral contact over and above the exchange of
personal letters. Almost all the open or distance
learning schemes include provisions for vacation schools
and occasional weekend seminars, telephone links, meetings
with tutor-counselors at local study centers, tours of
country areas by tutors, and so on.

The fourth element is one which is part of every
teaching situation, yet is not normally defined as a
method in its own right. In the United States, for in-
stance, it is referred to as independent study or self-
study, and it is essentially what in traditional termi-
nology might be called project work. Independent study,
and other similar unconventional methods of learning
utilized by distance education usually starts with a
contract between student and tutor in which the student's
projected study plan, means of obtaining information, and
final goal are agreed upon. The student then researches
this subject independently, guided more or less by the
tutor but also making use of local facilities such as
resources, centers, libraries, etc. The finished piece
of work, if it is approved by the tutor, is then awarded

the prearranged credit. Naturally, all types of study at all levels can, and frequently do, involve elements of individual project work, but during recent years independent study has been regarded as an acceptable route towards academic or professional credit.[12] The Open University of the United Kingdom, the University of Mid-America, the University Without Walls are good examples of institutions using this methodology.

Distance learning and the Open University. For the Open University of the United Kingdom, "distance learning systems serve relatively dispersed student populations and involve a minimal reliance on, or a significant change in the role of, formal face-to-face teaching."[13] Such systems may combine these characteristics with one or more of the features shown below:

1. Concerning students.

    a. A degree of independence on the part of the learner as to the regularity, timing and location of study activities.

    b. Enlargement of educational opportunity by providing new target populations with access to education (for example, through part-time study facilities for working adults, through relaxation or elimination of conventional academic entry requirements, or through in-

serving training courses).

2. <u>Concerning learning materials and methods</u>.

   a. A flexibility in the content and curriculum of the learning materials (for example, a modular structure, or a credit system).

   b. The provision of learning materials specifically designed for a self-instructional mode of study (including clearly formulated learning objectives, self-assessment devices and clear conceptual structuring) and containing features for the provision of feedback from students to learning systems staff and vice versa.

   c. The bringing together of learners and skilled practitioners at the local level.

3. <u>Concerning logistics and economics</u>.

   a. The centralized production of learning materials, such as printed texts, broadcasts, other individual materials, home experiment kits and so on.

   b. An optimal utilization of locally available resources (for example, teachers, libraries, meeting rooms, animaters, communication systems, business enterprises).

   c. A significantly lower recurrent unit cost

per student than obtainable through con-
ventional (classroom or equivalent) teaching
arrangements and also potentially a considerably
lower capital cost per student.

4. Concerning its flexibility.

   a. The system can be used in any kind of
   country, industrialized, developing, rural or
   urbanized.

   b. The system need not be restricted to the
   traditional content and structures of formal
   curricula. For example, they are being used
   innovatively in many countries to meet urgent
   needs such as primary and secondary level
   teacher education and the training of agricul-
   tural advisers and paramedical staff.[14]

Why open learning? Why distance education.

A. The impact of communications technology. In the
past fifty years the field of communications technology has
seen a process of invention, application and dissemination
as fast, as many sided and as universal as the developments
in education, and equally radical and far-reaching in its
long-term effect. Advances in printing, illustration and
other forms of the gramophone, the cinema film, the tele-
phone and telex, the computer, radio, television and record
replay devices--all these developments, the equipment they

produce (Hardware) and the associated learning material
(Software) have transformed, and are continuing to trans-
form, the ways by which we communicate with each other.

B. The disillusion about formal education. Most
open institutions respond not only to needs arising from
economic and social change; they also reflect the preva-
lent disillusionment about formal education. In the
higher levels of secondary and post-secondary education,
vocal discontent and alienation among students are com-
monly encountered, particularly in the western world.
Demands for relevance, for relaxation of authority, for
reform of curricula and of the examination system are all
too familiar. Large numbers of adults have closed their
minds to any further educational experience. It is to these
attitudes that many open and distance learning systems pay
attention. MacKenzie pointed out:

> The new challenges come partly from the wish
> to raise the general standard of education and
> teaching (in the first year of the Open University
> in the United Kingdom a large number of applicants
> were from non-graduate teachers who wished to
> improve their qualifications by gaining a full
> degree). . . . Some of the principal categories
> of these demands are for: a. Skills to operate
> and develop new activities created by technological
> advance (computers). b. Skills called for by the
> enlarged scale of industrial and civic activity.
> c. Opportunities for cultural and personal develop-
> ment.
>   It is these changing and complex situations
> that educational systems have to adjust themselves
> to, and it is to these that open and distance
> learning activities pay particular attention.
> Offering part-time study to adults and near adults

with other occupations, they all aim at enlarging
access. One important aim of the Open University
was to provide a second chance to those for whom
university education was not available at the
normal age.[15]

Adult learners and open learning systems: their situation
and needs.

Do adult learners differ from other students? Should
planners of open learning courses take particular pains to
meet their needs and deficiencies? Since open learning and
distance learning are typically student-centered it seemed
logical to start with the students, their situations and
requirements before moving on the principles and systems
set up to service them. In contrast to many full-time
students, open learning students study where they live--
in houses, lodgings, farms, etc. A small proportion, such
as members of armed forces, invalids in hospitals and
prisoners, live in institutions. But the vast majority
are home-students undertaking their studies as and when
these can be fitted in with their other work. In ability,
academic attainment and educational background they must be
considered very heterogeneous and many of them display
average qualities of character and perseverance.

The UNESCO commission devoted to open learning
systems at post-secondary level said:

As to motives, the vocational predominate: to
raise, enlarge, update technical or professional

qualifications in order to seek advancement, a better job, gain some skill created by technological advance.16

Many of those engaged in adult education emphasize a number of points as being frequently neglected:

1. Adults must be treated as adults, not teenagers. The wrong attitude can emerge in many small ways such as the way in which the written material is arranged and the study assignments graded and arranged. As a category adult learners must not be treated as inferior or less important than internal students (students within the university).

2. Unless they are accustomed to formal learning adult students often do not know how to study, and need help in organizing themselves for this purpose in addition to help in the other self-organizing task of creating space and time for study in their working life. Adults may have great difficulty in adapting to the greater freedom of open learning, particularly if their previous experience of education has been authoritarian and mechanical. Adult learners can display a need for very structured and conventional forms of education, finding too much liberty a source of anxiety.

3. Many adults who dropped out of basic education carry with them a sense of failure. Their reintroduction to education is more a form of therapy than of learning and, in the first stages, self-confidence rather than

academic attainment is the main aim.

4. Many adults express the need for some form of personal and social contact in their education, for the stimulus and fellowship of other students, and for a developing relationship with tutors and lecturers, and where possible, with those producing the course material. This need must be carefully considered particularly in large distance systems.

Similar considerations about adults' needs at post-secondary level are mentioned by Jerome Lord in his work Changes and Innovations in Post-Secondary Education in the United States. Lord commented:

> What is different is that the providers have started, but only started to learn when it comes to offering education to adults, you must start with what adults want. . . . The big two winners among adults are: education that relates to the development and expansion of careers and work styles, and education then helps the adults cope more effectively with the economic, social, psychological, and physical problems of life. . . . They want skills to operate and develop new activities created by technological advance; they want skills to deal with the increasing inter-nationalization and mobility of economic and political life; and they want opportunities for cultural and personal development.[17]

The same opinion about students' needs is stated by Mid-America University when Bondosar says:

> Research has shown that some non-traditional students want non-traditional programs of study. Research has also shown that there is a considerable and sustained demand for traditional subject matter which leads to traditional degree programs. Thus the content of open learning programs is as wide and varying as are the learning needs of the students who enroll in them.[18]

Taking into account that adults are the "prime target population" of open learning systems the next part of the chapter will be concerned with what is adult education, its general principles, and the relationship of these principles to the systems we are discussing.

Section 2. Principles of the New Education.
What is Adult Education

The Overview of Research in Adult Education was published in 1959. It reported:

> Any examination of research in adult education reveals a rather chaotic situation. A few pertinent areas, such as adult learning, have been explored far more thoroughly than others. Some have received almost no research attention. . . . Despite efforts to reach agreement on definitions at international seminars and conferences, there are still many difficulties about the precise and accepted meaning of terms.19

This section of the chapter deals with a group of terms that could be referred to as the principles of adult education. Because open and distance systems at post-secondary level are most concerned with adult education, the next few pages will attempt to clarify some of those terms.

What is adult education? Adult education is as old as humankind. Only in relatively recent years has the word education been associated primarily with youth. Adult

education goes back to ancient times. Confucius, Isaiah, Micah, Aristotle, Plato, Jesus--virtually all the great thinkers and teachers in history devoted their attention to developing mature minds. The term adult education has three common uses: 1. As a field of study (an academic discipline). The first Ph.D. in adult education was given in 1935 by Columbia University, where Thorndike's work on adult learning was done. Since that time more than 60 universities have developed graduate programs in adult education and an increasing body of trained professionals have received advanced degrees. 2. A field of professional practice: the term adult education refers to the entire group of organized activities carried on for adults by a wide variety of institutions for the attainment of educational objectives. It includes organized classes, study groups, lecture series, workshops, conferences, planned reading programs, guided discussions, correspondence courses, and its professionals include all those who administer, coordinate, teach, lead or counsel in such institutional programs for adults. 3. An adult activity (a part of every adult life): the term adult education is used to describe the process by which men and women continue learning after formal youth education is completed. In this sense it includes all forms of experience: reading, listening, traveling, conversing, attending

classes, participating in groups--all activities engaged in by people for the purpose of learning.

Other terms have been used to define adult education such as <u>lifelong learning</u>. For instance, in the United States legislation for the Lifelong Learning Act of 1975 stated:

> Lifelong learning includes, but is not limited to, adult basic education, continuing education, independent study, agricultural education, business education, labor education, occupational education and job training programs, parent education, post-secondary education, preretirement and education for older and retired people, remedial education, special education programs for groups or for individuals with special needs, also educational activities designed to upgrade occupational and professional skills, to assist business, public agencies, and other organizations in the use of innovation and research results, and to serve family needs and personal development.[20]

Another term widely used is <u>self-directed learning</u>. In its broadest meaning, it describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. In this concept the term <u>self</u> does not mean learning in isolation. On the contrary, self-directed learning and distance learning usually take place in association with various kinds of helpers, such as teachers, tutors, mentors, resource people and peers. There is a lot of mutuality

among a group of self-directed learners. The body of
theory and practice on which self-directed learning is
based has come to be labeled <u>andragogy</u> which is discussed
in the following section.

<u>Andragogy</u>. As described by Malcolm Knowles, the term
andragogy implies a new educational technology for the
education of adults. This term is contrasted to the term
pedagogy (the art and science of teaching children).
Knowles stated in his book <u>The Modern Practice of Adult
Education</u>:

> . . . to distinguish it from pedagogy, this new
> technology is being given a new name: andragogy
> which is based on the Greek word aner (with the
> stem ANDR), meaning man. Andragogy is therefore,
> the art and science of helping adults learn.
> Andragogy is premised on at least four
> crucial assumptions about the characteristics of
> adult learners that are different from the
> assumptions about child learners on which tradi-
> tional pedagogy is premised. These assumptions
> are that, as a person matures, 1. his self-
> concept moves from one of being a dependent
> personality toward one of being a self-directed
> human being; 2. he accumulates a growing
> reservoir of experience that becomes an increasing
> resource for learning; 3. his readiness to learn
> becomes oriented increasingly to the development
> tasks of his social role; and 4. his time perspec-
> tive changes from one of postponed application of
> knowledge to immediacy of application, and
> accordingly his orientation toward learning
> shifts from one of subject centeredness to one of
> problem centeredness.[22]

<u>What are the technological implications of the above</u>

<u>assumptions</u>? The following conclusions represent a summary of the main ideas developed by Malcolm Knowles in his book <u>The Modern Practice of Adult Education</u>:

    1. <u>For the self-concept</u>.

    a. <u>The learning climate</u>. Not only the physical environment should be one in which adults feel at ease to learn (furnishings, equipment, meeting rooms, arrangements, decoration, acoustics and lighting), but also the psychological climate should be one which causes adults to feel accepted, respected, and supported; in which there exists a spirit of mutuality between teachers and students, in which there is freedom of expression without fear of punishment or ridicule. On the other hand, the behavior of the teacher or tutor probably influences the character of the learning climate more than any other single factor. The teacher or tutor conveys in many ways whether his or her attitude is one of interest in and respect for the students or whether they are seen essentially as receiving sets for the instructor's transmissions of wisdom. But probably the behavior that most explicitly demonstrates that a teacher really cares about a student and respects his or her contribution is the act of listening to what the student says. Applied to distance learning most of such attitudes take place during the face-to-face relationship and during the very personal interactions between tutor and student (by phone, mail or interviews).

b.   <u>Diagnosis of needs</u>.   In andragogy great emphasis is placed on the involvement of adult learners in a process of self-diagnosis of needs for learning.   This aspect was discussed as an important factor for the distance learning system on pages 16 and 17 of this work.   This process involves at least three stages: 1. Constructing a model of the competencies required to achieve a given ideal, or final goal, according to the values and expectations of the teacher, the institution, and society which are amalgamated with those of the learner into a composite picture.   2. Providing diagnostic experiences in which the learner can assess his or her present level of competencies in the light of those portrayed in the model of final goal. This activity enables the learner to get feedback about the strengths and weaknesses of his or her life, in relation to the proposed goal.   3. Helping the learner to measure the gaps between his or her present competencies and those required by the model, thereby assisting him or her to establish specific directions of desirable growth.

c.   <u>The planning process</u>.   The function of planning consists of translating diagnosed needs into specific educational objectives or direction of growth, designing and conducting learning experiences to achieve those objectives, and evaluating the extent to which those objectives have been accomplished.

d. <u>Conducting learning experiences</u>. Andragogical practice treats the learning teaching transaction as the mutual responsibility of learner and teacher. In fact, the teacher's role is redefined as that of a procedural technician or resource person; he or she is more a catalyst than an instructor, more a guide than a wizard. Andragogy assumes that a teacher cannot really teach in the sense of making a person learn; that one person can only help another person learn.

e. <u>Evaluation of learning</u>. Andragogical theory prescribes a process of self-evaluation, in which the teacher devotes energy to helping the adults get evidence for themselves about the progress they are making toward their educational goals. In this process, the strengths and weaknesses of the educational program must be assessed in terms of how it has facilitated or inhibited the learning of the students. Evaluation is, therefore, a mutual undertaking, as are all other phases of the adult learning experience. This shift from evaluation to self-evaluation places a heavy burden on the teacher of adults. Such a teacher must set the example of being open to feedback regarding his or her own performance. New techniques in evaluation are arising related to those concepts. Distance education is devoted to a continuous evaluation not only of the attitude of the tutor, but also in the

materials produced, the process, the organization and so on.

2. For the experience.

Several implications flow from differences in the adult experience:

a. Emphasis on experiential techniques. There is a distinct shift in emphasis in andragogy away from the transmittal techniques so prevalent in youth education (the lecture, assigned reading, etc.) toward the more participatory experiential techniques such as group discussion, the case method, simulation exercises, role playing, field projects, laboratory method, demonstration, group therapy, independent study, etc.

b. Emphasis on practical application. Skillful adult educators have always taken care to see that new concepts or broad generalizations were illustrated by life experiences drawn from the learners. But numerous recent studies on the transfer of learning and the maintenance of behavioral change indicate the desirability of building into the design of learning experiences provision for the learners to plan how they are going to apply their learnings in their day-to-day lives.

3. For the readiness to learn.

a. The timing of learning. If the teachable moment for a particular adult to acquire a given learning

is to be captured, it is obvious that the sequence of the
curriculum must be timed so as to be in step with his or
her developmental tasks. This is the appropriate organiz-
ing principle for an adult education program, rather than
the logic of the subject matter or the needs of the
sponsoring institution. For instance, an orientation pro-
gram for the new workers would not start with the history
and philosophy of the corporation, but rather with the real-
life concerns of new workers: Where I will be working?
With whom I will be working? What will be expected of me?
How do people dress in this factory? Similar examples can
be applied for any student who begins the introductory
courses of distance education.

b. The grouping of learners. For some kind of
learnings, homogeneous groups composed according to the
developmental tasks are more effective. For other kinds of
learnings, heterogeneous groups would be clearly preferable.
The andragogical practice suggests making provisions in the
design of any adult activity for a variety of subgroups so
as to give the students a flexibility of choice in order
to discover colleagues with similar developmental tasks.

4. For the orientation to learning.

a. The orientation of adult educators. The adult
educator must be primarily attuned to the existential con-
cerns of the individuals and institutions he or she serves

and be able to develop learning experiences that will be consistent with these concerns. Andragogy calls for program builders and teachers who are person-centered, and who do not teach matter but rather help persons learn.

   b. <u>The organization of the curriculum</u>. Because adult learners tend to be problem-centered in their organization to learning, the appropriate organizing principle for sequences of adult learning is problem areas, not subjects. For example, instead of offering courses on Composition I and Composition II, andragogical practice would put in their place Writing Better Business Letters and Writing Short Stories.

   c. <u>The design of learning experiences</u>. The opening session in an adult educational activity would more appropriately be titled, "What are you hoping to get out of this course?" instead of "What is this course all about?" A diagnostic exercise through which participants would identify the specific problems with which the teacher and the institution are expecting to deal, along with the students' problems, are negotiated between teacher and students.[23]

<u>Can the concepts discussed be applied in distance learning</u>? In fact, most of the concepts or principles pointed out can be applied to distance and open learning. Most projects,

for instance, provide the facilities for an adequate psychological climate. The face-to-face relationship between tutor and learner tends to be more individualized than in any other formal system. The adult tends to be more comfortable in this relationship than in the traditional relationship of the classroom. The diagnosis of needs, the planning process, the provision of learning experiences and the self-evaluation (mentioned as principles of andragogy) are important elements in most of the guides and introductory courses for open and distance systems. These guides take different names but with the same purpose. Some titles include: guide to self-directed study, learning skills guide, a guide to learning how to learn, or orientation guide. A good example is given by the Learning Skills Guide of the University Without Walls working at the University of Massachusetts. It points out:

> Self-directed learning skills groups are an attempt to turn on our potentials and strengths. The groups could be one way of helping you to get back in touch with your intuitions about learning, and a way to improve your ability to structure your learning around your needs, interests, and personal style.[24]

Similar considerations are explained in the following excerpts from Roger Williams University Without Walls Orientation Guide:

1. You start where you are and construct your own curriculum with the assistance of a facilitator.

2. You use the world as a resource instead of

primarily classrooms, libraries, and extracurricular activities.

3. You choose your own facilitator.

4. You are bound by no time requirements except those natural ones which you impose yourself.

5. You request your own degree and set up your own degree evaluation procedures.[25]

An interesting example where needs of non-traditional adult learners and societal needs are combined is the inquiry project developed by the University of Illinois whose main purpose is:

> The system provides a means of identifying the needs of clients as they enter the system and for directing their attention to particular information files and support services. A network of linkages with educational counseling support systems in the community (distance course, traditional courses, labor market's needs, etc.) will be established for efficient referral when these services are needed.[26]

As we can see this model is an example of how distance education can be used to change the orientation of learning as mentioned on page 25 of this chapter.

The next section of this work will deal with the means used by open and distance systems to put in practice the principles explained above.

Section 3. The Technology of Adult Education

This section deals with the kind of educational

technology that is mostly used for open and distance learning systems. It attempts to point out not only the role of telecommunications technology in helping adults learn at a distance but also the educational technology and the multimedia approaches that are feasible for these systems.

Educational technology. Concepts. The challenges and problems arising from the simultaneous and mutually influential developments of communications technology and education have originated what is widely called Educational Technology.

For the purpose of this work and because such a definition integrates most of the elements of open and distance learning, the concepts of David Evans in his work Technology in Non-Formal Education have been included. Evans explained:

> The term educational technology, or as it is sometimes called, instructional technology, has a wide variety of meanings. The emphasis runs from the traditional focus on electronic hardware, to the programming software and the skills of the teacher, to a more basic definition of technology as the combination of resources in a organizational structure to address specific educational needs.
> The technology of education in this sense is the choice and manner of combining the various inputs for the educational process: human resources, both trained and untrained, physical resources ranging from texts to electronic hardware, to buildings and the organizational structure which provide the framework within which the educational process takes place.[27]

<u>What kind of educational technology is appropriate to
distance learning</u>? Considering the four elements of dis-
tance education described on pages eight and nine of this
chapter: 1. Correspondence lesson; 2. Broadcasting;
3. The face-to-face element, and 4. The method itself, and
taking into account the evidence from large distance
learning systems in the world, we can draw some pre-
liminary conclusions about those technologies which have
been receiving the most practical attention in field pro-
grams.

Adopting the category used by Evans, large-scale
communications media, one can say that broadcast television
and radio are the major technologies used not only for
reaching at a distance, but to reform the curriculum itself.
This is demonstrated in the well-known models of formal
systems in El Salvador, the Ivory Coast and the Israel
Television Center which used, during the last decade, large-
scale classroom television facilities to teach an adult
population coming to the school to watch television and
receive varying degrees of supervision from tutors.

Another form of systematic educational broadcast
television is demonstrated in the Open University of the
United Kingdom. In this model the broadcast component
is an <u>integrated element</u> in the total educational pro-
vision supplied by a unique partnership between the
University and the BBC. In most other countries

educational broadcasting is, for one reason or another, less integrated with the broadcasting systems.

Because of its importance to the open learning systems, broadcasting has been studied extensively by different centers and international commissions devoted to understanding the impact of these educational systems. Some conclusions have been reached and could be summarized as follows:

1. For reasons due partly to history, partly to the wide scope of national broadcasting, services are commonly not under the control of educational entities. Where broadcasting services are controlled by government departments, such departments are usually the Ministry of Education, or Information and Broadcasting. Where broadcasting is controlled by a corporation, the corporation has an overall mandate. The responsibilities of these bodies normally include a responsibility for educational and cultural broadcasting in a very wide sense, outside the control of a Ministry of Education.

2. Educational broadcasting systems based on educational institutions such as universities are commonly small in scale and without great resources.

3. Educational broadcasting seems likely to remain for many years the cheapest way of transmitting educational material to large audiences, and is therefore likely to be

the first solution to be examined by those contemplating the establishment of open learning systems in developing countries. But in other circumstances and as recording technology is further developed, it is important to regard broadcasting as merely one of the many modes, each with its own characteristics, of supplying audiovisual learning material.

4. All the evidence to date indicates that the full potential of educational broadcasting, when used as part of a deliberate system of learning, is obtained only when the broadcasts are fully integrated into the educational entity. The best use of this entity may require explanation, mediation and tutorial work at the point of reception, and the supply of staff competent to perform these functions may be a necessary component in the whole learning system.[28]

Further consideration of the advantages and "pedagogic values" of broadcasting is not the primary purpose of this work, but important conclusions have been reached by the Open University.[29]

The choice of media for distance systems: The multimedia approach. In the present stage of verified information no special pedagogic magic can be attributed to any of the available educational media. Each medium has its own

strong and weak points. There is no standard or ideal
combination. Some systems make no use of radio and a
larger number make no use of television. Some dispense with
face-to-face teaching. Perhaps what must be stressed is
that success depends on the close and effective knitting
together of whatever resources are used. For instance,
the UNESCO Institute of Education in Beirut reported:

> It must be said that the several media involved in the
> Institute's multimedia approach have little that is
> innovative about them if they are considered in-
> dividually and separately. All of them have been
> used, at one time or another, and in different com-
> binations, in the training of teachers, pre-service
> or in service. The uniqueness of the Institute's
> experiment lies in the integrated manner in which
> these different media are being used. The key
> concept in the Institute's multimedia approach is
> integration--a fusion of these media into one
> organic whole in which there are clearly observable
> interrelationships.[30]

The report on the British Open University made the
same point:

> The unique character of the teaching obviously resided
> not in the use of any or all of these teaching media,
> but in the degree of integration achieved and in the
> organic relationship between the planning of course
> content and the planning of teaching methods for
> each course.[31]

A great deal of research has been devoted to ex-
ploring the capacity of the broadcast media for different
teaching tasks or different subjects, but very few pre-
cise, comparative studies have been conducted of the
effectiveness of the various educational media in specific
contexts. Professor Wilbur Schramm explained:

> . . . given a reasonably favourable situation, a
> pupil will learn from any medium--television,
> radio, programmed instruction, films, filmstrips
> or others. This has been demonstrated by hundreds
> of experiments. . . . In general, the same things
> that control the amount of learning from a teacher
> face-to-face also control the amount of learning
> from educational media; among others, the relevance
> and clarity of the content, individual abilities,
> motivation to learn, attention, interest in the
> subjects, respect and affection for the teacher,
> clear and specific objectives, emphasis and
> replication of the central points to be learnt,
> and rehearsal by the learner.[32]

There are presently available a very wide range of
media useful to distance learning. Broadly classified
they fall into the following groups:

1. _Printed material_. Correspondence texts.
Specially written textbooks. Set books already published.
Packets of pictures. Directed reading using the resources
of libraries (including newspapers and periodicals).
Assignments of work for tutorial comment, or for computer
assessment. Self-assessment problems, exercises and ques-
tions. Instructional and experimental kits to be used at
home.

2. _Audiovisual materials other than print_. Slides,
filmstrips, film loops and film audio tapes. National or
local radio or television broadcasts. Locally made video
tape.

3. _Practical activities_. The use of home science
kits. Directed work in local laboratories. The under-
taking of research activities (e.g., social surveys or

field work, collecting of geological specimens) in the student's locality.

4. <u>Face-to-face teaching and other interpersonal activities</u>. Counseling (on choice of courses, methods of study, etc.). Study by correspondence including communication by telephone. Lectures and seminars. Self-help groups. Supervised professional activities. Attendance at summer schools or other short residential courses. Attachments for short periods to schools, colleges or community centers. Internships, or directed travel, etc.

As was pointed out at the beginning of this chapter, most specialists in open learning systems consider printed material as the central element in any educational project. There are several reasons for that approach:

1. Printed material as an expository medium is familiar to students. It allows them to go at their own pace and pause over their difficulties. It leaves them with a permanent record for revision. It can set out problems and exercises, including multiple choice questionnaires for computer marking for students to undertake at their convenience.

2. It can provide the nucleus around which an integrated sequence of broadcast programs, directed activities, discussion groups and face-to-face teaching can be built up as resources allow.

3. As an element in correspondence education, printed material is the basic and only method of personal instruction capable (wherever postal services exist) of indefinite expansion to new subjects and new audiences.

4. Correspondence study has also the practical advantage that unless it is geared to broadcasting (which has fixed dates), entry to the course, suspension and renewal can be adjusted to the student's convenience, within the limits of the system's administrative tolerance. The uses of recorded cassette material does not affect this flexibility, nor does it need to reduce the pacing effect of periodic issues of the printed learning material.

5. Finally, the stimulus to learning which the learning package offers depends primarily on the teaching skills which it incorporates, and on the sense of progressive mastery of the subject which the student derives from it. An attractive format and typography together with well produced illustrations also have a part to play in assuring the student that he or she is in good hands, that the teaching organization considers him or her important, and that learning can be a pleasure.

The differences between countries: appropriate technology. The distinguishing advantage of broadcast and media technology lies in their reach. But considered as a means of

dissemination their availability varies sharply from
country to country, and within each country they vary
markedly in cost. Because it is apparent that various
educational media can teach a wide variety of subject
matter, with broadly equivalent success, considerations
of availability, sophistication (appropriate technology)
and cost, both to the providing organization and to the
individual student, must inevitably play a major part in
the determination of which media should be used, and in
what proportions. Thus, for instance, the planners of
Israel's Everyman University believe that the use of tele-
vision will be greatly limited by two practical con-
straints--limited air time and cost of production and
transmission--and should be used only when pedagogically
essential. Japan, with its prosperous economy and in-
tensively developed use of television, has a broadcast
university which is providing eighteen hours of television
a day. The British Open University, operating in a small
country with good communications, can insist that its
students should attend summer schools. This would be
plainly impracticable for the Memorial University of
Newfoundland, which serves remote rural communities, some
as far as 800 miles away from the center.

Working within the limits of the practicable and the
economically possible, each teaching organization is,

however, obliged to allocate particular media to particular
purposes. In the absence of clear research findings, it
must make commonsense judgements, building as best it can
on its own experience and that of others.

The new shifts in the learning concept. At least five major
factors have to be taken into account in order to under-
stand open and distance learning. Those considerations do
now and will continue to influence greatly the development
of policy, programs and projects in the area of adult open
and distance learning. These are:

1. Adult populations and their aspirations

2. Access routes

3. Implementation problems

4. Technological considerations

5. The results of research.

Adult population and their aspirations. Shifting to the
client. It is fair to say that the impetus toward the
further popularization of open and distance learning
systems has come mainly from the providers of education.
It is extremely difficult, however, to get the providers
of education to concentrate on the centrality of the
learner. They tend to try to start with what they have,
and go out to find people who want what they have.

According to the new theories of andragogy more and more projects arise from specific needs or wants of the adult population. What is new in this kind of system is the shifting emphasis to the needs of the client. Providers have begun to learn that when it comes to offering adult education to adults, one should start with what adults want. (See pages 15, 16 and 17 of this chapter.)

A basic belief underlying open learning systems is that the true end of education is to create the lifelong, "self-directed learner committed to excellence in his learning," to quote the Minnesota College phrase. The idea is that the holder of a degree (from this college) is expected to be a whole person (not merely a knowledge-able person), capable of further learning and displaying social awareness, civic, recreational and vocational competence, active in his or her society, and alive and responsive to the changes taking place around him or her. Similar thoughts were conveyed in the address of the Chancellor of the Open University in 1969.

This belief leads to other ideas concerning the responsibility of students towards their own education. The conviction is that all students should have respon-sibility for and authority over, their own individual education. They should be responsible for developing their own programs of work, setting out components of the

plan, and proposing how and by whom their achievements should be assessed. They are assisted by the staff of the institution to assess themselves, their previous educational experiences and present attainments. The staff also advises students as to the facilities upon which they can draw to make their plans. When the plan has been agreed upon between the parties and the proposed work has been completed, the institution awards the degree.

Access routes. Using different methods of outreach. The routes by which adult learners can explore new kinds of educational opportunities--open and distance systems among them--are various and fascinating. They are designed for a whole variety of reasons--because they are easier, cheaper, nearer, more resourceful, more efficient or more satisfying. The home is receiving a lot of attention these days. As one adult put it, "it is open 24 hours a day to me." The home is, in fact, currently a significant factor as an access route for most distance systems. It simply means that education can take place where the adult spends a great deal of time. With the development of the video cassette and cablevision the potential of the home as a place of study has quickly increased.

Access is a crucial word. It can be provided by offering adults the opportunity to make their own

educational choices in league with institutionally based scholars or community based experts. Or it can mean a region providing a large scale multimedia based education delivery system complete with nearby learning centers, free watts lines, peer-group meetings and materials distribution. Open learning stretches from a one to one learning contact to a large regional system.

The use of media is a crucial category of access, and some say that nothing opens up education like the mass media. Television via satellite has been used to offer continuing education and retraining programs in the Appalachian region of the United States. The Medical Education Television Network in Indiana uses television to link seven campuses, 26 hospitals, and medical doctors in their own homes.

One of the largest experiments in the United States is the regional open learning project of the University of Mid-America. Through its state delivery systems, the UMA is currently using open broadcast and cassette television, audio cassettes, film, visual aids, and print material to deliver credit and noncredit courses to adults in the states of Nebraska, Missouri, Kansas, Iowa and South Dakota.

Business and industry are another access route, offering educational services and courses to employees,

or combined programs between companies and universities.
For example, Stanford University uses a closed-circuit
TV network to offer courses to several dozen companies
in its immediate area.

Finally, there is a broad array of access routes
that cannot be easily categorized. Methods of assessment
of experiential learning, particularly the pioneer work
done by the Council for the Advancement of Experiential
Learning (CAEL), grope with the problems of measuring what
an adult has learned, not where or by what method.

Implementation problems. There are forces of resistance
to open learning. Most traditional universities are
afraid of the development of open learning systems. They
urge that "open learning alternatives be built upon the
existing resources by linking existing resources, primarily
for the benefit of the underserved and second chance
clienteles."[33] It seems that open learning systems are in
a second category which must be linked only to traditional
and experimental universities.

Financing is the big problem for open learning
systems. New methods of financing, other than merely
public, have to be found. On the other hand, it is not easy
to know whether commitments to open learning systems and
programs are cost effective. Very little has been done to
try to measure the economic impact of individual factors

of open learning. However, a number of studies have been done of large-scale, multimedia-based open learning projects in other countries. The basic finding of these studies is that such large-scale projects are essentially cost effective. (See, e.g., McIntosh, 1980 and Wagner, 1973).[34]

Another important problem is the matter of control of the quality, quantity, and conditions of learning. Face-to-face education is an axiom of the traditionalists in higher education. Therefore, the farther the learner is from the origination of the teaching, the stronger the tendency to believe that the learning will be less satisfactory. Traditional education has grown comfortable with the idea that face-to-face contact is essential for the best teaching and learning. Many providers are even reluctant to identify the major variables in the distant-learning process or to experiment with various compositions of those variables to determine what works best for whom. To investigate this process implies the investment of time and money which in most cases are not available. (See Smith's study of eleven open learning projects in the United States.)[35]

Technological considerations. The fourth area of concern is the technology available to those wishing to get into open learning. Evans pointed out interesting aspects of

the use of technology in non-formal educational meetings
and particularly the importance of the Technology of
Educational Organization; in other words, the relationship
among types of learning resources used, the selection and
organization of the learners, and the relationship between
the learning enterprises and the expectations of the adult
learners. In this sense he concluded:

> Non-formal educational technologies are in-
> creasingly moving toward the more open options,
> and are recognizing that the ultimate effective-
> ness of the process depends more on the involve-
> ment of the learner than on the efficiency with
> which communications technologies deliver a pre-
> determined set of messages to the learners.36

Detailed explanations about the use of educational
technology in distance systems can be seen in section
three of this chapter, pages 27 to 34. For other con-
siderations about the use of appropriate technology see
Evans' study of Technology in Non-formal Education.[37]

Results of research. Interesting conclusions about this
matter are offered by Jerome Lord in his work Towards
Lifelong Learning: Changes and Innovations in Post-
Secondary Education. He pointed out:

> 1. Among adult learners it is possible to describe
> differentials by two different sets: a. Those that
> relate to the learning process, or experience:
> e.g., learning style, medium, media, content,
> services, and conditions of delivery and assessment,
> and b. the learner variables: age, educational
> accomplishment, sex, work, socioeconomic level and
> geographical location. A great deal of research has

gone into the initial discovery of the learner
variables but little on the habits and conditions
that apply to the learning process.

2. Basic research shows that distance is an important
controllable factor in learning effectiveness, that
media are as often as not, as good as, or better than
face-to-face education services. There is a common
ground on which to start when it comes to thinking
about the learners who presumably are the beneficiaries
of open learning initiatives.

