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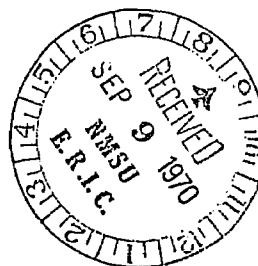
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ABSTRACT
               Phase III, Volume II of Project NECESSITIES is a
curriculum-development manual designed to increase teacher skill in
developing curriculum by using a systems approach. The 4 research
steps presented are assessing student resources, choosing a concept
focus, choosing a skill mix, and selecting content. Instruments are
provided for gathering and charting the information needed by the
teacher. The 3 curriculum-implementation steps are developing
instructional objectives, an instructional plan, and an evaluation
procedure. A model narrative scope and sequence K-12 is provided, as
are flow charts and unit-development worksheets. (LS)

CURRICULUM DEVELOPMENT

PROCESS MANUAL

(Phase III)

PROJECT NECESSITIES

VOLUME II

July 1970

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FOREWORD

This Curriculum Development Process Manual was created with the
teacher in mind. After textbooks have been chosen, or a course of study
established by a school board or a school administrator, the teacher
still is the critical factor in determining what goes on in the class-
room. For this reason teachers need to see themselves as at least
semi-skilled curriculum developers.

Curriculum development is a complex process. Great teachers
develop, refine or enrich curriculum in large measure by intuitive
means, just as the artist may often blend color and shape without
excessive consciousness or intent. But most of us are not great
teachers. We struggle from day to day, trying to make the learning
experience for our students more vital, more relevant, more exciting.
Often our teaching loads even prevent us from doing as well as we know
how. And when we do have time, it is often difficult to decide where
to begin: with objectives? with new media? with problem solving
exercises? with student developed projects? with a new textbook?

The curriculum development process the Project staff presents
here was derived from our own experience as teachers who have been
afforded the full-time luxury of thinking about ways to make social
studies education more significant to American Indian and native
Alaskan children.

When we had finished a "systems analysis" of the process we employed
in developing new social studies materials, we had four research steps

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(assess students, choose skill mix, choose concept focus, and choose
content), and three implementation steps (develop instructional
objectives, instructional plan, and evaluation procedures). We worked
out the relationship between these steps, created some self-question-
naires for the critical steps, and a series of guideline questions
that would test the adequacy of achievement for each step. We present
them in this volume--not as a final word in the field of curriculum
development, but rather as a model which we hope the classroom teacher
may find useful in working through her own battle plan for the year.
We believe that certain trends in shaping curriculum have emerged
recently that make this kind of tool in the hands of the teacher
particularly appropriate.

Regional and local curriculum development efforts are on the rise.
National curriculum development efforts, particularly in the form of
textbooks, are increasingly suspect. Why? Because they meet the needs
of the majority of students only passably well. In the ghetto, in
rural poverty areas, and most particularly among the children of
America's first citizens, mass curriculum hits intolerably wide of the
mark.

Equality of educational opportunity can hardly mean subjecting
the young--this nation's most important future resource-- to irrelevant
content, skill development unrelated to need, and methods which
frustrate the primary parties in the educational process: the teacher,
the student, the parent.

These factors have contributed to the Project NECESSITIES staff's
desire to share its curriculum development tools and the method of

their use with concerned practitioners of education, particularly with teachers, at the local level.

We believe (however difficult it may be to accomplish in the face of heavy schedules, large classes, little extra return in the way of economic or social recognition) that especially teachers, but also administrators, aides, and community leaders can and must take an active role in making curriculum vital and up-to-date.

We define curriculum as the who (teacher and student), the what (concepts, skills, and content), the how (methods, media, and material), and the whether (evaluation) of the educational process.

Since curriculum is made up of parts related to each other by a process, we also think that they can be broken down into components that, with some effort, are both understandable and usable. It is these components, and their interrelationship, that we present here.

The task of refining the curriculum development process and presenting it in a clear and functional way has just begun. We expect to have you criticize what we have done.

Thinness perceived in the development of any one step is not the result of a value judgment about priorities. Rather these bare spots reflect a stage of the Process Manual development.

Above all, we want this manual to be of use to you in your efforts to enrich or develop new educational experiences for your students. Experiences which might, just might, make a difference to the lives they will lead when they are no longer in school.

INTRODUCTION

Curriculum, an old Latin word having to do with the courses (tracks) that chariots raced on in forgotten days, early became connected with the educational process.

In the Middle Ages there were two well-known curricula. The Trivium (three roads) which led to the B.A. consisted of logic, grammar and rhetoric. A person was not well educated unless he knew language and how to use it. For the Masters degree the student studied arithmetic, geometry, music, and astronomy--the Quadrivium.

