ABSTRACT

              Institutional modeling and program evaluation in
relation to a correspondence program are discussed. The evaluation
process is first considered from the viewpoint that it is an add-on
activity, which is largely summative, and is the least desirable type
of evaluation. Formative evaluation is next considered as a part of
the process of institution building from the first step, which
continues as an ongoing activity for the life of the institution, and
is thus the most desirable evaluation process. Given the
institutional concept and rationale for a new approach to the
education of distant learners, including the over-all objectives to
be achieved, a model of the new institution is projected. A
conceptual matrix for building the correspondence institution is
provided, which is useful in modeling because it (1) identifies all
the elements that must be dealt with, and (2) provides a way for
builders to "select the universe" that they wish to work within. A
tentative three-stage model, in which the learner roles become the
active focus, is provided. A planning matrix for modeling a
correspondence teaching and learning institution is presented, and an
appendix provides a list of the quality control subsystems that may
be useful in fleshing out a model for a correspondence institution.
(CK)

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Institution Building and Evaluation

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1.0. Evaluation as an add-on activity

   1.1. Evaluation is frequently thought of as an add-on activity, after
         the institution has completed its work. The rationale for evalua-
         tion as an add-on to operations proceeds this way:

         1. First we planned our work on the basis of needs which
             were given to us as our responsibility to meet.

         2. Then we created the process to accomplish our work.

         3. We got authorization, staff, and funds to proceed.

         4. We did our work.

         5. Now we must report to our superiors what we have accom-
             plished, and ask for more subsidy so we can continue
             and grow.

       (add on)

         6. What have we accomplished?

   1.2. As an add-on evaluation may be useful (and better than no evalua-
         tion at all)but the rationale is faulty and the consequences are
         hazardous. Consider, for example, the numerous examples you can
         think of whereir program and institutional evaluation never occurs at
         all. When you ask about evaluation, people hang their heads, look wist-
         fully resolute and remark, "Yes. Well, we're going to do that later--
         just as soon as we get the time and the funds to do it. We've been so
         busy just operating the program we really haven't had a chance to get
         started. But we intend to." (Rustle of papers.) "You know, I even
         made some notes on it once. Let's see. Maybe they've been filed some-
         where. . . " The hazard, of course, is that the five stage activity
         cited above is wholly operational; it does not include evaluation ex-
         cept, alas, as an add-on, an afterthought. Furthermore, personnel com-
         mitted to operational stages that do not include evaluation, develop

a growing sense of anxiety about what they are accomplishing. If
this anxiety is not reduced by actually doing an evaluation, it in-
creases until it becomes itself a barrier to evaluation. Since the
person does not really know what has been accomplished, the anxiety
becomes fear of what may be revealed by a true evaluation. Even when
such anxieties-cum-fears are groundless (as they usually are) they de-
finitely inhibit the undertaking of an evaluation. What is usually
required to break this barrier is a crisis of some sort:

1. an order from a superior

2. a new top administrator who wants to make it clear that
   he's not responsible for what went on before he took over,
   requiring an evaluation to stake out the grounds and goals
   of his new administration

3. problems of such magnitude that the survival of the opera-
   tion is threatened

4. an opportunity for the program to grow dramatically if a case
   can be made on the basis of past performance.

1.3. Evaluation as an add-on is largely summative; that is, it is an activity
undertaken at some point to set forth what has happened and what has been
accomplished up to that point. It may be historical or sociological in
focus; it may be narrowly directed towards management, cost-benefit ra-
tios, completion studies or other aspects; or it may be comprehensive in
scope. An evaluation, however, is more than a summary of events or sta-
tistics; it is a careful appraisal of events and statistics leading to
the formation of judgements respecting what has happened (good-bad, use-
ful-not useful, authorized-not authorized) the identification of trends
and the elaboration of cause-effect relationships. An evaluation seeks
the why as well as the what and how of things, and may well include re-
commendations for future action. It is highly analytical in nature, and
depends not only on records of events, happenings and statistics, but al-
so on generally accepted standards and criteria drawn from the professions.
Comparative studies may be an important part of an evaluation if the per-
sons concerned wish to know how the activity evaluated compares with
similar activities conducted elsewhere.

1.4. Summative or add-on evaluations are generally carried out by persons who are separate from and neutral towards the activity evaluated. Objectivity on the part of the evaluators is essential. If the manager or staff of the activity conducts a summative evaluation, there is conflict of interest, and the evaluation is suspect.

1.5. Summative evaluations by separate and neutral persons ought to be carried out periodically (at least every three years) on a planned basis, not a mere add-on under the stress of a crisis which may have arisen, in part, because there were no periodic evaluations to reveal what is happening, why, and to provide considered courses of remedial or developmental action, on the basis of accepted criteria.

1.6. <u>Evaluation as a Function of Institution Building</u>

If evaluation is conceived of only as add-on or summative, what does the new institution or program do to find out what is happening, why, and to make decisions for remediation or development? Does one have to wait for a crisis, or for planned summative evaluation after a period of operation? Is there a process by which the advantages of evaluation can be continually avai le during institutional development? The concept of continuing eval. ion in institution building is important. It is, for example, an essential part of what has been called "systems design," a process that has evolved specifically to guide project and institutional development. As such, evaluation becomes a function of institution building itself, organic and integral to development, not add-on or summative. In this context evaluation is sometimes called "formative" or "developmental" evaluation. (1)

1.7. Formative evaluation is a part of the process of institution building from the first step, and continues as an ongoing activity for the life of the institution. It does not replace summative evaluation, which should occur periodically, and which is separate and neutral. Formative evaluation is carried on by the regular staff; it is not neutral and not separate. The people who use formative evaluation are committed to the mission and objectives of the institution because they have participated in their development; they are responsible for building the institution, its programs and services, and they are thus accountable for the consequences

of design, strateg, , programs, processes and ultimate achieve-
ment. Responsibility and accountability require formative evalua-
tion both for the self interest and security of the people in the
program, and for the survival of the institution itself.