3. When individualization is tried, we come to the
barrier of our ignorance. Yet one of the many chal-
lenges of open learning is in the opportunity it can
provide for just that kind of individualization, even
in circumstances where mass media play a role in
instruction and assessment. . . . It is simple to say,
yet we are at the point in open learning where we still
often apply the ideology of mass instruction (learning
packages, television production, computer instruction)
to the individual. If there is to be individualization,
evaluation and research to date show us that learning
must be individualized to the point of the individual's
success.

4. However, the larger the adult learner population
involved in open learning, the greater the need to
label any applications of open learning methods and
opportunities experimental. It is a simple admission
of the fact that we cannot expect to transfer to the
domain of individual learning on a more open basis the
dogmas and assumptions of traditional classrooms. The
learners have to be differentiated. This is an expen-
sive, complicated, sophisticated, time-consuming
business. But it is the logical goal toward which
the phenomenon of open learning could take us . . .[38]

Conclusions

This chapter has been devoted to the study--through

a literature review--of various terms such as andragogy,

distance education, open learning, adult education and

educational technology, mainly at the post-secondary level.

About the terms open learning and distance education.

    1. Open learning is at present a widely disparate set of responses to a variety of needs, wants and opportunities. It is a vague term. The frontier appeal of the word open suggests that its predecessor, or alternate (the present school system) is closed, or at least very restricting. At the same time the term suggests that it is a purposeful social intervention designed to accomplish equity, and in general to right educational wrongs.

    2. It is very clear that the term open learning has a long history in education. What is new is the attitude toward de-emphasizing time, space and method as was defined not only by the Open University but also by Gould, Lord, and the National Association of Educational Broadcasters of USA.

    3. Open learning as it is represented in the Free University of Iran, the recurrent education designs being considered in America, and the particular models of other countries are substantially different. The variety and magnitude of the methodologies that have been called into use in open learning have definitely expanded access to education, changed the conditions under which people learn and teach, provided bases for experimentation, and increased new managerial productivity.

4. Distance is, in fact, one of the characteristics of open learning systems in the context of post-secondary open systems. Distance education generates a need for using new forms of communications between student and tutor (or institutions). This new kind of relationship was explained on page 13 as the impact of telecommunications technology in education.

5. The primary elements of a definition of distance education are at least:

a. The separation of teacher and learner which distinguishes it from face-to-face education.

b. The influence of an educational organization which distinguishes it from private study.

c. The use of educational technology or technical media, mostly print, to unite teacher and learner and carry the educational content.

d. The provision of two way communication so that the student may benefit from or even initiate dialogue.

e. The possibility of occasional meetings for both didactic and socialization purposes.

6. Four elements were considered in this study as the main elements in a distance teaching relationship. These were: 1. The correspondence lesson (printed material), 2. Broadcasting, 3. The face-to-face element, and 4. The method used for teaching at a distance which

includes some of the characteristics mentioned as flexi-
bility, definition of objectives, needs assessments, self-
evaluation, etc.

About adult education. The second part of the chapter
attempted to clarify the main concepts used in adult educa-
tion. In that sense, adult education, lifelong learning,
self-directed learning, student centered activities are
all terms that in their broadest meaning describe not only
the kind of courses or experiences that institutions can
design but also those terms describe a process in which
individuals take the initiative, with or without the help
of others, in diagnosing their own learning needs, formulat-
ing learning goals, identifying human and materials re-
sources for learning, implementing appropriate learning
strategies, and evaluating learning outcomes. As was
stated, in most of these concepts the term self does not
mean learning in isolation. On the contrary, self-directed
learning usually takes place in association with various
kinds of helpers, such as teachers, tutors, counselors,
resource people and peers.

In describing the details of the process pointed out
in the above paragraph, the term andragogy was explained not
only as the art and science of helping adults learn, but
also was highlighted for the technological implications

that such a process generates for distance education. Such implications can be applied, at least in theory, to open and distance learning. Some examples were presented on pages 28 and 29.

The third part of the chapter was devoted to studying the educational technology useful to distance education and open learning systems. In that sense, it was understood that educational technology is a broad combination of hardware and software. In other words, it is the combination of different inputs for the educational process: human resources, materials resources, organizational structure and so on. All these elements, integrated in a system, can be mixed in various ways according to the needs assessment, the objectives of the project, strengths, weaknesses, etc. From pages 29 to 35 the chapter described the various media that could be used for distance and open education. Most of those means matched up well with the four elements of distance and open systems mentioned in conclusion six. It was pointed out that the relevance and success of any particular combination of media used would reside primarily in the degree of integration of such teaching media with the organic whole (organization) which generates it in a clear and observable relationship.

The final section of the chapter--the new shifts in the learning concept--presented what the literature

considers as very important factors in understanding open
and distance learning. At the same time that part of the
chapter could be considered as an introduction of the
most common problems and contradictions faced by open
and distance systems, and could be summarized as follows:

1. Satisfying individual needs (shifting to the
client) vs. administrative implementation (cost-benefit).

2. Using different methods of reaching the adult
population vs. concentration in large scale communication
media (broadcast television and radio).

3. Sophisticated and imported technology vs.
appropriate technology.

4. Innovation vs. traditional resistance.

5. Innovations developed inside traditional struc-
tures vs. total new educational structures.

6. Economics of scale vs. small distance projects.

7. Individualization of education vs. mass education.

8. Open and distance systems for adults vs. open and
distance systems for younger population.

C H A P T E R   I I

THE PRACTICAL FRAMEWORK OF DISTANCE AND OPEN LEARNING

SYSTEMS. TWO CASE STUDIES: THE OPEN UNIVERSITY OF

THE UNITED KINGDOM AND THE UNIVERSITY OF

MID-AMERICA

Introduction

The main purpose of this chapter is to present two
relevant and well known models of open and distance
learning. The first, the Open University of the United
Kingdom has been chosen not only because it is a major,
well developed system, but also because it represents the
major success in developments of this kind which has given
a substantial impetus to similar projects in different
countries around the world including those projects
developed in Venezuela. The second model, the regional
university of Mid-America in the United States, was chosen
because it represents a possible prototype for other re-
gional universities of distance learning and is similar
to some models developed in Venezuela.

The pace at which new systems have begun to emerge
and the diversity of their purpose and structure have
made it difficult to collect and classify information of
use to those engaged in their development, and to those

52

planning other similar projects. On the contrary, the two models selected facilitate access to any kind of information relevant for this study.

One of the reasons for using a case study approach is the belief that the needs and circumstances of each example could be so different that generalization would be not easy, and probably not very helpful. Used with care, however, case studies may provide some stimulation and guidance at the preliminary planning stage and help in deciding which systems (or combinations of them) should be studied in detail for a further implementation in a different environmental or national context.

Open learning has begun to make a successful impact as a principle; it has been demonstrated that it is needed and that institutions based upon this principle can operate effectively. What those involved in its further development now need is information, research, training and interchange at the operational level. The next task is to devise appropriate ways this can be achieved.[39]

The following outline has been used as a guide of the primary aspects studied in the two cases mentioned:

1. The national context
2. The origins and history of the project
3. Educational purposes of the model
4. Courses provided. The different purposes
5. The academic model: The elements of the courses

    a. The printed material

    b. The broadcast element

    c. The multimedia approach

    d. The delivery system

    e. The tutorial element

    f. Student progress

6. Student numbers and characteristics

7. Organization, control and staffing

8. Finance

9. Conclusions

The Open University of the United Kingdom

Introduction. The impact of the Open University model on
similar models in the world is very well known. The
Center for International Cooperation and Services of the
British University was established in 1974. In a two
year period the service handled over 70 projects, in-
volving nearly 100 Open University staff members in over-
seas assignments in 14 different countries. It has been
involved in a number of major projects such as those at
the Allama Iqbal Open University in Pakistan, Everyman's
University in Israel, the Fernuiversitat in the Federal
Republic of Germany, the Free University of Iran, the
State University for Distance Education in Costa Rica
and the National Open University in Venezuela.

Other countries for which the service was asked to carry out technical studies and training include Colombia, India, Kenya, Saudi Arabia, Sri-Lanka and Tanzania. In addition the CICS participated in a number of projects at the request of, and funded by, UNESCO, the Inter-American Development Bank, the British Ministry of Overseas Development, the British Council and the Inter-University Council.[40]

This study of the British Open University intends to tell the story of its invention, creation and development and to bring out the circumstances and influences that have affected it.

The study deals with the different courses offered by the university mostly at the first degree level. It does not deal with postgraduate courses or with consultancy services.

The conclusions call attention to the characteristics that could be of interest to those projects developed in other countries, particularly in Venezuela.

What is the Open University? The creation of the Open University in 1969 was a major initiative by the British government in response to changing educational circumstances which will be outlined later in this chapter. In terms of student numbers the Open University is now

Britain's largest university. Eight years after its in-
ception it had more than 65,000 students. In the same
period, over 21,000 people had graduated with the Univer-
sity's bachelor degree. Currently it is offering over
140 degree level courses for students, as well as a
range of postgraduate studies. In addition, it has
recently started to offer courses, some of a vocational
nature, for adult students who do not wish to follow a
full degree program. With its partner, the British
Broadcasting Corporation (BBC), the University employs
nearly 2,700 full time staff, assisted by 6,000 part-time
tutors. It has 250 local centers throughout the United
Kingdom and has so far published 2,000 correspondence
texts. With the BBC it makes over 800 television and
radio programs annually and its broadcasts during the
teaching year total some 60 hours weekly.[41]

The Open University was by no means the first in-
stitution to use correspondence, radio and television for
educational purposes. It was, however, the first to
unite them in a major national distance learning system,
combining an autonomous university structure with:

1. a credit based, highly flexible course structure
designed for part time independent study;

2. an open entry policy: no previous qualifica-
tions are required for admission (but in general, only
people 21 years of age or over are eligible);

3. a whole variety of distance teaching methods;

4. a working partnership with a national broad-casting authority.

The national context. 1. The United Kingdom is a compact, highly industrialized and predominantly urban country. Its population is about 67,447,000. It has a well developed communication system, good postal services and a well established public service broadcasting system with two television channels at its disposal, all of them with national coverage.

2. The educational system is at all levels pre-dominantly publicly controlled and publicly financed. There are at present no universities or institutions of higher education outside the orbit of the state-financed system. The universities, in spite of being state-supported, enjoy a very high degree of academic and administrative independence.

3. Since the Second World War, the United Kingdom has been engaged in remedying the deficiencies of its educational system and has embarked on a massive program of educational expansion. In 1939, there were only 50,000 full time students at the 24 then existing universities. By 1972, 20 new universities had been founded and the total number of students was 246,000.

4. A million and a half students (mostly adults) attend day-release or evening classes in colleges of further education or technical colleges maintained by local education authorities. Most of them are aiming for lower level technical and vocational qualifications. A further million and a half are enrolled in classes, mainly of a cultural or recreational kind, at evening institutes under the same authorities.

5. To complete the picture, it should be added that nearly all the United Kingdom universities have extramural departments which provide courses and organize classes of a nonvocational nature. These departments work in partnership with local education authorities. In 1971, more than a quarter of a million students were enrolled in such classes, mostly for short courses, and only a very small minority could be identified as serious students working at the university level on sustained courses.

6. Another background factor has had a great bearing on the development of the Open University. Teachers from elementary schools, from secondary schools and from special education areas are seeking university degrees. The long term national policy is to establish a wholly graduate teaching force, but there will be a continuing output for many years of non-graduates from

colleges of education of lower level. In the meanwhile, graduates are on higher salary scales than non-graduates.[42]

As can be seen from the above national context, very specific, favorable conditions existed in England for the creation of the open system, not only because of the existence of clients and very particular problems to be solved, but also because of the prior experiences on the country in similar educational activities. The geographical conditions of the island and the communications services at national level were among other important factors for the development of a national open university.

At the same time other conditions were present: 1. The continuing increase in the number of students, mostly adults, coming from the secondary level or non-graduate colleges with aspirations of admission into the university who failed to achieve the minimum entrance standard currently set by universities. 2. As described below the political and subsequent government support from the very beginning for the project of the "University of the Air" was a major factor in the creation of this educational system. For these various reasons the Open University must be considered a very "sui generis."

The origins of the project. Brief history. The idea of a

national institution which would remedy the deficiencies of British university education and contribute to a fuller use of the national pool of ability derived from a number of scattered sources, owes its embodiment to the British politician Harold Wilson. The initiative in establishing the Open University came from the Labour Government of 1964-70, and its role in the creation of this novel political institution was decisive.

On September 8, 1963, Mr. Wilson, the leader of the Labour Party, then in opposition, announced that his party was working on plans for a University of the Air. The new institution would provide through television and radio programs, reinforced by correspondence tuition, tutorial classes, and short residential courses, a new way of obtaining a formal university degree. Mr. Wilson's party took office in the autumn of 1964 and, early in the next year he used all his political power to develop that initial idea. The university thus had its origins in the realm of personal conviction, and not in any systematic survey of educational needs of the adult population. It found a place in the Labour Party's plan for education without public debate.

The subsequent deliberation of the advisory committee resulted in an official paper which met with a hostile reception (mostly from the traditional university system).

The decision of the government to go ahead was in no sense a response to pressures from outside, or to public demand. It was a political act of faith, calling for determination. The scheme was consonant with the basic philosophy of the party as the champion of the educationally underprivileged, and with its emphasis at the time on its role in making the fullest use of the latest technologies for the modernization of the United Kingdom.[43]

The advisory committee was succeeded in September 1967 by a government appointed Planning Committee. The business of the Committee was: 1. to produce a workable plan which would enable the project to start; 2. to develop public relations, and consult with other institutions; 3. to secure and enlist the expertise in educational broadcasting of the BBC for the production and transmission of the radio and television required, and 4. to recruit the senior staff and to select a site for the headquarters of the university.

The report of the Planning Committee was completed by the end of 1968 and published early in 1969. The same year the university began its operations.

Main purposes of the model. The objects of the Open University are to provide opportunities, at both undergraduate and postgraduate level of higher education, to

all those who, for any reason, have been or are being pre-
cluded from achieving their aims through an existing
institution of higher education. The main work of the
Open University focuses upon adult students (21 years or
more).[44]

Courses provided. The Open University offers three pro-
grams of study--undergraduate, postgraduate, and self-
contained post-experience courses.

Undergraduate. At the undergraduate level the
university awards the BA and BA honors degrees. Degrees
are built up on a credit system. A credit is awarded to
a student who completes a one-year full credit course on
the basis of continuous assessment and a three-hour
final examination. Six undergraduate credits qualify a
student for the ordinary degree and eight credits are
needed for the honors degree.

Because a one-year credit course requires 32 weekly
units of work (each demanding 10-14 hours of study), it
is expected that many students will take about six years
to get an ordinary degree. However, it is possible to
graduate in three years because students can take a
maximum of two full credits courses each year. If a
student has already successfully completed a period of
study at a higher educational level elsewhere, he or she

may be awarded up to three general credit exemptions. In
this way the Open University enables students to "top up"
their existing qualifications to degree standard.

The university's courses are offered at four levels--
foundation, second, third, and fourth. Many courses at
second and third level are offered in half credit modules
in order to allow wide student choice in the structure of
the degree. All students start with a full credit founda-
tion course, a broadly based introductory course which
assumes no prior knowledge of the subject. These inter-
disciplinary courses are offered by five of the faculties--
arts, social sciences, mathematics, science and tech-
nology. The sixth faculty, educational studies, starts its
courses at second level. After foundation level, students
can make up their own programs of study by taking virtually
any combination of courses.

Postgraduate. Postgraduate studies are at present
all research-based. The three higher degrees, BPhil,
MPhil and PhD--are awarded when a student completes a pro-
gram of research or advanced study and submits a disserta-
tion or thesis. A student's progress is assessed by means
of research credits which are earned by completing three
months full time work or its part time equivalent. It is
necessary to obtain a required number of research credits
before submitting written work for a degree. The award

of the degree is based solely on the examination of the completed dissertation or thesis. Of the university's 300 postgraduate students (1978), 40 full time students are supported by grant-giving bodies. These students are based at the university's headquarters in Milton Keynes and at the Oxford Research Unit. Another 220 post-graduate students are working independently on their own time and at their own expense and are supervised jointly by Open University academics and by external supervisors appointed by the university. In addition, 40 members of the university's full time staff, mostly course and re-search assistants, are working toward higher degrees.

Post-experience courses. There are fourteen post-experience courses (1979), which are self-contained and vary in length from five to ten months. These are non-degree courses designed for students who wish to extend their knowledge of their own career or acquire knowledge of a new field.

Post-experience courses use all the elements of the undergraduate teaching system; some courses carry credit that may count toward a BA degree if a student decides later to register for a degree program. A course certificate is awarded to students who complete the course work and pass a final examination. Students who finish the course but do not sit for the examination receive a

Letter of Course Completion.[45]

The academic model: outline of the learning system. The
outline of this learning system should include at least
three elements. The first, the degree structure was
explained above. The second, the course components,
and the third, course material production, will be
discussed in this section.

The courses developed by the Open University repre-
sent a unique and highly integrated blend of a wide range
of teaching materials, for example: correspondence texts,
broadcast and study notes, assignments, self-test ques-
tions, television programs, radio programs, summer
schools, home experimental kits, computer practice, set
books, tuition and counseling.

The unique character of the teaching obviously
resides not in the use of any or all of these teaching
media, but in the degree of integration achieved and in the
organic relationship between the planning of the course
content and the planning of teaching methods for each
course.

The course components and the course material production.
The table below (taken from The BBC and the Open Univer-
sity, An Introduction, October 1974, page 8), shows at a

glance the main components of the learning system. The
nature of the course components is shown in the first
column, the student response in the next column; and the
approximate proportion of the student's time in the third.

TABLE 1

THE COURSE COMPONENTS OF THE BRITISH OPEN UNIVERSITY

Course Components	Student Response	Time Spent

1. Printed Material
  a. Correspondence texts
  b. Set books
  c. Recommended reading
	Systematic reading	65%

2. Television and radio
  a. Course broadcasts in TV
  b. Course broadcasts in radio
  c. Open forum broadcasts
	Regular viewing and listening	10%

3. Tuition and counseling
  a. Individual and group tuition
  b. Individual and group counseling
  c. Summer schools
	Contact with tutors, other students, summer schools or study centers	15%

4. Assignments and assessments
  a. Practical experiments
  b. Tutor or computer marked assignments
  c. Examinations
	Doing practical work or projects, taking examinations	10%

The printed material. These generally carry the central
message of the course (correspondence texts) complemented
by required reading (set books and required reading).

Their writing (correspondence texts) should be just ahead of the other components in the course, and very often it is. In every case they are especially written, and usually the text for each unit is written by one academic member of the course team who is especially qualified in that unit of the course. But normally each text goes through several drafts before it is accepted by all. It is usual for each course team to split up into a number of working groups to concentrate on particular units. When the working groups come together in a full course team meeting, there is plenty of opportunity for mutual criticism. The teaching task of the course team, to quote the report of the Planning Committee, is to set in motion "teaching operations drawing on different media, but using a systems approach with the learner as the key figure." To adopt a systems approach to education is: to specify educational objectives; to break down the student's task into component elements, or successive stages; to identify the learning processes involved; to consider the appropriateness of the teaching methods available in relation to each stage; to combine the methods so that they make an integrated whole; and finally to provide for feedback, validation and assessment.

In this relationship between academics, educational technologists, and media experts lies part of the success of the Open University system. The members of a course

team do not merely cooperate. They combine their efforts and in so doing, learn from each other. Therefore, the academic staff of the Open University can explore the possibilities of the audiovisual presentations which are unique in the British university world. The staff of the BBC Open University Department has grown accustomed to working not as servants of academics, but as partners in a shared academic purpose, and both groups have learned how to make systematic use of the art and science of educational communication.

While the text is being considered in outline, it is also discussed with the Media and Publication Divisions, so that appropriate illustrations and other art work can be prepared; then, eventually, it is handed over to an out-side printer and at last emerges in the form in which it will reach the students.

Television and radio. The television and radio programs are planned as an integral part of the course design, to support, enrich, illuminate, demonstrate, or otherwise strengthen the learning experience of the course. The way they do this will vary from course to course, and from unit to unit within each course. Open University television has different blends at different times of the three broad categories of learning functions that television can serve, i.e., 1. instruction demonstration,

2. case material--description, and 3. experience-imaginative insight.

The science faculty with its television producers has consistently used television for essential demonstration of the practical work of the course and has advised applicants not able to receive the television programs not to enroll for their courses at all. Mathematics has concentrated on precise exposition, with extensive use of animated graphic material, to illustrate and demonstrate mathematical concepts. Social Sciences, Educational Studies and Technology have used television in the main for case study material. Arts have certainly attempted the imaginative or dramatic experience.

So far virtually all these programs have been prepared to support specific units of a course. Their relation to the unit has not always been the same. Sometimes a program takes a broad perspective of the unit material; sometimes it focuses in on a narrow front and explores a particular part of the unit in greater depth. Most science-based courses have a television program per unit; most arts based courses have one program per two units.

In spite of the great value of television as a learning means, some problems have to be considered in this section:

1. There is a further function of the television programs that deserves consideration. While it is not a pacemaker for the course design, it is inevitably a pacer for student progress. Together with the due dates for assignments, the regular transmission of the broadcast programs serves to keep students working at the pace of the course which in one sense reduces the flexibility of the system. (Nevertheless, it is known that between 85 percent and 98 percent of students are following each program. The regularity of the programs seems to help most students, rather than the reverse.)

2. The level of production (television programs) is limited by at least three primary factors: studio time, transmissions and costs. Studio time and cost are strictly related. Costs for production are very high, and the Open University has to pay for all the services of the BBC. The BBC estimates that the ratio of costs for television:radio is 10:1.

3. A further limitation on program output is transmission. The Open University has an agreement with the BBC which allows 30 hours a week transmission time, both on BBC and VHF radio. Normally each television program (25 minutes) is repeated once, in the morning and during the early evening.

4. In a certain number of courses the programs became primarily enrichment or background programs. This

was particularly true when the same learning objectives were covered both by the text and the program.

5. Another important problem is related to the inflexibility of the schedule of transmissions. The student may not be able to watch the broadcast, or may be forced to miss it for a number of reasons, in which case he or she misses an important part of the course.

Course broadcast in radio. The proportion of students listening to each radio is rather lower than for television, ranging between 75 and 90 percent. But radio has many useful functions, both in its appeal to the imagination and in its topical flexibility. It has been used in science both to give historical perspective to modern scientific development, frequently using archival material, and to give quite practical advice about home experiments and assignments. It has been used in the arts for music, drama and poetry, and in the social sciences for practical discussions with students about their work. The allocation of radio programs is generally the reverse of television: one per unit in arts based courses, one per two units in science based courses. Two developments in the use of radio are producing significant results. One is the use of radio-vision, i.e., the combination of a radio program with a succession of projected or printed pictures; and the other

is the possibility of more elaborate forms of radio tuto-
rial, with students able to phone in their questions.

In addition to the regular broadcasts for each
course, there is a weekly radio program devoted to news
and views in the University and to other items of general
student interest, such as mutual help groups, forms of
assessment, use of study centers, preparation for summer
school and examinations. Following these programs is
entirely voluntary, like taking part in union and club
activities in a conventional university; but there is a
good deal of evidence to suggest that the programs are
appreciated.[47]

Other audiovisual materials. Because of the high cost of
television, the University has looked very carefully at
alternative systems of delivering audiovisual materials to
students. Every student in the technology foundation course
for example is issued a cheap audio-cassette recorder
and play-back machine, a small number of cassettes (about
six), including one spare or blank with which the student
can communicate with his tutor or other students, or use
to record programs. Some courses--where only playback
facilities are required--have used cheap, plastic records.
(Eighty percent of Open University students have access to
a record player.) In 1974, video cassette recorders were

provided for a small number of study centers to allow programs that students had missed to be recorded and played back.

Experiments are taking place with telephone teaching, by linking students in the same area with shared lines. Again, however, because this system can reach only the 60 percent of Open University students with telephones, or those who go to study centers, it must, like all the other audiovisual developments, be seen as a supplement to the basic distribution system of correspondence text, radio and television. Despite rapid technological advances, therefore, television and radio are likely to remain key features of the Open University teaching system for many years to come.

Tuition and counseling. The third main component in the system is the personal tuition and counseling that is available to the student. This is done by about 4,000 part-time tutors and counselors, some of whom perform both functions. They are appointed by one of the university's thirteen regional offices and they are mainly teachers in other universities and colleges and each serves about twenty Open University students. The main work of the part-time tutors is to read, assess and comment on the regular assignments done by their students. Their role is

both a teaching one and an examining one, but the primary role is teaching. They should use every opportunity to help the student by the right blend of encouragement and constructive teaching points. In addition to their role as correspondence tutor, they undertake a limited number of group tuition sessions at study centers or in some cases a one-day school two or three times during the course.

As far as the students are concerned, their part-time tutor is the first point of reference on any question relating to the academic content of the course. They will expect to get helpful comments from him or her on their work; they can attend group tuition sessions, and most important, they can write to the tutor if they wish, or even telephone him or her on a particular problem. This is very much a matter between individual student and tutor; but the relationship is often one of such personal communication.

This kind of correspondence teaching (correspondence tuition) allows, as broadcasting does not, for a two-way traffic of ideas. In a literate culture, the printed word is far more effective than pictures and the spoken word in confronting the student with a problem to be solved, or a task to be carried out, at the student's own pace and in his or her own time. Whatever the mode of presentation may be, there must be a regular response from the student, and

that response calls for individual attention. Included in the learning package are slides, illustrations and written instructions for the experimental work done with the science kits.

Tutor and counselor. Individual and group counseling. While the part-time tutor is concerned essentially with the academic content of the course, the part-time counselor is more concerned with the learning efficiency of the student. Anything that may help the student to make more confident, more cheerful and more efficient progress is the business of the counselor. This may involve bringing students together in discussion groups, or helping them over problems of reading, writing or practical work, or it may involve domestic or transport problems. They are the regular Open University presence at the local study center, and are the expression of the university as far as most students are concerned. They attend the study center either once a week or once a fortnight; and for the students following their subjects, that is where they will normally be found.

The system of local counselors and tutors each with a different function has been under review recently. Since the university began it has become increasingly clear that the distinction between the function of counseling and tutoring is not always clear to students in their

first year. The new scheme proposes that tutoring and counseling should be carried out by the same person at foundation level and separated only at higher levels where specialized knowledge becomes more important.

Face-to-face teaching. Summer schools and study centers. For all the foundation courses and for many subsequent courses, particularly in the science area, students must attend a one week residential summer school, which will be held in one of twelve university campuses, where arrangements have been made by the university for such schools. In order to accommodate so many thousands of students, the whole three-month period, July–September (vacation period), is devoted to a succession of summer schools on the twelve campuses, and students are given as much choice as possible about where and which week of the summer they go.

The enthusiasm of the students has left no room for doubt about the value of this residential sector of the course work for adults without the previous experience of university life. For science students, the primary emphasis is on laboratory practice, and for the arts and social science students it is on seminars. Both groups benefit from the attention to individual needs. Even more important is the opportunity to meet members of the central

academic staff of the university who have previously been
no more than names or at most faces on the television
screen. Other negative considerations have to be analyzed:
the summer schools are planned to be self-financing. Most
of the students have limited resources. There may be
travelling expenses. Many students have family responsi-
bilities as mothers, or as fathers with wives and chil-
dren and only short holidays. Whatever the reasons may
be, there is a heavy dropout rate of students at this
point (9 percent in 1975 of those still enrolled). It
seems likely, however, that many students would satis-
factorily complete the credit course if it were not for
these obstacles; and it is therefore arguable how far
compulsion should be applied, except perhaps for science
courses because there extensive practice is essential.

Study centers. One of the original motives for establish-
ing study centers was to ensure that students who lived in
areas of poor broadcast reception, who found it difficult
to concentrate in the family living room, or who simply
preferred to view or listen with a group of fellow students,
could receive the university's programs there.

The university has established 284 study centers
throughout the United Kingdom, and the great majority of
students are within reasonable distance of a center.
Organized in 13 regions, each headed by a regional

director and served by a staff of full-time counselors and tutors, with the necessary administrative support, they provide the bases for the personal tutorial services to students, and the framework for their life as under-graduates. They are normally situated in technical colleges, polytechnics or other existing educational institutions, and many of these allow the use of their own libraries, laboratories and social amenities. They are open each weekday evening from 6:30 to 9 PM, and some-times on weekends. They are designed to meet the needs of 75 to 500 students depending on the area.

Assignments and assessments. The fourth main component in the system consists of the practical and written work that students are asked to do. Again this varies from subject to subject, but course teams are constantly think-ing of the most useful forms of practical work they can devise and of how this can be made more interesting. As a result the home experiment kits of science and technology have been models of ingenuity, such as the portable microscope. In social sciences, education and technology, there have been nationwide practical projects in Open University courses, such as producing a noise map from the readings of students on decibel meters in different parts of the country. In arts and mathematics there have been

extensive and imaginative uses of self-assessment questions which students can use to check their own progress.

Tutor marked assignments. Assignments are part of the essential requirements of each course--generally the best of six out of nine monthly assignments are presented. Part of each takes the form of continuous writing, (i.e., essay-answers, reports of experiments or calculations) and these answers are commented on and assessed by part-time tutors, as described earlier. The assignments are assessed by four pass grades and two fail grades; and the student must pass at least six of the year's assignments. If the student passes more than six assignments, he or she receives an honors degree.

Computer marked assignments. Other sections of the assignments are designed in multiple choice questions to test whether basic concepts and critical facts have been understood; and these answers are checked in the university's computer. There is evidence that initial fears of some students have generally been allayed and the majority have come to accept the electronic assessment as a valuable and labor-saving element in the system.

Examinations. At the end of each course every student has to take a three hour written examination. This exam is taken in a large number of local centers on an appointed day in early November.

Figure 1 is a summary of the learning system from the student's viewpoint. It has been taken from: <u>The BBC and the Open University: An Introduction</u> (London, 1975), page 14.

<u>Student numbers and characteristics</u>. What follows is a summary of a very detailed work published by the Open University after its first four years of operation (1971-1975) which provides a good idea of the characteristics of the student population and some important problems of the system.

<u>Admission procedures</u>. No qualifications are needed to apply for the Open University; and selection is mainly on the basis of "first come, first served." Weighting factors are used in relation to occupation, geographical area and choice of course--so a crofter on Shetland wishing to read mathematics would have a rather better chance than a teacher in Hampstead wishing to read social sciences--but the date of application remains the most important factor.

It is necessary to apply a system of constraints and quotas, but within the limits so imposed applicants are admitted simply in the order in which they apply, except for the small number belonging to categories for which special arrangements have been made: the physically disabled, prisoners and members of the armed forces serving

Figure 1

Summary of the system from the student's viewpoint
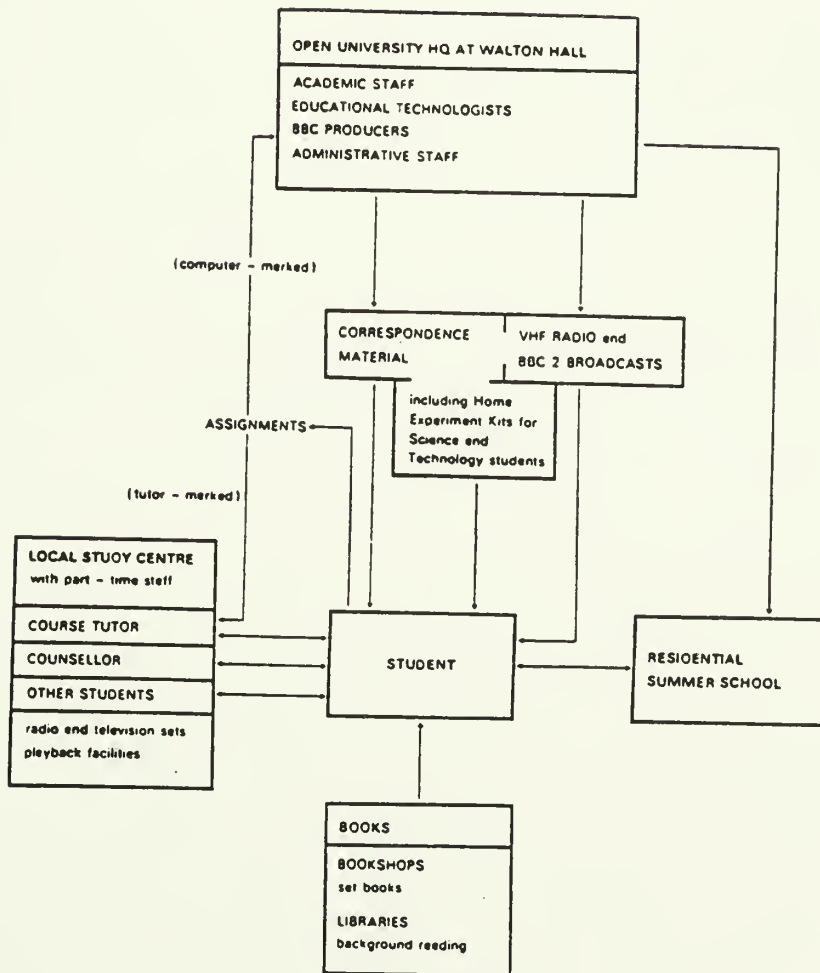
overseas.

All of those initially accepted are admitted at first as provisionally registered students. They pay an initial tuition fee for the first three months, which is regarded as a probationary period. This arrangement allows for the voluntary withdrawal of students who decide that they cannot cope or do not have time for the work. At this stage, there is a dropout of some 25 percent of the provisionally registered students. It leaves behind a body of serious entrants capable of profiting from courses on a university level.

Student characteristics. For many adults, the primary motive for undertaking an arduous course of study is vocational. The men and women most likely to be attracted to, and to persevere with, studies on a university level are those who have maintained the habit of study in adult life, and in particular those who have already earned qualifications which entitle them to credit exemptions and shorten their path to a degree. Three out of four Open University students have previously been involved in part-time education of some sort, and some 30 percent of them are able to claim at least one credit exemption.

The occupational composition of the study body varies considerably from course to course, but in sum

total the largest single occupational group consists of teachers, the great majority of them non-graduates for whom a degree will mean higher scales of pay and better career prospects. Other largest categories are: full-time house-wives, draughtsmen, laboratory assistants, technicians, qualified scientists and engineers seeking to extend their professional scope or to bring their knowledge up to date.

The university has been criticized for its failure to attract applicants from the lower level socioeconomic groups, and especially from manual workers. The present student population is necessarily a self-selected group of men and women who believed they could, and who have proven by experience that they are capable of working at university level. The number of applicants without any formal education is, however, increasing.[48] It is not surprising that the finally registered student body of the university, constituted at this time, should have proven to consist of excellent and hard working students.

Student numbers. Demand for student places has risen, but overall numbers are governed by a grant made to the university by the Department of Education and Science. In 1974 the number of places for new students was 15,000 out of a total of some 35,000 who applied. Additional grants from

the Department of Education and Science in 1975-1976
enabled the university to admit 20,000 new students in each
of those years. For 1977 and 1978 the university is
expected to admit 25,000 new students per year.