Among early curriculum developers were people like Plato and Aristotle who energetically tried to work out the relationship between student, subject matter and teaching method (heady company for a present day teacher trying to make things better in his classroom!).

Nowadays, curriculum usually means a set of courses and their contents, which are taught to students. There is tremendous variety of "approved" curricula at the elementary, secondary, collegiate, and even graduate school levels. The questions, "What's worth knowing? By whom? When? How should it be taught?" appear central in many current educational controversies.

We have chosen the Concept route to what's worth knowing. Other curriculum "systems" have been divided between Traditional, Topical, Discipline, and Existential.

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Traditional Curriculum is perhaps best known. This is curriculum based on what has been taught before, and is essentially content oriented: "An educated man knows Grammar, Latin, Greek, American and European History, Algebra, and so forth." The values of traditional curriculum: scholarship, cultural filtering of the best that man has been able to isolate from his experience, and coherence provided by chronology. Its liabilities: inability to respond to rapid change (the knowledge explosion), encasement in essentially one medium--writing, compartmentalization and narrowness, almost exclusive reflection of the values and traditions of the dominant culture, and universal lack of specific applicability to individual student needs both present and future.

Topical curriculum (Issue or Problem centered) attempts to be relevant by choosing topics which deal with serious issues in a meaningful way. In this respect it does respond to student needs, and is prone to be more open to exciting methods and media-materials. Topical curriculum tends to fall into the trap of teaching something rather than someone. Its major fault is its shot-gun effect: units or years of curriculum are rarely articulated across the grades; therefore, little coherent building of cognitive ability and knowledge takes place.

Discipline oriented curriculum, long known at the col. iate level, is becoming fashionable in the high school in areas other than history and geography. Courses in Psychology, Economics, Anthropology, Sociology, and Political Science are appearing quite widely in schools as means to enriching the study of society. While having the advantages of internal coherence, and the relevancy of fashion and focus, they also tend to

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fragment learning and often set up dogmas about truth more characteristic of religions than the sciences.

Existential curriculum is in use in a few places, mostly private schools, and is the current bearer of the progressive mantle. In making the student the almost exclusive center of education, it allows maximum relevancy to expressed student need--but often focuses so heavily on affective growth that it shortchanges other skill areas. Existential curriculum also lacks coherence across time.

A modified form of the Existential curriculum has recently appeared. Leicestershire Openstructure, and its emerging American brand, the Integrated Curriculum (also known as open education, the free school, informal instruction, the developmental classroom) is a hopeful new venture in which children choose what they want to learn and how much time they plan to spend learning it. The classroom is arranged into resource areas. The child becomes his own curriculum designer.

Project NECESSITIES Concept Centered Curriculum

Concept centered curriculum has a number of dangers connected with it. Concepts can easily be made into dogma, or become objects of knowledge like facts. The curriculum specialist can become so fascinated with the beauty of developing conceptual hierarchies that he loses sight of his principal task: the creating of a rich, exciting and dynamic learning environment for the teacher and the students.

But when it is understood that a concept is not a word, but a multitude of similar and potent human experiences which words conjure up, words which speak to significant common elements of reality, then

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the fundamental utility of the concept as a curriculum key is discovered. The concept word plays the role of a short-hand, better yet a calculus, for dealing with the incredible complexity which has become our daily lot.

At the Project, we define a concept as a word which gives form to the world of experience in the mind. A concept word organizes some dimension of experience. "River" for example is the concept which takes our primary experience of the Colorado, the Missouri, the Mississippi, and our secondary experience through pictures, films, books of the Amazon, the Rhine, the Yangtze, and allows us to deal with them in terms of their basic similarities in physical and dynamic terms. "Conflict" is the conceptual category which gives form in our minds all the way from a fight with another person, to great powers engaged in a war.

Hence, insofar as a concept word deals with areas of basic human experience, it can be responsive to student need. For example: POWER in personal terms is very important to the child as he in effect asks, Who has power over me? Whom have I power over? CHANGE is an important dimension for the child to be conscious about for it is the very essence of growth and education.

Consciousness depends on the effective use of concepts in our heads, and consciousness is the hallmark of the free man. If you can't conceptualize you can't predict. If you can't predict, you can't act effectively for your own future. Conceptualization and prediction are particularly important skills for people not part of the dominant society. Political concepts, economic concepts, educational concepts, legal concepts,

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organizational and governmental concepts are the dominant society's major weapons. Without knowledge and skill to move in these conceptual domains in a way which accurately forecasts futures as a basis for effective action, there is no real freedom, equality or justice.