1.8. Formative evaluation, viewed in this way, is a function of insti-
tution building. If employed as suggested, it can bring to insti-
tution building the validity and vitality that the emphasis on be-
havioral objectives has brought to teaching in the past few years.
Formative evaluation in institution building is creative, formative.
The institution being built is the outcome of a complex of creative
processes which derive their validity--always--from mission, objec-
tives, goals. This kind of evaluation continually throws inquiry
respecting what is going on back to original questions:

What are we committed to do? (Mission, objectives, goals)

Why are we doing these things? (Social needs rationale)

How best can we accomplish what we are committed to do?

(Method, process)

Is what is actually happening consonant with our mission,

objectives, goals? (Responsibility)

Why or why not? (accountability)

What decisions must we make now to improve the institu-

tion? (continuing development, building)

2.0. Institutional Concept and Rationale

2.1. Formative or developmental evaluation is organic and integral to the
building (and operating) of the institution. Consequently, formative
evaluation begins with the conceptualizing of the institution or pro-
gram. In conceptualizing the program a theoretical model is being
created, a prototype of the institution which will come to be through
successive stages of development. The model is useful in making con-
crete and realistic the conceptual abstractions of institution building,
and in guiding the development of the actual institution.

2.2. The general concepts that precede the formation of the institution give
the answers (or the direction in which to search for answers) to such
basic questions as:

Why is the institution needed? How were these

needs determined? Are they valid?

What is the authority for the institution?

Who is the institution to serve?

Where are the learners; what is their condition

and situation?

What educational services shall be provided?

How well do the services match with the

needs?

Who will develop these program services?

How will the services be brought to the learners?

What outcomes are expected?

If you look back over these questions you will see that they con-

stitute an outline of, and rationale for, the institutional concept.

2.3. The Institutional Model and Evaluation

2.4. Given the institutional concept and rationale for a new approach to

the education of distant learners, including the overall objectives

to be achieved, a model of the new institution can be projected. The

model must define the "universe" within which the institution exists.

All the elements which are now part of reality must be present in the

model system. In addition, as a response to the tensions inherent in

the acceptance of objectives, the model system must picture the dyna-

mics of activity, of movement, of things being done to achieve the ob-

jectives, to reduce the tensions through successful achievement. Hence

the model system has to introduce these new elements, activities, struc-

tures, measures, arrangements that are not part of the present reali-

ties. A model system, therefore, will include elements that are novel

or unique at the model building stage. These uniquenesses, as soon as

implemented in practice, become part of the realities of the system.

So a model must cope not only with things as they are, but also with

things as they will be.

2.5. A model system is also characterized by subparts, or subsystems. The

subsystem (or submodel) must be as viable to its purposes as the overall

model system. Each part of the system and subsystems must be tested for

validity in every way known beforehand as well as during its operation.

Any system implies a condition of equilibrium; that is, given the con-

ditions, the objectives, the forces acting, the activities, there should

be certain predictable outcomes. A change in any part of the
system produces change in the other parts of the system.

Alas, no human system actually operates so precisely.
There may be errors in defining the "universe" within which the
system operates because of unknown or unperceived elements which
are not taken into account. There may be changes introduced un-
knowingly at some point so that adjustments to other parts of the
system are not made concurrently. Predictability thus diminishes.
Reliability falters. Validity fades.

2.6. That is why the model system suggested here has a built-in forma-
tive evaluation or sensing element. If feedback warns the insti-
tution builders of something unanticipated, of a failure at any
point, an immediate analysis of the system model in situ is called
for. The equilibrium of the system which makes it reliable, and
outcomes reasonably predictable, must be restored. Consequently
an evaluation scheme which only comes into being to measure effect
after institution building is an extravagance that human planners
who care about their work cannot afford. Even success, evaluated
after the fact, offers little enlightenment. Institution builders
use formative evaluation to analyze what is going on, almost day-
to-day, make decisions on the basis of known realities, and continu-
ally develop and refine the model system until it does achieve that
reasonable equilibrium that assures reliability and predictability.
Such an evaluation does not require control groups, since its purpose
is not comparison with some presumed standard. However, operation
of the model will eventually produce norms or standards   which
can be used in other kinds of evaluation or as part of periodic sum-
mative evaluations. (2)

2.7. Building an institutional model is therefore not a simple matter of
putting together a project according to a pattern or template. It is
a creative effort to achieve the thrust and counterthrust, the tension
and counter-tension, the actions and reactions that the model systems
hypothesize are needed to produce the results desired. And since in-
stitution building is not carried on to prove or disprove the models,
but rather to make advances in human organization and activity towards

better education, in this case of distant learners, the burden of
the institution builders is to work creatively with the system to
make it produce what is needed. Continuing evaluative feedback
will make that kind of development possible, and will also contri-
bute to later summative evaluation. (3) To present formative evalua-
tion as a function of institution building it is necessary to pre-
sent a view of institution building. Hence the succeeding pages
have a dual purpose: 1) a compact delineation of institution build-
ing as a process, and 2) an exposition of the role of formative eval-
uation within that process. While the presentation has general
validity, it is specifically focused on the problems inherent in
building a correspondence or independent study institution serving
distant learners. (4)

2.8. A Conceptual Matrix for Building the Correspondence Institution
The matrix presented on page 8 cites the various situation realities
that must be considered in constructing and operating a correspon-
dence institution. Each of the realities is, in fact, a variable,
because in no specific place or region where such a program is esta-
blished will the situation be exactly the same. The matrix is useful
in modeling because (1) it identifies all the elements that must be
dealt with, and (2) it provides a way for builders to "select the
universe" that they wish to work within. For example, institution
builders may wish to approach their test universe through the selec-
tion of target populations, through a subject or content focus, or
through some other situational reality. The matrix enables the
builder-designer to locate the approach that is closest to his situa-
tion--that fits his resources, the population that he regularly works
with, etc. He can select the universe that is indigenous to him and
thereby apply the special talent, expertise, resources and experience
that his situation offers.

) building the correspondence institution models, variables such as these itemized here, must be considered as parts of the "universe" being created.
ile each variable is conceptually separate, it has validity in the universe only because it is a part of the whole. Hence the variables must be studied
id acted upon vertically and horizontally, separately and in relationship to others according to mission, purpose, objective.