Age range. It is interesting to note that contrary
to expectations there has been a definite trend toward
younger applicants. The average age of students over the
past six years is just under 30.

Proportion of sexes. For 1976 the proportion of
women was 37.85 percent and men 62.2 percent (registration
confirmed).

Geographical spread. The geographical spread of
applications has generally been fairly close to the popula-
tion spread. Applications have been somewhat higher in
London and southeastern England.

Success rate. The story is encouraging first because
of the high percentage (75 percent) of those provisionally
registered who confirm their pre-registration and the high
percentage of those who stay on throughout the year, take
their exams and eventually earn credit (76 percent of
19,000, in 1971, 1972 and 1973).

Dropout. From the years from 1971 to 1974 the dropout
percentage was about 25-30 percent. That is much lower
than in most distance teaching.

Organization, control and staffing.

Who runs the university? Like every other university
in the United Kingdom, it is governed by a Council and a
Senate. In general terms the Senate formulates the
academic policies. Council membership is part-time and
drawn largely from outside the university. It is comprised
of the Officers of the University, four members appointed
by the Lord President of the Privy Council, three by the
Committee of Vice-Chancellors and Principals of the United
Kingdom, three by associations of Local Education author-
ities, one by Education Authorities in Scotland, one by
the Royal Society, one by the British Broadcasting Company,
six by the Senate, two students and two members of the
part-time tutorial staff. There are also eight optional
members. The Senate comprises, at present, all members of
the full-time academic staff, together with a number of
other members of the university's nonacademic staff and
part-time tutorial staff.[49]

The officers are the Chancellor, Pro-Chancellor, Vice-
Chancellor, Treasurer, three Pro-Vice-Chancellors and
Secretary of the university. In British universities, the
titular head of the university is the Chancellor, but he or
she has no executive duties except ceremonially to confer
grades. The full-time executive head of the university is
the Vice-Chancellor, who consequently bears very heavy
responsibilities indeed including the chairmanship of

the Senate.

The general structure of the university is briefly as follows:

1. The central administrative office under the direction of the secretary of the university. This office has the primary task of developing systems for student registration and records, for financial accounting and for servicing of all university business.

2. The academic departments, staffed by full-time university teachers. Their duties are: 1. Study and research in their subjects. 2. To integrate the faculties, and 3. To prepare (as part of a team) the academic study material.

3. The group of administrative staff; tutors and counselors in charge of home tuition and correspondence services, and directors of the local centers and tutorial services.

4. The regional director who provides the link between the central office and the regions.

5. The operational research unit whose main purpose is to undertake the necessary studies and investigations about the learning conditions and in general the conditions in which the teaching model is working.

Finally, the relationship between the university and the BBC is one of educational partnership, based on mutual

confidence. This confidence stems from a clear under-
standing on both sides of the rights and responsibilities
of each, and a joint statement of the understanding has
been prepared as Appendix I of the Report of the Planning
Committee to the Secretary of State. The basic principles
behind it are that the university has the ultimate respon-
sibility for the academic content of course material and
the manner in which this material is taught, respecting
the BBC's judgment and expert advice on matters relating
to the preparation and presentation of the broadcasts.

Staff. The staff of the university is much more diverse
than that of a conventional institution. It has had to
recruit not only the 400 academic members of its central
and regional academic staff, a group of librarians, and
the members of its IET, with the usual administrative
support. It also has a specialized need for a corps of
systems analysts and computer programmers, for typographers,
designers, graphic artists and photographers, and for
groups of men and women expert in such various fields as
copyright, publishing, the management of correspondence
services, and the worldwide marketing of printed and
audiovisual material.[50]

Operationally, the university must be run as an
efficient factory, with rigid delivery dates, and a need
for close discipline among its interlocking operations.

The housing of all its basic services (except for printing and warehousing) on one campus makes far easier the necessary degree of control, and contributes largely to mutual understanding between the various groups of staff involved in the whole operation.

Finance. The income of the University includes approximately 80 percent derived from government grants and 20 percent from students' fees including summer school fees. The basic tuition is 12 pounds sterling but the student has to pay additional fees for home experiment kits, summer school and correspondence material, including postage.

Running costs and direct student costs. In a conventional university, for as long as the staff-student ratio remains a major determining factor, academic salaries will account for the major part of running costs and vary in accordance with numbers of students. In the Open University the salaries of the academic staff on the central campus account for only about 15 percent of operating costs and are virtually independent of student numbers. Thus direct student costs are high at a conventional university but low at the Open University, where costs are primarily accounted for by printed materials, visual aids, tutorial and counseling services, summer school tuition, home

experiments kits and so on. The point is that items such as faculty and course development costs, BBC costs, and central and regional administrative costs, for example, remain the same whether the university has 20,000 students or 50,000 students. It costs the same given amount to produce a television program whether it is transmitted to one student or to a million students. Similarly, costs of designing and producing a course are the same for one student as for thousands. But printing or manufacturing course materials and sending them out by mail obviously incurs costs directly related to the number of students.

Therefore, contrary to the situation in conventional universities, the cost of the Open University per student seems to go down markedly as the number of students goes up. The Open University has the opportunity to benefit greatly from economy of scale. So the future of this university depends on the size it is allowed to reach more than on any other single factor. Considerations other than the amount of the government grant may, however, have a bearing on the question of size. There must, for example, be a limit to the number of suitable part-time staff available. Furthermore, the capacity of the computer and of existing systems is not infinite. It is possible that the optimum size may lie within the range of 60,000 to 70,000 students.

Cost per student.   A report prepared by the staff of the
Higher Education Research Unit of the London School of
Economics, basing its findings on courses offered in 1971-
1972, and taking two years as an Open University student
as broadly equivalent to one year as a student in a campus
university in terms of hours spent on study and of progress
towards graduation, concluded that the cost per full-time
equivalent student was very substantially less at the
Open University than elsewhere. Its findings did, how-
ever, suggest that more higher level courses with fewer
students would either have to be produced more cheaply, or
justified on the grounds that they were an integral part of
a system providing wider access to complete degree courses
rather than on the grounds that they were cheap in them-
selves.

The total cost for a student for an honors degree
could be estimated as 200 pounds sterling (1975) for eight
full-credit courses, a further 130 pounds sterling for a
set of books, and a minimum of 77 pounds sterling for the
summer schools associated with the two compulsory founda-
tion courses. For a science student the cost of the
summer schools and experimental kits could amount to very
much more.[51]

Conclusions

1. The Open University is a new, permanent institution which has been operating for ten years. It is a university among existing universities in the United Kingdom, conforming primarily to their established requirements, though proposing to offer a range of distance courses giving the individual greater choice than in existing universities.

2. In contradiction with the theoretical framework of distance learning suggested in the first chapter, the Open University had its origins in the "realm of personal conviction" and not in any systematic survey of educational needs of the adult population. The decision of the government to go ahead was in no sense a response to pressures from outside, or to public demand; it was a political act of faith.

3. The initial motivation of this university was based on a political motivation consonant with the basic philosophy of the Labour Party as the champion of the educationally underpriviliged. Nevertheless, the Open University has been criticized for its failure to attract applicants from the lower socioeconomic groups, and especially from manual workers.

4. The Open University has conducted only one

experiment (involving 500 people) with younger populations (16-21). Most of its students are adults ranging between 21 and 60 years old, with the average about 30. In different countries where student populations are younger, this is a very important factor to be considered. The system seems to be designed for adult learners.

5. The most impressive aspect of the Open University is the integration of the different elements of the learning system. The concepts of open learning (no requirements with the exception of age) and distance learning are present in most of the materials of the various courses. The same can be said in regard to the principles of adult education, i.e., clear objectives, study at the pace of the student, self-evaluation and feedback, and in general, use of the system analysis approach. Nevertheless, little has been done in regard to student participation in material design and learning contracts. The whole learning system is prepared primarily for the staff of the course in the headquarters of the Open University. In general the system shows a very well structured learning system which provides a rate of student success of about 75 percent (at least in the first five years of the institution). In this aspect there seems to be a contradiction with the theory of adult education in the sense of self-directed learning principle proposed in the first chapter. The same idea can be

observed not only in the rigid inflexibility of the television broadcasting and the rigid schedule of the study centers, but also in the compulsory school sessions for the science courses.

6. Although the Open University offers postgraduate courses and post-experiences courses most of the adult population is concentrated in undergraduate courses (in order to be awarded the BA degree). In that sense the university seems to be very formal and trying to maintain the same quality and standard of the traditional British universities. Other aspects of the model are traditional or at least inflexible as mentioned in the above conclusion. Perhaps the low dropout rate (25 percent) is caused primarily by those factors.

7. The organization of the university is similar (at higher levels) to the other British universities, but seems to be effective at operational levels where the structure is completely designed for working with the academic model in accordance with the complexity of a distance operation system: integration, production of learning materials, delivery system, counseling and study center administrations. It suggests that projects of this kind should be managed only by organizations especially designed for such a purpose.

8. Financing does not seem to be a problem for the

Open University, not only because it is financed by government grants, other local authorities and educational institutions but also because the system has the possibility of self-financing through student fees, learning materials incomes, consultancy charges at the international level, exportations of material, etc. The main economic aspect of this university lies in the benefit of the economies of scale, the high productivity of the learning material, and of course, the very controlled growth of the student population in accordance with the optimum level of efficiency not only of human resources but also of the hardware used.

9. In regard to the transferability of the Open University system, its teaching material and because it is a very "sui-generis" development, some considerations have to be explored:

A. The impact of the Open University learning model on similar models in the world seems to be strong and maybe many aspects of it could be adapted to different situations but some elements of the model should be studied carefully, for instance:

a. As a system of distance and open learning applicable to university and other levels of age and attainment. In this aspect special consideration must be given in relation to the

increasing younger population asking for higher
education, particularly in Latin America.

b. As a system expressing principles, ideas and
techniques that are capable of different expres-
sion at lower levels of cost and complexity
(appropriate technology) in other educational
and developmental contexts.

c. As a model for study of institutions or
systems in countries with different educational
or political systems, or at different stages of
economic and social development.

d. As a teaching system that makes full use of
most, but not all, modern educational media,
and draws heavily upon all relevant pre-existing
educational and communication facilities: postal
services, government support at national and
regional levels, BBC and educational institutions,
full-time and experienced staff of other univer-
sities, publishers, commercial printers, public
libraries, etc.

e. As an organizational model and teaching system
which provides education to large numbers of
students (nationwide) achieving low cost per
student.

f. As an institution with a very particular

partnership, the BBC has patterns of working relationships among academics and educational technologists which draw upon the forty years of experience of educational broadcasting guided by national educational advisory agencies and upon a national aptitude for collaborative work.

B. <u>Related with learning materials</u>.

a. The Open University course teams prepare materials primarily for British students and this obviously involves cultural presuppositions, some of which are likely to be invalid in other countries.

b. The materials could be adapted for a variety of learning situations on campus, partially on and partially off campus, or off campus, for part-time or full-time study.

c. As was stated above, the Open University delivery system is based on factors which are peculiar to the United Kingdom. Distances are fairly small, there are national radio and television transmission systems which reach most of the population, a fast and reliable postal system exists, the universities are national institutions rather than local or

county or state institutions. Thus it would be unrealistic to expect to transplant the whole Open University system and assume that it would work as well as it does inside the United Kingdom.

The University of Mid-America: A Regional Open Learning Model

Introduction. The State University of Nebraska (SUN) and the regional University of Mid-America (UMA) constitute a new phenomenon in United States post-secondary education. These institutions are not novel simply because they are open. Open education is no longer new, although the immediate precedents of this movement go back only ten years. What is new is the scale of development, its regionalization, the mechanisms used to create a regional institution that is credible and legitimate, the emphasis on research and evaluation, and the role of the United States Federal Government in funding and guiding development.

There are few technological or educational innovations in the UMA in spite of a great deal of influence from the British Open University. Its significance as a case study lies in the orderly yet creative reform of the post-secondary systems of eleven state universities

to serve large regional and educational needs. Because change has been conducted within the customary development channels, destructive division among the states has been avoided.

This short study of the University of Mid-America aims to tell the story of its invention and development. The study deals with the learning system and courses offered by the university and the conclusions call attention to the characteristics that could be of interest to those projects developed in other countries, particularly in Venezuela. For the study of this case the same general outline used to study the British Open University will be followed.

What is the University of Mid-America. The University of Mid-America is the result of a consortium on nine midwest state universities (the University of Kansas, Kansas State University, Iowa State University, The University of Iowa, South Dakota State University, The University of South Dakota, The University of Nebraska, The University of Missouri, and The University of Minnesota-- the last three being multi-campus institutions). The University of Mid-America, in spite of its name, enrolls students only through participating schools. It has course development, planning, coordinating, and umbrella functions; but it recruits no students, and has no

intention of offering an independent degree.

As a pilot experiment in regional and open learning development, UMA is not a university in the traditional sense. It has no campus or full-time faculty. It grants no credit; it awards no external degree. Rather, UMA is a facilitator, working with and through existing institutions of higher learning and their open learning delivery systems to assist in the process of teaching and learning. UMA is motivated by three prime considerations:

1. The improvement of educational access
2. The improvement of quality of education
3. The achievement of economics of scale.[52]

Since the fall of 1974 nearly 10,000 UMA students have enrolled at six universities of the consortium. The average age is 37, and 75 percent are women, many with toddlers or teenagers at home. Half have never lived in a college dormitory. UMA continues to add courses; more than 12 courses have been developed and their leaders hope to have courses that will allow many to complete part of their work for a college degree. They also want to expand courses that will help people to get better jobs.

Because of the ambiguities associated with open learning, UMA has endeavored to carefully define its program as having the following characteristics:

1. A policy of unrestricted admission so that

anyone who wishes to learn may do so; the primary audience being those people who cannot or are reluctant to participate in campus-bound programs.

2. An understanding of learner needs and interests and a commitment to use this information in planning the learning opportunities made available through the system.

3. The establishment of provisions for learning opportunities which enable the learner to learn at convenient times and places.

4. The willingness to meet the learners where they are educationally and to assist learners in meeting their educational goals.

5. The use of a variety of media so that people who learn best in different ways can use their preferred media.

6. The flexibility in course design that will allow students to enter and finish at their own speed; students in certain courses may also construct their own learning sequences by using different modules at different times.

7. The use of local and regional courses that already exist, in cooperation with existing institutions, to expand the educational opportunities available to the learners in their own environment.[53]

As McBride said in one of his papers:

Open learning offers great possibilities, indeed, for the equalizing of educational opportunities, and for the efficient deployment of educational resources. Hopefully, the time has passed when

> we must justify the need for mediated teaching
> at-a-distance: the level of world wide open
> learning development confirms that this is an
> idea whose time has come.54

The regional context.

1. UMA had its beginnings ten years ago as the
State University of Nebraska (SUN) project, a fledgling
outreach program of the University of Nebraska. Nebraska
had in place a nine-station, statewide educational tele-
vision network, and a sophisticated production facility,
housing the latest telecommunications equipment.

2. Nebraska is a largely rural state with one half
million people spread over 77,000 square miles. The state
has a severe climate with cold winters, heavy snows, and
hot, humid summers. About 20 percent of the employed
Nebraskans work in agriculture, the remainder in trade,
government and manufacturing. The public, elementary-
secondary schools enroll nearly 500,000 children. The
capitol is Lincoln, which is also the seat of the Univer-
sity of Nebraska, a land grant institution with an enroll-
ment of 36,114, and three campuses headed by a president.

3. The University of Nebraska includes an Exten-
sion Division and an Agricultural Extension Division Ser-
vice. The Extension Division is widely known for the
excellence of its correspondence courses on the high school
and college levels. Its high school courses have been

important in enriching the curricula and learning oppor-
tunities of students in the many small high schools in the
state. The Great Plains National Instructional Television
Library is also located at the University of Nebraska.

4. The University of Nebraska has a tradition of
serving state needs through extension services and modern
technology.

5. The population of 11 million people in the states
of Nebraska, Kansas, Iowa and Missouri that UMA would serve
may be adequate to make the system economically viable.

6. The data show that learner characteristics are
strikingly similar from state to state. Geographical
distribution of learners, for example, tends to corre-
spond to the population characteristics of each state.
The percentages of learners who live in farms, in towns of
less than 2,000 people, and in cities of more than 50,000
follow the general population pattern.

7. People reported incomes as low as $1,000 a year
and others as high as $40,000, with the median income
level at about $10,000.

8. Studies of the learner characteristics were con-
ducted before the courses were prepared. Two information
sources were used to compile this data. One, the student
registration form, supplies such basic demographic in-
formation as age, sex, occupation and the like. The other,

a student information questionnaire returned by more than
half of the students in Iowa, Kansas, Missouri and Nebraska,
is far more extensive. The questionnaire asks for such
information as level of previous education, use of
leisure time, etc.

The origins of the project. Brief history. The idea of
an open university for the State of Nebraska had its
origins in the late 1960s. In 1969, in the United King-
dom, the Open University was chartered and the development
of the university began to take place at Milton Keynes.
A steady drumbeat of articles, descriptive on new exper-
iments in mediated and more open form of instruction,
laid a theoretical and pragmatic basis for the various
commissions in the United States charged with evaluating
the need for institutional change, more open forms of
learning, and mediated instructional patterns and options.

2. The commission on nontraditional study reviewed
the status of innovative experiments on a national basis,
and various states studied their needs to recommend new
institutional development.

3. Two national reports on higher education--the
Carnegie Commission Report and the Newman Report--
emphasized that, despite the vast number of institutions
offering some form of post-secondary education, there
still remained a significant national population which

could not take advantage of the opportunities offered by
on-campus programs.

4. The ferment in higher education and concern over
adults' lack of access to higher education posed a question
in Nebraska; if the citizens of Nebraska were not able to
take advantage of the many existing opportunities for
higher education, could not the well-established Nebraska
Educational Television network be given an important role
in alleviating the situation?

5. The events that led to development of the UMA
began in the Spring of 1971, when University of Nebraska
President Varner proposed using Nebraska's nine station
educational television network to make college courses
available to people in their homes.

6. Early in the planning, the U.S. Office of Educa-
tion awarded two grants to SUN to begin a broad study on
a regional basis. The federal interest led to other grants
over succeeding months, the latest of which came from the
National Institute of Education (NIE). It was with NIE
encouragement that SUN broadened its vision to a regional
and national one, seeking to investigate the possibility
that a well-planned and high quality program serving the
midwest might provide a national model for regional
learning programming. Intensive study of the potential for
regionalization began on February 1, 1974, and after six

months of intensive planning the UMA was created with the participation of the universities of the area. The same year, in the fall of 1974, the university began its operations.

7. As the result of various fiscal and economic studies, it became clear that, in order for the system to operate cost-effectively without compromising academic or production quality, it would be necessary to maintain the university consortium beyond the boundaries of a single state. It was a simple matter of economy of scale: large numbers of learners had to be attracted to the system in order to keep per-student costs within reasonable bounds.[55]

Main purposes of the model. Since its creation the UMA has been trying to accomplish four primary objectives: a. the design and development of mediated credit and noncredit courses for use off-campus in teaching at distance programs; b. research into and evaluation of formal adult teaching and learning; c. assistance with the planning and development of the state open learning delivery systems and mechanisms, and d. dissemination of both course work and research products to all those interested.

Target populations. An important aspect to be pointed out is that the primary goal of UMA is to serve those persons whose educational needs have not been met. As UMA has

developed, both the potential and the limitation of this goal have become more clear. Early needs assessment efforts identified a significant number of people interested in enrolling in open learning courses, and specified course areas of particular interest to the intended population. People reported they want to learn for a wide variety of reasons, ranging from a desire to know more in general to the necessity of updating job skills to survive economically.

It is clear now that UMA is reaching in the United States a non-traditional population, particularly in terms of age, sex and previous educational experience. The data indicate that the typical UMA learner at a distance is older than the on-campus student, with a median age of 37. Seventy-seven percent are women, 79 percent are married, 41 percent have mostly young children, and 23 percent identify themselves as homemakers. Forty-eight percent have never attended college, and 47 percent have had no formal education experience during the five years previous to enrollment.

Learners come from farms, small towns, and cities roughly in proportion to the distribution of the overall population. Sixty-three percent of all registrants hope for some academic degree. "Career improvement goals" are selected most often as being the "most important," followed by "personal satisfaction" goals. The greatest

concerns learners have, before starting their course work, are related to academic and learning problems.

Courses provided. UMA and its participating institutions are committed to producing and delivering college-level courses that reach people in their homes through television programs, newspaper, tape-recorded lessons, textbooks and other independent study materials. Because open learning is central to UMA's mission, their courses are open to anyone who wants to learn, regardless of age or level of formal education. Students may enroll on a credit or noncredit basis.

UMA's curriculum planning is complicated by the diverse, non-traditional and quasi-anonymous nature of its target audience. No single set of assumptions holds true for all members of this adult population, which ranges from the high school senior wanting a head start on college to the senior citizen interested in a particular content but not for credit. Some individuals seek college credit, others do not; some seek professional advancement, others basic education; some are motivated by practical, others by recreational interests. Thus a number of orientations toward curricula are necessary if UMA is to serve the sub-groups in its target population.

UMA proposes to provide at least four general categories of educational experiences to help serve the

diverse subpopulations: 1. college credit courses for those seeking credentials; 2. inservice vocational or professional training courses; 3. skill courses for personal improvement; and 4. noncredit personal enrichment courses. Each of these categories embraces a variety of possibilities, and in many instances these categories overlap (for instance, a practical nurse wanting paraprofessional or inservice training might also desire college credit).

The UMA open learning goals call for the provision of educational experiences which allow the student flexibility in constructing his or her own learning sequence and permit the reduction of constraints on how people can learn.

UMA has an especially designed course development process, which includes different approaches to both design and team composition. The complex and systematic instructional design procedure can be summarized in five steps: design, production, field testing, redesign and reproduction. A resident content specialist, aided by a senior content advisory panel, is joined by an instructional designer, a producer, writers, a research evaluator and television, audio, film, graphic, print and design specialists for the life of the course. This enables content, design, production and evaluation personnel to work together creatively as an integrated team.

The aim is not to produce rigidly structured traditional courses, but materials which allow the learner to mold individual opportunities to unique individual needs. In order to provide maximum flexibility, UMA stresses development of interdisciplinary courses, modular offerings which allow the student to follow various tracks through them, and other structural variations designed to meet individual needs.

So far, one important difference can be observed from this approach; for instance, in the Open University of the United Kingdom and that is the emphasis on meeting the needs of individual learners, or at least the presence of more flexibility in the learning package.

Five different approaches to the design of non-traditional educational experiences have been identified: development of courses which include a high cost television component; development of courses which include a low cost television component; development of mediated courses without television; acquisition of existing courses for use with minimal adaptation; acquisition of existing courses requiring major adaptation. Time lines and budgets have been developed for each approach. The acquisition of existing materials allows UMA to develop a large number of courses at the lowest possible cost; but standards of quality dictate that the majority of acquired courses will undergo some adaptation before they are employed.

UMA's goal was to produce, by 1980, 55 courses chosen on the basis of both market research and pure hunch. About 65 percent of these courses were to be acquired from other institutions, and the rest would be produced. It had been an inevitable task to design some of the courses to meet the varied needs of UMA's clients. Credit courses pose particularly difficult problems, since college faculties are traditionally loath to accept and accredit anything from the outside, no matter how good it may seem to others.

Some examples of courses. Problems in production. The first courses rolled off the production line in 1974: a two-semester program in basic accounting and a course in psychology. At this point, there arose some of the major problems to be faced in course production in the following years:

1. The high cost of production required to produce top-quality products. The total cost of the accounting course was about $375,000. Of this amount $200,000 went into television programs. The audio tapes cost about one tenth as much. The number of students registered for this course was 407.

Introductory Psychology, also a multimedia course, is quite different from the accounting course. This one is based largely on a commercial textbook and educational films previously produced by others. There are no audio

tapes for the course. UMA wrote a study guide, reconstituted the films to meet its goals, and produced new transitions for the television programs. The cost was $80,000 as compared with $375,000 and the 15 television units totalled about $20,000 as compared with $200,000. The preliminary attitude surveys show in both courses that the students were very pleased with the texts and study guides and found the audio tapes very helpful, but regarded the television programs as only moderately helpful.

2. Other problems were the time span from concept to completion which ran from six months to two years; creating delivery and marketing systems from scratch, and measuring the impact of UMA's multimedia techniques on users.

3. The largest obstacle facing UMA's courses was an intangible one: fear and lack of support from educators--even those within UMA's own seven state consortium--who believed that they would be replaced by a TV set, or that UMA's outreach program to "learners at a distance" would cut their pool of potential on-campus students.

Today UMA has completed 12 courses and has largely altered its 50 course goal in favor of a new strategy aimed at reaching larger numbers of students rather than

producing a specific number of courses. Its current offerings run the gamut from "Pest, Pesticides and Safety" to "Anyone for Tennyson," a series dramatizing American English poetry. Other titles are: "The Great Plains Experience" (American Indian history), "Introduction to World Food Problems," "Japan: The Living Tradition," "Going Metric," and "Foundations of American Nationalism," etc.

In the few years that UMA's 12 courses (and those of other producers) have been on the air, close to 10,000 people have registered at the university in its consortium for credit programs. Thousands of other students have taken UMA courses for credit outside the consortium.

Finally, and more recently, UMA through its Institute for Professional Development, is offering seminars and workshops for professionals who serve adult learners. Most of these are using face-to-face techniques and some multimedia approaches, and are offered nationwide.

Outline of the learning system. The outline of the UMA's learning system includes three elements: The first, the course system and "degree structure," have been explained above; the second, course components, and the third, course material production, will be discussed in this section.

The UMA's system, modeled largely after Britain's Open University, is designed for distance teaching and is

based, as are most television courses, on printed text-
books, study guides and weekly lessons published in the
statewide Omaha Sunday World-Herald newspaper. To
humanize the instruction, audio cassette lessons are
mailed to students, walk-in learning centers have been
established in several cities of the consortium, tutors
are available by telephone, and television lessons are
played on the public network. Students are never re-
quired to leave their homes except to take proctored
examinations in local libraries or learning centers.

Course components and course material production. The
outline below shows at a glance the main components of the
learning system.

Course Components

a. Printed material

    Set books (textbooks)
    Study guides
    Weekly written lessons (in newspaper)
    Weekly instructions for experiment kits

b. Television and radio (other multimedia)

    Television lessons
    Radio lessons
    Audio cassette lessons

c. Tutorial activities

    Individual (personal or by phone)
    Study center activities

d. <u>Assignments and assessments</u>

Practical experiments at home
Proctored examinations
Tutor marked assignments

In general, to enroll in a UMA course, a person fills out a simple form and mails it to one of the university's addresses in his or her state. Soon after, he or she receives a packet of materials. These may include a textbook, study guides, discussion booklet, set of questions and answers, audio cassettes--and for biology for example, a kit for doing experiments at home. The student then carries on self-instruction by following assignments from the study guide. But additional learning resources are available. Courses are often integrated with programs on television and radio. Also, newspaper articles are written especially to meet UMA goals.

Students may spend as much time learning from these mass media as from the textual materials. When the students have questions, they may get answers for UMA course instructors (tutors) over a toll-free telephone line. And if they have the opportunity, they may visit one of the learning centers for wide ranging discussions. Periodic tests inform both student and instructor about progress in the course and tell whether the student is ready for higher levels of work. There is no pressure; each student decides where and how much to study.

<u>Printed material</u>. In general, the printed material carries the central message of the course complemented by study guides or a weekly written lesson in the local newspaper. These are always ahead of the other components in the course. Normally the content specialist is a faculty member on leave from his or her home institution, whether a UMA member institution or elsewhere. This academician works with a senior content advisory panel and various topic experts to generate course content, and is responsible for the academic quality of the course. UMA seeks the best available personnel for these key academic positions; for example, Dr. Edwin O. Reischauer of Harvard University, former U.S. Ambassador to Japan, serves as the leader of the senior content advisors in the Japanese Studies course. These advisory panels assist in setting course content and structure, and serve as academic reviewers of all materials produced. UMA has no full-time resident faculty; content specialists are hired on a course by course basis, in an attempt to provide the best academic talent for each individual course.

UMA courses are developed by a team of academic, andragogical and media production specialists working in concert to produce materials which are instructionally sound and aesthetically appealing. The issue of academic quality is always integrated with the issue of appeal of

the materials. Since UMA is developing courses which employ mass media components, the university has to compete successfully with commercially produced textbooks and the entertainment programs of the broadcast media.

The course team structure. Each UMA course team has four core members: an instructional designer, a resident content specialist, a formative evaluator and a professional media producer. The instructional designer serves as the coordinator of the course team, responsible for its day-to-day activities. UMA has a pool of full-time designers who work on course teams, using a constantly evolving UMA instructional development process. These professionals take the content generated by the content specialists and organize it into a systematic instructional format of goals, objectives and learning hierarchies. They are also responsible for working with the content experts and producers to assign different media roles to the course content.

Each team includes one or more evaluators, whose responsibility is the instructional validity of the course. UMA's formative evaluation procedures are more thorough and elaborate than those of most developers. At every stage of the course development process, materials are tested with sample audiences representing the intended learners, and revised within constraints of time and resources until the course team is satisfied that the

materials are achieving their desired effect. Like the instructional designer, the evaluation specialists are full-time UMA staff members, thoroughly familiar with the UMA course development process.

The producers of UMA courses are experienced media professionals. Typically, they have had wide experience in commercial and public television and film production. Producers are hired on a course-by-course basis, and work under the direction of a resident Executive Producer.

<u>Television, radio and other multimedia</u>. The television and radio programs are planned as an integral part of the course design to support, enrich and reinforce learning as well as to test achievement. Newspaper lesson reinforcements are planned to demonstrate experiments, etc. The TV programs are not taped lectures. Some televised courses use a documentary style, others include dramatic vignettes; sprightly dialogues about specific topics; excerpts from different essays. A repertory company of professional actors conveys much of the materials through sketches. Through an audio course, "Introduction to Symphonic Music," students hear performances by leading orchestras. The "World Food Problems" course brings top experts from three continents as guest lecturers.

More recently, UMA has joined with other producers to develop multimedia materials which are designed for multiple audiences. A good example is the "Foundations of American

Nationalism" course, developed jointly with National Public Radio (NPR) and featuring a series of 30 half-hour discussions between Professor Commager and Henry Owen, formerly director of the foreign policy at the Brookings Institution. NPR produced the radio series, which was aired for the first time in Spring, 1979, and UMA produced the companion print materials.[56]

Delivery. The delivery systems in the member states of UMA are being developed by the states themselves, with advice and coordination from UMA. The Constitution of the United States leaves the responsibility for education to the states, and this is a prerogative which the states have jealously guarded. Furthermore, each state has some delivery mechanisms already in place, and this fact has helped to keep system costs lower than they might have been if each had to be developed anew.

The Nebraska Educational Television Network, which covers the entire state and overlaps into areas of South Dakota, Wyoming, Colorado, Kansas, Missouri and Iowa, telecasts each of the television modules at least twice per week. Other states have public and commercial television stations and networks available at the learning centers for students whose schedules do not permit them to watch the telecasts, or for those who begin courses at times which do not correspond to the telecast schedule.

Tutorial activities and study centers. A main con-
cern of any learning distance system is the dropout rate
caused primarily by the loneliness of the long distance
learner. UMA provides some aids for this problem: a. pro-
vide pacing and motivation through mass media components;
b. provide educational support through excellently
designed materials with provision for student activity
and interaction, and c. provide social support and direct
interactive assistance through toll-free phone calls and
other forms of personal and group attention, particularly
study centers.

The learning center functions at UMA. 1. A learn-
ing center is a means by which delivered courses are made
accessible and a place where learners can receive advice
and counsel; register for courses; learn at an individ-
ually determined pace; meet other learners and faculty
members; and use educational resources. 2. The learning
centers of UMA are located on local college campuses, in
shopping centers, libraries or mobile vans. The center
houses the staff, contains complete sets of courses and
materials, and provides places for learners to work inde-
pendently or in groups. All of the centers in the various
states are strategically located in relation to driving
distances. 3. The centers provide addiitonal access to
course materials (such as video cassettes of television
components). The centers free the adult student from

constraints of broadcast schedule and academic calendar, and also serve an important clearinghouse function as a source of information about other educational opportunities, both in the community at large (libraries, museums, art galleries, local post-secondary institutions), and on a larger scale (educational programs and services throughout the nation and region). Moreover, these centers serve the important function of providing feedback from learners for use in both curriculum planning and course development.

Assignments and assessments. The fourth main component in the system consists of the practical and written work that the students are asked to do. This varies from course to course. Most of the written material includes questions, exercises, reports of experiments or calculations which have to be sent to the tutor in order to be commented on and assessed. They are assessed according to the accreditation system of each state and the needs of the learner. As was explained above, examinations are taken by the students according to their particular pace, mostly in the learning centers around the states.

Student numbers and characteristics. A policy of open admissions ensures that programs are open to all students. Students who are unable or unqualified to complete a

course may drop out without penalty at any time during the first four weeks after enrollment. A student may register in person at a learning center, or by mail through the central UMA office. If the latter, he or she will be referred to the learning center nearest home, and will receive a package of materials including the study guide, text, audio cassettes, audio player (if requested) and the instructional kit for the course in which he or she is registered.

The student population. Data yielded by initial surveys indicate that 20 percent of the population of the UMA area is interested in the benefits continuing education can provide. In an eight-state area surveyed there appear to be 200,000 people interested in taking UMA courses.

The first (October 1974) courses offered by UMA (accounting and psychology) enrolled nearly 600 students. This test population ranged in age from 13 to 69 years, with a median age of 41. Most enrollments represent the 25 to 54 age group. Females outnumbered males; credit enrollments outnumbered noncredit; and half of the enrolled students had previous college experience.

UMA hoped it would have more than 100,000 students taking credit courses and working toward degrees by 1980. Only 1,652 students registered by the fall of 1979, bringing the enrollment since the fall of 1974 to

9,264. UMA no longer talks about reaching the magic 100,000.

The occupational composition of the student body varies considerably from course to course. Learners come from farms, small towns, and cities roughly in proportion to the distribution of the overall population. Sixty-three percent of all registrants hope for some academic degree. Career improvement goals were selected most often as being the most important, followed by "personal satisfaction" goals. The greatest concern of learners before starting their course work was with "academic and learning problems."

At the time of the finishing of this study there is not available information concerning the success rate or the dropout rate of the UMA students in the last three years. But some significant changes were noted in the policy of UMA for the coming years which give an idea of some potential problems in the current system. The new president of the University, Donald R. MacNeil, has suggested the following changes:

1. The use of research funds to "identify potential learners," their needs, motivations, barriers and probability of enrollment.

2. Shift from a totally credit-based program to include the design of more general continuing education and personal enrichment courses and the design of training

programs for professional development.