The fact that concepts are amenable to ordering and manipulation permits the development of a coherent basis for social studies curriculum articulated over 13 years. Project NECESSITIES has made some definitive choices about particular concepts and their ordering. These appear in more detail in the section: Step B; Choose Concept Focus.

A Note About What's Ahead

The following pages take you through the four research and three implementation steps in developing curriculum. For those of you who find flow charts useful for obtaining a rapid overview of a process, there is a complete set in the appendix.

Please feel free to alter the order of the steps to meet your own needs. If, for example, you are already committed to using a text or texts, then you should review them for concepts which can be illustrated by the content already given, and you can develop new classroom activities in light of your assessment of your students' needs in the area of skill development.

RESEARCH: STEP A - ASSESS STUDENT RESOURCES

Our curriculum process begins with the student--the ultimate
consumer of developed material and methods.

In spite of the attention you see being given to the form and
content of curriculum, don't lose sight of the fact that curriculum
is merely a tool with a function--that is, helping to bring about
changes in children. No matter how elegant in concept, logical in
design, or otherwise pleasing to the intellect a curriculum may be,
it is useless unless it is appropriate to this function.

Now to change someone is a tricky and often dangerous business.
We don't want to attempt it unless we are reasonably sure that change
will be useful to the student and the wider social context(s) he is now
in and will be in the future. In short, we only begin tinkering with
a student when there is a need for it.

What needs does the student have? What strengths and weaknesses
does he bring through our classroom door each morning?

Need is open to a wide range of interpretation. For our purposes
let's define it simply as those resources (information, skills, concepts
feelings, values, learning styles, goals, etc.) which a student must
have to live his life effectively. So if we are going to make a functional
curriculum, we should know something about a student's resource require-
ments.

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Perhaps the easiest way to begin to describe what a student needs is to take stock of what he's got--the resources a student already has access to and can use effectively in the various domains of his life--thinking (cognitive), feeling (affective), doing (psychomotor).

In order to identify the student requirements the curriculum is to satisfy, students are assessed along six dimensions:

1. Age and grade level considerations--what is the chronological spread in your classroom? what is the student's achievement level in relation to state and national norms?

2. Prior school/home success/failure patterns--which students have been successful, and which have had problems in their home relationships? what do previous teacher and guidance records indicate?

3. Life experience dynamics--what kinds of out-of-school experiences do students bring with them to class? are there distinct differences in the ways boys and girls view the world and each other? what formal and informal social structures do the students know well?

4. Culture specific inputs--what elements from the students' cultural background have the most impact on them? language? religion? history? life style?

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5. Student learning patterns--do you know the learning
   patterns most useful to your students? is there a
   marked difference between the learning patterns of
   your students and the one you are accustomed to?

6. Student perceived goals--what goals do students hold
   for themselves in the following areas: vocation,
   economic, own culture, dominant culture, personal
   life style?

From these data the most useful thing a teacher can develop is a
narrative profile outlining characteristic student strengths and
weaknesses. This process helps make explicit early in the school
year a realistic view of the class. This process is one which all
good teachers do intuitively, but a systematic approach can uncover
important items that might otherwise be overlooked, items which will
assist in selecting the concept, skill and content mix most appropriate
for effective learning.

The version of our Student Assessment Inventory, included here,
is a model for the kinds of student factors you might consider when
setting out to develop a curriculum. This version is fairly extensive.
If you are undertaking only a few weeks of curriculum, it is probably
not feasible to take formal account of all the separate items on this
inventory. You will no doubt want to edit it down to suit your needs,
perhaps dealing explicitly only with such things as age and grade
level considerations and the student's immediate cultural environment,
juggling the rest informally in the back (but not too far back) of

your mind. If you are developing a year or more of curriculum, you might want to add items or even whole other categories to the model we have provided.

Read through the entire inventory once to get a feel for the kinds of considerations that cluster around the issue of student needs. Then work over the filled-in example. Finally make your own inventory drawing on our model, new notions it has triggered, and the experience you gained in the course of your contact with students. Then get busy collecting your data. When you have completed the inventory, we suggest you write a short, general profile of your students, covering their major resource characteristics, strengths as well shortcomings.

STUDENT ASSESSMENT INVENTORY

1. Age and Grade Level Considerations

   a. Grade level of your students _____.

   b. Average age of your students _____.

	1 yr.	2 yr.	3 yr.	3+ yr.
1) % of class above average age				
2) % of class below average age				

   c. Is there a discrepancy between the chronological age of your students

   and their grade level with reference to state and/or national

   age/grade level standards? Yes _____ No _____

   If yes, how much?