2.9. Conceptual Matrix for the Correspondence Program

Subjects of Focus in Courses	Educational Process	Educational/ Other Resources	Linkages with other depts, agencies	Structure Organization	Admin./Management	Training Develop. of Staff	Quality Control & Assessment	Financing
get ulations		Educational— Univ.Ext. Residence Ad Hoc Instruction. Field s. f	Univ. Admin. Ext. Admin. Resident dept. Ministry of Ed; other colleges/ universities	Design to accomplish mission objectives in each situation	Conceptual matrix Recruitment Counseling Registration	Course writing Course editing Production Instruction	Reporting Evaluation for decision making from students Evaluation for institution building	Gov't bi-lateral aid; fees Cost/benefit Ratio Budgeting
groupings	Media: print other							
io-cul-ural coupings	Educa-tional package	Counseling Evaluation Media/print production	local schools Tech. colleges Vocational programs Educ. assoc. libraries	Relationships to residence faculty, gov't, process ministry, public, pri-vate schools	Records Student Services Transfers Accreditation process Certification Reporting Quality control process Budgeting Evaluation/assess-ment Employment poli-cies Staff training/ development	Record keeping Recruiting Counselling Management Other media	Persistence completion criteria/ standards	Unit costs
upational coupings	Practical work	Postal service		Advisory council		liaison/re-lationship with other agencies	Periodic comprehen-sive evaluation	Lead time for reports, bud-gets
geographic aracteris-ics	Achievement standards	Other-- Space buildings rooms equipment		Vertical/la-teral work flow, Authority control Check points Report points		Eval./quality control Standard/cri-teria	Conceptual matrix	Report points Control points Approval points Process-- internal, external
ofiles	Exam pro-cedures					Population/ market studies	Formats to be used	
rket urveys						Rewards Standards Criteria Time allotted	Risk practices	

2.10. The conceptual matrix suggested is not complete. Each institution builder may insert into the appropriate columns his mission, objectives and the other items that describe his universe, and. delete what is inappropriate, to complete the conceptual matrix for his own institution. Vertical columns should itemize all the development concepts of the particular categories, spelled out in specifics. The first column (far left) will spell out mission and objectives. Hence by starting with a specific objective on the left, it is possible to follow laterally through the succeeding columns to conceptualize the model or system that is being built to achieve that objective. Of course it is not possible to get the grand design on one sheet of paper, as presented here. Laying out the entire model or design in detail, unique to a specific situation, may require an entire wall in your office.

2.11. Laying out the matrix may look like a boring chore. It isn't. It's an exciting, intensive effort, for here before your eyes and under your hands the institution begins to come into being. The matrix is dynamic, not static. It changes as your conceptualization matures, as the realities of your universe are perceived or altered, as mission and objectives are modified. If nothing else the matrix is useful as a series of check lists; but it will be more than that if it is employed thoughtfully.

2.12. The conceptual matrix is not at this point a system, model or institution. The concepts fashioned in the matrix, however, are the basic ingredients of the next steps, modeling, testing and operating. The modeling process suggested here consists of three essential elements--a systems development plan, an analysis of learner roles, and a matrix for modeling.

2.13. Systems Development Plan. A systems development plan merely itemizes, in appropriate sequential order, the major task areas that must be completed in working towards a model system.

      Task 1. Concept

      Task 2. Mission, objectives, goals

      Task 3. Learner roles and needs

      Task 4. Resources required to achieve objectives
              with learners

Task 5.   Communications media to be used

Task 6.   Coordinations required

Task 7.   Learner services

Task 8.   Curriculum, courses, diplomas, degrees

Task 9.   Continuing formative evaluation

Task 10. Staff required, regular and ad hoc

Task 11. Organization and structure

Task 12. Software and hardware

Task 13. Training, staff and learners

Task 14. Finance, fees and budget (5)

The order in which tasks are taken up is important. The aim of
a systems development plan is to go from the concepts and genera-
lizations of the conceptual matrix to quite specific plans that
will be needed in the later stages, and to ensure that particular
tasks (such as organization and structure, or finance and budget-
ing) are not considered until the institution builders know in
considerable detail what the institution will be so that practi-
cal models that fit the requirements can be produced.

2.14. Modeling to Fit Learner Roles. To construct a model,   test and
operate it as an institution, it is now necessary to conceive,
picture or visualize events as they are likely to occur in the uni-
verse described by the conceptual matrix. The institution builder
"acts out" the events intellectually, and puts them on paper as a
model of the institution and its behaviors. Modeling is thus a test
of the completeness and appropriateness of the concepts first sketch-
ily drawn together in the matrix. It's not unusual to find that con-
cepts which looked adequate are too fuzzy to act out; or that ideas
which seemed realistic at the conceptual level are at odds with cer-
tain realities of the universe which are unchangeable givens in the
situation; or that some concepts are in conflict with others. Hence
modeling tests and improves the validity of the concepts upon which
the institution is built. This is formative evaluation at work fo-
cusing inquiry on concepts and processes, and providing feedback to
the institution builder of what is complete, what works; what is
incomplete, what doesn't work; indicating voids in design and pro-
cess, signalling the need for decision making, modification or re-
design.

2.15. <u>Seven Learner Roles</u>. The focus of the correspondence institu-
tion is on the distant learner. If we look at the distant
learner in his situation with the purpose of achieving the
overall goals which have been stated on the matrix, we see that
there are seven identifiable roles which the learner plays in
relationship to the institution being built.

Role 1 - The learner is passive with respect to learn-
ing because he thinks he is learned enough to
survive and perceives no new learning needs.

Role 2 - He is anxious because he thinks or fears that
maybe he doesn't know enough, and begins to
weigh whether and how he could learn general or
specific things that would meet his needs bet-
ter. His needs are only vaguely perceived but
he is beginning to display goal seeking beha-
viors.

Role 3 - He casts about for leads which will put him in
touch with learning opportunities to satisfy
his needs in his situation. His needs are now
more sharply perceived, and are being transmuted
into goals. Anxiety increases, particularly if
he fails to locate opportunity that is accessible
to him.

Role 4 - He acts on his goals, makes decisions among the
possibilities open to him. He does something to
enhance his learning, such as enroll in a learn-
ing program. Whatever overt or covert action is
taken to initiate purposeful learning, goals con-
tinue to undergo modification. If the action
taken is formal, goals are modified according to
institutional programs and accessibility. The
learner displays learning or knowledge seeking
behaviors.