3. Narrowing the range of UMA course subjects and setting production priorities to match the greatest consumer demands.

4. A decision to streamline production and deliver more courses at a lower cost in a shorter period of time.

5. Research and development of new teaching tools, including non-broadcasting multimedia technology such as programmed instruction, video discs and other developing models.

6. The creation of consortia within and outside of UMA's membership for joint program development, so that other sources--such as universities, professional associations, government agencies--match in money and in kind UMA's own contributions to specific courses.

Organization, control and staffing. Figure 2 will give an idea of the complexity of organizing a regional approach to open learning including different states. Some comments are necessary at this point about the overall organization of UMA:

1. UMA is a nonprofit organization, governed by a board of trustees, with the advice of an academic council and other consultant groups. The University of Nebraska provided, at the beginning of the operations, the leadership of the system, but during the last three years an
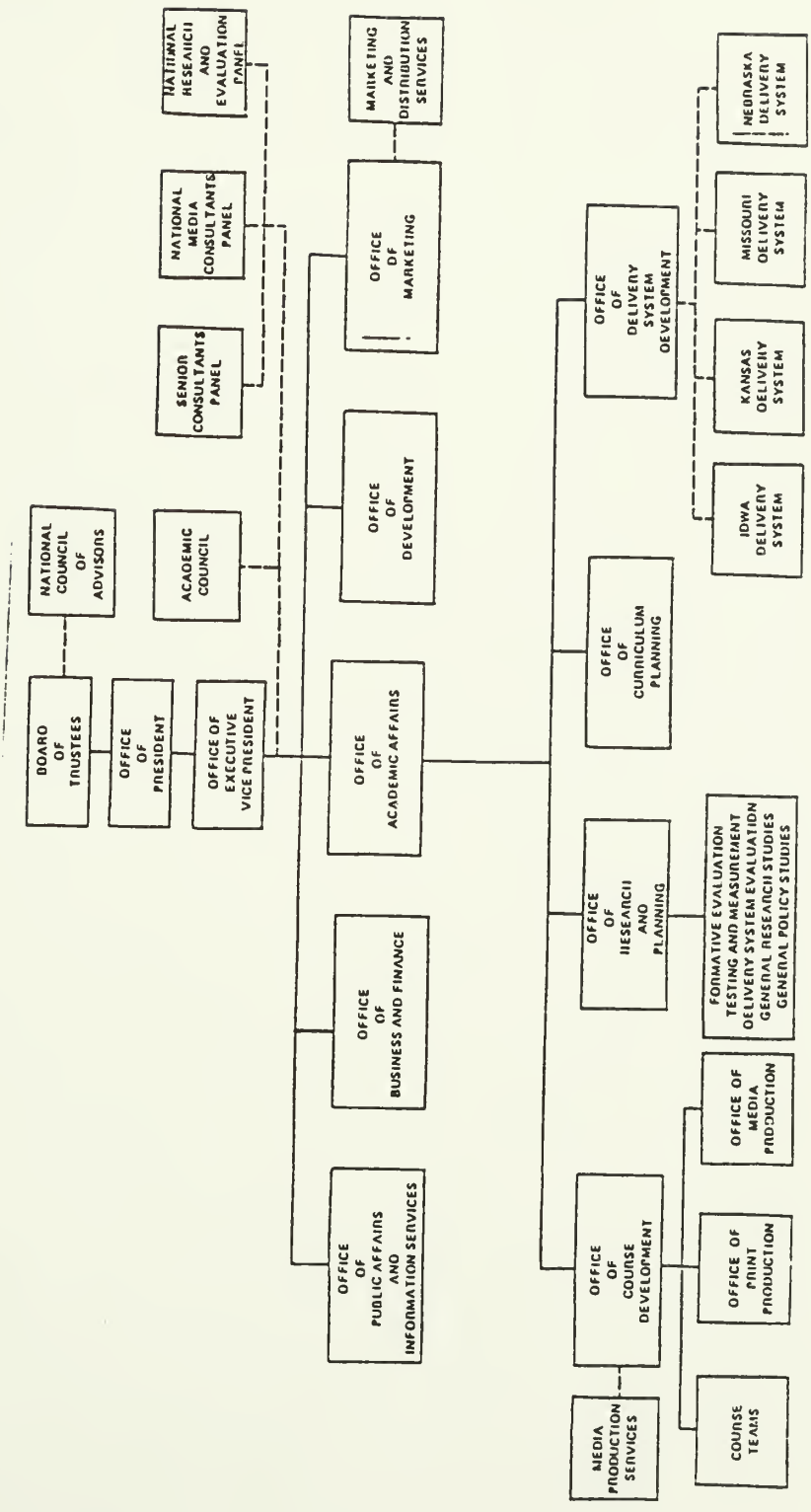
Figure 2. University of Mid-America. Table of Organization. Taken from: McBride, Jack. The University of Mid-America: A regional Open Learning System. Caracas: Lacfep, 1976. Attachment B, p. 2.

evolutionary transition has occurred into the organizational form explained in Figure 2.

2. The complex arrangements necessary for the creation of a regional university including different states, each of which has sovereign control of education is a formidable task. Agreements across state lines must have the approval of governors of the states, presidents, chancellors, deans and faculties. Public subsidy requires legislative appropriation in each participating state. The flow of money across state boundaries requires authorization. Employment of academic staff at participating institutions in other states involves approvals all along the line. If funding is also received from the federal government, additional approvals are required.

3. The states initially participating were committed to developing and funding statewide open learning delivery systems aimed at new populations of adult learners. Each state is pledged to provide the participation and cooperation of all its institutions of post-secondary education and during the year of 1975 they assumed 50 percent of the costs of delivery system planning and development.

4. It was agreed that course development and distribution processes must be centralized to avoid duplication. The major source of expense in any such system is course development. These costs are relatively fixed; they do not increase in proportion to enrollment. Therefore,

the broader the economic base of the consortium, and the larger the potential audience, the greater the prospects for economic viability. It seemed essential that development costs be kept relatively constant through the control of the regional entity. Hence, institutions of the participating states are responsible for delivery, but UMA coordinates delivery. Responsibilities for course development, research, creation of public understanding and awareness, and faculty training were given to the regional entity.

Finance. UMA gets most of its money from the federal government through the National Institute of Education. It began with a $1,418,000 grant for the fiscal year 1975--which started in October 1974. The institute gave UMA $1,500,000 in 1976 and 1977, $2,100,000 in 1978 and last October it awarded $2,250,000.

There have been grants from foundations, usually to help with a particular course. A three year $700,000 Ford Foundation grant expired in July 1979. The Lilly Endowment gave $300,000 for a course on world food problems.

Membership contribution. Each state made a contribution of $25,000 increasing by $25,000 each year, and levelled off at $150,000 per state in 1980.

Tuition income. Dependent upon factors such as type

of course and ability of the student to pay, several tuition rates are employed. Tuition income was calculated at an average of $20 per credit hour. Noncredit course income is about $25 per course. It was assumed that 60 percent of the adult learners will enroll for credit, and 40 percent will audit on a not-for-credit basis.

Course materials are charged to students at cost. Total costs of course materials are balanced each semester according to the income from student fees.

The cash flow model for UMA (for five year period development plans) gives the essential financial picture and it is used to provide an overall picture of funding; where the money comes from and where it goes. For example, expenditure and income anticipated for 1975 were $781,900. This sum was from the following sources: tuition, $253,800; materials, $121,800; state appropriation, $158,000; private grants, $60,000; NIE grant, $187,000.[57]

Cost comparisons with other institutions are not yet available, but the university is trying to benefit from economies of scale, as has been explained earlier in this chapter. The future of the university depends, therefore, on the optimum size it is allowed to reach more than on any other single factor.

Conclusions.

1. UMA is a new institution, only seven years old,

which has been developing since 1974 according to clearly
stated philosophy, rationale and objectives. The institu-
tional support in Nebraska, Iowa, Kansas and Missouri
(and other states of the region), expressed through the
consortium, seems to be working well (see pages 98-99).

2. The UMA open learning emphasis is consistent with
the region's historical acceptance of university exten-
sion, independent study, distance learning and mediated
instruction.

3. From the very beginning early needs assessments
were conducted, identifying a significant number of people
interested in enrolling in open learning courses. Studies
of potential learner characteristics were conducted before
the courses were produced. This aspect seems to be in-
cluded in every effort of the UMA authorities and academics
and is consistent with the theoretical procedures for
satisfying adult needs mentioned in the first chapter of
this study.

4. One of the most impressive aspects of UMA is the
integration of the different elements of the open learning
system: no previous requirements; distance learning (no
campus); application of the principles of adult education
(clear objectives, at the pace of the student, self-
evaluation, needs assessments) make up the basic philosophy
of the UMA. The learning material is mostly prepared using
the criteria developed from students' needs, marketing,

etc. In some cases courses have been produced according to the criteria and interests of the grant and participating foundations--the Japan course, for instance.

5. The flexibility of the system is an important element in most of the courses. There are not compulsory learning activities (summer schools) or rigid broadcasting schedules, or rigid schedules for the study center activities. A main concern of the overall system is to maintain the <u>student's own pace</u>. Examinations, for instance, are provided when the student is ready to take them.

6. Course components are similar to those used by the Open University but there are new, interesting elements such as the weekly lessons published by local newspapers as a complement to the written material provided. The concept of an integrated course team is appropriate for this learning system. Nevertheless, the initial emphasis of the UMA on a highly sophisticated television component seems to be the main cause for expensive courses. To explore lower cost technology should be the main purpose of the new administration of this university.

7. The emphasis on meeting individual learner needs, and on providing more flexibility to the learning package (i.e., looking for a more individualized education) has generated very complex problems for the UMA ranging from academic design to administrative procedures. The variety

of approaches identified for UMA's course production is an example. At the same time the impossibility of producing the 50 planned courses for the period 1975-1980 (only 12 have been produced) is a clear example of the academic and administrative complications that have arisen. The new shifts in UMA, mentioned on pages 122-123, reveal these complications.

8. According to the financial information provided, unprecedented federal funding will continue until at least 1980. The dialectical relationship of UMA to the national Institute of Education opens new potentials for state-region-federal collaboration respecting large educational needs and issues. Economies of scale seem not to be working for the UMA. The confirmed registration for 1980 was about 10,000 students. New strategies for attracting students have to be developed.

9. Training personnel to serve the independent distant learner must be an important development of the UMA and should take into account the delivery problems, the loneliness and point of view of the distant learner instead of only the experience or expertise of regular campus-based academics or media personnel.

10. The five year plan had given to UMA general guidelines to follow. The system had been developed through a process of trial and error which was necessary, and even healthy, since no other open learning system had

been mounted on a scale and conceptual design similar to UMA.

11. Finally, some considerations of Jack McBride (Executive Vice-President of UMA) could be useful for the viability of translating this experience to other countries. McBride explained:

> Educational institutions express, in very concrete ways, the political, cultural and economical conditions and values of the country in which they emerge. Each institution acquires its character from the total context in which it exists, and that context, more than anything else, is what is indigenous. While the borrower can adopt the concept, technology and even the substance of an innovation, he cannot easily borrow the context which, in other countries, made the program viable.
> In conclusion, for those contemplating the establishment of open learning teaching at distance systems which incorporate both course preparation and delivery, our experience at the University of Mid-America leads to suggest two recommendations:
> The first recommendation: Proceed cautiously but deliberately, and allow ample time for research and planning before beginning operations.
> The second recommendation: Special consideration must be given to the following fourteen elements, which are essential to a successful open learning distance teaching system:

1. Clear definition of educational objectives.
2. Clear identification of the adult learners to be served.
3. Careful determination of the particular curriculum and courses to be offered.
4. Deliberate determination of the open learning organization and governance structure.
5. Careful planning of the curriculum and course development process to insure academic substance of the highest quality.
6. Insurance that the course development process produces components of the most professional mediated quality.
7. A strong educational research and evaluation unit dedicated to the open learning system.

8. An efficient delivery system which dis-
   seminates the open learning courses in such
   a manner as to insure that open learning
   successfully takes place.
9. A carefully determined course design and
   production process which is constantly
   evaluated and refined.
10. Special plans to recruit the variety of non-
    traditional adult learners to be served.
11. Equally special plans to insure that students
    continue through the course to successful
    completion.
12. Means developed which will bring about faculty
    acceptance, an appropriate academic climate,
    and accreditation of the open learning
    courses.
13. A carefully nurtured and developed political
    climate in which the open learning system can
    appropriately function.
14. Development of an economic plan which sees the
    open learning system ultimately made cost-
    beneficial to society.[58]

C H A P T E R   I I I
ASSESSMENT OF CURRENT PRACTICE IN VENEZUELA:
THREE CASE STUDIES

Introduction

This chapter contains two major sections and the con-
clusions derived from them. In the first section, after a
brief description of the Venezuelan social context, the
chapter explores various rationales for distance education
in Venezuela. Such rationales include statements of the
problems that distance teaching programs attempt to solve
and the assumptions underlying the various instructional or
administrative approaches that are being integrated in a
given distance teaching program. In short, this section
summarizes the possible justifications, characteristics and
social role of distance programs in Venezuela according to
recent observations within the country. Necessarily,
therefore, the section explains the general characteristics
of the country, particularly its higher educational system,
its educational philosophy and the general policies that
the Ministry of Education have been trying to implement
since 1976.

The second section of the chapter assesses current
practice in Venezuela through three case studies selected

as distance educational models. The first example, <u>Los Estudios Libres</u> of the Simón Bolívar University, is one small project of distance education that has been functioning in the capitol city with distance students mainly in the field of education, preparing teachers for the secondary level in subjects such as physics and mathematics, a large gap in the country. The second project, <u>Los Estudios Universitarios Supervisados</u> of the Central University of Venezuela--the largest formal university in the country--has developed a program of distance education which includes at least three major cities, providing educational specialization for practitioners working at the secondary or elementary level who are seeking a university degree. These two projects are innovative programs functioning inside traditional institutions. The third and most recent project is nationwide. It has been promoted by the Ministry of Education with the creation (1978) of the National Open University, which is providing distance and open education at the national level, including the technical areas useful to the development of major industries. The project has the specific purpose, however, of solving the problem of an increasing population completing high school and for a variety of reasons unable to enter the formal university system.

The conclusions of this chapter help to identify the

causes of strengths and weaknesses of current approaches to distance education in Venezuela, and the factors which need to be considered in improving that design for 18 to 25 year old post-high school students.

Section 1:   The Rationale for Distance Education in Venezuela

A description of Venezuela's social context. The Republic of Venezuela is located at the northern end of South America and its territory covers 912,050 square kilometers, divided into twenty states, two federal territories, and the Federal District, all of which form eight socio-geographical regions.

The government is of a central-federal type controlled by a representative democracy. The president is elected by direct popular vote for a five-year term. The legislative branch is bicameral and is comprised of the Senate and the Chamber of Deputies who are also selected by popular vote. The judges of the Supreme Court are nominated by both houses of Congress in joint session.

The present population numbers approximately 14,500,000, 25 percent living in rural areas, and 75 percent in urban zones. Population density is 13.7 inhabitants per square kilometer, and shows a high concentration in the ten largest cities, which contain

45 percent of the total population, with an annual growth
of 3.4 percent. Table 2 shows the total population pro-
jection following a medium-low growth alternative.[59]

TABLE 2

PROJECTION OF TOTAL POPULATION BY AGE GROUPS
(1971-2001)

Age Groups	1971	1976	1986	2001
TOTAL	10,721,582	12,476,380	16,489,649	23,581,821
0-14	4,824,282	5,381,040	6,589,554	8,186,186
15-29	2,881,458	3,604,108	4,723,462	6,544,849
30-44	1,596,049	1,799,058	2,794,579	4,648,852
45-64	1,102,371	1,321,843	1,806,784	3,159,291
65-above	317,362	381,331	556,270	1,042,643

Venezuela is a country of a traditional agriculture-
and-cattle physiognamy with a relative industrial develop-
ment. Its income is derived mainly from the petroleum and
iron industries, which have recently been nationalized.
Although there is an accelerated industrialization process,
the country demonstrates a high dependence on the import
of finished products, food and machinery.

The following paragraphs reveal some indicators of
the behavior of public finances and other monetary aspects
which constitute essential elements in the industrializa-
tion process.

The balance of the Central government's fiscal
management from 1969 to 1976 has shown a con-
siderable increase, both in public income and

in public expense, mainly due to the increase in
oil prices. Income during that period grew
342 per cent, from $2,235,000,000 in 1969 to
$9,316,000,000 in 1976. It is worth noting that
the contribution of oil to the 1974 income tax
(one year before the oil nationalization)
reached 91.14%, whereas the other aspects of
the economy, contributed only 8.86 per cent.
These facts show the vulnerability of Venezuelan
economy, since its development depends on foreign
forces and pressures.[60]

The per capita income in Venezuela in 1977 was

$856.51, which is one of the highest in developing

countries. In spite of the fact that some indicators of

social welfare show improvement during the period 1960-

1976--for example, education, health and housing--there

are still serious deficiencies in such areas as mal-

nutrition, infantile mortality, illiteracy and lack of

access to the educational system. These deficiencies do

not correspond to the development which occurred in the

economic sector. At the beginning of the present constitu-

tional period (1978), approximately 70 percent of the

population could not satisfy their minimal nutrition require-

ments, while 5 percent of the population absorbed almost

25 percent of the country's total income and only 25 per-

cent of the population acquired half the consumer goods of

the national market.[61] Although the present government has

undertaken the task of reorienting the distribution of the

income and consumer goods, Venezuela is still far from

reaching an efficient and full capitalization of persons

belonging to the dispossessed classes. As in other

developing countries, Venezuela shows a high rate of un-employment. The economically active population is 3.9 million people, 6.3% of whom are in conditions of manifest unemployment. If underemployment, for which pre-cise figures are lacking, were added to this figure the total would reach a high proportion of the population. This phenomenon is linked with a high concentration of population in marginal urban areas, which demand constant and unavoidable attention from the state. That attention in turn, creates expectations of improvement of the socio-economic conditions among these marginal groups, and accelerates the consequent exodus from the countryside to the urban centers. At the same time, it should be pointed out that the active manpower and womanpower is not highly usable, due to its low capacitation and inefficiency.

The educational system in Venezuela. At present, the Venezuelan educational system includes the following levels: One to two year pre-school education for 4 to 6 year old children; primary education (6 years) for children 6 to 12 years of age; secondary education (comprising two cycles, a basic one of three years, and a diversified cycle of 2 or 3 years of studies); and higher education with programs requiring from 4 to 6 years of studies.[62]

Table 3 shows the number of teachers serving the various levels of the educational system in 1975, and the

projected number of teachers for 1980, the closing year of the fifth plan of the nation.[63]

TABLE 3

TEACHERS REQUIRED (1975-1990)

	1975	1980	1990
Pre-school	4,359	21,205	40,704
Primary	60,829	---	---
Basic cycle	27,199	105,161	147,951
Diversified cycle	9,723	22,124	52,205
Higher education	12,849	14,638	---

It is significant that the great demand for teachers has caused the incorporation into the system of a number of persons as teachers who lack proper accreditation or training. It is established that over 10 percent of the total teachers in primary education, and over 60 percent in secondary education, have no academic titles whatsoever. On the other hand, the new project of the Educational Law, when approved by Congress, will require teachers to have a higher education degree. This will mean that the training of the great majority of primary school teachers will have to be upgraded. Another indicator of the teaching and instruction situation in Venezuela, is the fact that the majority of the higher education professors have no pedagogical training.

The higher education system. Higher education comprises:

1. Universities, whose task it is to discover, preserve and impart knowledge through research and teaching, and to prepare the professionals needed by the nation. Venezuela has ten national universities with an enrollment of 168,166 students, and five private universities with an enrollment of 19,363 students. These universities are coordinated by the National Universities Council. In 1976, the budget of national universities reached $436,728,079.[64]

2. State University Pedagogical Institutes, whose function it is to form teaching and administrative personnel for the secondary and higher education levels. At the date of completion of this study, 1982, there are four such institutes.

3. Polytechnical University Institutes. These are state institutions devoted to the formation of technicians and production engineers. In 1982, four institutes of this type exist.

4. Technological University Institutes, in charge of preparing higher level technicians in priority areas to be incorporated after a short program of studies, into the industrial development. In 1982, there are eight such institutes.

5. Junior Colleges devoted to the training of higher level technicians through short careers, for administration, education, and other priority areas, to be

incorporated into a field of work or to permit them to pursue studies at higher levels, either in the Pedagogical Institutes or at the various universities. There are, in 1982, eight Junior Colleges.

6. Private university institutes, created by private initiative to contribute to the formation of higher level technicians in various disciplines. There are, in 1982, seven such institutes.

7. Military institutes, devoted to the preparation of officers for the four branches of the Venezuelan army. There are, in 1982, four such institutes.

In 1976, the enrollment at institutes and junior colleges reached the figure of 54,450 students. Table 4 shows the historical development of enrollment in higher education for the period 1966-1976.[65]

Table 4 shows an increase in enrollment in the higher education institutions. In truth, this process of massification had its origins in the political change, including the reestablishment of democracy, which took place at the beginning of 1958. In 1950, higher education enrollment was 6,900. In 1957, it had reached the 9,467 mark, an approximate rate of growth of 5.7 percent. By 1964, enrollment had already climbed to 40,587 students, indicating an average annual growth of 45 percent for the period 1958-1964. For the 1975-76 academic year, enrollment was 254,979 students. It places Venezuela as

one of the fastest growing countries in the world in the
field of higher education.

TABLE 4

HIGHER EDUCATION ENROLLMENT--HISTORICAL SERIES 1966-1976

Years	Universities	Other Institutes	Total
1966	47,099	3,277	50,376
1967	52,599	3,583	56,137
1968	56,674	3,775	62,449
1969	66,218	4,598	70,816
1970	80,598	5,077	85,675
1971	88,505	6,789	95,294
1972	107,541	7,921	115,462
1973	145,462	13,807	159,269
1974	154,509	23,309	183,318
1975	182,854	33,346	216,200
1976	197,529	57,450	254,979

Budgetary increases for the financing of higher
education have also reached surprisingly high figures.
Table 5 shows this increase.[66]

The operational costs have been estimated by OPSU
at 7,875 bolivares per student ($1,832) and the investment
costs at 20,374 bolivares ($4,730) for each new space made
available.

Democracy and the consequences of the educational expansion.
The rapid increase in enrollment and the great institutional
diversification is the result of the decided interest of
democratic government to develop the educational sector in

TABLE 5

APPROVED BUDGETS FOR UNIVERSITIES AND OTHER HIGHER
EDUCATION INSTITUTES IN MILLIONS OF BOLIVARES

Institutions	1971	1972	1973	1974	1975	1976
Universities	534.2	794.1	762.7	1,212.1	1,583	1,724
Institutes	39.5	66.7	79.5	169.8	177	303
Total	573.7	860.8	842.2	1,381.9	1,760	2,027

Venezuela. The manifest trend since 1958, has been to expand
the higher educational level according to social demand, and
this has caused abrupt growth (only loosely linked to the
social, economic, cultural, and scientific development of
the country) and a consequent deterioration in the general
efficiency of the national universities. Due to this
rapid expansion, the Venezuelan university's relevance to
the present and future situation of the country is de-
clining. Scientific and technological research is
minimally developed due to the fact that the volume of
enrollment expansion absorbs almost all of the state's
investment in higher education. Although national priority
areas in socioeconomic development have been established,
and some estimates of anticipated human resources have been
made, the lack of a sound orientation to social demand for
higher education in the Venezuelan universities causes them
to continue graduating professionals in areas already

saturated and which have little relation to the development plans of the nation.

The national needs. On March 9, 1976, the executive branch of the government approved a plan which outlined the essential features of social and economic development of Venezuela to be achieved during the five year span 1976-1980, known as the Fifth Plan of the Nation. Following the criteria set forth in the Plan of the Nation, the contribution of the educational sector to economic development and its anticipated effect upon the economic sector were to be as follows:

a. Primary sector. Agriculture plays an undeniably important role in the consolidation of the country's economy. The Fifth Plan and the Sixth as well, foresees an increased average of 10.8 percent in the GNP in agriculture, which will affect positively the process of substitution for imports, thus considerably diminishing the negative balance of agricultural national production and in turn reducing the cost of living and widening the bases of nutrition. All this will require decisive action by the educational system, since agricultural development and an adequate technification of agriculture will demand a great volume of highly skilled human resources. In relation to mining, the nationalization of the primary natural resources (iron and oil)

represents a decisive step in the process of steadying
Venezuela's economic system. At the same time the rational
use of these resources demands the accelerated training of
technicians and specialists, a demand which necessitates
an increase in technical education, related university
careers, postgraduate specializations as well as the
development of scientific and technological research.[67]

    b. <u>Secondary sector</u>. Current industrial develop-
ment indicates a process of high rate industrialization
which will endow the country with the necessary infra-
structure for: 1. rationalizing and increasing foreign
trade; 2. adequately assisting the growth of internal con-
sumption, and 3. substitution for imports. A growth in
employment capacity of 30,000 to 40,000 new jobs per year
for the period 1978-1983 is foreseen. The development of
the secondary sector of the economy urgently demands the
technical and technological capacitation of a large per-
centage of the human resources it will employ, and the
establishment of a solid scientific and technological
basis to take care of the requirements of development.[68]

    c. <u>Tertiary sector</u>. The state decision to make
really effective the improvement of the level and quality
of life for all Venezuelans represents a significant in-
crease in benefits being offered by the various com-
ponents of the Services Sector, especially education,
health, and social security. These increases demand a

considerable development of human resources, equipped at all levels with attitudes, knowledge, and skills which will enable the development of the Services Sector. This will result in the expansion of an educational system which has the task and the commitment to train the necessary personnel.[69]

The educational revolution. The policies of the new education. During the year of 1976, in the exposition and analysis of the Minister of Education Memoir presented to the Congress, the Minister stated the basic policies of the Educational Revolution.

The determination of policies is directed toward the research and establishment of new forms which correspond to the values most related to the problems to be solved. Every educational policy should reflect the political options of a country, its traditions, values, and the conception of its future. The primary purposes and objectives justifying and orienting the educational revolution can be synthesized, in their essential aspects, in three broad principles:

    I.   Education for Democratization

   II.   Education for Innovation

  III.   Education for Autonomous Development

    From these principles are derived three basic

policies which are essential guidelines to all programs and actions of the Educational Revolution process. These three policies are the following:

Policy I. Education for Democratization. Every citizen must: 1. Be given a foundation as a democratic citizen for a democratic society. Have an effective right to basic education--the minimum education considered basic and essential by the laws of the country, so that he or she is able to become fully developed both as a person and as participating member of a modern society. 3. Enjoy the real opportunities to continue his or her development in the post-obligatory educational system, according to his/ her abilities, knowledge, and interests. 4. Receive the benefits that permit him or her to compensate for the possible disadvantages of a particular sociocultural origin. 5. Have the real possibility of actively participating in the basic organizations of his or her community.

Policy II. Education for Innovation. The educational system should be oriented toward the permanent fulfillment of a vigorous capacity for innovation, thus making it possible to reach a high academic quality in the sets of instructions and processes of the system. This quality is understood as having three dimensions: 1. The need to transform an elite-oriented system of education into a system capable of meeting the new demands of

massified education. This change will involve educational methods, structures, curriculum, attitudes and patterns of prestige. 2. The ability to incorporate into the educational process, the social conditions, advancements and discoveries related to theories, processes and technologies of contemporary education. 3. The possibility of giving Venezuelan students a type of individualized education relevant to their own conditions, needs and aspirations; stimulating their creative capacity and influencing the formation of values, motivations, attitudes and conduct appropriate to face, in a permanent manner, the processes of generation of knowledge and technologies relevant to the sociocultural reality of Venezuela.[70]

Policy III. Education for Autonomous Development. The educational system must be a coherent and articulated whole, oriented primarily toward satisfying the objectives, aims and values required by society for its strategies of autonomous national development.

The fundamental aim of this policy is to orient development toward improvement of the quality of life of the Venezuelan person. At the same time, however, the educational system should prepare the human resources required in areas of national priority, not only for economic development, but also in those areas related to systems of human ecology. This policy therefore

arises from the principle that education not only meets a demand, but also is transformed into a function of the goals of desirable human and cultural development.

Finally, the autonomous development of Venezuela, within the relativity of the concept of autonomy, generates a regional harmonic development within the nation itself, and development which is integrative within the context of Latin America and the Caribbean area.[71]

Why open and distance education? This section explains some of the rationale for using open and distance education in Venezuela. Such arguments reflect the primary observations of various project directors, deans and other personnel related to distance education in Venezuela. Included is an exploration of how the national system of distance education (the various projects working with the idea and particularly two of the cases to be studied) is related to the policies described above. This constitutes one of the most promising strategies for the democratization and innovation of post-secondary education in Venezuela.

Why distance education programs? It is not easy to answer this question in a definitive manner. Distance education programs take many forms and they appear for a variety of reasons. Some of those reasons were discussed in Chapter I, specifically on pages 13-14. In the

Venezuelan cases some common ideas appeared not only in the interviews conducted among personnel related to distance programs but also in the variety of rationales provided in the various programs. Some of those common matters include, but are not limited to, the following arguments:

1. Disillusion with formal education. Traditional universities in Venezuela are not responding to the increasing social demand for better and more modern skills to fulfill the needs arising from economic growth and the rapid industrialization of the nation. The economic system is not well served through the traditional universities in the preparation of graduates required for the technological courses needed by the country. The creation of new and experimental universities, the impulse toward postgraduate programs in foreign countries, and the creation of the National Open University seem to be a response of the government to these problems.

2. The urgency to train "qualified teachers" to meet the needs for education. Distance teaching provides a means of training more teachers faster. Two of the cases studied in this chapter are exclusively devoted to the training of practitioners working mostly at primary and secondary levels within the national educational system.

3. Distance teaching reduces the need for many expensive physical facilities. For this reason, it is

possible to reach more students with the resources avail-
able.

4. The increasing relatively young population (18-
25) coming from high schools mostly in the urban areas of
Venezuela as a direct consequence of the democratization
process is a great challenge which traditional universities
are not meeting. The introduction of new teaching dis-
tance approaches inside traditional structures seems to
be a natural development of some traditional universities
in an effort to find a solution to student massification
and is at the same time a way to become modernized. Dis-
tance education and the educational technology involved in
it has become an indicator of modernization.

5. It is possible through distance education to pro-
vide higher quality education than that which is available
through most conventional education systems.

6. Distance teaching provides an opportunity to
reduce the disparity between the rich and the poor, or urban
and rural people, with respect to participation in educa-
tion, and the consequent acquisition of social benefits.

7. Distance teaching provides an effective means of
enhancing a sense of national unity and purpose and can be
an effective means of promoting national development goals
such as improved agricultural practices, improved factory
skills, provision of degrees for practitioners, etc.

8. Distance education can, through economies of

scale, or appropriate management of small-scale projects, make education a more cost-effective enterprise.

Similar considerations were found in the written rationales of the case studies. For example, the National Open University stated:

1. <u>Democratization</u>. The distance and open systems will offer real opportunities of higher learning to students from various social strata and primarily those who work and to adults who do not otherwise have this opportunity.

2. <u>Massification</u>. The distance systems and their programs should significantly assist in the meeting of a strong social demand for higher education, by offering academic levels not inferior to those in the best higher institutions in the country. The distance system will contribute to the massive and accelerated formation of human resources demanded by the priority programs of national development.

3. <u>Innovation</u>. The distance and open systems should establish a capacity to develop and incorporate in a continuous manner the innovations which optimize the teaching-learning process. These systems will develop an individualized teaching-learning approach relevant to the conditions, needs and aspirations of its users, and stimulating their capacity toward creativity and critical thinking.

4. <u>Optimization of state investment in higher education</u>. The distance system will contribute significantly

toward diminishing the yearly cost per student and the social need for graduates will indirectly affect the cost as distance systems are capable of creating more rapidly the professionals needed by society.

5. <u>National integration of resources</u>. The distance system could, without duplications, complement actions and programs for national needs which other institutions of higher education are performing satisfactorily. At the same time these systems could optimally use the resources and installed capacity of educational institutions and public and private enterprises.[72]

Similar considerations can be found in the initial paper presented to the National Council of Universities by the Simón Bolívar University.[73]

<u>Preliminary conclusions</u>. <u>Role of distance systems in Venezuela</u>. Most of the projects in the country have established similar objectives in order to accomplish--at least in theory--the general principles proposed by the Ministry of Education. Those objectives can be understood as the role that distance and open systems are beginning to play in Venezuela and they could be summarized as follows:

1. To form at short, medium and long range, the human resources needed by priority areas of socioeconomic development. Special emphasis has been given to the formation, professionalization, and upgrading of teachers.

For instance, the Central University of Venezuela has developed a special program for practitioners in the areas of elementary and secondary education. The Simón Bolívar University is working with a program to provide a degree for teachers of physics and mathematics. The National Open University has included in its programs such departments as physics, mathematics, civil engineering, industrial engineering, agricultural and marine sciences, education and social sciences, all of them according to the priorities established by the national plans V and VI. Finally, all the distance programs have in common the specific problem of experimenting in the "know-how" of providing adequate education to 18-25 year old post-high-school students.

2. To establish in the country a special department of the instructional and administrative system of higher education, responding to a multisectoral approach. This means full participation of both public and private sectors in the planning and implementation of programs of the distance system, in order to meet the real needs of the country's socioeconomic development and optimize the use of existing resources in the various areas. In fact, this seems to be happening with the creation of the permanent National Commission for Distance Studies--integrated with the Minister of Education, the National Open University, the private universities, the public universities. That

commission has been working for about four years with such specific accomplishments as avoiding duplications, identifying appropriate distance programs for the country and evaluating those developed by the different projects.

3. To develop, implement and administrate new strategies of teaching learning to heighten economic efficiency, and to maximize the effectiveness of available resources. To carry out research, to evaluate experiences in the new field of open education and to coordinate the activities of distance systems with action of the Ministry of Education in the areas of educational technology and open education at other educational levels.

4. Distance systems in Venezuela are attempting to structure a teaching learning system as a modular system of learning which allows the user to progress through the various stages of professionalization until reaching a high level of specialization. The modules used by the various projects are very similar and the learning materials are structured according to this objective.

Distance systems are facing a challenge derived from the lack of precedent in Venezuela and it is necessary to produce a change of attitude among users to reverse the relationship of responsibility existing in traditional learning systems. The distance user has to take responsibility for his or her learning and the institution should do everything necessary to make this possible by offering

alternatives and resources which optimize the process of instruction.

Finally, one objective of distance systems in Venezuela seems to be to optimize the external efficiency of educational investment, thus maximizing the economic yield of the state investment in the distance systems, with the aim of lowering the cost per student and per program through the criterion of economy of scale. This issue is, at the moment, very confused, not only because most of the projects are small, working with populations between 300 and 1,500 students, but also because the National Open University--which was supposed to serve a larger number of students--is only serving about 12,000 students, which is generally considered to be within the small project range. Some consideration of these issues and the management of small projects will be included in following sections of this work.