STATE STANDARDS		NATIONAL STANDARDS	
PERCENT OF CLASS	+ more than, - less than YEARS DISCREPANCY	PERCENT OF CLASS	+ - YEARS DISCREPANCY

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d. What are the logical causes for discrepancy between student age and grade level?

CAUSE	PERCENT OF CLASS
Began 1st grade late	
Previous non-promotion due to academic failure	
Suspended from school for non-academic reasons	
Dropped out of school (poor performance, family pressure, etc.)	
Poor language skills	
Other (specify)	

e. With reference to state and/or national standards what are the skills in which your students excel (reading skills, math, comprehension, analysis, etc.)?

PERCENT OF CLASS	SKILLS

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f. In which do they lag?

PERCENT OF CLASS	SKILLS
55%	reading comprehension
40%	oral communication
67%	writing & spelling

g. What are the skills for which there are no typical standards in which you feel your students excel or lag (social skills, manual skills, creativity, etc.)?

EXCEL		LAG	
PERCENT OF CLASS	SKILLS	PERCENT OF CLASS	SKILLS

h. Are your students divided into performance groups (bright, average, slow, etc.)?

PERCENT OF CLASS	PERFORMANCE GROUP
	Bright
	Average
	Slow
	Other

i. How are performance groups determined?

Class Standing _____

State Standards _____

National Standards _____

Other _____

j. Do you think the standards against which performance groups are determined are realistic given your particular students?

Yes _____ No _____ If no, is there some useful way that you can modify them?

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2. Prior Home/School Success/Failure Patterns

This part of the inventory can be considered as part of a more
informal Age and Grade Level Considerations. The data sources
are conversations you may have had with your students' parents,
school staff (other teachers who have dealt with your students,
guidance personnel, etc.), and general observations on student
behavior you may have discovered in your students' school records.

a. Parent/Teacher conference data on home success or failure
   patterns.

b. Data from student records or other school personnel on prior
school success and failure patterns.

3. Life Experiences Dynamics

   a. What life experiences do your students seem to attach the most

      positive and negative value to?   (Rate ± values 1-5)

LIFE EXPERIENCE	+ - VALUE	RANK + ORDER	RANK - ORDER
Formal activities with family (chores at home, etc.)			
Informal activities with family (playing with siblings, etc.)			
Formal activities in community (religion, politics, etc.)			
Informal activities in community (socializing on the street, etc.)			
Formal activities with peer group (school, extra curricular activities, organized sports, etc.)			
Informal activities with peer group (play, chatting, etc.)			
Formal activities by self (studying, individual projects, etc.)			
Informal activities by self (just thinking, going for walks or rides alone, etc.)			
Escapist activities (daydreaming, drinking, drugs, etc.)			
Other			

   b. Is the student population more representative of rural, urban or

      suburban environments?

            Rural _____   Urban _____   Suburban _____

   c. Is your school environment more representative of rural, urban or

      suburban environment?

            Rural _____   Urban _____   Suburban _____

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d. What student skills, knowledge or other resources enhance or
handicap the ability of your students to deal with various
environments?

SKILLS	RURAL + -	URBAN + -	SUBURBAN + -
Language			
Familiarity with local geography			
Familiarity with local population			
Familiarity with local technology			
Familiarity with local customs			
Familiarity with local legal and social systems of rewards and punishments			
Familiarity with how to provide for basic needs (food, shelter, clothes, etc.)			
Familiarity with local tempo and style of life			
Other			

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4. <u>Culture Specific Inputs</u>

   a. What aspects of the tribal culture hold the most positive and
      negative interest for your students?

ASPECT	+ — Interest	+ Rank Order	− Rank Order	Does this have a parallel in another society?
Religion/philosophy				
History				
Economic/vocational				
Political				
Other				

   b. What aspects of the white middle class culture hold the most
      positive and negative interest for your students?

ASPECT	+ — Interest	+ Rank Order	− Rank Order	Does this have a parallel in another society?
Religion/philosophy				
History				
Economic/vocational				
Political				
Other				

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c. In general, which culture seems to hold more meaning to students?

Tribal _____ White middle class _____ Other _____

d. Are all of your students of the same tribal background?

Yes _____ No _____ If not, please specify which tribes your students represent and the approximate breakdown of the student population across different tribes.

TRIBE	PERCENT OF STUDENTS

e. Are the tribes your students represent generally in sympathy with one another?   Yes _____   No _____

f. If no, what are the major differences between conflicting tribes represented?

g. How are these differences manifested in the classroom?