Role 5 - He becomes a student in a specific program.

He begins learning.

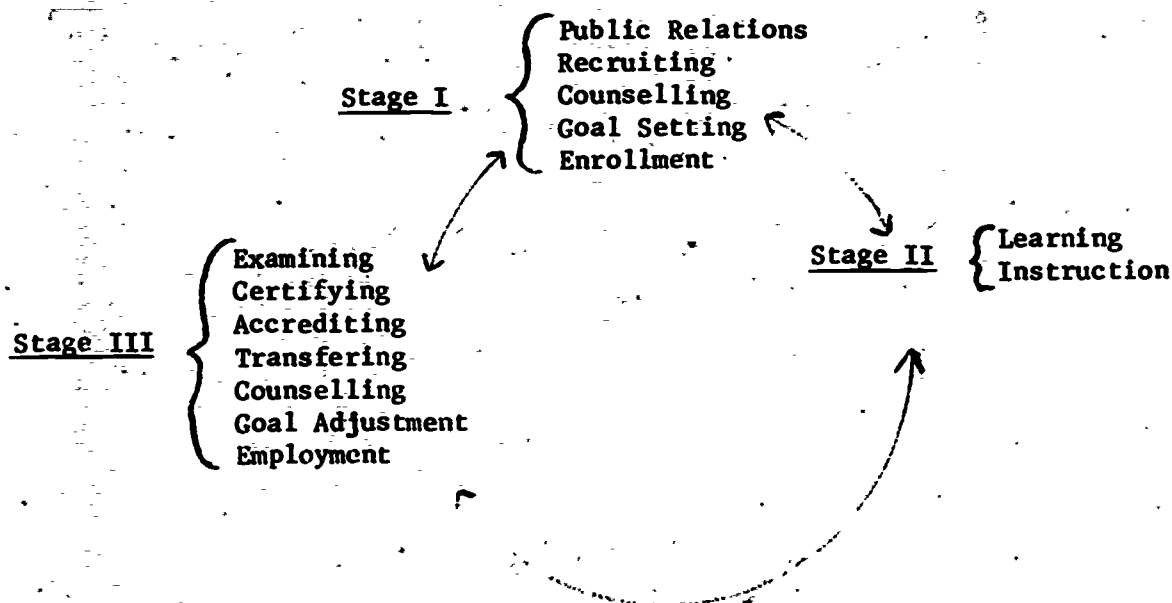Role 6 - He persists (or does not persist) in learn-
ing.

Role 7 - He reaches (or does not reach) his and/or
the institution's goals. Anxiety is reduced
if successful; increased if unsuccessful. Fur-
ther goal modification.

These seven goals are cyclical. For example, in playing out Role
7, the learner whose needs and goals are in equilibrium will cease
formal learning and return to Role 1. Or, if needs and goals are
not in equilibrium, he will go back to Role 2 or 3. Similarly
success or failure (for whatever reason) in Roles 3, 4, 5 and 6
will push the learner ahead to the next role, or will force him
back to a preceeding role. Role 1 is characterized by passivity,
which, as needs are perceived and transmuted into goals, gradual-
ly phases into activity, first through goal seeking behaviors, and
then through learning or knowledge seeking behaviors. The extreme
dependency of the early roles is replaced (if the learning is suc-
cessful and the institution's goals are met) by growing autonomy
and independence in the later roles. If the cycle of roles descri-
bed above is reasonably accurate for most learners (differences in
socio-economic, cultural and educational background, geographic and
situational circumstances naturally affect role behaviors) then the
educational institution ought to focus on these roles.

2.16. Institutional modeling has generally focused on institutional roles,
not on learner roles. If the institution has the mission simply of
teaching learners who are required to attend school (the source of
most of our concepts of teaching, learning and the institutional mo-
dels that have evolved) the number and nature of learner roles per-
ceived is somewhat different. Here the institution builder starts
with the learner as a given. He works out a model according to what
the institution has to do from that point on, with captive learners.
There is thus a tendency for the institution to become authoritarian,
to deal with the learner as a supplicant, to fashion objectives,
courses, and processes in the image of the institution and at its
convenience.

2.17. The institution which seeks to encourage self-selected, non-captive distant learners must develop its model on other concepts and on the roles played by its learners. This is not an easy task if the distant learner program is a department or division within an otherwise conventional institution. In such cases the institution builder has to face pressures, and a climate of educational theory and operating practice, that may be inimical to the concepts, purposes, roles and processes that he is trying to model. Nevertheless the builder of a correspondence or other types of mediated program for distant, independent learners has no real choice. If he wants to build to serve those learners, he must be prepared in his modeling to deviate from the conventional.

2.18. A Tentative Three-Stage Model. From the conceptual matrix, systems development plan, and the analysis of learner roles a tentative system model can be constructed to accomplish the purposes in the universe and with the populations and resources that have been identified. The learner roles become the active focus of the model; that is, the institution is built around the actual roles of its learners in order that it will serve learners at every stage of relationship and development. A model built around learner roles can be expressed in three stages. The exact number is immateı. ;o long as the subsystems accurately relate to the learner and tl. .es that he plays. These stages are cyclical, but they may be shown as linear or branched if that is preferred.

Stage I {
Public Relations
Recruiting
Counselling
Goal Setting
Enrollment
}

Stage II {
Learning
Instruction
}

Stage III {
Examining
Certifying
Accrediting
Transfering
Counselling
Goal Adjustment
Employment
}

2.19. Stage I

A subsystem designed to reach and serve the
learner in Role 1, in which the learner is pas-
sive, and assumes that he knows what is neces-
sary to survive, meet his needs and goals.
There is lack of perception of the cotermin-
ous relationship of ignorance and knowledge and
there is lack of goal seeking and knowledge seek-
ing behaviors. The learner (or, from the point
view of the institution, the potential learner)
may be neutral to the institution or friendly or
hostile, but that he needs a relationship to the
institution for learning is inconceivable to him.