Section 2. Assessment of Current Practice in Venezuela: Three Case Studies

Introduction. This section deals with the primary questions to be answered in this study:

1. What are the strengths and weaknesses of current approaches of universities to distance and open

learning with particular reference to instructional design in the context of Venezuela?

2. Are these particular designs appropriate for 18 to 25 year old post-high school students?

In searching for those answers, three Venezuelan case studies have been studied as representing models of open and distance education. One of them, the National Open University, is a national model providing education throughout the country; the other two--the Free Studies of the Simón Bolívar University and the Supervised Studies of the Central University of Venezuela--are smaller regional urban models.

The three models have been selected not only because of the size difference but also because they are the most experimental projects where, therefore, information has been more accessible.

To address the above broad questions, the three case studies will be analyzed using information concerning:

1. The type or model of the distance education adopted, with an emphasis on the institutional and national objectives.

2. The relevant curricula for any given type.

3. The development of appropriate learning materials and the actual delivery system.

4. The type and age of population served by the model.

Using this information, conclusions will be drawn concerning the strengths and weaknesses of each case.

The type or model of distance education. The type of distance education institution a particular society develops depends upon the following factors:[74]

1. Government's perception of needs, which could be a real awareness of citizens' needs or political and philosophical compromises made by politicians with specific classes in the society.

2. The realization by individual departments within institutions that satisfying the needs of the adult market may significantly increase program size.

3. The decision by an institution's extension department to expand courses and program offerings beyond the limits of the campus.

4. The realization by professional schools that service and the upgrading of programs may be served by television, radio or printed material.

5. Demand for courses and programs by people living in remote areas who feel a personal need for contact with an institution, for job training or simply for something in television or radio more

instructional than normal commercial broadcasting.

To these demands, governments and institutions around the world respond in the following basic ways:

1. By establishing an autonomous "open learning" institution, such as Britain's Open University, studied in Chapter II.

2. By establishing institutions in which campus-based and distance education have equal status and are in fact integrated. New Zealand's Massey University and Australia's Murdoch University are models of this kind.

3. By establishing an extension service within a traditional institution. This seems to be the most common evolution of distance education. This kind of approach appears to fall into five categories:

    a. The strongest extension services are those with the authority to decide what distance education activities will be developed and to control design, production and delivery of such activities.

    b. The most common extension services are those that lack the authority to decide the nature of an institution of distance education but do work closely with on-campus faculty in arranging a program.

c. The least effective extension services appear to be those which may only respond to faculty requests for distance education programs, and have neither the mandate nor the budget to initiate programs on their own.

d. A fourth and somewhat limited extension service is expressed in the form of "graduate studies only" distance education programs. Such programs appear to emerge directly from institutions that prefer to have undergraduates on campus, and to deliver only advanced courses via any tele-communications medium.

e. A fifth form is that of a community based extension service within an institution. A good example is the Memorial University of Newfoundland in Canada. This unit produces packaged materials, videotapes, films, slides, printed material, courses and seminars in direct response to requests for service or assistance from groups of fishermen, parents, teachers, businessmen or factory workers. Similar examples are the Empire State College in New York and the Vermont Community College.

<u>The relevant curricula for any given type</u>. The instruc-
tional design converts the curricula objectives into
terminal learning objectives, analyzes them, determines
the prerequisites of knowledge and established the in-
stance of instruction which will be necessary for the
attainment of their mastery by the student. This leads
to the determination of the instrument of evaluation and
to the logical and sequential ordering of the instruc-
tion. The contents are materialized in the media and
andragogical strategies that constitute the distance
learning materials. The evaluation at different stages
will determine the level of acquisition of knowledge
and skills. Self-evaluation is a means used by the
student as an authentic aid in measuring the effective-
ness of the instructional materials and the degree of
mastery which he or she has attained.

<u>The development of appropriate learning materials and
the actual delivery system</u>. Another important con-
sideration closely related to the instructional design
is the course development procedure. At least four
elements will be considered for each of the models
proposed: 1. author techniques for printed materials;
2. educational technology used as a complement of the
printed material; 3. material production, and 4. delivery
system.

The type and age of population served by the model. The fourth aspect of the scheme represents the curiosity of the author of this study to know if the main clientele of Venezuelan projects are really students 18 to 25 years old instead of the adult population 26 to 60 as has been the case in many well-documented projects of distance education. The fifth element of the scheme could be considered as the conclusions of this chapter. The methodology used to obtain the data is explained at the beginning of each case.

Case 1. The supervised studies of the Central University.

Methodology used in this case. The methods used to obtain the data for this case were the following:

1. Study of the original documents of the project from 1971 to 1975.

2. Study of the reports presented by two of the coordinators of regional study centers of the system.

3. Interviews with the director of the project during the period 1979-1981.

4. Five interviews with advisers and members of the academic personnel of the system.

5. Eight interviews conducted with advanced students in two different regional centers.

6. Analysis of the printed material of at least 8 different subjects.

Only in a few instances was it possible to get access to statistics about the development of the project

due mainly to the lack of organization of the existing information. To analyze it could take years. With these time limitations in mind the following scheme was used as a guide for interviews, analysis and researching of documents:

1. Foreign influenced model or national development.
2. Previous needs assessment conducted.
3. Institutional support of the project.
4. The main objectives of the model.
5. Model developed.
6. The form of distance education.
7. The instructional design approach.
8. Analysis of the printed material.
9. Study center operation.
10. Student evaluation.
11. Other elements of the system.
12. The course development procedures.
13. The delivery system and the distance elements of the model.
14. Characteristics of the population served by the model.
15. Dropout and promotion rates.
16. Costs.
17. Conclusions.
18. The future of this project. Alternatives.

Foreign influence. The supervised Studies of the

Central University of Venezuela were initially influenced
by the British Open University and this fact is reflected
in the prior studies and references of the first project
presented by this university to the National Council.[75]
That initial model, however, has changed considerably in
the last seven years and the current project is quite far
from the English distance model as will be pointed out in
the following pages.

Needs analysis. There is no evidence that the com-
mission in charge of the original project conducted any
needs analysis among the population to be served. That
population has been primarily composed of elementary and
secondary level teachers, mostly practitioners seeking a
university degree as required by law since 1976. The
potential population for this project was identified by
the studies and figures published by the Ministry of
Education. (See Table 3 on page 139 of this chapter:
Teachers Required for 1975-1990.) Based on the demand
of this population for assistance toward obtaining a univer-
sity degree, and the incapability of the formal School of
Education to provide that assistance, a group of teachers
inside the traditional school conceived the possibility of
developing a distance system that could reach that par-
ticular clientele. The project developed with the insti-
tutional support of the Dean and other authorities of the
School of Education and the Faculty of Humanities into

which the school is integrated.

The objectives of the model.

1. To promote a distance educational model in order to initiate educational experimentation as a new way of training teachers at the university level. The primary purpose should be the development of new technologies related to distance approaches, such as printed material systems, TV, radio, audiovisual aids, etc.

2. To provide the opportunity for a university degree to those practitioners who for whatever reasons could not previously achieve the university level. The project should be oriented to students working as teachers at the elementary and secondary levels.

Model developed. The project began to work by January of 1975 adopting the curriculum developed by the traditional school of education. Two reasons were used for that adoption: 1. to provide the same quality of programs offered by the formal system and accepted by the Ministry of Education, and 2. to facilitate the transference of students from the new system to the formal system in all parts of the country where similar formal schools of education are working.

In order to receive a degree of Licenciado en Educación, the student has to achieve a total of 170 credits distributed in ten semesters including some 48 different subjects.[76] The maximum number of credits per semester

is 21, varying according to individual differences. The
student is free to choose the time, place and manner of
study, without any obligation of face-to-face classes,
and has the possibility of presenting his or her evalua-
tions as is convenient.

At the date of this study, the Central University
has developed three regional urban centers in five major
cities of the country. The total population distributed
by regional centers, as the result of seven years of con-
tinued increase from 1975 to 1981, is around 1,150 students.
This figure represents those whom the system considers
regular students working presently in various levels of
their careers. The dropout rate per year is around
50 percent. This information, provided by the student
control office of the school of education, was the only
information available at the time of this investigation.[77]

Between 1975 and the date of this study, there have
not been any students graduated from the distance system.
It is expected that approximately 100 students between July
and September, 1982 will receive the degree Licenciado en
Educación for the first time.

The form of distance education. The form can be
categorized in the third group described at the beginning
of the second part of this chapter. In other words, as an
"extension service within a traditional institution without
authority to decide the nature of an institution of

distance education program, but working closely with on-campus faculty in arranging a program." This seems to be exactly the case in the Supervised Studies of the Central University. It is, in fact, an extension of the School of Education. All personnel are members of the Faculty of Humanities and members of the School of Education. The budget is totally controlled by the Council of the School of Education. The project has developed only one approach which is very similar to that developed by the formal system. Any decisions regarding the project have to be approved by the School of Education's Council. As in similar projects of distance education in Venezuela, and from the administrative point of view, the project cannot be considered open. Only students with a bachelor degree (degree awarded after completion of five years of study at the secondary level that could be equivalent to the completion of high school level in the United States) have the legal right to enter the system.

The instructional design approach. The entire system is based on printed matter. The 52 subjects have been developed and taught using academic units which the student can complete during a limited period of 20 weeks established for the semester. If the student does not complete a particular unit he or she can continue with the system the next semester and so on, according to his or her own pace of learning. At this point the system seems to be

very flexible.

Analysis of the printed material. Around 15 different academic units were analyzed. The observations are:

1. Most of the material does not specify the terminal objectives to be reached by the student or what is expected for each academic unit.

2. With very few exceptions in specific subjects as didactics, pedagogy and instructional design, the remaining academic units do not provide adequate instructions for individual study, a very important aspect for isolated distance students. Most of the units do not clarify specific objectives to be reached and only general objectives, difficult to be measured, are made explicit in most of the material.

3. The lack of adequate instructions for how to use the material and how to get more information is a common mistake in the material analyzed. A very short bibliography is provided at the end of the academic units as sources where the student can get more information if needed.

4. In short, the materials used for this project do not have any technical instructional design appropriate for a distance system. The printed material and the periodic interactions between students and advisers are the only sources of learning planned by the system. There are no TV or radio lessons nor any other audiovisual means commonly

used for distance systems, such as slides or video cassettes.

Study center operation. During the 20 weeks of each semester there is a specific calendar which determines the dates and times of the interactions between students and advisers, normally the subject specialists. Other complementary activities such as informal meetings, laboratory practices, examinations, etc., can be developed in those periods of time. Such activities have been practiced from the very beginning of the project in the three regional centers and five cities served by the university.

There is a coordinator for each center who keeps the center in operation only during the times established in the calendar. Teachers and advisers representing a variety of subjects travel to the centers each established time to help students with the problems that can arise ranging from simple academic problems with the printed material to evaluations, consultations and so on. Interviews are treated individually or in groups according to the particular situation. In the case of the center of the east region a group of advanced students have kept the center open every day since 1981. Interactions among advanced students and new students are providing an interesting experience that could be transferred to other centers.

Student evaluation. The system uses three methods to evaluate student performance:

1. Self-evaluation. Most are exercises included in the printed material and related to the rest of the written material. The student has the possibility of finding the answers in the same unit. It helps the student to realize the progress he or she has made. The only purpose of this evaluation is to help the student understand the content of the module and facilitate the feedback of achievements reached by the student during his or her self-study.

2. Distance evaluations. These are composed mainly of two kinds of activities: a. distance examinations made by the student at home at the end of each academic unit, and b. reports of the student about topics selected and negotiated with the adviser which have to be corrected by the adviser. In both cases the student will receive the corrections and comments of the teacher. A partial grade is provided to be added to the rest of the evaluations of the semester.

3. In situ evaluation. Some kind of final examination developed at the study centers at the end of each semester or academic unit. These can take a variety of forms (written exams, discussion of papers, objective examinations, etc.). Finally, the student will get a grade which is the result of adding all the various evaluations.

Other elements used by this system. No other specific educational technology has been observed in this project. Computers are used only for administrative

purposes. The information system is very limited and mostly based on the information and personal records kept by the teachers and advisers.

The course development procedures.

Author techniques and material production. With a very few exceptions the printed material is not the result of original work developed by any person or team of the project. Most of the written material used are textbooks, or authorized works from national or international authors specializing in the different subjects of the course of study. There is not any specific team working in the production of new material and in most cases the material prepared five years ago is the same material utilized today. All the material is produced with the resources of the university using traditional machinery.

There is no particular educational technology beyond the printed material. The quality and requirements of a distance text are not present in most academic units. The materials used in this study for comparison are those developed for other universities in the country and the material developed by the British Open University and the University of Mid-America.

The delivery system and the distance elements. Very few elements can be considered "at a distance" in this project. Those elements which do exist are:

1. The students do not have any obligation to participate in formal face-to-face classrooms.

2. Study centers exist where the distance student can get help when it is necessary.

3. There are distance evaluation materials.

Other distance methods are not present in this system, such as radio, television, or telephone counseling. The delivery system is not an efficient one. The material (printed material, exams, new units) is delivered by the advisers or teachers at the time when the counseling sessions take place. Transportation is by car or plane. The national postal system is very inefficient; it cannot be used for this purpose, and the private companies are very expensive. Normally the centers have enough material to satisfy the demand of the students.

Characteristics of the population served. The average age of the student is 30-35. The main clientele is composed of people working as practitioners at elementary or secondary level. Therefore, the great majority are adults with an average income of $1000-1500 per month, the vast majority coming from urban areas. In fact, no one of the centers could be considered rural.

Dropout and promotion rates. After seven years no student has graduated from the distance system of the School of Education. By the end of 1981 the total of

students who showed interest in the system and had become
registered was around 2,170. By the same year only 1,150
students could be considered regular students taking at
least six credits inside the system, the established
minimum requirement. The dropout rate is around 50 per-
cent, as was indicated above.[78]

Costs. One of the premises of the Supervised Studies
of the Central University is that the cost per student
should be lower than the cost in the formal system. This
assumption is based on the following presuppositions:

1. The system is oriented towards working people
able to pay at least partially for studies. Students pay
a minimum tuition ($25 per semester) and around $15 per
credit taken.

2. The system should utilize the already existent
resources of the School of Education. Therefore, the
initial investment should be considerably lower.

3. The possibility of getting a self-financing
system according to the principle of the economy of scale:
as the student population increases, the cost per academic
unit produced is lowered.

Nevertheless, Tables 6 and 7 show a different ten-
dency in the expenses and income of the system from 1974
to 1981.

TABLE 6

COMPARISON BETWEEN INCOME AND EXPENSES OF THE
SUPERVISED STUDIES

Year	Income	Expenses	Difference	% of In-come Used to Pay
1974	---	105,491.20	-105,491.20	---
1975	125,822.67	320,514.80	-194,692.10	39.25
1976	149,237.20	423,592.04	-274,354,80	35.23
1977	257,830.80	470,670.30	-217,490.60	53.79
1978	155,116.40	637,098.00	-481,981.65	24.34
1979	218,794.90	712,175.79	-493,380.90	30.72
1980	237,377.25	811,858.58	-573,881.32	29.00
1981	259,159.60	1,011,456.70	-754,297.11	25.40
Total	1,401,338.80	4,492,857.20	-309,518.4	

The negative difference in this comparison is evident.
Expenses have been growing without any correction or evalua-
tion of such a tendency. On the other hand, tuition and
credit income has been the same during all the seven years.
While the average income over the seven years is 34.6 per-
cent, it is noteworthy that for the past four years the
income has significantly lowered.[79]

Table 7 is presented more as an illustration than as
an accurate description. The criteria of comparison among
universities in Venezuela is an area that has not quite
been developed. In this case the tendency, contrary to the
expectations of the Supervised Studies, shows a growth of
the cost per student in the Supervised Studies as compared
to the cost in the traditional system.

TABLE 7

COMPARISON BETWEEN COST PER STUDENT IN THE FORMAL
SYSTEM AND IN THE DISTANCE SYSTEM

Year	Formal System Cost Per Student	Distance System Cost Per Student
1975	620.50	423.40
1976	655.90	428.30
1977	1,102.80	653.70
1978	814.50	708.60
1979	884.60	823.82
1980	949.60	931.90
1981	1,009.60	1,040.06

The cost in the distance system could be considered higher because one student takes seven years to get a degree. In the formal system the average student achieves a degree after only five years.[80]

Conclusions for this case.

1. Innovative project inside traditional structure. This project can be described as an innovative educational experience existing inside a traditional system. The organization, administration, personnel and allocation of the system inside the already problematic environment of the School of Education seems to cause the transference of the many problems of the School of Education to the innovative system, among others the "fight" between innovator and formal educators and the nonexistence of

specialized personnel for distance teaching. As a result, many traditional teachers are the same personnel working in the new system. Without a sui-generis organizational structure, these distance projects have been burdened with all the problems of the School of Education while working in conditions very far from authentic control of decisions and further development.

2. Lack of need analysis. No need analysis was conducted before or after the project's initiation, although it is working with a specific clientele trying to solve a national problem diagnosed by the Ministry of Education. A need analysis should be an important aspect not only for new students but for those who are already inside the system. It could be particularly important to determine whether regional needs are the same as established national needs. This kind of study could provide a better orientation of the curriculum particularly in the specialized areas of the curriculum.

3. The main objectives of the project have not been accomplished. The two major objectives of this project were: 1. to promote educational experimentation on new educational technologies using a distance educational model, and 2. to provide a university degree for practitioners working at elementary or secondary levels. The first objective has not been accomplished because the model established is not fully a distance model. So far, no

specific technology or new methodology has been developed by this system. The printed technology used is very far from what has been used in major distance systems--for example, there is no production of written material specifically for distance subjects. The written material used are the same books used by the formal system, and study guides which do not specify measurable learning objectives. The poor quality of the written material is reason enough to establish that no printed technology has been developed. On the other hand, the nonexistence of any other educational technology such as TV, radio, telephone systems or even a correspondence system, indicate that this first objective has not been reached at all.

Regarding the second objective, it is difficult to conclude any determination because there has not been any evaluation of the quality of achievement by the students after their initiation into the system. After seven years there is no graduate of the system. This indicates that the objective of training practitioners is becoming more difficult than through the formal system where five years is the average to produce graduates. If the purpose of the system was to provide teachers in response to urgent national needs, it is obvious that this objective is not accomplished so far. At the same time, there is not any criteria to indicate which system has better academic quality.

4. <u>The instructional design</u>. As pointed out earlier in this study, very few elements in this project can be considered distance elements. The poor quality of the printed material and the nonexistence of any other distance education technology have been commented upon. There is no specialized personnel with a background in distance education inside the system. Most of the teachers have been graduated from formal systems without any particular training or past experience in distance models. As a result, for instance, the interaction sessions for individualized or group attention are simply formal classes. The inflexibility of the calendar established with the semester schedule is another heritage of the formal system. In other words, there is not a calendar designed for distance students. The absence of any department of educational technology is a large gap in this project which is, of course, an important factor in determining the quality of materials produced. The inexistence of a rational delivery system is another lack in this project, and finally without any research unit providing feedback concerning the many problems involved in a distance project, the future of this particular one seems to be very uncertain.

5. <u>Dropout and promotion rates</u>. The dropout rate, 50 percent, is very high. This percentage does not discriminate between students matriculated but not exposed

to the system, and regular students who drop out of the system after a certain period of study. Primary causes are: 1. The poor quality of the printed material produced and its impact on a student working in isolation at home without any other learning aid. 2. The very few interactions developed by the regional centers. According to the interviews, the main activities developed are _in situ_ examinations at the end of the academic units. 3. The lack of resources of the project: lack of trained personnel, lack of educational technology to help students, inexistence of libraries in the regional centers, inadequacy of physical plants of the regional centers. 4. The continual instability of the university, which for a variety of reasons (political, strikes, budgetary allocations) has to stop its activities for as much as a semester causes many students to decide not to continue with the system. 5. The student evaluation does not follow the three criteria established for a complete evaluation of the performance of the student. Most of the time the printed material does not have any feedback or self-evaluation to help the student. Distance evaluations have almost been eliminated because of the difficulty of delivering the material on time. Therefore, the final _in situ_ evaluation is practically the only criterion to determine failure or success in a particular subject. Among

the students interviewed, 60 percent provided this explanation.

Cost considerations. Although the purpose of this work is not to determine the cost-benefit of this or any other particular project here analyzed, some consideration about cost could be useful.

1. Within the entire free education system provided in Venezuela, distance education can provide a variety of ways to get money from sources other than government allocations. For the first time in a Venezuelan university students are paying some kind of tuition for credits taken. Many other ways to get money can be developed such as: selling material, slides, pictures, etc.

2. The comparison between the student costs shows, at least in this case, that a similar cost is possible for formal and distance students. (See Table 7.) At the same time, increasing expenses can be covered by the system's own income as is pointed out in Table 6.

6. Adult population and urban areas. This project is working with a population with an average age of 30 to 35, the vast majority coming from urban areas. It appears that the system has established a priority for students coming from elementary and secondary schools, avoiding the entrance of the younger population which normally is

diverted into the formal system.

The future of this project. Some alternatives. The future of this project after seven years without producing any graduates, with a per-student cost similar to the formal system, with a dropout rate of 50 percent and without any sui-generis distance organization seems to be very uncertain. If the project is to survive as a new technology, great changes have to be introduced. Some of them could be:

1. The project will have to develop total independence from the formal system, developing total autonomy from the problems of the School of Education. A new and innovative organizational structure according to distance models and regional conditions must be implemented.

2. A study of regional needs where the university is operating is absolutely necessary in order to adapt the project to regional problems in education. Changes in the curriculum must be consonant with this adaptation.

3. The training of personnel in all areas of distance education could be developed taking into account the experiences of other universities or through progressive training in foreign countries. Short or postgraduate courses in Venezuela directed by Venezuelan personnel graduated in distance systems can be developed.

4. The creation of a national center of information

about the experiences and resources available at national
and international levels could be a great help in many of
the purposes of developing distance educational technolo-
gies.

5. The need to establish a private delivery system
handled by the university to assist regional center is an
urgent consideration to be studied.

6. The creation of departments of research and
educational technology inside the project provide the only
possibility for correcting the variety of mistakes
committed so far. The development of working teams for a
variety of subjects is a particular need of this project.
Printed material could be produced in Colombia where costs
are lower and experience is greater than in Venezuela.

7. Special attention should be given to the re-
organization of regional centers, with a permanent resident
coordinator in each region and the centers in continual
operation. Advanced students can help in the activities
of interaction as developed in the regional center of
Puerto Ayacucho.

8. The income of the system can be improved by in-
creasing tuition and fees for credits taken according to
the inflation rate of the country. Good quality materials,
professionally produced, could be sold not only to distance
students but to the formal students of the School of Educa-
tion and nationwide as well. The development of new

audiovisual materials can be another source of income for the system. Seeking regional cooperation among other regional institutions to avoid duplication of programs and for cooperative use of well-developed educational programs could be another way to get money into the system. Reducing cost by production in other countries and selling the materials widely in other Latin American countries could generate a self-financing structure for the system.

9. New and attractive promotion must be done if the system desires more students, but the most important aspect will be taking care of the quality of the learning and teaching experiences which are provided. The system will not survive if the dropout rate is maintained and the average student has to spend 7-8 years to get a degree. At the same time the credibility of the program in the eyes of the government and regional authorities will continue to be very low.

Case 2. The Free Studies of the Simón Bolívar University.

Methodology used. The methodology used to get the data in this case was: 1. Study of the original documents of the project from 1973 to 1975; 2. Interviews with the former dean and creator of the project (1973-1978); 3. Interview with the current dean (1979-1981); 4. Interview with five subject coordinators; 5. Analysis of 12 academic units of the system; 6. Material and statistics

obtained from the research unit of the project; 7. Study
and analysis of the evaluation report of the project
made during the first year of activities (1975-76); and
8. Conclusions derived from the various meetings organized
by the authorities of the project published in a work
titled: A Look to the Free Studies. The major difficulty
in this case was the impossibility of getting data about
the costs of the system. Some comments will be included
at the end of the study of this case related to that
aspect. The same scheme used as a guide for the research
of the Central University case was utilized for this
project.

Foreign influence. The main ideas that influenced this
project were obtained from the concepts published in the
book Learning to Be, published by UNESCO in 1970. The prin-
ciples of free education stated in that book seem to be the
philosophy of the project: 1. Free pensa and methods of
teaching-learning; 2. Free space to study without the re-
strictions imposed by the classroom; and 3. Free time to
study according to the individual pace of students. The
original project defines the system as a "distance system
where the place for learning is different from the place
where teachers are present."[81]

<u>Needs analysis</u>. After two years of planning, the project
was approved by the National Council of Universities and
began its operations in January of 1975. There is no
evidence that the planning commission conducted any needs
analysis among the population to be served. The program
was designed to train teachers for the secondary level in
the areas of physics and mathematics, a large gap at this
level in Venezuela according to the figures published by
the Ministry of Education. The project began to work with
the first two years of such courses of study, equivalent to
the first two years of the formal system of the Simón
Bolívar University. After the first year of operation it
was decided to offer the entire program through the dis-
tance system. At the end of the studies the student re-
ceives the diploma of <u>Licenciado en Educación</u> in physics
or mathematics. The project was developed with the complete
support not only of the Chancellor of the University but
also with the support from the other academic departments
of the formal university.

<u>The objectives of the model</u>.

1. To promote the investigation of new methods of
the teaching learning process with the specific purpose of
facing the problems which arise as a result of the in-
creasing population asking for a university degree
(massification). Specific experimentation will be conducted

with: a. Academic units or printed material especially designed for this system and the audiovisual aids created for it; and b. The formal system using the material developed by the distance system.

2. To help in the training of secondary level teachers in the areas of physics and mathematics in order to reduce teaching-learning costs and increase academic quality and to facilitate the access to university education for that portion of the population which has a low socioeconomic status.

Model developed. The curriculum includes three major areas: general studies, specialization area and pedagogical training with a total of 130 academic units to be approved in order to get a degree. The student has a minimum of 4 weeks and a maximum of 16 to have the right for an examination of any academic unit. Most who were interviewed agreed that the limits of the periods have been adequate for the average student in the system. After the first four weeks the students can choose the most convenient moment to take an examination without being limited by any restrictive schedule.

So far the university has developed a main study center located in the capital city of Caracas. The total enrollment for 1980 was 328 students as the result of the movement from 1975 to 1980. The dropout rate per year is

around 50 percent. Since 1975 until 1981 there have not been any graduated from this system. It is expected that in July, 1982, two students will receive the degree of Licenciado en Educación for the first time. Table 11 on page 197 shows the movement of students in the system from 1975 until 1980.[82]

The form of distance education. The form of distance education in this model can be categorized in the second group according to the description annotated at the beginning of the second part of this chapter--as an institution in which campus-based and distance education have equal status and are integrated. In fact, this is a project directed by a Dean with the authority to decide what distance education activities will be developed and to control design, production and delivery of such activities. Although the system has developed the same course of study as the formal system, many changes have been introduced ranging from teaching-learning methods to the way that subjects and academic topics have been transformed, including the complete reorientation of subject programs according to modern theories of physics and mathematics. At the same time, new, modern theories and practices of andragogical knowledge have been introduced in the pedagogical areas of the curriculum, quite different from the methods used in the formal system of the university.

Most decisions about the project are solely the
responsibility of the dean and the coordinators and pro-
fessors of the system in accordance with department
opinions. The project has its own budget, its own per-
sonnel and its own physical plant outside the formal
university building with all the facilities appropriate
to a distance system. On the other hand, this project
cannot be considered totally open. Only students with a
bachelor degree can gain access to the system. Most
students are admitted after an admission examination is
approved. During the first two years most students
accepted by the project were over 25 years of age. This
has changed, and younger population has now been accepted
as will be seen later in this chapter.

The instructional design approach. Around 85 percent
of the system is based on printed materials. The written
material is provided to the student in the format of
academic units. The rest of the material used for teaching-
learning experiences are audiovisuals (a combination mostly
of slides and audio cassettes) that can be used individ-
ually in the study center. Diagrams and some pictures
are used to illustrate printed material primarily in the
academic units of physics and mathematics.

Analysis of the printed material. About 12 different
academic units were analyzed in this case. At least five
were discussed with the subject coordinator as part of the

interview. The observations regarding the instructional design are the following:

1. Almost every academic unit specifies general and terminal objectives to be reached by the student at the end of the unit. The evaluation system is based on the percentage of objectives reached by the student and for that reason the objectives are very clear and measurable.

2. All the printed material is presented in a similar format in a very attractive way providing clear and easy instructions for study of the material.

3. Learning by doing is a concept widely applied in most units. A diversity of activities to be developed by the student at home is proposed in the printed material, some of which are to be corrected by the adviser during the interactions sessions. A few units in the areas of physics and mathematics have audiovisual aids attached, and other units of additional readings are always provided by the system in the format of academic units.

4. On-going face-to-face interaction among advisers and students is established to help the student. Each student has access to individual interactions through phone, used primarily to make appointments for such interactions.

5. Information about the quality of the printed material was obtained from the last evaluation of the

system conducted by the research center of the university. According to this evaluation, 70 percent of the students think that the printed material in the areas of physics and mathematics is "good," and 30 percent consider it "very good."[83]

6. The same valuation demonstrated that the most problematic units are those related to social science areas. Most of them are considered inappropriate and difficult to read. Sixty percent of the students suggested improvements or changes of such material. The personnel working in this area is aware of the problem and already changes have been introduced, mostly with the inclusion of additional readings and facilitating more interactions with students who have problems in these specific areas. In the area of Language and Communication, the units were considered of very good quality by 72 percent of the students.

7. Those academic units with a major number of failures are the first units which could be interpreted as indicating the lack of familiarity of traditional students facing a distance system for the first time. This tendency toward failure changes with more advanced students to a tendency toward success as the student becomes familiar with the study's methodology.

8. In relation to the audiovisual aids used, a high percentage (72 percent) considered them very useful for

self-learning and only 10 percent thought they were not adequate. Here again the more advanced students tend to use more of this resource than the new students.

Study center operation. From the very beginning the student has the opportunity to contact teachers and advisers as needed. This contact happens in the main study center located in the capital city. The center is open every day from 8:00 A.M. to 9:00 P.M. including Saturdays. The center provides all the academic facilities and administrative services the student may need such as interactions, examinations, informal meetings, audiovisual rooms, study areas and counseling services. Advanced students have been working as advisers in a variety of units since 1977, receiving a salary for this job.

A vast majority of students (75 percent) considered interactions a very useful contribution to the distance learning process. At least three of the professors interviewed also considered interactions very useful, but indicated that they were not sufficient particularly in the social sciences areas.

Student evaluation. Each unit has its own evaluation and is approved after the student passes an examination taken in the study center. The student has a total of four chances to reach 75 percent of objectives considered as minimum requirement to continue with the next unit. The four opportunities are considered sufficient for

a majority of students (75 percent vs. 25 percent)[84] to pass the exam. The grades are obtained according to the following scale of objectives reached:

From 95% to 100% = A

From 85% to 94% = B

From 75% to 84% = C

In this project it is not possible to talk about quarters, semesters or years. The total time used for one student to get a degree depends on the student, number of units taken and the frequency of examinations taken. The vacation period is limited to 16 weeks and can be used by the student in any part of the year.

Sixty-six percent of the students indicated that there is a good relation between the learning objectives proposed in the units and those presented in the examinations, particularly in the areas of physics and mathematics. The main complaint about this relation occurred in the areas of social sciences where the exams "tend to be based on memory and where the learning objectives are difficult to measure."

Other elements used by this system. There is no other specific educational technology observed in this project. No radio, TV, or computers are used for teaching purposes. Computers are utilized only for administrative affairs. Because of the small numbers of students and the limited amount of resources of the center it seems

to be easy to keep personal records, which is the practice used by teachers and advisers.

The course development procedures.

Author techniques and material production. Almost all the printed material for the physics and mathematics units is the result of original work developed by a team of subject specialists, one instructional designer, one evaluator and academic advisers. Sometimes advanced students participate in such teams. Audiovisual technicians assist in the creation of materials. The social science teams are mainly composed of the subject specialist, the advisers and the instructional designers, if any. In the social science subjects, the printed material is closely related to additional readings which are also provided by the system.

Although the learning material is fully produced by the university press, it is of very good quality and comparable to the best printed material used by other national and international distance systems.

The delivery system and the distance elements. The main elements that could be considered at a distance in this project are: no obligation of the student to attend formal face-to-face classes; the existence of study centers where the distance student can obtain help if needed; the distance learning material (printed and audiovisual),

technically designed for self-study and the telephone which occasionally is used for distance consultation.

The other learning material for this project (audio-visual aids and complementary readings) have been used frequently at the study center. With a very few exceptions (in the areas of physics and mathematics), the learning material is not designed to be used by the student at home. The delivery system is designed in such a way that every student has to pick up the learning materials personally at the study center which is possible because a vast majority of students live in the capital city where the center is located. In the future the university will provide more distant students with a private delivery correspondence system if the program is expanded to the rest of the country.

Characteristics of the population served. The next tables indicating the total student registration between 1975 and 1979 demonstrated particular tendencies as follows:

1. Table 8 demonstrated that around 77.3 percent of the average population registered are men and only an average of 22.7 percent of the students are women. This composition reflects a cultural value in the sense that physics and mathematics are traditionally careers for men, although this tendency is changing as can be observed in the table. From 1975 to 1979 the total increase in numbers

195

of women in these fields was around 10 percent.[85]

TABLE 8

STUDENT SEX

Year	Male	Female	Total
1975	395	86	481
1976	213	51	264
1977	167	45	212
1978	274	96	370
1979	325	131	456

2. Table 9 indicates[86] that the average student age was around 30-35 in the first three years of the project. During the last two years, because of the promotion of an open policy, students less than 20 years of age have increased to a proportion of 71.2 percent of the total population registered. There are several reasons for such a change: first, the open policy practiced since 1978 after the project was completely established and the learning material was completed; second, the attitude of the new dean in initiating a more expanded experimentation with younger population as stated in the original objectives of the project, and third, the increasing dropping of adult students who for a variety of reasons leave the system.