5. Student Learning Patterns

This is a very difficult part of the inventory--but very important. In order to find out the ways in which your students learn best, you may need to spend some time setting up a classroom research project to test appropriateness of different teaching methods: oral presentation, visual presentation, language pattern difficulties, etc.

Parents, experience teachers, dorm aides--all can be useful in assisting you to gain insight into the learning patterns of the children you are teaching.

One significant factor which you should take into account is any marked variance between the way you learn and your students learn.

Activity	Student Response			Teacher Response		
	High	Medium	Low	High	Medium	Low
Reading						
Writing						
Oral Presentation						
Visual Media						
Logical Sequencing						
Problem Solving						
Physical Activity						
Silence						
Other						

Summary of learning pattern analysis:

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6. Student Perceived Goals

This portion of the inventory is best developed by the teacher finding out directly from the students what goals they hold for themselves in the following areas:

a. What mix of vocational goals do students either have or perceive as possible for themselves?

b. What economic goals do students hold?

c. What goals with respect to the student's own culture are evident (become operating member of culture's adult society, get away from home as soon as possible)?

d. What goals with respect to the dominant culture do students have?

e. What personal life style goals do students have (lot of time for leisure, hard work, independent, group oriented)?

RESEARCH: STEP B - CHOOSE CONCEPT FOCUS

A concept focus for a day, week, unit, year of curriculum material can be chosen in any one of several ways: the concept dimensions chosen can be a direct response to discovered student need; can be chosen out of a local village, culture, or region; or can be adopted from the theoretical framework such as the Project has established.

Project NECESSITIES curriculum materials center around five Master Concepts and their conceptual antonyms which the Project staff believes encompass the most significant dimensions of human experience.

These master concepts are: INTERACTION (ISOLATION), CHANGE (STABILITY), CONFLICT (COOPERATION), POWER (POWERLESSNESS), and VALUING (IGNORING).

The working descriptions we have given these concepts and the linkages between each are as follows:

1. INTERACTION - the perceived dynamic in all human situations.

2. CHANGE - the movement and direction of an interactive system.

3. CONFLICT - the result of different value responses to the direction, duration and extent of change.

4. POWER - applied to continue or counteract change-produced conflict.

5. VALUING - the internal process which determines response to human situations.

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For the Master Concepts to work as guides to the development of specific curriculum they must be located with respect to the Actor, and Theatre of Action, The Type of Action, and the Time of Action-- what we choose to call Locational Concepts.

The Actor: man, self, others, family, clan, tribes, groups, races, nations.

The Theatre of Action: space, land, house, school, village, town, reservation, region, city, state, country, continent, world, solar system, galaxy, universe.

The Type of Action: political, economic, socio-cultural, psychological, technological.

The Time of Action: past, present, future.

Sub-Concepts which may extend the concept mix.

When the master concepts are tied to a set of locational concepts, they become powerful catalysts to the development of specific curriculum units.

For example: the concept of CHANGE in the PRESENT located in a TOWN with a family as actors--immediately triggers possible learning which draws from students' lives to illuminate the "experience of change resulting from growing up, going to school, getting ready for a job." If the time of action is changed to the PAST, one visualizes a study of the parent-child relationship in early America, or Renaissance Italy. By shifting CHANGE to CONFLICT and VALUING as master concepts

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the imagination moves to the generation gap and youthful rebellion,
PAST, PRESENT, or FUTURE. If FAMILY is replaced by TRIBE, and TOWN by
RESERVATION, a new scenario unfolds of dispute arising from the distri-
bution and use of Federal claims settlements.

Sequencing of Concepts

The organization of concepts for the thirteen years from kinder-
garten through twelfth grade is broken down into two main divisions:

Elementary Grades -- K-6

In this division the curriculum includes experience with
the concrete and simple dimensions of each of the five master
concepts in each year. While the concept words themselves are
not introduced, the intent is to give language to the child's
experience of interaction, change, conflict, power and valuing,
and to help him use that language in meaningful and effective
ways.

The Theatre of Action is used as the primary "filter" for
each of the master concepts (interaction in the home, change
in the school, conflict in the village, etc). The Present is
the central time of action. Communication, socio-cultural,
and economic Types of Action are emphasized.

Secondary Grades -- 7-12

In this division there is a shift from the Theatre of Action
as the principle "filter" to the Master Concepts themselves.

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Each of the concepts is the basis for a year's work with the other
four master concepts, the locational concepts, and sub-concepts
introduced as needed.

Grade 7 - Interaction/Isolation

Grade 8 - Change/Stability

Grade 9 - Conflict/Cooperation

Grade 10 - Power/Powerlessness

Grade 11 - Valuing/Ignoring

At the end of the 11th grade, students will be tested to see what
they do and don't understand about concepts, what they can and
can't do with concepts.