The subsystem to cope with Role 1 learners
is sometimes called Public Relations and Recruit-
ing. The purpose is to reach as many Role 1
learners as possible, and help them advance through
Roles 2, 3 and 4. Although Role 1 learners may
seem to represent an undifferentiated mass of people,
the subsystem to reach and serve them must be discri-
minatory. Mass recruiting is generally unsatisfac-
tory, as is mass Public Relations. The subsystem
must be rifled to reach those who are most likely
to respond to the opportunities made accessible.
Communications formats must be of the kind to which
such learners pay attention and respond. Although
the long range institutional and social goal may be
to encourage purposeful learning through an enroll-
ment in a course, the Stage I enabling goal is more
general: to get the person to examine situation,
needs and goals, and discover that continued learn-
ing may contribute to the improvement of his and
society's well being.

Since it is well known that the more education
one has, the more one perceives continuing needs for
learning, the Stage I subsystem tends to build on
what educational experience or awareness is already

present among Role 1 learners.

Formative evaluation at this point focuses on what happens, the successes and failures, of this stage of the institution's model activity. The institution builders ought to be able to estimate how many Role 1 learners must be reached in order to get a yield of Role 2 learners, and so on. Demographic data as well as program data are needed. Who is to do these important tasks, what reports are needed, how often, and how they relate to decision making all along the line must be carefully built into the subsystems.

The Stage I subsystem will also reach and serve Role 2, 3 and 4 learners, not only as they result from efforts with Role 1 learners, but also because the model activity will reach persons already in Roles 2 and 3.

The subsystem hence will have specific enabling objectives to guide activities with Role 2, 3 and 4 learners. At some point the general public relations and recruitment type activities will be replaced, for specific learners, with advising and counseling activities. Here again the institution builder must be able to estimate the number of learners in each role that will yield, through the institution's model activities, the learners required in successive stages so that the total system remains economically and academically viable. Formative evaluation at each stage and substage will analyse, pinpoint and critique in order to achieve the necessary flow of learners, and to generate the demographic data that are needed in order to design programs that will work.

2.20. Stage II

A subsystem that works with a learner who has enrolled in the learning program. Stage II is composed of two subsystems to accommodate Role 5 and 6 learners.

Role 5 - the learner begins learning or does not begin

Role 6 - the learner persists or does not persist

Each of these substages is designed to accommo-
date branching. Essentially, branching in the
system proposed is a reversal of progress to a
previous learner role. It is important to note
that if, for example, a student who has progressed
from Role 4 to Role 5 does not begin learning (the
performance of learning tasks and the submission of
evidence of learning) there may be many reasons, in-
cluding a decision just to drop the whole thing.
Perhaps 10% of the self selected, non-captive dis-
tant learners who progress to Role 5 (are enrolled,
obtain materials, pay fees and exhibit initial learn-
ing seeking behaviors) actually do not begin. They
branch out, in effect, before starting. Ten per-
cent of an enrollment is a high figure, and both for
the learners and the institution it is eminently
worth while to have a subsystem to cope with this
phenomenon. Whether the subsystem retrieves (i.e.,
reverses the role regression) every learner or not
(it won't) the counseling at this point can be very
valuable in helping learners and in compiling data
that can be used to construct profiles of learners
that will help assess and modify all the subsystems.
This is a function of formative evaluation.

There may be a tendency as the systems are rou-
tinized for a certain rigidity to creep in; for man-
agers and staff people to shrug their shoulders over
the non-start phenomenon because the learners who do
progress through their roles keep everybody busy.
Furthermore, the nature of most institutions--and the
people who staff them--is to focus on what appear to
be institutional successes rather than failures.
(Non starts do not necessarily represent failure,
but they may be categorized as failures by an unknow-
ing public or higher institutional authority unless
the program people research the phenomenon, work at
improvement, and have the evidence to avert a mis-

reading of the raw, superficial statistics.)
This, again, is a function of formative evalua-
tion.

The same observations may be made about
learner branching in Role 6, persisting or not
persisting in learning. Research has generally
indicated that the learner who actually begins is
more likely to persist; that a learner who per-
sists through a third of a course is more likely
to persist to the half-way mark; that a learner
who passes the half-way mark is likely to complete
the entire course. Again, there are many causes
for lack of persistence, some completely outside
the institution's responsibility, but some that
may be directly the result of problems that have
their origin in the instructional system itself.

Formative evaluation will probe learner pro-
gress to monitor what is going on, sort out learners
who cease for reasons external to the system, and
those who are hung up for reasons that are the in-
stitution's responsibility. Profiles of learner
persistence in each course are instituted and main-
tained; if a profile, for example, shows that a sub-
stantial proportion of learners in X course falter at
Lesson 7, this is an unmistakable signal that some-
thing unanticipated is happening at Lesson 7. What is
it? Why? What must be done to correct the situation?
Who is responsible for modifying the lesson? For coun-
seling the learner? When must all this be done?

Formative evaluation feeds information to decision
makers that will keep the system in reasonable equili-
brium. Note that the total system (the stages and sub-
stages working together) are in effect a closed loop.
Each successive stage is dependent for its success on
the success of the preceding stage. For example, if
there is a problem with Lesson 7 in a course, and sub-
stantial attrition occurs at that point, the stages of
the system that are to serve completing learners are
endangered. Learners in sufficient numbers to support
the later stages do not get that far. Objectives

(both individual learner and social-institutional)
are not achieved; the unit may appear to be over-
staffed; per unit costs escalate; a budget crisis
may arise; the program may come up for review by
higher authorities. Formative evaluation is in-
tended to signal malfunctions early on, to pin-
point causes, and offer evidence on which deci-
sions may be made for correction--before a crisis
occurs.

If there is no built in formative evaluation
system to be used as a guide in institutional de-
velopment, the manager frequently does not know
where to look when trouble occurs. All he knows
is that learner and social-institutional goals are
not being met. In a complex system the trouble
could be anywhere. A full blown comprehensive,
summative evaluation by a neutral outsider is
time-consuming and expensive. The patient may
die before the right diagnosis and treatment can
be determined.