Finally, Table 10 demonstrated the occupation of the vast majority of students at the moment of registration is not related to practitioners working at secondary or

TABLE 9

STUDENT AGE

Year	-20 years	20 to 25	26 to 40	Over 40	Total
1975	59	159	227	36	481
1976	22	98	125	19	264
1977	62	81	64	5	212
1978	157	82	104	27	370
1979	302	62	74	18	456

elementary level, which was one of the initial assumptions behind the creation of this particular project. Nevertheless, as was explained by the dean and as is demonstrated in the last statistics presented in Table 10, most of the people working with the project have been related to jobs in the educational system of the country. This is the percentage shown in Table 11. That percentage has been decreasing from 83.2 percent in 1975 to 27.7 percent in 1980.[87]

TABLE 10

STUDENT OCCUPATION

Year	Teachers	Technicians	Office Workers	Unknown	Total
1975	79	138	61	203	481
1976	59	43	25	137	264
1977	35	39	7	131	212
1978	59	40	23	180	370
1979	51	24	24	357	456

TABLE 11

STUDENT MOVEMENT 1975-1980

481 I

```
        481 Total
       83% Teachers
            1975
```
165 R = 34.30%

264 I
```
        429 Total
       79% Teachers
            1976
```
315 (65.5%) D

189 R = 44%

212 I
```
        401 Total
       79% Teachers
            1977
```
238 (55.5%) D

180 R = 44.8%

184 I
```
        364 Total
       52% Teachers
            1978
```
215 (53.5%) D

178 R = 48.9%

252 I
```
        430 Total
       34% Teachers
            1979
```
185 (50.1%) D

322 R = 74.8%

115 I
```
        437 Total
       27% Teachers
            1980
```
109 (23.8%) D
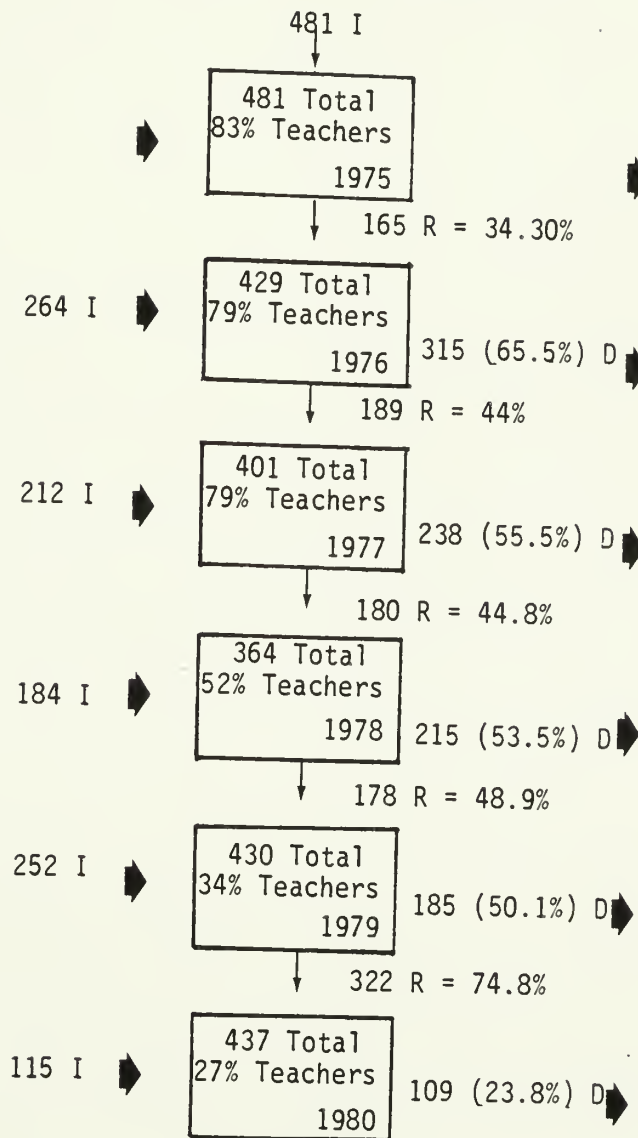
Total of regular students 1980: 328
Drop-out rate: 50% average.

I   Students registered for the first time (new students)
R   Students registered for second time (Promoted to the next year)
D   Drop-out rate
Total: Total of students registered
Teachers: Teachers registered in the system.

Dropout and promotion rates. Table 11 indicates that
the dropout rate is around 50 percent per year. So far
there have not been any graduates from the system and only
two students from the physics area are expected to get
their degree by July, 1982.

Costs. No statistical information could be obtained about
the expenses or income of this project. The project and the
university in general are supported by government money
allocated every year and distributed through the depart-
ments of the university. The main income of the project is
originated in this budget and in the income obtained from
the material sold not only to the distance students but
also to the students of the formal areas of physics and
mathematics of two universities of the country. The amount
of the sales was not available. The price of the academic
units varies from five to twelve dollars per unit.

Conclusions for this case.

Innovative project inside a new university. Totally
organized to reach the objective of a distance system,
this project demonstrates a strong organization with total
independence to make decisions about the development of
distance programs. The project maintains excellent rela-
tions with the formal system and full cooperation between
both systems was observed. The personnel assigned to the
project is specialized in the various areas of educational
technology used and both the former dean and the present

dean have wide experience in non-formal educational systems.

Lack of needs analysis. No needs analysis was conducted before or after the project's initiation. There is no evidence in the original documents establishing the need for teachers in the areas of physics and mathematics on the secondary or elementary level in the capital city where the project is working. The population attracted to the distance system represents a variety of jobs quite different from the educational field (or practitioners) as shown in Table 10 on page 196.

The main objectives of the project are partially accomplished. Of the two main objectives proposed in the original project only the first one seems to be accomplished. In fact, the investigation and experimentation conducted with academic units, audiovisual programs, objectives exams developed, participation of advanced students in the production teams and quality and success of academic units of physics and mathematics are partial achievements of this educational experiment. The possibility of the development of a more complete distance system is established and the future of this project could change radically if the second objective is reached. In this sense the project is very limited and the initial intention to spread education to a broad clientele (low socioeconomic status) has not been reached at all. Only urban students in the capital city are attending through the system and the number of students is too low to remark about the ways the project is helping to solve the massification problem faced by most

of the universities in the country. The project has been
kept as a very sophisticated pilot project in a protected
experimentation environment which seems to be extremely
expensive. This fact is reflected in one of the con-
clusions derived from the meetings with the personnel of
the project where it was stated:

> This project has to be considered as an experimental
> center where educational research is conducted with
> the specific purpose to determine what means and
> educational technology can be used--on small and
> large scale--by a variety of institutions such as our
> own formal university, other educational institutions,
> national industries and government offices.[88]

The instructional design. It is one of the most
relevant aspects of this case. Very important elements
useful to distance education have been developed, par-
ticularly the printed material and the academic units.
The flexibility of the calendar and the interaction activ-
ities are important elements that combined with the evalua-
tion system and the various opportunities (four times in
20 weeks) that the student has to take examinations make
this system a very helpful and promising experience for
the development of distance systems. The close relation
between the objectives proposed in the academic units is
very consistent with the student evaluation questionnaires
which demonstrates a great deal of integration in the
instructional design. Finally, the delivery system and the
accessibility to the students of the various learning
materials are not a problem because of the very limited
expansion of the system within the urban area of the

capital city.

Dropout and promotion rates. The dropout of 50 percent is very high. Causes for it are: 1. The disillusion of many adult students with getting a fast diploma through the distance system. 2. The lack of motivation of a novel distance student working in isolation at home. 3. The lack of experience of traditional systems facing for the first time distance education which requires a great deal of training, self-responsibility and personal determination in order to combine learning activities with job and family problems. 4. The difficulties faced by the system as a new experiment in education. Such failures are present for instance in the academic units developed by the social sciences area of this project as was shown in the evaluation conducted. The promotion rate is around 49.6 percent, as demonstrated in Table 11, and in any case the total benefit of the project is very low considering the fact that only two persons will receive the degree of Licenciado en Educación after 7 years of operation.

Cost. High investment. Although it was not possible to get budgetary data about this project, it is obvious that the initial investment of this system is very high compared with the total benefit obtained. The cost of producing 45 academic units to cover the three areas of study is very expensive. By comparison the cost of production of 12 academic units for the Zulia University

project was around $125,000 for only the editing and publication of 4,000 units each of 12 different subjects. If the participation of the personnel and working teams and other related expenses are taken into account, it is very easy to conclude that for experimentation purposes alone this system is very expensive. The physical plan or study center of the project with all the facilities mentioned above is another important added cost. This high initial investment could be justified until the moment the project was established and the learning material completed, but after almost seven years of operation with a low rate of students the system should shift its direction toward major distance education productivity.

The future of this project. Some alternatives. This project must change radically if in the future it is to reach its initial objectives. Among such changes could be:

1. An increase in the number of students in the two courses of study developed so far. This could be done through a promotional campaign which explains the benefits and advantages of a distance education. A study of the real needs of the population to be served must be conducted to avoid the changes of population shown in Table 10. New opportunities of study must be introduced for a population with different motivations.

2. A complete cost analysis must be done in order to

determine the cost benefits of maintaining an experimental project with the sole purpose of researching educational methodologies. In such a case the project should offer all the experience accumulated to other universities or industries interested in training programs. The project could take advantage of the experience of the personnel to train personnel of the other distance systems in the country, including postgraduate courses at a distance. The preparation of short, specific courses to solve specific problems could be a way to reach a vast population using distance methods. The use of radio and TV programs could provide a source of income particularly when most of the written material is ready to be designed with audio-visual support.

3. The information system of the project must be developed. The use of computers for this purpose is almost an obligation if all the data obtained during the experience is to be used to facilitate a better feedback. Computers, on the other hand, are useful tools in student evaluation particularly for a project that has developed a learning objective system easy to transfer to computerized examinations.

4. The project must keep its administrative independence from the traditional systems avoiding any attempt to be involved with the traditional budgetary problems of most Venezuelan universities. A self-financed system would be

a radical solution to this aspect.

5. Table 9 on page 196 demonstrated that the total population 18 to 25 years old which was attracted and which registered from 1975 to 1979 is around 60.76 percent of the total registered in the project with a particular increase during the years 1978 and 1979. This tendency is the result of a new policy developed since 1978 as was indicated on page 199 of this study. This could be an indication that the instructional design is appropriate for that kind of population. Such an indication could be confirmed by the fact that printed material from this project is used by the formal system of the University Simón Bolívar and other two universities of the country where the vast majority of the student population is around 18 to 25 years of age. A more in-depth study of this aspect should be conducted in order to determine the real effectiveness of this material and this methodology for the populations specified.

Case 3. The National Open University of Venezuela.

Methodology. The methods used to gather data in this case were primarily: 1. Study of documents about the original project presented to the National Council of Universities. 2. Interview with the former Chancellor of the university. 3. Interview with the director of

the student registration office. 4. Interview with five subject coordinators. 5. Analysis of the evaluation report of the first seminar organized by the institution in 1980 titled "Institutional Policies of the Open University." The main obstacle to getting statistical information lies in the fact that this is a very new university which has only been in existence since 1978. Many of its control offices are not yet fully established. In the various interviews conducted some conclusions arose, one of which is that the university is now beginning to realize what achievements have been reached. To initiate this innovative experience at a national level with an initial population of 17,000 students registered for the first time would have been an incredible task if all the administrative procedures and control had to be established at the same time. Some statistical information is provided in this study in an effort to be objective, but a great deal of consideration is the result of personal conclusions based on observations and some speculations obtained from the few available figures. The same scheme used to research the other two cases was followed in this one.

Foreign influence. This is, without doubt, the Venezuelan project most influenced by the British Open University. From the very beginning (1975) the organizing commission of the National Open University (UNA) was assisted by members of the Centre for International Cooperation and

Services of the British Open University. The Minister of
Education of Venezuela, first promoter of this university,
and members of the organizing commission of UNA visited
the British University and an agreement was reached re-
garding British assistance in the creation of the Vene-
zuelan project. By September, 1976, a seminar based on
distance education course was prepared and implemented for
Venezuelan personnel by members of the British Open Univer-
sity. This cooperation agreement has continued so far
through assistance, seminars, consultancy assignments,
information exchanges and short training courses for
Venezuelan personnel.

Nevertheless, this initial influence does not mean
that the UNA is a copy of the British model. On the con-
trary, the documents of the project demonstrated a great
deal of concern for Venezuelan conditions and in face the
entire model reflects the social and educational background
of Venezuela. At the same time, there is evident in the
initial documents and final project a great deal of aware-
ness of national priorities (mentioned at the beginning
of this chapter) in the objectives and programs of the
UNA. In fact, the nine initial courses of study offered
by UNA seem to be in accordance with the most important
social and economic priorities, in particular those related
to the development of technical and qualified personnel for
areas of present major concern such as the industries of

iron and oil as well as social areas of education.

Needs analysis. The organizing commission of the UNA, established in July, 1975, presented the first stage of planning. In 1977 the commission submitted the formal proposal for the creation of UNA to the National Council of Universities and to the national executive. The university initiated activities in July, 1978.

Ever-increasing problems of massification, financing, elevated costs and lack of pertinence to the needs of national development, were some of the elements that caused the Venezuelan government to study and experiment with new strategies for higher education, based upon the rational use of multimedia systems of instruction. There is ample evidence of the need analysis made by the organizing commission. The original project made a study of the characteristics of the country, examining the social context of Venezuela, the alternatives to development and the needs in the area of human resources. UNA defines its approach to Venezuelan problems as a social approach combined with the criteria of efficacy and efficiency. The implementation of the social approach demands planning based on prospective studies, in this case related to the population to be served, the courses of study to be offered and the priorities of the national government.

UNA is offering a total of nine courses of study as shown in Table 12. Most of them demonstrate the necessity

of development of human resources in technical and industrial areas, particularly those related to the basic industries of the country, oil and iron.[89]

TABLE 12

COURSES OF STUDY

Areas	Courses of Study
Basic Sciences	Physics Mathematics
Engineering	Civil Engineering Construction Industrial Engineering Production Systems Engineering
Education	Technical Education Physics and Mathematics Languages Social Sciences Pre-School Education Learning Problems
Social Sciences	Sociology majors in: Rural and Industrial. Social Work Administration majors in: Public Administration Business Administration Accounting

The objectives of the model. Through the documents examined and the interview with the former Chancellor and

creator of the UNA, many principles and philosophical aspects arose. To mention some of them: 1. Democratization (to open the university level to those who did not otherwise have the opportunity to pursue higher education), 2. Massification (to attend to the social demand for higher education), 3. Educational innovation, 4. Contribution to autonomous national development, 5. Individualized education, 6. National character of UNA, and 7. Optimization of the investment (to reduce the annual cost per student and the social cost per graduate).[90]

What follows is an attempt to summarize from the Spanish transcript of interviews conducted for this study a variety of objectives that as stated in the sources mentioned can be classified in three categories: 1. Institutional objectives, 2. Functional objectives, and 3. Operative objectives.

1. Institutional objectives:

   a. To form human resources for priority areas of socioeconomic development who will act upon the social system as agents for qualitative changes needed by the nation.

   b. To get full participation of both public and private sectors in the planning and implementation of programs of the UNA system in order that it may respond to the real needs of the country and optimize the use of existing resources.

c. To develop research and link it to the solution of problems in priority areas of development.

d. To promote, through cultural action, the identification of the Venezuelan people with the values of national and Latin American culture.

2. <u>Functional objectives</u>.

a. To develop, implement and administrate new strategies of teaching-learning experiences in the fields of open and distance education, coordinating activities with other institutions of the nation.

b. To produce a change of attitude among users of UNA so as to reverse the relationship of responsibility existing in the traditional learning systems. The UNA's user should take responsibility for his or her learning and the institution should do everything needed to offer alternatives and educational resources to optimize the instruction process.

3. <u>Operational objectives</u>.

a. To optimize the efficiency of educational investment with the aim of lowering the cost per student and per program through the application of the criteria of economy of scale.

b. To cooperate in the rational expansion and enrollment of the formal higher education

system. The rapid expansion is caused both by the increase in the young population as well as the growth of demand by the adult population for more educational opportunities.[91]

Model developed. As mentioned in the original project of the UNA system, the elements which make up the curriculum[92] in the UNA are: first, reality as the object of knowledge, and second, the student is an adult able to contribute to his or her own development as well as to that of the country. These two elements can be reached when the student is able to apply scientific and technological knowledge to the solutions of problems of reality. The third element is the interaction of theory and practice which can be brought within a logical sequence and a methodology based on distance education using methods different from the conventional formal methods of teaching.

The teaching-learning process at the UNA is carried out on various levels as follows: introductory course, general studies and professional studies. The introductory courses have the specific purpose of training students in the techniques of self-directed learning and the introduction of motivational elements that facilitate the students improving their academic results and their chances of remaining in the distance education system. These courses

have a duration of a quarter and are a requirement to con-
tinue to the next steps in the system. The general studies
constitute the formal entrance of the student into the UNA
system of education. Its purpose is to provide the individ-
ual with an integral form of thinking with emphasis on
interdisciplinary relations and professional orientation.
The academic content is divided into three periods of eleven
to fifteen weeks each. Intervals of three weeks are used
for the purpose of evaluation and data gathering for the
control of subsequent enrollment. Professional studies have
the goal of preparing the student in a specific course of
study thus permitting him or her to enter the labor market.
These courses are composed of periods of study of about
eleven to fifteen weeks each. The number of study periods
varies depending upon the course of study selected and the
individual pace of the student. Whenever possible, the
usual length of the university and the post-secondary
studies is maintained.

So far the university has developed and installed
22 regional study centers covering the 20 Venezuelan states,
2 territories and 1 federal district of the country. For
the year of 1981 the registration of the courses was dis-
tributed as follows:

Introductory courses: 11,077 students

General studies: 4,968 students

Professional studies: 1,700 students.

No information was officially available concerning the dropout rate. Some comments and conclusions obtained about this aspect will be mentioned later in this case.

The form of distance education. The form of distance education of this project is clearly categorized among the first group of the description annotated at the beginning of the second part of this chapter; in other words, as an autonomous open learning institution similar to the model of the British Open University studied in Chapter II. Figure 3 will explain clearly the structure and organization for the system's operation.[93]

The UNA has its own budget, its own personnel and its own physical installations. The project, approved as a national university covering all the country, has ideal conditions for the development of an innovative experiment of distance education.

Instructional design approach. So far, the most important element in this model is the printed material. The instruction in all the courses is provided through modules of instruction (similar to the academic units mentioned in the last two cases) which are structured sets of self-instructional material forming part of a course or program of studies. A module contained printed material considered the "master" media; mass media presentations (systematic programs of radio or TV) provided through channels five and eight of the Venezuelan

Figure 3.   Table of Organization of the UNA.

Superior Council

President

Planning, Strategies
and Institutional
Evaluation

Fiscal Control

Board of Directors

Chancellor

Programming

Information Office

Institute of
Educational
Innovations

Secretary _____ Vice-academic
Chancellor

Director of opera-
tions
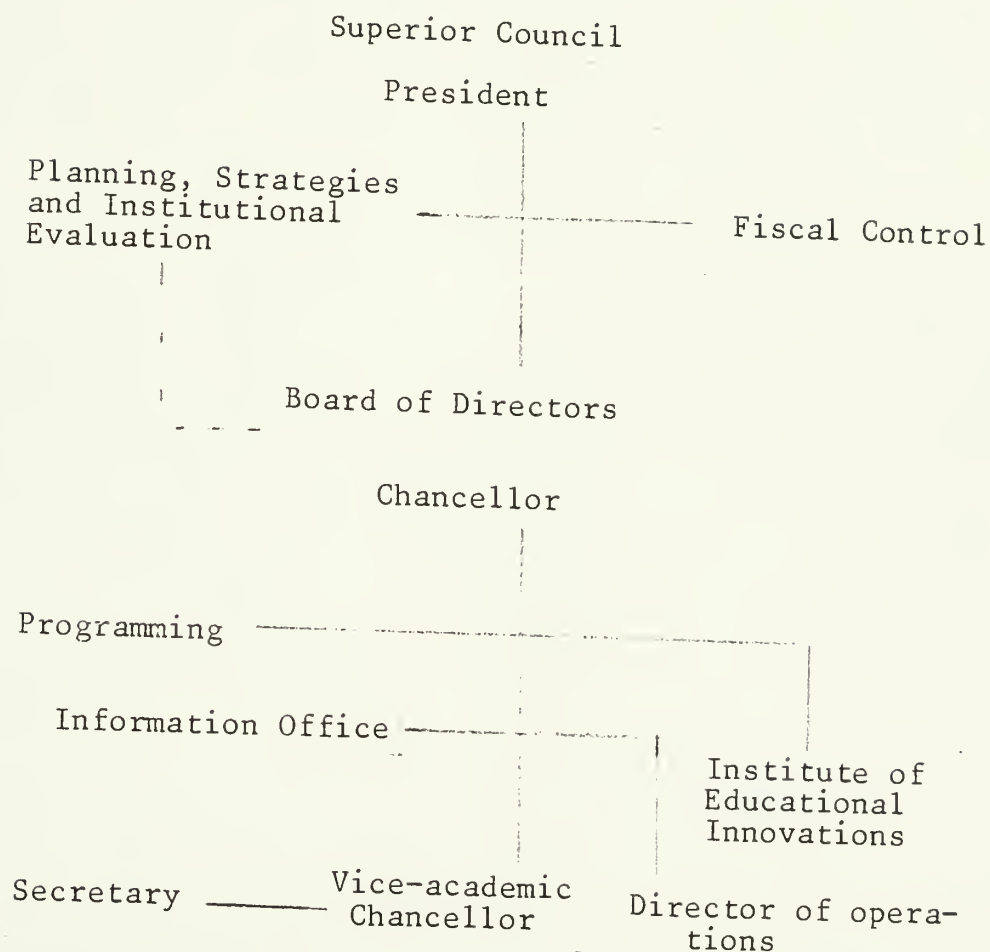
government at least twice a day (early in the morning and
late in the evening); support learning materials (audio
cassettes, video cassettes, bibliographic materials, etc.);
individualized experimental equipment (laboratory kits for
instance) and time for counseling and orientation. It was
observed that a maximum of educational technology is or
will be incorporated into the design to obtain highly
structured material which permits efficient self-instruction.

Analysis of the printed material. Twelve printed
units were available for analysis in this case pertaining
primarily to the introductory courses (5), the general
study courses (4) and the professional studies (3). The
material for the areas of introductory courses and general
studies demonstrated the best external and internal
quality. The information that follows was complemented
by interviews with two instructional designers working at
the regional center of Caracas. The main aspects covered
by this instructional design are:

1. Every sample of printed material examined
specified terminal objectives to be reached by the student
at the end of the module. In each unit the student is
evaluated through comparison of his or her entry behavior
with conduct established by the terminal objectives of the
unit. The difference is the study program learned by the
student.

2. Most units present a summary that demonstrates
the relations between the different modules and the learn-
ing objectives so the students can determine in what phase
of the learning process they are and what proportion of the
skills and knowledge have been achieved.

3. A diversity of activities to be developed at a
distance by the student are presented in the units, most
of them to be corrected with the advisers during the inter-
action sessions.

4. Frequent face-to-face interaction is mentioned in the written material and each student can receive assistance concerning academic or methodological problems through such interviews.

5. The development of student groups (study groups) and other periodic meetings are pointed out in some units as a way to avoid the "student in isolation."

6. Six television programs were monitored. Television seems to be the media most used after the printed material. The programs in general seem to be designed to complement areas of knowledge mentioned in the written material avoiding repetition of what it was written. The idea is to reenforce the knowledge acquired by the student and to attain the objectives more completely.

7. In some units additional material is recommended (reading guides, microfilms, complementary books, etc.) as part of the activities to be developed by the student at home.

Study center operation. Twenty regional centers and a similar number of local centers have been installed by UNA throughout the country converting this university into a national higher institution that for the first time covers all the nation. There is a national center located in the capital city and 21 regional centers working as local centers where the student has access to all the facilities for distance study.

The main functions of the national center are related to national decisions about regional activities, organization of research design, production and distribution of teaching-learning materials around the country. The regional centers have two kinds of activities: the first are mostly administrative functions related to the storage and distribution of instructional and informational materials and the evaluations carried out on a regional scale; the second is concerned with academic and administrative activities in direct relation to the student, especially the organized learning support tasks. These centers are expanded as the result of student enrollment, the media resources required and the plans for regional development. It is estimated that a local center should have the capacity to serve from 500 to 1200 students. The center is used by the student not only for getting the instructional material but also for meetings, interactions, group study sessions and a place for evaluation.

The student evaluation. Once the student decides to enroll in the UNA, he or she begins the introductory course which is a requirement to enter this university. The introductory course seeks to train the applicant for the achievement of the academic standards required by the university. Once the course is completed the student is evaluated. If the results of the evaluation are favorable (grades are in accordance with the number of objectives

reached during the course) the student is enrolled in the university as a regular student. Before receiving any module or learning material the student is tested on the first unit and according to the results he or she will receive instructions in how to study the unit. Instructions for self-evaluation included in the unit can stimulate consultations with the adviser mostly concerning academic problems. Sometimes problems related to personal affairs are brought to the consultation too, if such problems are affecting the activity of the student. Indications for remedial work are provided by the advisers and new self-evaluations are conducted (provided in some cases by the same adviser) in the form of additional material out of the initial written material. Finally, the student takes a final examination at the end of the study period. Most students enrolled in the general studies have the opportunity to reach the objectives proposed because of the remedial work. To pass the exam the student has to complete at least 70 percent of the objectives proposed in the unit. The courses have a duration of one trimester and there are around three trimesters per year. The credit system is very similar to the formal system in order to facilitate transference to those systems.

Other elements used by this system. There was no other educational technology observed in this project except

what has been mentioned above. Computers, for instance, are used only for administrative affairs. Most of the enrollment information is processed through the regional centers and transmitted to the national center by a telex used by the university. The information related to student registration has been treated with more care. Problems with implementing the information system and the urgency to serve the population seem to be the causes for the system not yet being organized in this relevant aspect.

The course development procedures.

Author techniques and material production. The preparation of the modules including written material for the TV programs or any other educational strategy decided upon for any particular course is a cooperative task of what is called the "instructional design team" composed of one specialist in instructional design, one content specialist, one specialist in evaluation and one specialist in media. Normally a coordinator of design is named in accordance with similar topics or subjects and is responsible for two or more teams.

The production of printed materials is contracted for with specialized Venezuelan companies. The production of audiovisual materials (films, slides, audio cassettes, video cassettes, slide tape presentations, etc.) have been produced in the institution's own studios and facilities.

Most of the TV programs were produced through state companies such as the National Audio Visual Center and the <u>Venezolana de Television</u>, in some cases using the media infrastructure for audiovisual production (for instance, the Zulia University Television Center) installed in the national system of higher education.

<u>The delivery system and the distance elements</u>. The delivery system operates through regional centers where the student can pick up the learning materials. The other educational messages are sent through TV programs. Radio, correspondence and phone consultation are not used so far.

The distance elements in this system are very clear and were indicated in the preceding pages. They can be summarized as: 1. Printed material to be used at a distance; 2. TV programs and audiovisual aids to be used at the regional centers; 3. Interactions among teachers and students; 4. Study groups, and 5. Self and distance evaluation systems.

<u>Characteristics of the population served</u>. UNA is providing education at the national level serving all the major, medium and small cities of the country. The students from the interior of the country constitute 80 percent of the total registration. This is explained by the lack of formal universities in many of the small and medium cities of the country. In 90 percent of the cases, the typical

student of UNA is an adult, 29 years old with family and
job responsibilities who has had previous experience in
higher education. The system can only accept students with
a bachelor degree according to the law in Venezuela. The
percentages of men and women are the same in the total
registration.[94]

It is important to point out that although this
project has particular reference to the need to serve the
younger population coming from the high school system, the
need analysis conducted and the other distance experiences
in the country have determined that the target population
for the project at the beginning of its operations in 1979
would be adult population. In the final project proposal
sent to the National Council of Universities it is stated:

> The National Open University will offer real oppor-
> tunities of higher education to students of diverse
> social strata, in particular to those who are
> employed, and to adults who did not have the oppor-
> tunity to pursue higher education in the traditional
> system.[95]

During the years 1979 to 1981 the student registra-
tion demonstrated that a similar percentage has been main-
tained throughout the various areas of specialization
offered by UNA showing a major tendency toward stability
in the areas of social sciences and education. The indus-
trial areas (engineering) kept a very regular rate of
growth during those three years. There has been practically
no growth in the basic sciences. (See Table 13.)

TABLE 13

STUDENT REGISTRATION

Area	1979	1980	1981
Basic Sciences	1.8%	2.2%	1.5%
Engineering	32.9%	32.8%	29.8%
Education	25.7%	24.1%	26.8%
Social Sciences	39.3%	40.7%	41.7%
Total Students	12,105	22,042	11,077

Dropout and promotion rates. The next figures pro-
vided by the coordination of student registration[96] shows
that many students are interested in the UNA system and
enroll in the introductory course. In the first year, only
30 percent reached the general studies and during the years
of 1980 and 1981 only 44 percent reached the general
studies. This dropout rate is interpreted in two ways by
the personnel of UNA: First a considerable group of
students (after enrolling) do not take the introductory
course and second, a group of students fail after taking
the introductory course and drop out of the system. There
is no statistical analysis of the proportion of students
in these two different situations.

The analysis of promotion from the general studies
courses to the professional studies demonstrated a large
dropout rate. For 1980 only 29 percent reached the pro-
fessional studies, the rest stayed on the general studies

level or dropped out of the system. Statistics for 1981
show that 20 percent of the students reached the profes-
sional studies. (See Table 14.)

TABLE 14

STUDENT REGISTRATION PER AREA

Courses-Area	1979	1980	1981
Introductory	12,105	22,042	11,077
General Studies	3,630	9,685	4,968
Professional Studies	---	1,085	1,710

Costs. The UNA is organized as a State experimental univer-
sity economically supported by the national government.
Nevertheless, other sources of income are sought, such as
the sale of instructional materials and services, tuition,
and participation of the private sector in developing in-
structional materials and programs. Although the major
share of the UNA's income, especially in the first years,
is derived from the national executive and the national
congress, the additional income should increase as the time
passes. The initial budget of the UNA for 1978 was in the
order of $20,282,642 distributed as $16,558,139 for
initial investment and $3,724,503 for operational cost.
The budgets for the years 1980 and 1981 were similar
amounts (around $17,000,000 for each).[97]

UNA requires a high initial investment during its first years, at least until the programs and courses are totally developed. After that stage the income from the selling of instructional materials and the increase of the student population will be an important amount and a self-financing system can be developed as is happening in the British Open University.

Conclusions for this case. Only three years after its initiation, it is very difficult to make an objective evaluation of a project which at the national level is experimenting with new distance educational technologies. This is a tremendous enterprise and its evaluation must include more time for its total implementation. This university is the result of previous national experiments conducted inside traditional universities that were looking for new educational forms and which have been working in the country for around 8 years. The UNA has all the conditions to develop a consistent distance system and the three initial years have demonstrated the real possibilities of this project.

The main objectives of the project pointed out on pages 213-216 are very ambitious objectives. Most of them are not accomplished yet but interesting tendencies are beginning to demonstrate its practicality as, for example,

the initial interest shown by the adult population in the system and the enrollment in the industrial areas designated by UNA as priority areas in the national development (see Table 14). This aspect seems to cover the first institutional objective of this university or at least to show a constant tendency maintained in the first three years of operation.

The dropout rate of the project, its high initial investment, and the lack of initial organization seem to be natural factors in distance projects and in this case may be caused by the relation between the magnitude of this enterprise and the short time taken to implement the system at the national level. For instance, the initiation of nine courses of study seems to be a very complex problem if the population is, as in this case, around 12,000 students in three different course levels. The production of instructional material alone is enough to produce serious controversies about the possibility of this system. In this sense, one of the observations made by the former Chancellor of UNA was that the organization of the operational and intermediate levels is not working as expected, particularly because of the lack of trained personnel in areas such as information, institutional evaluation and research.

The lack of evaluation of the initial instructional materials is related to the lack of experience of many of

the personnel working as academic specialists and other professionals. These persons, coming from the traditional universities, do not understand the new conceptions that a permanent feedback can provide in a distance system. This kind of training is one of the most important services to be provided by this project.

The instructional design of this project adapted to the Venezuelan situation through the curriculum used and the use of educational technology adapted to the conditions and real resources of the country is one of the most relevant aspects of this model. The fact that the university is for the first time reaching the entire country is demonstrated by the massive registration (80 percent) coming from the interior of the nation.

Many adjustments have to be made and many changes should be incorporated immediately if the system is to keep the cost per student at least congruent with the level of the traditional universities which will be very difficult in the first years of operation. At the same time, more consistent and continuous evaluation of the entire system must be developed in a short time if effective changes are to be introduced.

Finally, it is necessary to comment upon the fact that this project is not at all serving the younger population that was expected to be the target initial population of

this project. On the other hand, a tendency to help the adult population is the pattern demonstrated in the last two cases studied.

The next chapter of this study will come back again to the distance systems in Venezuela and some prospective considerations and possible developments and improvements will be suggested.

C H A P T E R   I V
TOWARD AN INSTRUCTIONAL DESIGN FOR VENEZUELAN
DISTANCE PROGRAMS

Introduction

This chapter presents the conclusions derived from this study. The conclusions are divided into three parts which constitute the three sections of this chapter. The first section highlights answers to the initial question proposed for this study indicating conclusions reached in the three preceding chapters with emphasis on the nature of current practices in distance programs in Venezuela. The second section introduces some preliminary conditions to be considered before the implementation of any distance system as well as a number of propositions for the development of an instructional design that could be applicable to the country. The third section briefly indicates some ideas about the management of small distance projects and mentions some alternative options for distance programs in Venezuela.

In order to facilitate the reading and understanding of this study, a summary of the main conclusions reached chapter by chapter is included as Appendix A.

<u>The nature of current theories and program models in distance education. Conclusions.</u>

1. Chapter I demonstrated that a growing theory of distance education is only now emerging. Distance education, as conceived since 1970 with the initiation of the British Open University, is a new concept in education different from traditional correspondence studies. This new theoretical development was presented in Chapter I through an overview of evident concern about distance and open education primarily in the United States and Europe, and most particularly in England. Since 1970 a great deal of emphasis has been given to the hardware of educational technology and the "powers" of the multimedia such as TV, video cassettes, computers, etc., but only since 1974 have theoretical considerations made a noticeable impact in the implementation of distance projects.

The lack of unanimity in the terminology used in this field is another characteristic that must change in the near future. This is especially true in the English speaking world where each of the following terms are used extensively: correspondence study, external studies, distance teaching, education at a distance, and distance education.

As a result of the theoretical development mentioned, new elements are now integrated into the definition of <u>distance education</u> which seems to be the most widely

accepted term for "activities where the act of learning is separated from the act of teaching." This term is now used at the international level, as for instance in German _fernstudium_ (distance study), in French _formacion a distancé_ (formation at a distance) and the phrase _educación a distancia_ (distance education) in Spanish seems to confirm _distance education_ as the generally accepted term.

2. Within this study the term "distance education" was generally applied if the following integrated elements were present:

a. The separation of teacher and learner, which distinguishes it from face-to-face teaching.

b. The influence of an educational organization, which distinguishes it from private study.

c. The use of a technically designed media, usually printed material, to carry the educational content and relate teacher to learner.

d. The provision of two-way communication so that the students can benefit from dialogue.

e. The possibility of occasional meetings useful for both didactic and social purposes.

From this conception of distance education it is easy to realize that the use of isolated elements of learning do not establish a distance education system. On the other

4. The term "open," analyzed as part of the many self-styled open systems, is considered in this study as a philosophical position rather than an administrative term. In the former sense its meaning is related with greater or lesser extent to efforts to expand the freedom of students. Some systems are open only in a spatial sense, while others provide freedom in other aspects such as admissions, selection of courses, student pace, study time, goal selection and evaluation methods. Open learning has been associated with distance education but it is not exclusive to that kind of education. It has also been used in formal education; for instance, open administration policies are very common in face-to-face institutions.