The senior year will be spend in several research projects
directed to remedying deficiencies, deepening strengths. A
detailed syllabus and research guide will assist the student
and teacher in laying out tasks for the year.

On the next two pages are examples of sub-concepts derived from
both the Master Concepts and the Locational Concepts. Following
these examples is a Model Conceptual Scope and Sequence for all
thirteen grades.

EXAMPLES OF SUB-CONCEPTS DERIVED FROM THE MASTER CONCEPTS

INTERACTION	CHANGE	CONFLICT	POWER	VALUING
Input/Output	Compromise	Competition	Sovereignty	Empathy
Savings/Spending	Adjustment	Rivalry	Comparative Advantage	Dignity
Scarcity/Plenty	Growth	War	Authority	Choice/Morality
Competition/Cooperation	Creation	Revolution	Leadership	Loyalty
Needs/Resources	Progress	Rebellion	Control	Consent of
Survival	Dissolution		Nation-State	Governed
Social Systems	Acceleration			Freedom
Economic Systems	Innovation			Equality
Political Systems	Secularization			Wisdom
Technological Systems	Movement			Beauty
Psychological Systems	Acceleration			Respect
Cultural Systems				
Communications Systems				
Arrangement				
Balance/Imbalance				

SUB-CONCEPTS

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EXAMPLES OF LOCATIONAL SUB-CONCEPTS

ACTOR	THEATRE	TIME	TYPE
Man	Space	Present	Political
Family	House/Home/School	Past	Economic
Mother, Father, Child, Son, Daughter, Brother, Sister, Husband, Wife	Land	Future	Social/Cultural
	Village	Duration:	Psychological
Clan	Town	Second	Technological
	City	Minute	Communications
Grandfather, Grandmother, Uncle, Aunt, Cousin, Mother-in-law, Father-in-law	Region	Hour	
	State	Day	
	Country	Week	
Community	World	Month	
	Universe	Year	
Tribe, Friends, Group, Acquaintances		Decade	
		Century	
Nation		Eon	
		Millenium	
Countrymen, Others, Outsiders		End of Time	
		Critical Moment	
World		Flow of Time	
		Life Time	
Strangers, Enemies, Allies		Birth	
		Death	

SUB-CONCEPTS

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MODEL CONCEPTUAL SCOPE AND SEQUENCE K-12 FLOWCHART*

Grade: K → 3

Time: Present

Master Concepts / Actors	Self / Child	Classroom / Society	Classroom / Objects	Land / Animals/Plants	Home / Family	Home / Objects	Village / Objects	Land / Nature	Land / Man
A. INTERACTION (Isolation)	Thinking Feeling Doing Communicating	Rules Roles Games	Words, Objects, and Space arrangement	Homes	Social Roles Economics consumption	Words, Objects and Space arrangement	Money Market Jobs	Various natural cycles	Use of resources
B. CHANGE (Stability)	Daily activity cycle	Schedule	Rearranging	Growth cycle	Life cycle	Moving rearranging	Building decaying	Seasons	Planting raising harvesting
C. CONFLICT (Cooperation)	Fear Frustration Rebellion	Strangers Discipline Competition	Over Crowding	Survival	Punishment Reward	Ineffective arrangment	Strangers Limited resources	Imbalance Storms Floods Volcanoes	Survival
D. POWER (Powerless)	Expressing Creating Making Self-control	Control	Protection	Weapons	Cooperation	Protection	Protection	Erosion	Tools
E. VALUING (Ignoring)	Good/Bad	Learning	Arrangment for Learning	Balance	Traditions Holiday	Order/Disorder	Order	Balance	Productive-ness

	Home and School	Village	Village	Land	Town	City	State	Nation	Self
Place									
Actors	Self and Others	Resources	Society	Use and Distribution	System	System	System	System	Self
A. INTERACTION (Isolation)	Extended Roles	Services Physical	Government	Patterns	Economic Political Government Services Transport Communicatn	"	"	"	Thinking Feeling Doing
B. CHANGE (Stability)	Roles	Use	Leadership	Industri-alization	Technology Seculariza-tion	"	"	"	Growth
C. CONFLICT (Cooperation)	Rivalry	Scarcity/ Plenty	Factions	Ownership	Poverty Generations Racial Class Pollution Growth	"	"	" War	Anger Rebellion Fear Frustration
D. POWER (Powerlessness/Autonomy)	Identity Autonomy	Economic	Law	Territorial Identity	Executive Law/Courts Police	"	Legislative Militia	"	Expressing Creating Controlling
E. VALUING (Ignoring)	Cooperation	Utility	Tradition	Tradition	Tradition	Culture	"	"	Independent