2.21. Stage III

A subsystem that works with learners in Role 7,
reaching or not reaching completion. Learners
close to completion, approaching final exams, wind-
ing up the submission of all learning exercises,
are likely to complete. But some do not; and some
who do complete are failures as a result of a poor
examination, poor overall achievement or other
causes. Learner failure cannot be avoided. There
are learners who are lazy, who fail to show requi-
site progress, who simply have failed to learn des-
pite efforts made by others to help them achieve suc-
cessfully. However, self selected learners who have
persisted to completion have exhibited a high level
of motivation plus a willingness to invest energy
and resources over a period of time. It would seem
unrealistic to classify them as lazy, or uncoopera-
tive, or lacking in resourcefulness, or even lacking

in capacity at the end of the course, in order to
explain failure. Such causes for failure should
have shown up earlier, been noted so that counsel-
ing and instruction could be modified accordingly,
in order that an unqualified learner does not in
fact approach the final stages unless he has reason-
ably good prospects for satisfactory completion. In
a well designed course the risk of failure should di-
minish as the learner progresses even though it can
never be completely eliminated. Hence the final exa-
minations is as much a test of the instructional sy-
stem as it is of the learner.

Distant learners face one examination hazard that
deserves careful study. Throughout a course of instruc-
tion, distant learners generally prepare their lessons
in an open book, untimed format. This format works well,
preserves freedom of choice; and is essential for non-
captive learners. However, learners in this mode are
not prepared for conventional examinations that are
supervised, timed and exclude access to materials.
Some distant learners find this switch of format dis-
astrously upsetting. Yet for quality control and certi-
fication-accreditation reasons, the institution may re-
quire conventional examinations. The system must there-
fore anticipate the problems and prepare the learner to
meet them. A mid course examination may be needed not
only to check progress, but chiefly to give the learner
experience in taking a final examination in a different
format. Lessons may be designed to give practice in some
of the skills important in taking examinations.

Formative evaluation of the system and subsystems
will yield up evidence of "what is actually going on"
so that the managers as well as the learners are prepared
for eventualities and ready to make decisions that will
improve performance and success.

But even successful achievement is not the end. Learn-
ing is continuous throughout life. With completion of any
part, a new cycle is ready to begin. The institution should
not abandon the successful learner anymore than it abandons

learners who have regressed in various roles through-
out the process. The subsystem must cope with learner
and societal needs at the end of a process as well as
at the beginning. Examination, certification, accredi-
tation, transfer, continuation, counseling towards new
or continuing goals, employment--these are some of the
activities that cluster when the Role 7 learner achieves
closure. Since a substantial proportion of the enroll-
ments of educational institutions is composed of pre-
viously successful learners (the more you learn, the
more you want to learn) an adequate subsystem for cop-
ing with successful learner needs is important to the
development of the institution.

2.22. The tentative three-stage model(system and subsystems) suggested
above is not yet complete. A system model is not complete unless
it clearly indicates:

What is to be done

Why

How the work is performed (the various systems
and subsystems in stages)

Who is responsible for what

When things are scheduled to take place (sequence
or order, including branching)

' ,anisms for sensing what is actually happening
(continuous feedback analysis through formative
evaluation)

Check points for monitoring and developmental deci-
sion-making

Participatory relationships with learners, teachers,
counsellors, administration and others as neces-
sary or desirable

2.23. The institution builder who has progressed this far can now begin
to flesh out his own model. Fleshing out (supplying in detail all
that the model calls for) is likely to be successful because of
the preliminary work already accomplished. (6) Bringing together
the results of previous steps (conceptual matrix, systems develop-
ment, analysis of learner roles, and tentative three-stage model
with subsystems) may be easier if a modeling matrix is followed.

2.24. Matrix for Modeling a Correspondence Teaching and Learning Insti-
tution. A matrix as a guide in fleshing out the model is suggested

2.24. A Planning Matrix for Modeling a Correspondence Teaching and Learning Institution

Learner Roles	Model Stages; systems and subsystems	Enabling Objectives	Responsibility Institution	Tasks, Problems Anticipated	Processes (subsystems)	Responsibility Learner	Sensing Mechanism	Check Points
	Stage I							
	Public Relations							
1	Recruitment							
	Goal Seeking							
	Counseling							
2	Registration							
	Goal Setting							
	Adaptation of learner/course goals							
3	Beginning learning							
4	Persisting							
	Stage II							
5	Persisting							
	Reaching							
	Objectives							
6	Counseling							
	Stage III							
	Examination							
	Certification							
	Accreditation							
7	Transfer							
	Continuation							
	New goals							
	Employment							

2.25. When the planning model is fleshed out, each subsystem can be
modeled. It is desirable that the institution builder carry out
this step to test the completeness, accuracy and viability of the
total systems model. Following modeling, the systems and subsystems
should be piloted, tried out. Here the sensing mechanisms are also
tested, and the information yielded enables the institutional builder
to modify and improve the model where needed. Full operation fol-
lows the piloting and modification.

2.26. The steps in institution building suggested here may seem more com-
plex, burdensome and unwieldy than building the institution itself.
Experience shows that they are not. Ordinarily the theory and prac-
tice of institution building is assimilated over a long period of
time. Here a grand design has been compressed into a single presen-
tation, chiefly as a vehicle to convey the place and role of forma-
tive evaluation in institution building.

3.0. Ends and Means

Formative evaluation systems design, and all the other concepts and practices
discussed, are not ends in themselves. They are only means towards those lar-
ger institutional ends which animate social and institutional planners and
builders. Their chief virtue is that they continually remind builders of the
true ends of all institution building--the improvement of the lives of indivi-
duals in society, and thereby the improvement of society itself.

3.1. Early on in this paper it was mentioned that in planning and build-
ing one has to cope not only with what is present as a given in any
social or institutional situation, but also with what one has built
to ameloriate, meet needs. The consequences of intervention (in an
individual, institutional or social sense) are not always occurately
foreseen, no matter how carefully the model has been designed and
tested. Means which have been employed towards valid goals tend to
become goals themselves; and valid goals when achieved tend to become
means by which other goals may be realized. John Dewey (7) noted this
most forcefully in pointing out, "In the continuous temporal process
of organizing activities into a co-ordinated and co-ordinating unity,
a constituent activity is both an ends and a means: an end insofar
as it is temporally and relatively a close; a means insofar as it pro-

vides a condition to be taken into account in further acti-
vity." He also reminds us that "No human activity operates in
a vacuum: it acts in the world and has materials upon which
and through which it produces results. . . .That organization
which is the 'final' value for each concrete situation of valua-
tion thus forms a part of the existential conditions that have
to be taken into account in further formation of desires and in-
terests or valuations."