5. Chapter II was devoted to the study of two very well known distance models, the British Open University in Europe and the University of Mid-America in the United States. Both cases demonstrated that distance education has achieved remarkable progress in only ten years, and in these two cases had adapted very well to the particular conditions of the area and population served. During the 1970s it was very common to see new institutions based on or copying the Open University model as well as innovative projects within traditional universities which adopted an "open university approach." So far, none of those attempts has come close to the success of the British Open University

impact.

The British Open University is <u>sui generis</u>. Its
success is due to many specific factors but among them the
most important is the strong political support the project
got from the very beginning which permitted an exceptional
period of planning and implementation of the institution.
It was possible for planners to build very strong founda-
tions for the new institution. There are other elements
to be considered in this success: a. The particular
partnership between the Broadcast British Corporation
(BBC) and the Open University. It provided the Open
University from its initiation with all the network and
audiovisual infrastructure to support its printed material.
b. The fact that almost 100 percent of the British popula-
tion receives TV signals. c. The efficiency of the mail
system in England--one of the best in the world. d. The
openness of the British university, which does not impose
major restrictions on gaining access to various levels of
the university. This element created a very high demand
from an adult population with a variety of educational
background seeking university education. e. The develop-
ment of an economy of scale in the educational system based
more on production costs than on number of students. In
other words, the marginal cost of producing one extra
learning package (printed material, audiovisual support,

TV programs, etc.) is minimal compared to the initial invest-
ment in technical personnel, design, development and pro-
duction required for each new course. What is obvious
is that distance education will be less costly than face-
to-face teaching where the number of students wishing to
study a particular topic is large.

6. Through all the chapters there is a general con-
clusion that should be pointed out: <u>There is a technology
of distance education</u>. Educational technology means both
the equipment plugged into the walls and the rules, methods,
ideas and organizational complex specifically established
to facilitate distance learning activities. In the 1970s
distance education began to use both kinds of technology in
a more conscious manner, developing a very important part
of the <u>distance instructional design</u>. A few elements of
the software of this educational technology are: a. The
use of course teams to assure that the principles of the
instructional design received attention. b. The definition
of instructional objectives and a rational approach to
student evaluation wherever a distance education system
is developed. c. The general acceptance of the use of feed-
back to make the systems self-improving. The revision and
remaking of courses is usually oriented toward an improved
learning effectiveness since data collected during prior
experiences are used systematically to identify problem areas.

d. The integration of the various media used in a particular learning package. More and more the learning packages are the results of combining various strategies and means of learning where the printed material seems to be the "heart" of the package surrounded by complementary audiovisual resources (including TV) or planned interviews with the student. e. The face-to-face element has become essential in distance systems as a response to the need for dialogue and two-way communication between student and institution in order to avoid student isolation. f. Instead of the teacher or adviser, the entire institution has a major responsibility in the teaching-learning process and an obligation to provide all possible teaching aids to the student.

7. The hardware of distance education is described as the equipment and media used for educational purposes. Distance education utilizes technology to shorten the gap between teachers and learners. The use of TV was strongly emphasized in the new institutions of the 1970s. (See the cases of the University of the Air, first title given to the Open University, and the Mid-America University which was initially based on the television network of Nebraska University.) As was explained in the case of Mid-America University, changes have been introduced in the media used in order to produce a less expensive learning package. The

television component has been eliminated or TV programs
already prepared for private enterprises or educational
institutions are being used in courses. Television costs
have been increasing in the last ten years with the in-
flation rate making courses more and more difficult to pro-
duce. At the same time, few projects around the world have
been successful in producing TV programs which are appro-
priate to the course and are of professional quality.
(Here again the British Open University is sui-generis
in its partnership with the BBC.) In other cases, as for
example the Open University in Venezuela, the TV programs
are broadcast through government channels only in early
or late hours and the air time depends on the willingness
of the authorities to supply it.

New TV delivery mechanisms are starting to appear
from satellites, private cables and video discs which
could have a central role in putting together teachers
and learners. However, it has not happened yet and TV
has to wait a little longer to be fully used in distance
education.

The Venezuelan models. Conclusions.

1. Distance education has been in Venezuela since
1974 through five small projects operating inside tradi-
tional universities, and since 1978 through the National

Open University. Most of the small projects are limited
to specific regional areas and only the UNA is working at
the national level. All the projects have been influenced
by the revolution created by books like <u>Learning to Be</u>
and the development and success of the British Open
University. Venezuelan projects are working to solve
specific problems affecting the national development such
as the formation of human resources for the secondary
level of education and for the industrialized areas of the
country particularly in the iron and oil industries. Most
of the projects demonstrated a clear definition of the pro-
grams they offered and the reasons for such a selection.
As in many other international projects, Venezuelan
projects have been implemented without a theoretical
framework and under pressure of time in such a way that
many errors which could have been avoided in a planning
stage have had to be corrected. This could be one
reason for the high dropout rate in the projects pre-
sented in this study.

2. Although the National Open University and other
Venezuelan projects are named "open systems" some contra-
dictions are apparent: First, the educational system is
open only to persons who have completed the bachelor
degree as required by law to enter any national univer-
sity; second, time for study seems to be more open than

in traditional universities, but in the three cases
studied the "open time" and "student pacing" are qualified
by the establishment of rigid schedules of study (deadlines
for assignments, broadcasting program schedules, consulta-
tion time and study center hours) which seems to be related
to the administrative complications of serving student
needs at a very individualized pace; third, the openness
in teaching methods and learning support seems so far to be
limited to the development of printed material as primary
distance teaching element with a few exceptions observed
in the TV broadcasting of the National Open University.

3. Omitting the Central University case, which
cannot be considered a distance system, the other two
educational models have all the requirements established
for a distance system. The Central University case was
considered an "extension service" of the formal School
of Education with a few elements of a distance education
system as discussed on pages 175 to 180.

4. The instructional design developed by the UNA
and the Free Studies of the Simón Bolívar University is
adapted to the Venezuelan national conditions and needs.
The printed material is not a copy of foreign material or
texts used by other distance systems. The quality of the
academic material has been evaluated only in the Simón
Bolívar University, and has received a positive initial

feedback. The learning material of the UNA is very well produced but not yet evaluated. The other elements of a distance system are present in these two cases. (See pages 235 and 236 for the definition of a distance system.)

5. Major areas of ineffectiveness of Venezuelan projects are: a. Their initially proposed objectives have been accomplished only partially. They have failed, for instance, in the rapid creation of human resources for national development. The fast training of practitioners in education seeking a university degree is a common objective of the three cases studied, but after seven years (in the two smaller cases) no student has achieved the degree requirements. b. The other major objective (experimentation with new teaching-learning methods and distance education technology) has been accomplished partially by the Free Studies of the Simón Bolívar University whose material is already being sold to formal universities as a result of the quality demonstrated by the academic units used in the distance system. The UNA has developed good written material supported primarily by the network of study centers located all around the country. The increasing population from the interior of the nation matriculated in the university seems to be an initial response to the quality of material produced, and the organization of the study centers.

6. The specific purpose of attracting young population (18 to 25 years old) has not been accomplished to a significant degree for any of the projects. Only the Simón Bolívar University has been dealing since 1978 with around 260 young students in an experimental attempt to evaluate the effectiveness of distance studies with such a population. Several reasons have been given for the failure to reach this initial purpose: First, the realization of planners that the international experience had been with an adult population and that the level of maturity of adults could guarantee an initial success for innovative projects without a risk of failure at the very beginning which could mean lack of support for the whole system; second, the distance system is particularly attractive to a clientele which has jobs and family responsibilities because of the possibility of studying at home. At the same time, distance students have to pay for their tuition and learning material which means getting a job which is not the case for younger people. Maybe for such reasons as these the UNA and the Central University decided to shift the system toward adult population until it was totally established and had gained confidence to initiate experiments with younger populations. It is interesting to realize that the initial clientele identified by the Ministry of Education was an adult population, and most projects used such an analysis to justify the

project initiation.

7. It was impossible within the scope of this study, due to the magnitude of the task, to determine whether the instructional design could be considered a factor in the low attraction of young population to the distance systems. Experiments conducted by the British Open University with young population tend to demonstrate that the instructional design is adequate for an adult population. Here again the difference seems to be in the level of maturity and the strict conditions of self-responsibility and determination that students in isolation have to show in order to achieve success in a distance system.

8. The dropout rate in the cases presented is around 50 percent and should be studied in two groups of withdrawal, one made up of students pre-registered who never begin the academic course and a second group consisting of those students who withdraw from the program after a certain amount of time. The second group of students have to be considered as the real dropout rate, because the former group never become exposed to the activities of the distance system. Primary causes for the Venezuelan dropout rate are: a. Lack of experience of students with distance education methods and lack of initial training provided for the projects to help students who have been previously educated only through formal face-to-face education.

b. Lack of motivation of students because of the impossibility of getting a university degree in a shorter time than in the formal system. c. Lack of additional support other than the printed material which is a common failure in the three cases presented. d. Inadequateness or extreme difficulty of the printed material provided.

e. Instability in the continuity of activities of the university (strikes for instance) which create more isolation in distance students for long periods of time.

f. The incapacity of the projects to introduce appropriate correctives to a variety of problems due to the lack of a systematic analysis of the experience and information accumulated in past courses.

9. One major factor to be corrected in the Venezuelan systems is the lack of an investigation unit or research office which should deal with the feedback and develop ways to improve the projects. Only the National Open University has begun such investigations at the time of this study. The lack of programs and appropriate computers to analyze the accumulated data makes it virtually impossible to make decisions which will improve the practice of the projects. Most of the statistical data presented in this study, for instance, was the result of personal work developed by inexperienced personnel assigned to do the job. In this sense the training of personnel in

the operative areas of the projects seems to be an urgent task. Similar consideration can be made about the training of academic personnel coming from the traditional systems.

10. The costs of the Venezuelan distance projects are very high. It has been justified because of the initial investment those systems need to establish for all the planned programs and courses. The figures presented in the Central University case demonstrated the same cost per student in both distance and formal systems. The high investment revealed by the UNA could be necessary due to the magnitude of the project, which covers all the nation. Some symptoms indicating that the projects can reach a self-financing stage were observed in the Central University case where the income covered 35 percent of the expenses. The mentioned economy of scale (which accounts for the major success to the British Open University with its 70,000 students) is very far from being reached in Venezuelan cases because of the small scale of Venezuelan projects working with populations which vary from 350 to 12,000 students.

Toward an instructional design for Venezuelan projects. In this second section the chapter deals briefly with conditions of the country as valid considerations for the future of the distance projects in Venezuela during the

1980s, and with some specific suggestions for the establishment of a more appropriate model of distance education in the nation. Such a proposition attempts to integrate not only the conclusions reached during this study but also the experience accumulated by the author during three years as former director of a distance project in western Venezuela called the Supervised Studies of the Zulia University.

What is the future of the Venezuelan programs for the 1980s? This review of the evolution of Venezuelan distance education in the 1970s has demonstrated that a few projects have grown in spite of the many problems faced by innovative educational approaches. What appears certain is that they will continue to grow. The diverse educational needs of adults, the possibilities of favorable economics of distance instructions and the increasing development of telecommunications technology will combine to create an increasingly important role for distance education. Such a climate will facilitate the further development of publicly supported distance institutions and perhaps the private sector will be even more interested in exploiting the new educational methods.

For the 1980s the following facts create interesting perspectives for distance education in the country:

1. The total population of the nation will grow

from 14 million (1980) to 21 million (1990). Seventy per-
cent of the population will live in urban areas.

2. The growth of our basic industries will neces-
sitate the accelerated formation of human resources. Dis-
tance education must find ways to provide short, effective
training to satisfy this demand.

3. The demand for university education will be on
the order of 210,000 to 230,000 students. It is urgent to
continue experimentation with new and innovative forms of
educational technology, and distance education seems to be
an alternative for countries with an accelerated industrial
development.

4. In the decade 1980-1990 the national system of
higher education will take care of educational innovations,
creating rules and mechanisms to regulate the expansion of
national educational innovations. The integration of small
projects which have similar objectives with the National
Open University seems to be inevitable in the future of
the entire system.

The instructional model proposed. The following
diagram (Figure 4) is self-explanatory. It shows the needs
and motives to be taken into account in designing a dis-
tance system appropriate to Venezuelan national conditions.
Three main levels--national, regional and operational--are
considered.

Figure 4.   Interaction Diagram

Preliminary Stages

NEEDS-MOTIVES	ANALYSIS OF RESOURCES	LEVEL
Political, social and economic needs.	Political support. Economic, cultural and technical resources	EDUCATIONAL, NATIONAL AND REGIONAL
Needs for open and distance systems	Human resources. Availability at national level. Communications technology. Institutions involved. National inventory.	
Learner population. National or regional. Academic profile.	Quantity and quality of human resources involved in this study. Finance. External aid.	
	DEBATE AND DIAGNOSIS	
Number, academic profile and educational characteristics of the courses to be offered.	Quantity and quality of resources available. Budget. External resources, internal aid. Productivity. Abilities, ideology and interests of the personnel.	INSTITUTIONAL
	DECISIONS ABOUT COURSE PRODUCTION	
Production, evaluation and renewal of the courses to be produced.	Production system. Media involved. Characteristics of the staff involved.	OPERATIONAL

<u>National collaboration</u>. A national inventory of
material and human resources in the various areas useful
to distance education should be conducted as the next
step before designing a distance model. Such an inventory
will facilitate knowledge of the real needs for the project
and avoid the duplication of existing facilities. It will
promote a national collaboration not only of human re-
sources but also of the infrastructure already existent.
These could be a way to avoid some of the high initial
investment required for distance systems. Many of the
distance services, like study centers, could be the result
of agreements with already established educational settings.
The sharing of experiences developed by the various
projects, the use of existent resources, could be organized
on the basis of monthly meetings to decide common matters
useful to the various projects. The training of personnel
for a new project could be the result of such a collabora-
tion lowering the cost and using national specialists. The
creation of a national research system in the area of
educational technology and distance education could provide
national feedback to avoid the repetition of failures.
Finally the possibility of selling material and services
to other distance and formal projects could increase the
income of any new system, providing at the same time major
credibility for securing government funds.

The elements of the model. Diagram. Figure 5 sum-
marizes the most important elements of a proposed distance
system and indicates the interrelation of the components of
the model. The most important subsystems supporting the
model are described at the bottom of the diagram. The
student is considered the center of the system and the main
concern of the distance institution.

The introductory phase has the objective of deter-
mining the student profile, training the student in the dis-
tance teaching-learning methods, and offering the student
the opportunity to try the system for a short time in order
that the student may know if he or she will be able to
succeed in the regular distance courses. This introductory
phase is of vital importance in diminishing the dropout
rate during regular academic programs. At the same time,
it facilitates institutional anticipation of the kind of
student the system is attracting and permits the orienta-
tion of the student to the distance or formal program
according to the results of this first phase. The profile
of the student will help in the implementation of the
printed material as well as many other aspects of the
system. The duration of this stage should be around three
months divided into three different phases. First, the
distance promotion and delivery of distance information
through the newspaper, the student manual and the summary

Figure 5. Diagram of the model
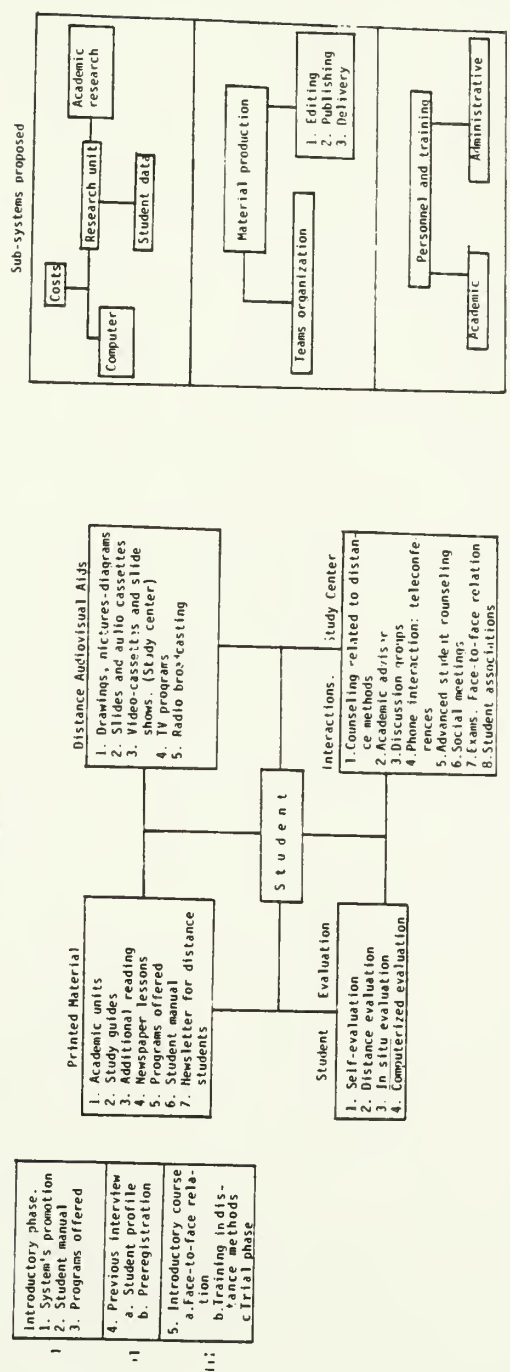
of the programs offered. This initial delivery of material will help to determine the real possibilities of using the newspaper and the postal service for delivery purposes. Second, a face-to-face relation through an interview where the student can investigate in more depth the characteristics of distance education and at the same time provide the student profile to be used by the institution. A third phase, the introductory course, establishes face-to-face relations and distance techniques that, combined, offers the student a real simulation of what should be expected in the professional program selected.

The printed material. The development of Guttenberg technology, to mention the creator of print, has developed rapidly in the last 20 years (printed visual design, graph art revolution, and computerized text processing) into what is called the new technology of print. Printed material is a basic element in any distance teaching system. In the proposed model the printed material should be especially designed to meet the needs of the distance student and help to bridge the gap between student and teacher. It has to be prepared in such a way that clear learning objectives, instructions for reading the material, self-evaluations, distance evaluations, detailed illustrations, and adequate reference bibliography can facilitate the distance student understanding of academic topics. Additional weekly newspaper lessons and complementary reading

are proposed as support of the main academic units. The distance newsletter could help the distance student to understand how he or she is part of a whole institution that shows concern for the common problems of its students. The sharing of this and other feelings should be a great aid to isolated students. In this model, the printed material is considered the "heart" of the system and major efforts should be made to increase the quality of this media. The production should be entrusted to the most qualified teams of media specialists and its publication to experienced enterprises. In the case of Venezuela it is suggested that the publication be done by Colombian enterprises which have demonstrated a great deal of expertise. This would also take advantage of the reduced costs promoted by the regional economic agreement called Pacto Andino which reduces dramatically the taxes for educational material produced in foreign countries. Finally, the participation of advanced distance students in the development of the printed material is suggested as a way to get feedback from the main subjects for whom the material is created.

Distance and audiovisual aids. To provide inexpensive audiovisual aids to be used at a distance is the purpose of this model. Drawings, pictures and diagrams showing the interrelation of topics in the academic units is an easy and inexpensive way to provide visual aid to

distance students. Slide productions and audio cassettes, as complements of the written lessons to be used at home are ways to help the student's motivation. The production of video cassettes to be used at the study center or at home if the student has the facilities is an effective complement to written material. Slide shows are an effective method for explaining and correlating knowledge in a very short time. They are being used more and more in distance projects. This inexpensive technology is excellent for the distance student and for the system itself because it permits the student to carry the teacher in the pocket (cassettes and slides), and it can be produced with student participation which is another way of learning and a better adaptation to the user's needs. In order to avoid the increasing cost of distance education, the use of TV and radio broadcasting should be limited. One additional advantage of "inexpensive and transportable" audiovisual materials is that they can be sold, generating additional income to the distance system.

Interactions and study center operation. The use of pacing and the freedom promoted by distance systems seems to be in contradiction to the institutional need to impose some kind of rigid schedule on the student such as setting deadlines for assignments, schedules or evaluations, hours for study center operations and fixed times for the

broadcasting of television programs. If an institution of distance education wants to increase students' chances of achievement it may need to restrict their freedom and introduce a certain degree of compulsion. In the proposed model the important point is the balance between what the student carries out by him or herself and what can come through the interactions with others (advisers, peers, etc.). This balance is the key to the design of distance studies. In the diagram above, special attention is given to the interaction activities as a way to help the isolated student. At least three specific human contacts are indicated: The first is with the counselor who will be primarily concerned about the methodological and personal problems faced by the student which can be causes of dropout. The second contact is with an academic adviser who basically will take care of academic problems related to the courses or program taken by the student. The third contact is with student peers as a way not only of comparing skills and knowledge achieved but also of generating social activities. There are areas of knowledge and skills that can only be mastered in contact with other human beings. Television and computers can replace some of the functions in interactive communications but tutors and advisers are still a fundamental factor in distance education.

The study center should operate at least 12 hours

daily according to the job hours of the students. Availability of advisers and counselors must be guaranteed to the student at all times and teleconferences and phone systems should be of major importance as a means of distance interaction until a face-to-face relation is obtained. The phone is a magnificent tool to demonstrate to the student the concern of the institution. If a student does not appear at the study center for a long time, a simple phone call showing concern for the student may prevent a dropout.

Student evaluation. Three different modes of evaluation are proposed to measure learning objectives reached by the student: Self-evaluation which is composed of exercises, questionnaires, etc., within the written material can provide the students with training in distance evaluation, a self-measurement of achieved progress. This can help to break the monotony of continuous reading, putting the distance student into a reflective activity about the academic content. Self-evaluation could be primarily done by the same student through the answers provided at the end of the unit or if needed discussed with peers or advisers.

Distance evaluation. Distance evaluation takes a variety of forms (computer marked assignments, experiments, reports, papers, questionnaires, etc.) to be completed by

the student at home and corrected and commented upon by the adviser as proper feedback for the student. This evaluation gives the student an opportunity to keep human contact with the system providing correction and guidance in academic progress.

In situ evaluation is made at study centers. It is a face-to-face evaluation and can take a variety of forms from the oral examination to the computerized test. Its purpose is to check whether the student has completed the necessary academic work and reached required objectives. This evaluation introduces final correctives enabling the student to reach the maximum possible learning objectives. All of the evaluation system is based on the objectives of the program. Units and grades will be granted in accordance with an established minimum percentage.

Computerized tests. Two-way computer-assisted communication systems have the advantage of personalizing the feedback received from tests. The computer not only can mark the tests but can also generate remedial advice and suggestions for additional reading which are specific to the individual pace of the student and the number of objectives he or she has reached. At the same time, computers make possible the organization of a data bank with thousands of questions and tests which prevent

repetition. Validation of adequate exams is another possibility with the computer that is almost impossible for humans. All these advantages help to avoid the possibility of corruption of the examinations in the distance systems.

Costs. It is not possible to make any cost analysis for this model but some considerations indicate that they would be reduced considerably. This model is based on some inexpensive ideas as follows:

1. Production of good quality but inexpensive written material utilizing national and/or regional collaboration using whatever human resources and infrastructure are available. Its publication must be in Colombia because that is the cheaper way to do it. Additional material (up-date of lessons) can be published at the institution with its own resources. All the material should be sold to the student for a reasonable profit.

2. Production of distance audiovisual aids, as proposed earlier in this chapter, to be sold to the student. The mass production of slides and similar materials (drawing, graphics, etc.) is possible at very low prices by various specialized enterprises in the United States. The profit from selling this material will be enough to

cover production costs and to obtain important benefits for the system.

3. Limit as far as possible any TV production or radio broadcasting because of its excessive cost. Instead, use already developed programs adapted to the courses.

4. Production of video cassettes or slide shows to be used with small equipment or with the collaboration of the video infrastructure of the country.

5. When possible, counseling for students concerning methodological problems should be solved in the introductory phase in such a way that only academic advisers are needed during the rest of the program which greatly reduces personnel costs.

6. Study center operation can be organized in rented space inside private or educational institutions with facilities useful to distance systems already installed. Providing education useful to private enterprises and industries is a way to generate private collaboration. Government offices should be another target for collaboration in distance systems.

7. Student evaluation, when possible, should be computerized not only for the educational benefits already indicated but also because the procedures used can be inexpensive. Here again the purchase of inexpensive computer terminals with a certain amount of independence

from the main computer can provide the study center with all the facilities to process almost 90 percent of its academic activities and administrative problems. (Registration, tests, data bank, student control, test advising, budgetary matters, inventory control, schedules, etc.).

8. Finally, a few words about the frequently mentioned economy of scale as a way to make a distance system profitable. From the point of view of the author of this study, economy of scale is not only a matter of large numbers of students registered in the same course which makes it economically possible; the total economy of scale is based on other factors such as: a. The economy of keeping students at a distance as much of the time as possible, which is the basic economy of distance system compared to the cost of face-to-face education. b. The use of computers for a diversity of functions described above, such as computer counseling, etc. c. Fixed schedules that avoid the risk of complicated individualized schedules which increase the costs and the dropout rate and thereby necessitate a higher cost in distance systems. d. Printed materials have to be produced on an enormous scale to diminish costs. The same consideration holds for audiovisual aids. e. Many students must take a particular course to make it profitable.

What is obvious with the application of the criteria

of economy of scale to distance systems is that it intro-
duces real dangers to the existent system. Distance pro-
duces an isolated student. Counseling through the com-
puter and phone dehumanize the system, and the creation of
fixed schedules reduces the freedom of the student. The
production of learning materials in great quantities re-
duces the timeliness of the material produced and in-
creases the tendency to avoid revision of learning material
until the initial production is totally sold.

These contradictions concerning massification projects,
educational technology applications and distance philosophy
can be diminished in small distance projects. This is a
real possibility in Venezuela as demonstrated in the five
cases currently operating in the country. Some considera-
tions about the management of distance projects follow.

The management of small distance systems. Many authors
are agreed that small distance systems are those serving
fewer than 15,000 students. So considered, all Vene-
zuelan systems including the National Open University
can be considered small distance projects.

Distance education has complex management require-
ments which are reflected in the challenges of planning,
organization, control and measurement inherent in the
separation of the "acts of teaching" from "the acts of

learning." In distance education an <u>institution</u> teaches, which is a radical difference from formal education. The amount of learning tends to be diminished by time, distance and the lack of personal contact. The distance student is more affected by the overall health of the institution than in a conventional system. A good example of this aspect occurred in the material production area of the Zulia University in Venezuela. In July, 1977, it was necessary to move the administrative center of the Supervised Studies to another place for a variety of reasons. The decision to move precipitated a severe reaction from the staff which considered it an injustice to the work developed by the group. A very low morale was generated among them. Moving the project took around seven months, a time during which students were affected by delayed course production and fewer communications from the University. This result was not caused by any collective decision by the staff; it was simply the effect of the lowered level of motivation in each member of the project.

The process of producing distance courses is based largely on daily decisions. Maintaining a management structure which supplies consistent decisions and answers to the complex requirements of the Venezuelan environment is a constant challenge requiring great doses of creativity.

For such reasons it is strongly recommended that at least
three subsystems be planned from the very beginning of the
operation of the proposed model (see Figure 5): 1. The re-
search unit with the subareas indicated, 2. The material
production subsystem, and 3. The personnel and training
department in both academic and administrative personnel
areas.

Finally, it has been suggested through this study
that the management of small distance education projects
should consider at least these four major aspects of
management: planning, organizing, leading and evaluating.

Planning. The first steps for planning a small dis-
tance project are indicated in the diagram on page 249
(Figure 5). Primarily, what a distance project requires
is the setting of explicit objectives for at least the
first two years of operation. These objectives should
be set in a participatory manner so that the staff may
be involved in the entire process. Most projects in
Venezuela have begun activities with a staff which is not
only unfamiliar with distance education but also expected
the distance project to operate like a conventional institu-
tion. The degree of specificity of the objectives can
change with each particular situation; precise goal setting
is preferable when implementation time is sufficient and
resources are available in a stable environment.

Directional goals seem to be more appropriate in the
formative period of an institution in conditions of un-
certainty when, for instance, there is little consensus
among the staff. This is a normal stage in the develop-
ment of an innovative distance project. The other step
in the planning process is to forecast the availability
of resources for the project and the degree of support
from the authorities during the initial implementation
and subsequent development of the system.

Organizing. The major aspect to be considered in
organizing a small distance project is a clear defini-
tion of the specific tasks to be accomplished by each sub-
system and a clear understanding of the relation of the
various functions of each group or department to each
other and to the whole system. In distance projects the
programmed schedules of tasks have to be completed in time
for each independent subsystem to use them. When one
department finishes its work another begins, and this
cycle has to be maintained. A chart with the entire
program and tasks to be developed during the year should
be kept in each department and at least one general super-
visor should check weekly if not daily the developments
according to established times. A weekly meeting is strongly
advised with all possible personnel present. This is a
good way to share experiences, discuss failures, intro-
duce correctives and/or change directions if necessary.

In addition, continuous participation by the staff in the decision making will keep motivation high.

Leading. Given the novelty and uncertainty that any small distance project experiences in its infancy, motivation of the staff is a particularly important aspect of leadership. This is particularly true in Venezuela where the personnel has good stability inside the university. Thus aside from economic problems of the personnel, a leader must provide conditions for esteem and self-actualization in its personnel. The attempt to match performance objectives with the personal goals of individuals is not an easy task but where it occurs, excellent results can be achieved in project development. The personnel of small distance projects operate as team members rather than as individuals (like the faculty in formal universities). This creates a special conflict between the deadlines established for each task mainly because the failure of an individual team member to produce creates conflicts and problems not only inside the team but also interferes with the entire system. The administrators of small distance projects should have concern for both production and people. The kind of leadership to be developed can change according to the circumstances. Sometimes the leader has to be a democrat and sometimes an autocrat, to mention two kinds of

management leadership. This is particularly true in distance systems, and administrators should be trained in both dimensions of leadership.

Evaluating. Small distance projects require tighter administration than any other educational enterprise. This activity (evaluation) is present in all of the three above-mentioned aspects of management. At least four aspects of distance projects should be in the mind of evaluators: quality, quantity, cost and time. The first element, quality, can be measured from the beginning in distance education through adequate control of the material produced, from the initial teamwork until the final production and delivery. What is difficult to evaluate is the performance of the distance student and the impact of the material on an isolated person. To follow the drop-out and promotion rates is complicated in distance systems because of the continuous registration of students throughout the year. Precise control of student performance is only possible through individualized files (mostly computerized). Time seems to be another problem in evaluation in distance systems, for more projects emphasize the pacing of the student. Distance projects, at least for long-term programs, are not the fastest way to train personnel as demonstrated in two Venezuelan cases. Time is a factor that should be evaluated in relation to needs initially established by the system and the amount of individual

freedom the project considers sufficient for the finishing
of any specific program.

A final aspect to be evaluated is the cost-benefit
of any project. Following traditional standards is not
the best methodology. Distance projects must create their
own standard as programs are successfully completed by a
valid sample of students. Cost-analyses have to be done
particularly if government money is involved. The problem
seems to have been, at least during the 1970s, that experi-
mental distance projects needed a certain amount of time
to demonstrate their educational possibilities and it is
well known that the initial investment is very high.
Small distance projects need to develop, more than any
other educational system, a research subsystem which pro-
vides complete data and feedback from the very beginning.
That alone will justify the investment of public funds in
such projects. In Venezuela this does not happen. There-
fore, this practice must be initiated.

Alternative options for distance programs in Venezuela.
Various alternative options in distance education on the
higher education level can be forecast in the future of
Venezuela. These options require, first of all, a more
open legal requirement for entering the university system
(for example, eliminating the bachelor's degree as a
prerequisite for enrollment) if the country wants lower

classes to gain access to university education. At the same time, however, the universities can offer a variety of traditional programs without the prerequisite of the bachelor degree and with the purpose of solving specific problems. For instance:

1. Training courses for personnel working in the industrial areas of the country (industrial security is an example) or courses which satisfy specific needs of workers and factory owners.

2. Short business training courses in already well developed programs at traditional levels--for instance, administration, marketing, management.

3. Courses oriented toward solving specific problems of the community--for instance, "techniques to develop a good postal system" to be given to mailmen and administrators of the various offices of the country.

4. Regional courses to satisfy regional needs in collaboration with government and private enterprises.

5. Courses for inmates in the various jails of the country primarily related to manual skills and other short programs and courses concerned with the "adaptation process of an inmate to society."

6. Short courses to train distance teachers in the methodology of distance education and in the use of the distance methodology.

Among others, these two areas should be considered as potential for distance education: 1. Postgraduate programs for professionals interested in specialized areas related to national development, and 2. Short refresher courses for very specialized personnel to introduce new technologies in that particular area as, for instance, the use of computers in education.

Finally, the case studies in Venezuela and most international case studies as well, demonstrated that the main population attracted by distance programs is an adult population (25-60). It is suggested that distance programs in Venezuela develop a promotion of the system which attracts such a population. This approach offers two advantages: it reduces the risks of early dropout and it permits the places occupied by adult population in the formal universities to be used by young population who have demonstrated a major tendency to continue with face-to-face education. This approach will permit Venezuelan distance projects to not only complete the implementation of new programs but also to be in better condition for future experiments with young population once the instructional design is totally evaluated.

FOOTNOTES

[1] The University Without Walls, _A First Report_ (Ohio: University Without Walls, 1972), p. 3.

[2] Norman MacKenzie et al., _Open Learning_ (Paris: UNESCO, 1975), p. 15.

[3] The Open University, _Report of the Planning Committee to the Secretary of State for Education and Science_ (London, 1969), p. 8.

[4] MacKenzie, _Open Learning_, p. 16.

[5] A. Ahmadi, _Theory and Practice in the Design of an Open Learning System: The Free University of Iran_ (Caracas: Lacfep Press, 1976). See pages 1 to 6 for a discussion of the various meanings of the term "open."

[6] MacKenzie, _Open Learning_, pp. 16-17. Original source: National Association of Educational Broadcasters (Washington: 1974).

[7] Ibid.

[8] Commission on Non-Traditional Study, _University by Design_ (San Francisco: Jossey-Bass, 1973), p. XV.

[9] Jerome Lord, _Toward Lifelong Learning: Changes and Innovations in Post-Secondary Education in the United States_ (Caracas: Lacfep Press, 1976), p. 13.

[10] Ibid., pp. 13-14.

[11] International Extension College, _Correspondence Teaching at University_ (Cambridge: International College Press, 1973), p. 6.

[12] Ibid., pp. 6-8.

[13] The Open University, _Centre for International Co-operation and Services_ (Milton Keynes, 1975), pp. 5-6.

[14] Ibid., p. 6.

[15] MacKenzie, _Open Learning_, pp. 24-26.