Grade 4 → 6

Time: Present, Past

Grade	7	8	9
Time	Present, Past, Future		
Place	Home, Village, Town, Reservation, Region, State, Country, World, Universe		
Actors	Man: Self, Family, Clan, Group, Tribe, Countrymen, Others, Strangers, Friends, Enemies		

INTERACTION (Isolation)
Political
Economic
Social/Cultural
Psychological

CHANGE (Stability)
Political
Economic
Social/Cultural
Psychological

CONFLICT (Cooperation)
Political
Economic
Social/Cultural
Psychological

Grade	10	11	12
Time		Present, Past, Future	
Place		Home, Village, Town, Reservation, Region, State, Country, World, Universe	
Actors		Man: Self, Family, Clan, Group, Tribe, Countrymen, Others, Strangers, Friends, Enemies	

Research, Planning,
and Development Projects
individual and group
in areas of:
concept strength
concept weakness

POWER (Powerlessness)
Political
Economic
Social/Cultural
Psychological

VALUING (Ignoring)
Political
Economic
Social/Cultural
Psychological

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RESEARCH: STEP C - CHOOSE SKILL MIX

Skills: the ability of the child to do something for himself or
with others. In many ways skill development is at the heart of the
educational process. We live in a time when the ability to translate
what you know into action is the critical step on the road to freedom.
Economic income depends on skill, political power depends on skill,
self-image depends on skill.

For the purposes of clarity and understanding we have broken skill
development down into six areas:

1.   Thinking (cognitive)

2.   Feeling (affective)

3.   Doing (Psychomotor)

4.   Concept Formation

5.   Practical

6.   Communication

It has been the habit of educators to present skill development
in a linear fashion, i.e., you have to learn to crawl before you can
walk, walk before you can run. We find ourselves doubting whether this
is necessarily and always so. It seems more likely that the child
practices both simple and complex skills simultaneously, but is able
to demonstrate the simple skills on request more easily and with more
precision. For example, the six year old may be able to demonstrate
simple recall, but may not be able to explain the relationship which

he senses between a series of objects, or the question he feels because he lacks the right words and phrases to express complex observations.

On the next page you will find an organic model indicating that skill development in a variety of areas takes place as the child grows. Following that there are four pages showing the six skills areas sequenced for emphasis over the thirteen grades.

This section ends with an instrument which you can use as you work up your curriculum materials.

SKILL DEVELOPMENT

THINKING

GROWTH

GROWTH

COMMUNICATING

FEELING

observe
describe
identify
enumerate
recall
discriminate
differentiate
measure
classify
generalize
analyze
question
theorize
model building
extrapolate
synthesize
evaluate
interpret
critique

rhythm music
speech making
influencing
debate
argumentation
reading
writing
drama/gesture
singing
skits
answering
reciting

cooperate
help
appreciate
understand
sympathize
be aware
be sensitive
be concerned
be choose
participate
be equal
be free
be wise
love

THE CHILD

GROWTH

GROWTH

PRACTICAL

DOING

life style decision making
Social decision making
political decision making
economic decision making
Vocation decision making
budgeting
data collection
chores
map reading

manipulate
draw
chart
coordinate
control
assemble
build
create

CONCEPT FORMATION

DOING

GROWTH

GROWTH

abstract language for abstract things
abstract language for general things
abstract language for concrete things
concrete language for concrete things

This model of skill development portrays the child as a whole person whose skills grow organically rather than in a linear fashion. On the next few pages, a linear model is shown indicating grade levels and appropriate skill emphasis.
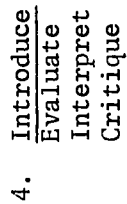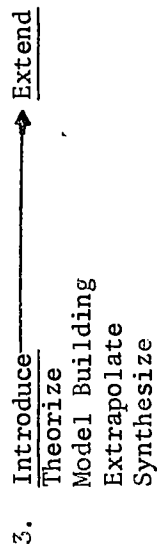
SKILL DEVELOPMENT

SKILL DEVELOPMENT	K-3	4-6	7-9	10-12
Thinking (cognitive) ①	1. Introduce Observe Describe Identify Enumerate Recall Discriminate Differentiate Measure	← Extend →	← Refine →	
		2. Introduce Classify Generalize Analyze Question/Answer Measure	← Extend →	← Refine →
			3. Introduce Theorize Model Building Extrapolate Synthesize	← Extend →
				4. Introduce Evaluate Interpret Critique