3.2. In this paper formative evaluation has been suggested as a means
which will aid in the building of an institution, a process by
which the manager can monitor the institution's development, and
through which the consequences of intervention in the universe
which comprises the institution may be more fully and accurately
known.

3.3. All this is also implied in "Murphy's Law" and its subsequent amen-
dments. Murphy's Law expresses the common man's observation of
how things work out in a complicated world: "If anything can go
wrong, it will." Apocryphal amendments to the law include, "If
anything can go wrong, it will, when and where you least expect it";
and, "If anything can go wrong, it will, not only when and where you
least expect it, but you will be the last to know." The employment
of formative evaluation as a function of institution building may
help prevent the unwanted consequences which sometimes dog the acti-
vities of institution builders; and create an institution which ac-
hieves its purposes.

CAW/ss
5/14/73

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(1) Contemporary Approaches to Program Evaluation, Sara M. Steele; Report prepared for ERIC Clearing House on Adult Education; 1973, page 89 ff.

(2) Ibid, "Matching Evaluation Approaches to Needs," page 52 ff.

(3) "Evaluation of Continuing Education Programs", C. A. Wedemeyer; American Journal of Pharmacy Education, 35-5, 1969.

(4) "Independent Study", C. A. Wedemeyer, The Encyclopedia of Education; Macmillan and Free Press, Crowell-Collier, 1971; vol. 4, pp. 548-557.

(5) Adapted from Wedemeyer, Wood and Moore, The Open School, State of Wisconsin, 1971, p. 12.

(6) See the Appendix to this paper for a list of the quality control subsystems that may be useful in fleshing out a model for a correspondence institution. (Adapted from Report of Assessment and Development, C. A. Wedemeyer; Department of Correspondence Instruction, INCE, Caracas, Venezuela, 1973, pp 48-53.

(7) Theory of Valuation, John Dewey, The University of Chicago Press, 1939, pages 49-51.

APPENDIX

Objective	Function	Criteria	Measures
1	1,4,7	1. Do courses selected and produced meet the needs of: INCE participants? the nation?	1. enrollment statistics 2. completion statistics 3. quality indices (level of participant performance) 4. participant follow up survey and profile (continuing) 5. national needs and INCE policy 6. field director survey (annual) 7. participant employment indice (annual)
2,3	2, 3, 7	2. What problems in the development, use and application of methodology have been identified and solved through research and experimental studies?	1. The identification of problems has been made a fixed responsibility of some person. 2. Time is allotted for a person or persons to define problems, set up formal studies, gather data, formulate hypothetical solutions, test validit and apply solution. 3. Ad hoc functional arrangements made with outside specialists for specific research, experimental, or problem solving activities. 4. Research, experimental and problem solving studies have been reported at professional conferences, and/or have been published. 5. INCE specialists in correspondence study are sought for consultation, advice, leadership in a larger spher (regional, national, international). 6. Publications and reports go beyond the descriptive to problem solving on a generalized and theoretical basis for broader application. 7. Problems identified and studied do not persist; or new studies are undertaken to achieve solution.
4	7	3. Is the correspondence department administered efficiently in terms of its mission, objectives, and functions?	1. enrollment statistics 2. completion statistics 3. lesson load statistics 4. participant quality indices 5. collaboration with other related departments as needed for use of staff, resources 6. regular reporting

Objective	Function	Criteria	Measures
			7. Development/growth according to planned and systematic strategy and implementation
			8. Productivity increasing proportional with development phases I, II, III.
			9. Cost of administration diminishing proportional with development phases I, II, III.
			10. Quality control measures in force and standardized.
			11. Comprehensive evaluation in collaboration with evaluation unit at periodic intervals for decision making with respect to mission/objectives and functional success/achievement.
5	5, 6	4. Does the correspondence instruction provided succeed in: a) motivating participants? b) being relevant to participant situation goals, aspirations, problems? c) communicating information, process and content? d) satisfying the needs of participants and national needs? e) maintaining a quality level at least as high as conventional instruction? f) employing methods, techniques, media and materials that reach participants effectively, ie., give easy access and provide satisfactory feedback? g) defining problems needing study? h) mobilizing INCE resources from various units for resourceful development of materials, processes, content? i) applying instructional know-how effectively? j) applying results of partipation in professional training and upgrading, continuing education, independent learning, and attendance at conferences and meetings of a professional nature?	1. enrollment statistics (cumulative) 2. dropout, failure statistics (cumulative) 3. review, inspection of all materials 4. maintenance of problem file for correction of materials at points needed? Removal of obsolete elements 5. Development/maintenance/revision on regular schedule. 6. Materials, content, approach, design from participant situation and profile analyses. (Continuing and cumulative) 7. Training and upgrading programs for instructors, others. 8. Training, upgrading for course writers, developers. 9. Training, upgrading for field representatives/director of centers, advisers to participants. 10. Close study at periodic intervals of time factors in feedback loops. 11. Spot checking at intervals of lessons taught by instructors for fairness, accuracy, completeness, positive and encouraging attitude, motivational relevance.

Objective	Function	Criteria	Measures

Criteria

5. Does the learning of the participants:
   a) meet INCE quality levels at least as well as conventional methods?
   b) satisfy practical needs of participants for entry into job marketplace or job upward mobility?
   c) provide regular feedback to instructors and course developers/maintainers for the surveillance of overall goals, methods, materials, etc?
   d) carry to the mastery level for concepts, processes, information and skills that are essential to practical use and application in life?
   e) coordinate with other learnings obtained elsewhere so as to be reinforcing and to contribute to continuing learning through whatever methods?
   f) indicate adequate and successful use of communications media and strong dependence upon sense learning for development of ability to abstract and apply as necessary in job performance?
   g) occur through access systems designed to minimize loss of time, reduce confusion, and emphasize practical usefulness of learnings?
   h) yield to analysis so that the range of individual successes and failures is clearly visible to the instructor for individualization of instruction, differentiation of responses, and clear and justifiable identification of failure, average and exceptionally successful participants?
   i) enable exceptionally successful students to be singled out for congratulation?
   j) permit analysis for learner problems, leading to maintenance, revision and further development?