[16] Ibid., pp. 39-41.

[17] Lord, _Toward Lifelong Learning_, pp. 20-22.

[18] Joseph Bondosar, _Technology and Adult Education: A Report on the University of Mid-America Experiment_ (Nebraska: Mid-America University, 1977), p. 37.

[19] J. R. Kidd, _How Adults Learn_ (New York: Association Press, 1977), pp. 10-11.

[20] Russell Robinson, _An Introduction to Helping Adults Learn and Change_ (Milwaukee: University of Wisconsin, 1979), p. 99.

[21] Malcolm Knowles, _The Modern Practice of Adult Education_ (Chicago: Association Press, 1973), p. 38.

[22] Ibid., Chapter III, pp. 37-55. See Technological Implications.

[23] Ibid., pp. 38-50.

[24] The University Without Walls, _A First Report_, p. 21.

[25] Ibid., p. 19.

[26] Drake University, _Non-Traditional Study: Threat, Promise or Necessity_ (Iowa: Drake University Press, 1975), pp. 157-160.

[27] See discussion of this aspect in David Evans, _Technology in Non-Formal Education_ (Amherst: Center for International Education, 1976), pp. 1-2.

[28] MacKenzie, _Open Learning_, pp. 27-28.

[29] See a report of the pedagogic values of television broadcasting in Mackenzie, _Open Learning_, pp. 60-62.

[30] Ibid., p. 56.

[31] Ibid., p. 57.

[32] W. Schramm, _What the Research Says_ (Hawaii: The University Press of Hawaii, 1972), pp. 44-45.

[33] Lord, _Toward Lifelong Learning_, pp. 39-40.

[34]See John Daniel et al., <u>Distance Education: A Reassessment for the 1980s</u> (Australia: International Press, 1981), pp. 149-150.

[35]Lord, <u>Toward Lifelong Learning</u>, p. 42.

[36]Evans, <u>Technology in Non-Formal Education</u>, pp. 3-9.

[37]Ibid., p. 8.

[38]Lord, <u>Toward Lifelong Learning</u>, pp. 40-43.

[39]MacKenzie, <u>Open Learning</u>, p. 91.

[40]The Open University, <u>Center for International Co-operation and Services</u> (London: Open University Press, 1975), pp. 6-9.

[41]Ibid., p. 8.

[42]For complete details on National context in the United Kingdom, see The Open University, <u>Report of the Planning</u>, p. 2. See too, MacKenzie, <u>Open Learning</u>, pp. 322-325.

[43]Ibid., pp. 1-3.

[44]Open University, <u>The BBC and the Open University</u> (London: British Broadcasting Corporation, 1974), p. 3. See too, The Open University, <u>Report of the Planning</u>, pp. 2-5.

[45]For a detailed explanation of the courses offered by the Open University see: Open University, <u>Report of the Planning</u>, Chapter VI, pp. 16-19. See too, MacKenzie, <u>Open Learning</u>, pp. 333-337. See also, Open University, <u>What is the Open University: A Brief Explanation</u> (London: Open University Press, 1978, pp. 17-24.

[46]For a complete report of the pedagogic values of broadcasting, see A. W. Bates, <u>Using Television in Mathematics</u> (London: Centre for International Services, 1978), pp. 3-5.

[47]A. W. Bates, <u>The Use of Television and Audio-visuals at the Open University</u> (London: Institute of Educational Technology, 1975), pp. 31-46.

[48]Valerie Morrison and Naomi McIntosh, _Student Demand, Progress and Withdrawal: The Open University's First Four Years_ (London: The Open University Press, 1975), pp. 344-348.

[49]More information about the administrative organization of the Open University is contained in The Open University, _Report on the Planning_, pp. 13-15.

[50]MacKenzie, _Open Learning_, pp. 354-355.

[51]For more information about the cost per student, see: Open University, _What is the Open University?_ pp. 33-35.

[52]Jack McBride, _The University of Mid-America: A Regional Open Learning Model_ (Caracas: Lacfep Press, 1976), pp. 5-7.

[53]See University of Mid-America, _Open Learning Goals_ (Nebraska: University of Mid-America, 1974), pp. 1-4.

[54]McBride, _The University of Mid-America_, p. 1.

[55]Information about the origins of the University of Mid-America can be seen in MacKenzie, _Open Learning_, pp. 448-452. For same aspects, see McBride, _The University of Mid-America_, pp. 6-7.

[56]Course components and production systems are discussed in Ronald Gross, _American Education_ (New Jersey: Educational Technological Publications, 1979), pp. 7-10. See too: University of Mid-America, _What Others are Saying About UMA_ (Nebraska: University of Mid-America, 1979), pp. 12-17.

[57]MacKenzie, _Open Learning_, pp. 468-470.

[58]McBride, _The University of Mid-America_, p. 65.

[59]Dirección General de Estadística y Censos Nacionales, _Proyección de la Población de Venezuela_ (Caracas: Dirección de Estadística, 1975), p. 83.

[60]Ministry of Education, _Preliminary Figures for the Memoria y Cuenta_ (Caracas: Ministry of Education, 1977), p. 32.

[61]Ibid., p. 40.

[62] Ibid., p. 24.

[63] Ministry of Education, V Plan de la Nación: Sector Educativo (Caracas: Oficina Sectorial de Planificación, 1976), p. 16.

[64] Oficina de Planificación del Sector Universitario, Estadisticas en Educación (Caracas: Opsu Press, 1977), pp. 12-17.

[65] Ibid., p. 34.

[66] Ibid., p. 56.

[67] Ministry of Education, V-VI Plan de la Nación: Sector Educativo (Caracas: Oficina Sectorial de Planificación, 1977), p. 35.

[68] Ibid., p. 36.

[69] Ibid., p. 38.

[70] Luis Manuel Peñalver, La Revolución Educativa (Caracas: Ministry of Education, 1976), pp. 3-7.

[71] Ibid., pp. 3-5, 7, 8-10.

[72] Organizing Commission, The National Open University of Venezuela: Project (Caracas: Editorial Arte, 1977), pp. 33-35.

[73] Simón Bolívar University, The Free Studies of the Simón Bolívar University: Project (Caracas: University Press, 1975), pp. 2-4.

[74] Desmond Keegan, On Defining Distance Education (Australia: Distance Education Journal, 1980), pp. 19-35. See too, Geoff Potter, Comparative Models of Distance Education (Canada: British Columbia University, 1980), pp. 2-5.

[75] Central University of Venezuela. The Supervised Studies at the School of Education: Project (Caracas: UCV Press, 1974), p. 36.

[76] Student Control Office, Statistics of the School of Education of the Central University of Venezuela (Caracas: UCV Press, 1982), p. 24.

[77]Ibid., p. 15.

[78]Ibid., p. 19.

[79]Vielma Andrade and José Cortazar, Comportamiento de los Gastos e Ingresos de los Estudios Universitarios Supervisados (Caracas: UCV Press, 1981), p. 34.

[80]Alvaro Arocha and Betty Martinez, Informe Estadistico de la Escuela de Educación (Caracas: UCV Press, 1981), p. 27.

[81]Simón Bolívar University, The Free Studies, pp. 1-7.

[82]Information obtained from the Dean's Office. Unpublished information of the last students' registration.

[83]Instituto de Investigaciones Educativas de la Universidad Simón Bolívar, Informe Sobre el Primer Año de Funcionamiento de los Estudios Libres (Caracas: University Press, 1976), pp. 14-15.

[84]Ibid., pp. 18-19.

[85]Ibid., p. 20.

[86]Ibid., p. 32.

[87]Ibid., p. 34.

[88]Organizing Commission, The National Open University of Venezuela, pp. 17-27.

[89]Ibid., p. 77. See initial programs of the National Open University.

[90]Ibid., pp. 31-36.

[91]Ibid., pp. 34-37.

[92]Ibid., pp. 39-44.

[93]Miguel Casas, La Educación Superior a Distancia en Venezuela (Caracas: National Open University Press, 1981), p. 59.

[94]Ibid., p. 77.

[95]Organizing Commission, <u>The National Open University of Venezuela</u>, p. 33.

[96]Coordination of Student Registration, <u>Statistics about Student Registration</u> (Caracas: University Press, 1981), pp. 41-43.

[97]For a detailed distribution of this budget see Organizing Commission, <u>The National Open</u>, pp. 113-114.

BIBLIOGRAPHY

Ahmadi, A. Theory and Practice in the Design of an Open
   Learning System: The Free University of Iran.
   Caracas: Lacfep Press, 1976.

Andrade, Vielma and Cortazar, José. Comportamiento de los
   Gastos e Ingresos de los Estudios Universitarios
   Supervisados. Caracas: UCV Press, 1981.

Arocha, Alicia and Martinez, Berty. Informe Estadístico
   de la Escuela de Educación. Caracas: UCV Press,
   1981.

Bates, A. W. The Use of Television and Audio-Visuals at
   the Open University. London: The Open University
   Press, 1975.

Bergeson, Alan. "Using Media to Teach Media." The
   Journal (London), Vol. 7, No. 2, 1980.

Brock, Dee. "Adult Learning Through Television." The
   Journal (London), Vol. 7, No. 6, 1980.

Casas, Miguel. La Educación Superior a Distancia en
   Venezuela. Caracas: National Open University
   Press, 1981.

Central University of Venezuela. The Supervised Studies
   at the School of Education: Project. Caracas:
   UCV Press, 1974.

_____. Statistics of the Students' Control Office.
   Caracas: UCV Press, 1981.

Cheek, King V. Learner-Centered Education. Caracas:
   Lacfep Press, 1976.

Chickering, Arthur. Problems in the Post-Secondary
   Education of Adults. Caracas: Lacfep Press, 1976.

Daniel, John S. and Stroud, Marpha A. Distance Educa-
   tion: A Reassessment for the 1980s. Australia:
   International Press, 1981.

Dressel, Paul and Thompson, Mary. Independent Study.
   San Francisco: Jossey-Bass Inc., 1974.

"Educational Technology Around the World." Educational Technology Magazine. New Jersey: Vol. IX, No. 11, 1969.

Evans, David. Technology in Nonformal Education. Amherst: Center for International Education, 1976.

Gronlund, Norman. Stating Objectives for Classroom Instruction. 2nd ed. New York: MacMillan Publishing Co., Inc., 1978.

Hameyer, Uwe. School Curriculum in the Context of Life-long Learning. Hamburg: UNESCO Institute for Education, 1979.

Haney and Ullmer. Educational Communications and Technology. Des Moines, Iowa: Brown Company Publishers, 1975.

Ieldhusen, John. The Three Stage Model of Course Design. New Jersey: Educational Technology Publications, 1980.

Instituto de Investigaciones Educativas de la Universidad Simón Bolívar. Informe Sobre el Primer Año de Funcionamiento de los Estudios Libres. Caracas: University Press, 1976.

International Extension College. Correspondence Teaching at University. Cambridge: International Extension College Press, 1973.

Kapfer, Miriam and Kapfer, Philip. Learning Packages in American Education. New Jersey: Educational Technology Publications, 1973.

Keppel, Francis. The Impact of Communications Technology in Post-Secondary Education. Caracas: Lacfep Press, 1976.

Kidd, J. R. How Adults Learn. New York: Association Press, 1977.

Knowles, Malcolm. Self-Directed Learning: A Guide for Learners and Teachers. Chicago: Follett Publishing Co., 1975.

_____. The Modern Practice of Adult Education. Chicago: Follett Publishing Co., 1970.

Kross, Ronald. The Lifelong Learner. Handbook. New York: Simon and Schuster, 1977.

Lipson, Joseph. "Technology and Adult Education: A Report on the University of Mid-America Experiment." The Journal (London), Vol. 4, No. 6, 1977.

Lord, Jerome. Toward Lifelong Learning: Changes and Innovations in Post-Secondary Education in the United States. Caracas: Lacfep Press, 1976.

McBride, Jack. The University of Mid-America: A Regional Open Learning Model. Caracas: Lacfep Press, 1977.

MacKenzie, Norman; Postgate, Richmond; and Scupham, John. Open Learning: Systems and Problems in Post-Secondary Education. United Kingdom: The UNESCO Press, 1975.

"Mass Media and the Adult Learner." Educational Technology. New Jersey: Vol. XI, No. 7, 1971.

Mayeske, Betty. The Open University: New Approaches to Adult Education. Caracas: Lacfep Press, 1976.

"Media and Methodology in Effecting Change." Educational Technology. New Jersey: Vol. IX, No. 7, 1971.

Morrison, Valerie and McIntosh, Naomi. Student Demand, Progress and Withdrawal: The Open University's First Four Years. Milton Keynes: Open University Press, 1975.

Organizing Commission of the National Open University of Venezuela. Project of the National Open University. Caracas: Editorial Arte, 1977.

Porteous, Andrew. Course Production at the Open University. London: Open University Press, 1977.

Rahmlow, Harold. The Teaching-Learning Unit. New Jersey: Educational Technology Publications, 1978.

Robinson, Russell. An Introduction to Helping Adults Learn and Change. Milwaukee: Omnibook Co., 1979.

Rowe, M. The Everyman's University of Israel. Caracas: Lacfep Press, 1977.

Salomon, Gavriel. Interaction of Media, Cognition, and Learning. Washington: Jossey-Bass Publishers, 1979.

Shoemaker, William. Systems Models and Programs for Higher Education. Washington: Academy for Educational Development, Inc., 1973.

Simón Bolívar University. Project: The Free Studies. Caracas: University Press, 1972.

Stanyal, Bikas. The Role of Non-Formal Higher Education to Meet Labour Market Needs. Caracas: Lacfep Press, 1977.

Stojanovic, Lily. Evaluación de los Aprendizajes en el Estudio a Distancia. Caracas: Universidad Nacional Experimental Simón Rodriguez, Publicaciones de la Presidencia, 1977.

Strother, Seldon. The Classroom Learning Center with a Cognitive Style Mapping Interface. Ohio: Jossey-Bass Publishers, 1980.

Student Control Office. Statistics of the School of Education of the Central University of Venezuela. Caracas: UCV Press, 1982.

The Open University. Centre for International Cooperation and Services. Milton Keynes: Open University Press, 1976.

_____. Criteria and Guidelines for the Allocation of Broadcasts. Milton Keynes: Open University Press, 1975.

_____. Report of the Planning Committee to the Secretary of State for Education and Science. London: Her Majesty's Stationery Office, 1969.

_____. The BBC and the Open University: An Introduction. Milton Keynes: Open University Press, 1974.

_____. The Courses: Degree Structure. Milton Keynes: Open University Press, 1975.

_____. What is the Open University? A Brief Explanation. Milton Keynes: Open University Press, 1974.

University Without Walls. <u>A First Report</u>. Ohio: Design
     Studios, 1973.

_____. <u>Handbook 1979-1980</u>. Ohio: Design Studios, 1973.

Wagner, Jon. <u>Images of Information, Still Photography in
     the Social Sciences</u>. London: Sage Publications,
     1979.

INTERVIEWS

Barbera, Stalin. Central University of Venezuela, Caracas. Interview, 12 September, 1981.

Casas, Miguel. National Open University, Caracas. Interview, 12 March, 1982.

Dávila, Beatriz. National Open University, Caracas. Interview, 11 March, 1982.

Gímenez, Jose. Simon Bolivar University, Caracas. Interview, 3 March, 1982.

Klein, Jorge. Central University of Venezuela, Caracas. Interview, 3 March, 1982.

Lima, Eduardo. Simón Bolívar University, Caracas. Interviews, 11, 18 March, 1982.

Personnel of the National Open University, Caracas. Interview, 23 March, 1982.

Ramírez, Zoraida. Central University of Venezuela. Interview, 30 March, 1982.

Struve, Emiro. Zulia University, Maracaibo. Interview, 30 September, 1981.

Students of the Central University of Venezuela, Caracas and Barquisimeto. Collective Interview, 2 March, 1982.

APPENDIX A

THEORY OR PARTICULAR CIRCUMSTANCES EXISTENT	OPEN UNIVERSITY CASE	MID-AMERICA UNIVERSITY CASE	VENEZUELAN PROJECTS	OBSERVATIONS
Term "open": No restrictions or previous requirements. No campus, no time, open in ideas, open in new methods. A philosophical term more than an administrative one.	It is not totally open. Restrictions 1. Age 21, financial constraints, geo quotas. 2. Summer school requirements. 3. Inflexible television schedule, study center schedule. 4. No student participation in learning package design. Open: New ideas, new methods.	Open to every body. No entrance requirements, no summer school, flexible modules, students take exams when are ready. More openness = more problems in design, courses and satisfaction of individual needs. More expensive production.	Various projects are not totally open Legal restriction: Bachelor degree to get into the university. No campus, but a strong supervision of student progress. Learning package made primarily by teachers. TV time inflexible. Time limitations. Open: in new and experimental methods and in ideas.	Openness brings difficult problems particularly in designing individual courses, administrative procedures and high costs. More control = success Flexibility = high drop-out rate Openness varies according to the specific needs of population and resources. Very complex operation to pay attention to student's pacing.
Previous facilities or national or regional infrastructure is important for new open or distance systems. National services are relevant aspect to be considered in designing such systems.	Open University is sui-generis. 1. Strong support from the government 2. Unique facilities in the country (postal service, BBC and national TV system) 3. National experience in extramural education. Industrialized country very mature. 4. Large potential population (Adult)	1. Government support. 2. Previous educational experience. 3. Network facilities in the area. 4. Institutional integration of existing resources Excellent delivery systems, (TV, postal). Potential population determined. Rural area inside industrialized country.	1. Government support to the projects particularly the bigger one (National Open University). 2. Different projects, similar methodology, solving different problems but most of them working on a small scale. 3. Bad postal system, no previous experience in this kind of education. National TV system. Potential population determined in a superficial study.	Possibility of creation of infrastructure totally adapted to new systems. National integration of resources to avoid duplication.
Needs assessment (social or individual) is a primary factor in determining feasibility and role of open and distance systems. Need of a prior planning stage, national or regional.	Creation of the Open University was a political decision. Act of faith. No external pressures to do it. Large potential population existed, but needs analysis was not conducted. Political decision according to labor party's philosophy: to solve educational inequalities of workers. Long and excellent implementing stage.	1. Needs analysis conducted for region and students. 2. Concern about low matriculation in formal universities (economic survival of formal universities). High level of rural and adult population without college education.	Although under the national policy for improving education, a superficial needs analysis was conducted, the factual situation determined population to be served. High pressure from 50,000 students asking for places in formal universities. Increasing budgets of formal universities: political situation attempting to solve these problems.	In most of the cases, projects have been adopted as solutions to internal problems of traditional universities, or because members of the formal universities convinced authorities of the opportunity to help specific population feasible to be served by distance systems. UNA created to "solve the major problem" of the country. Young clients. Failure in attracting such population.
Distance and telecommunications technology are important factors in open systems. Distance has to be used as positive element in those systems.	Distance is a strong element in this project, integrated into the whole learning model of the Open University TV, radio, mail, phone, reinforced by face-to-face relationships according to students' particular situation Excellent distance model. Excellent use of distance multimedia.	Very influenced by Open University model. Distance and integration of learning material well balanced. Television as distance technology. Very expensive. Looking for cheaper, distance methods, multimedia, cassettes, newspaper lessons, etc.	No tradition in distance teaching. Most projects emphasize supervised activities. None of small projects using television or radio. Primarily written material and face-to-face interviews with tutors and other students. Only National Open University working with TV programs to complement written material.	Because of the lack of tradition in distance education, because of the high cost of production and the low number of students in small projects TV programs have to wait. Distance has to use other methods. The National Open University uses government TV channels.
Adult population is the ideal client for self-diagnosis, self-assessment, self-responsibility and for learning at a distance in isolation. (Andragogy theory)	Adult population main clients (37). Some previous education or well educated people. Middle class. Failure in attracting worker class as was initial purpose of the Open University. Only one experiment with younger population (500). It was a failure.	Adult population (30-35). Some previous education. Rural population in the region. Seven years of operation The growth of the university has been slow (10,000-12,000).	Some adult population interested in improvement or getting a university degree, mostly in small projects. (28-35). Big challenge is for National Open University to provide education for younger population coming from the high school (18-25). Not yet reached.	Venezuelan projects must complete implementation before initiation of a real experiment with young population. See chapter IV for complete details and suggestions about Venezuelan projects.

THEORY OR PARTICULAR CIRCUMSTANCES EXISTENT	OPEN UNIVERSITY CASE	MID-AMERICA UNIVERSITY CASE	VENEZUELAN PROJECTS	OBSERVATIONS
The academic model 1. Printed material 2. Broadcast element 3. Distance tutoring 4. Face-to-face relationship 5. Assignments and assessments	All elements very well integrated, and materials of superior quality. Excellent operational organization adapted to the system. Written material center of the system.	Very influenced by Open University. Problems in designing a variety of courses according to the variety of student's needs. Written material the center of the system.	Similar ideas, great influence from other projects and models. Written material well designed. Very expensive production. Written material and audio cassettes center of the system. Face-to-face relation emphasized.	To monitor the general instructional design and evaluate the materials used until now. Inexperienced projects without evaluation.
Utilization of educational technology is an axiom in distance systems. There is a technology of distance education.	Highly integrated technology used. Tendency to use multimedia, printed material, audio cassettes and cheaper technology than TV and radio.	High technology, but with tendency to use materials developed by other institutions in order to cut costs. Lessons through newspaper, new written element.	From the beginning small projects working with written material, and some computer technology (to correct exams, administrative procedures). Tendency to use teacher technology.	Most of the projects are experimenting with written material production audio-cassettes, audiovisuals and cheaper technologies. Only some brief TV programs, mostly orientation and promotional activities through television.
Financial aspects: Economy of scale Initial government support. Grants from private enterprises or institutions. High possibility of self-financing.	No financial problems. Using economy of scale, self-financing fees, exporting ideas and materials, very low rate of drop-out (25%) The New education has been exported to the world from England in the last seven years.	Economy of scale not reached. Government support and self financing fees. Needs to expand and attract student population. Needs to export production to other regions and produce new alternative distance courses.	90% financed by government support. Very expensive initial installations Economy of scale not yet reached. Very low fee to students. High drop-out rate (40-55%)	1. To improve material production 2. To attract more students 3. National collaboration 4. To sell material to other Latin American countries 5. To reach economy of scale See other conclusions in chapter IV.
Transferability. Theory and common sense has established that transferability from one country to another is limited and must be carefully studied	Both cases, the Open University and the University of Mid-America could be used on a national scale because both projects have suffered the same implementation problems that Venezuelan projects are experiencing now. That previous experience of the two cases can be used in Venezuela to avoid same mistakes.	-------------------------------	-----------------------------	Appropriate technology must be designed for the projects. No traditional administrative method must be used. A special administrative design must be created. Innovations within the traditional system seem not to be the best solution for distance education.
Common problems suggested by theory. 1. Individual needs VS mass education 2. Cheaper media VS large scale media 3. Small projects VS wide projects 4. Innovations VS traditional resistance 5. Adult population VS young population.	_____	-------------------------------	-----------------------------	Ideas which could be used in Venezuelan systems: 1. Needs assessment 2. Results of the actual projects 3. Integration of the elements of the system (System analysis). 4. National inventory of resources (to avoid duplication) 5. Development of appropriate technology. 6. Use of previously produced material. 7 To train personnel in these systems.

APPENDIX B

QUESTIONNAIRES

Director of Distance Program

1. How do you define this program? As a distance teaching system? Why? If not, why not? Is it an open system?

2. How did this program begin? Was a formal or informal needs assessment conducted? How were the students' needs identified? Who conducted this study? What were the statistical results? Was any profile for a distance learner established? Any other profile?

3. Is the structure of the program deliberately designed for distance education (own budget, entire government, administrative structure, personnel assigned)? What is the organizational chart and what are the main organizational problems affecting the program?

4. What are the priorities of the program? What national or regional priorities are included in the program? Who established those priorities? What objectives are set for this program? What, in your opinion, has been accomplished? What kind of data can demonstrate that accomplishment?

5. Why distance education in this context? What is the role of distance education in this particular area (nation, region, state)? What kind of educational problems is this system solving? Is the population served in accordance with the philosophy and initial

goals of the project? Has the population changed during the program? Why? If so, has the program changed? What is the data about the population? What is the student profile in this distance program? Is it different from the traditional student profile?

6. What were the main influences (foreign models) that affected the design of this program? What has been the results of applying these models? Why? What is the educational technology (hardware and software) most used by this program? What are the major innovations that this program has introduced during the time it has been working? What are the results of the Venezuelan innovations?

7. What are the elements of the instructional design of this model? Are the actual elements of this instructional design appropriate to the Venezuelan context? Why? Which are not appropriate? Why? What do you consider to be the main aspects to be used in implementing an instructional design for distance education? Why? What major inputs should be considered in developing instructional designs that are more appropriate to local conditions and might be more effective? Why?

8. What external or internal aspects, in your opinion, are affecting the effectiveness or ineffectiveness of this program (historical background, political

aspects, kind of population served, organization, budget, personnel, etc.)? Why? What crucial activities listed in the original plan occurred as intended? If they did not occur as planned, what happened instead? Which aspects of this program are not specifically cited in the program plan, the presence or absence of which might be related to program success or failure? Why?

9. Are there new and/or different alternatives of distance education that can be used in Venezuela in accordance with the experience of this program?

10. Is this program attracting the young population coming from the high school system? If not, why not? Can it be done through this model? Why or why not?

11. According to the statistical results (outcomes) do you consider this program cost-beneficial to society? If not, why not?

12. What do you consider the strengths and weaknesses of this program? What is the future of this model? What is the significance of this model for Venezuelan distance programs?

13. How is this program compared with a formal system at the same level--same, superior, inferior? How has the market accepted graduates from this system? What is the professional quality of graduates? Has any

study been conducted in that sense?

14. Where can I get more information about the following aspects of the program? (Whatever)

Questionnaire to Instructional Designers, Academicians, Tutors, Media Specialists

1. How do you define this program? Is it a distance teaching system? Why? What are the main elements of the instructional design of this program? What is the delivery system of the program?

2. Taking into account the most common elements in the instructional design of distance systems (printed material, broadcast [radio and TV] interaction system and student assessment system)--which of these elements are present in this program? Any other than those mentioned? How are they integrated into the system? How are those elements integrated into the instructional design? What was the original design, if any? Was the instructional model adapted from foreign models? If so, what models? Is this an instructional design made in the country? How was the original model changed with subsequent experience of the program? What do you consider the most important adaptations or changes? What were the most relevant aspects from foreign models? What are the innovations

proposed by this program? In both cases, how has it affected the failure or success of the program?

3. How is the instructional design appropriate to the population served? Why? How can that appropriateness be demonstrated? Any data? How are the curricula and courses offered by the program satisfying students' needs? What are the data? Who decided upon the curricula to be offered? The courses to be taught? How many courses have been delivered by the system? Why?

4. What are the most "popular" courses among students? What are the data? Any particular reason? How is the general distribution of students per courses offered? Why?

5. Is there any difference in the instructional design according to the particular subject? For example, between math and literature? Sciences and humanities subjects? Why? What is more effective? Why?

6. What is the most common educational technology used by this program (hardware, software)? How does that technology match with the instructional design? Why the specific hardware used?

Questions About the Specific Elements of the Instructional Design Used

Printed material.

1. What kind of printed material is most commonly used?
    What is the variety of material used (texts, guides,
    newspaper, etc.)? How are learning objectives
    specified? Who prepares the learning material? In-
    dividuals? Academicians? A team of professionals?
    Who are they? What is the entire process in designing
    the printed material? What is the student participa-
    tion in this stage? Or in the process? Is the
    material entirely designed for the personnel of the
    program? Is the material acquired from commercial
    sellers? Is it acquired from foreign universities and
    adapted to the conditions of the program? In each case
    what are the results?

2. How many courses have been produced from the begin-
    ning of the program? What courses (the material) have
    been more successful? Those adapted or those pro-
    duced by the program? Why? How was it measured? How
    long does it take to complete an average course? How
    is the material validated before it is used by students?
    How is the printed material integrated with the rest of
    the elements of the instructional design? Is the
    material always ready for the student? How is the
    capability of production of the program? Who is pub-
    lishing the materials? How much does it cost? What
    kind of problems are affecting this process? How much

is the cost of the material to the students? Can the
printed material be used for any kind of student other
than these in the project? Young? Adult? Mature?
Immature? Is there any provision in this respect? If
the population changes, what happens? How is the
material evaluated? What is the frequency of evalua-
tions? What are the results for areas of the project?
Subjects? What major improvements have been introduced
after evaluations? What printed material has been
abandoned? Why?

3. Are the material and the learning package flexible
enough for the variety of students in the program? How
is it measured? Where is the flexibility? Has the
student the opportunity of studying at his/her own
pace and time? What administrative complications
does it generate in the program? How are they
solved?

4. What is the delivery system? How is the material sent
to the student? Has the program, the state, the area
an efficient infrastructure to do that? What kind of
problems is the program facing in that sense? What
are the solutions?

Tutorial system. (Tutors and academicians).

1. What kind of additional support does the student

receive in relation to the printed material? Are there
provisions in the instructional design for interactions
among students? If not, why not? Is there provision
for summer schools, weekly interactions, experimental
sessions, lab kits, introductory courses? If any,
how are they working?

2. What are the terms of time of study? Is there any
established schedule or does it vary in accordance to
the pace of the individual student? If established,
what are the provisions for flexibility? Can the
student take examinations any time during the year?
Any limitations? What is the maximum flexibility of
the program? How has the loneliness of the distance
student been faced by the system? Is that a problem?
What kind of interaction is provided to complement
the printed material, to share knowledge, ideas, doubts,
etc.? Are there distance interactions (mail, tele-
phone) or is the emphasis on face-to-face inter-
actions? In any case how are they organized? What
are the results? What is the frequency of the face-to-
face interaction? What are the main problems of this
activity?

3. Who is conducting the interaction sessions--specialized
tutors? academicians? senior students? How are the
sessions designed (in a traditional way)? How efficient

has the program proved them to be?

4. Is the student trained in "how to study at a distance"?
    How? Is there provision for introductory courses?
    Written materials or manuals (handbooks) to get those
    skills? What are the results? If there is no such
    provision why is there not? What is the experience of
    the students in distance education? Are the inter-
    actions conducted in groups or through individual
    meetings? What are the most important problems seen
    in the interaction system; academic problems, adapta-
    tion to the system? Are interactions popular among
    students? In what subjects do interactions seem to
    be most necessary? Why? What are the main problems
    faced by the interaction system? What solutions have
    been provided?

Broadcast element.

1. How is the broadcast material; radio, television,
    other? What are the frequency and flexibility of the
    lessons? Schedule flexibility? Who designed the
    television or radio component? Is the broadcast
    element a complement of the printed material or does
    it only have the purpose of adding new ideas to the
    topic selected? How efficient or helpful are

broadcasting lessons by students considered to be?
How are their effectiveness measured? What are the
costs of television programs in relation to radio
programs? Is the system reaching the entire popula-
tion of the program? What kind of evaluation and
results have been obtained in relation to the role
of the broadcast element in the distance system?
Has the student the obligation to see or hear the
programs? Any provision in the learner center to
provide video cassettes of the missed lessons? If
the broadcast element is too expensive or not used by
the program, what other alternatives have been used
in order to complement the audiovisual component of
this system? What is the multimedia approach of the
program; audio cassettes, video cassettes, slide
show, emphasis in learning center operation, other?
What is the effectiveness of that approach?

Evaluation system (student assessment).

1. How is the student evaluation conducted? Distance
    evaluation? Self-evaluation? Evaluation integrated
    into the printed learning materials? Tutorial evalua-
    tion, _in situ_ evaluation? What other system is used?
    What is the most effective system? What is the

credibility of distance and self-evaluation? What is
the accreditation system? How are broadcasting lessons
evaluated?

2. What is the evaluation data related to the different
courses? Which subjects are difficult? What are easy
subjects? Why? What is the overall record of the
students since the program began? What has been
the dropout rate in the program? What are the causes?
What are the primary problems evident in the evaluation
system? What kind of solutions have been implemented?

Questions to the research units.

1. What provision has been made for periodic review of the
program? How often did it occur? Are reviews done
internally or do they include outside assistance?
What techniques are used to monitor and/or modify
program operations on a day-to-day basis?

2. What planning or problem solving meetings occur to help
remedy the program problems or to share program suc-
cess? What decisions are made on the basis of review
and/or information concerning program weaknesses or
strengths?

3. According to this unit can this program be considered
a distance education system? Why? In what specific

areas has this evaluation unit conducted investigations? What are the results? What are considered the critical areas to be investigated? Why?

4. Is measurement conducted primarily for formative or summative evaluation? That is, is the information obtained through this unit feedback to the staff for the purpose of program improvement or is it only utilized for the purposes of official reports?

5. According to the evaluations conducted by this unit, specific questions must be elaborated in order to cover accurate information about any aspect investigated.

Student Evaluation Questionnaire

Name of the program   Age   Date   Sex

Income average per month if any   Dependent upon parents?

1. How long have you been in this program? Continuously or at different periods? Illustrate.

2. What was your purpose when you originally entered this program? What do you hope to get out of it? Why distance education instead of formal education?

3. Has the program, to this time, covered all the needs for which you entered? If not what are the failures? What additions would you personally suggest?

4. Has the program resulted in your doing anything differently than you did before you enrolled in it? Illustrate.

5. What degree of sequencing and adaptation to your particular needs is evident in the instructional material provided to you (printed material, broadcasting lessons, etc.)?

6. Are the radio and television programs, printed materials and tutorial activities stimulating? Do you get any extra support from these materials or activities in relation to the printed materials? Are they integrated?

7. How do you participate in the elaboration of learning materials? What main problems can you describe about the design of any of the materials?

8. What other resources have been used to support the program and the course you are taking? How has it helped your learning process? If not, why?

9. How do you think loneliness as a distance student is affecting you? What solutions are the program providing to help you to solve this problem?

10. How much interpersonal contact instruction is the program providing to you? Is it helpful? Have you satisfied your personal needs or interests with the interaction activities? What kind of interaction has been most valuable to you? Distance interaction; face-to-face interaction; with tutors; with other students? Why?

11. What amount and kind of practice activities, review, and quizzes are provided to reinforce the material sent to you?

12. Have you received an effective feedback about your individual progress? (Through verbal or written critiques, explanation of scores, or by objectives reached? What other methods have been used? Is that feedback useful? How? What remedial activities are designed?

13. Had you any previous experience in distance education before taking this program? For how long? How is that helping you?

14. How do you think your maturity level has influenced your failure or success in this program? Illustrate. Do you recommend this program for adult population 25 years or over? Is this program appropriate for younger population?

15. How do you think your economic and home conditions affect your studies in this program? Do you think the program can be adapted to your specific conditions? How?

16. How flexible is the system in relation to: schedule of activities, exams, etc.? What are the problems in going to the learning center?

17. What suggestions have you for improvement in the following areas:

> New courses
>
> Printed material
>
> Tutorial system
>
> Student evaluation
>
> Learning center operation.

If you have additional comments please be free to include them.