Measures

1. enrollment statistics
2. drop-out, failure statistics
3. examination/lesson statistics
4. compare quality level of participant achievements with other programs.
5. Survey of standard feedback of participant attitude towards each course, with demographic data (for profile), problems, satisfaction/dissatisfaction.
6. Follow up survey (annual) of success of participant drop outs, failures-- re: entry/change in job market; further learnings. Later re-assessment of course taken--add to profile
7. Proportion of new enrollments that are repeat participants by own choice.
8. Periodic (annual or bi-annual) survey of field directors re: effectiveness of courses, progress of studies etc. (anonymous)
9. Periodic (annual or bi-annual) survey of instructors, course developers of learning problems, effectiveness of process, materials and usefulness of course (anonymous)
10. Identification of top 10% of participants in success, and special recognition of, linked with profile, job entry and upgrading data. (Promotion public relations.) Suggestions for improvement.
11. Survey of instructor lessons for evidence of adaptation to individual differences.
12. Study of lesson service--time/etc.
13. Maintenance of problem file for revision/development.
14. Definitions of problems in need of study.
15. Evidence (attendance, writing, reporting) of professional development gained from attendance at conferences and meetings.
16. Review panel for methods, materials.

Objectives	Function	Criteria	Measures
		k) satisfy the expectations as well as needs of participants? l) reflect the application (in methods, materials, processes) of knowledge of how learning occurs?	

5.8. Summary of measures recommended: Time Frame

1. Reports of
   Statistics: enrollment, current & cumulative
                completion, current & cumulative   satisfactory
                dropouts, current & cumulative   unsatisfactory   monthly,
                lesson loads, current & cumulative (failed)   with semi-
                exam loads, current & cumulative   annual and
                                                                      annual sum-
                                                                      mary
                                                                      (for department,
                                                                      director, publi-
                                                                      city)

2. Course Statistics Analysis
       enrollment
       completion
       dropouts   } from above   semi annual;
       lessons loads   or annual
       exam loads
                                                                     (for department, super-
       problems noted by participants   visors, course developers
       problems noted by instructors   training and develop-
       problems noted by field directors   ment)
       problems noted by supervisors

3. Methods/materials review panel(1 administrator-Chairman
                                or instructor   annual
                                one course writer/deve   Review each course
                                  loper   every 2 or 3 years;
                                one participant   oftener if pro-
                                one producer)   blems occur; less
          (use of data compiled in #2;   frequent if course
             Recommendations? Actions on?   proceeds with few
                                                                     problems. Review
                                                                     Panel thus looks
                                                                     at 1/2 or 1/3 of
                                                                     courses annually.

4. Identification of problems requiring
   special study (ie., research, experimentation   annual (for bud-
   piloting, etc.)   geting/planning)

5. Field director survey
       special problems   annual
       assess meeting needs of students
       suggestions for new courses, modification of old

6. Participant Survey - continuing (part of each course enrollent; completed
                                                at time of final exam; anonymous)

        Probe: problems
               attitudes
               satisfaction of needs
               suggestions for improvement   (Report to department chairman)
               practicality
               future plans for learning
               personal data

7. Participant Follow-up Survey

        (Probability sample only)   repeat some of questions   one study annually
        a)   successful completers   in survey 6.   of completers, non-
        b)   unsuccessful completers   completers for im-
             (compare)   Present status: provement of in-
        c)   dropouts (add items getting employed in area   struction, courses,
             getting at why)   not employed in area   revisions, train-
                                          employed in other area   ing, etc.
                                                                         (Report to
                                                                          department
                                                                          chairman)

8. Course revision/development panel 1 writer
                                      1 supervisor   annual; act on
                                      1 methods/technology   information from
                                      1 administrator (chairman)   other measures;
                                                                         prepare report
                                                                         for planning, bud-
                                                                         geting, training

9. Comparative Statistics Study

        comparison of enrollment, persistence, success and
         quality indices vis a vis correspondence instruc-   annual
          tion and other types of instruction. Also (if   (for department
          known) disposition/ie., what happens to participant   chairman, public
          after course. .employed?)   release)
          comparative unit costs (see #10)
          top 5%-10% of students by name for special congratu-
            lations.

10. Productivity Survey   annual
        work output of department   cumulative com-
          and individual members of department   parison for trends
        proportional cost (%) of administration
                            teaching   (for use in
                            materials/other costs   publicity; plan-
                                                                        ning and bud-
                                                                        geting for deve-
                                                                        loping decision
                                                                        making quality
                                                                        control
                                                                        compare #9.

                                                                        (to department
                                                                        chairman)

11. Comprehensive Evaluation
        by Evaluation unit and correspondence instruction unit   every three years

12. Report of Feedback Time
    a) center participants
    b) mail participants

annual
to department chairman

note problems identi-
fied; action taken

13. Profile of Participants--different levels
                           different courses

annual

from continuing course survey data and
follow-up data

to department chairman
for use in development,
revision, planning,
methodology, materials,
training, reporting

14. Instructor Survey (anonymous)

    for problems
        suggestions
        attitudes
        new course ideas
        etc.

annual

to department chairman

15. Lesson Review Panel 1 administrator, chairman
                         2 instructors
    (random sample   1 field representative
      review)   1 part-time or former participant
                           or professional

for department chair-
    man
training
planning, development

16. Periodic staff meetings to discuss any of above,
    reports of reading, conference, meetings, policy,
    training, etc. . . .or periodic staff bulletin to
    carry same function demonstrations.

        (By department chairman and collaboration
        of other specialists as needed, both, from
        within and without the department.)

3 times/year with
sufficient time to
explore problems/
statistics, reports
in depth, discuss,
sense direction of
training needed.

Report of Assessment & Development, Dept. of Correspondence Instruction, INCE,
Caracas. C. A. Wedemeyer, 1973, pages 48-53.