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SKILL DEVELOPMENT

K-3   4-6   7-9   10-12
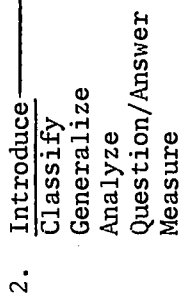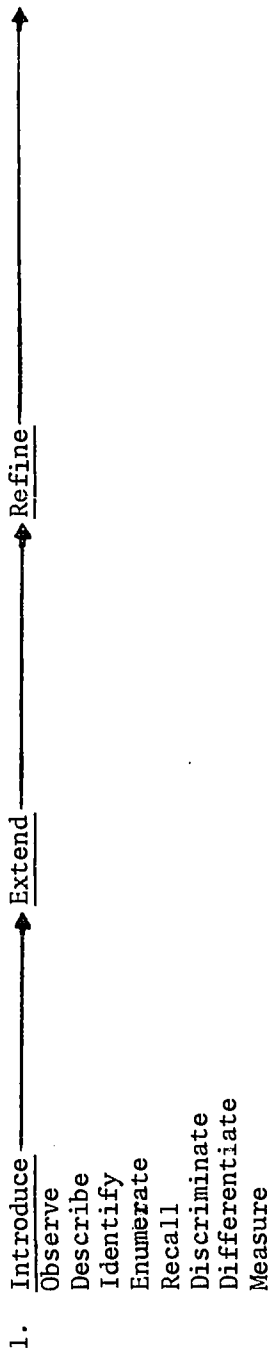
Feeling
(affective)
②

1. Introduce —— Extend —— Refine
   Cooperation
   Help
   Appreciate

2. Introduce —— Extend —— Refine
   Understand
   Sympathize
   Be Sensitive

3. Introduce —— Extend
   Be Aware
   Be Concerned
   Choose

4. Introduce
   Participate
   Empathize
   Be Equal
   be Free
   Be Wise
   Love

③

1. Introduce —— Extend —— Refine
   Manipulate
   Draw

2. Introduce —— Extend —— Refine
   Chart
   Coordinate
   Assemble

3. Introduce —— Extend
   Control
   Build

4. Introduce
   Create

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SKILL DEVELOPMENT

| | K-3 | 4-6 | 7-9 | 10-12 |

Concept
Formation
④

1. Introduce: concrete
   language for
   concrete things ———————— Extend ———————— Refine ————————→

2. Introduce: abstract
   language for
   concrete things ———————— Refine ————————→ Extend

3. Introduce: abstract
   language for
   general things ———————— Refine ————————→

4. Introduce: abstract
   language for
   abstract things

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SKILL DEVELOPMENT

	K-3	4-6	7-9	10-12
Practical (5)	1. Introduce Map Reading and and Making	→ Extend →	Refine →	
		2. Introduce Filling Out Forms Charting	→ Extend →	Refine →
			3. Introduce Data Collection Budgeting	→ Extend →
				4. Introduce Vocation Decisions Economic Decisions Political Decisions Social Decisions Life Style Decisions
Communications (6)	1. Introduce Reciting Answering Questions Singing Drama/Gesture Writing Reading	→ Extend →	Refine →	
		2. Introduce Oral Presentation	→ Extend →	Refine →
			3. Introduce Argumentation Debate Influencing	→ Extend →
				4. Introduce Speech Making Multi-Media Presentation

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CHOOSING SKILL MIX

'The following instrument may be useful to you as you make your determination about a final skill mix for a single activity, a unit or a year of curriculum.

A. Period of time: Activity _____ Unit _____ Year _____

B. Skill focus by area:

	Introduce	Extend	Refine
_____ 1. Thinking (cognitive)			
Major _____			
Minor _____			
_____ 2. Feeling (affective)			
Major _____			
Minor _____			
_____ 3. Doing (psychomotor)			
Major _____			
Minor _____			
_____ 4. Concept Formation			
Major _____			
Minor _____			
_____ 5. Practical			
Major _____			
Minor _____			
_____ 6. Communications			
Major _____			
Minor _____			

Now go back and list the order of importance of each skill area 1 through 6, in the blank next to each area.

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C. Next, list possible activities which could help to develop the major skill in each area, in the sequence you have established to see whether you can implement your skill decisions in actual classroom practice (this will be useful to you when you get to Step F - Develop Instructional Plan.)

Skill Area 1: _____

_____

_____

_____

_____

Skill Area 2: _____

_____

_____

_____

_____

Skill Area 3: _____

_____

_____

_____

_____

Skill Area 4: _____

_____

_____

_____

_____

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Skill Area 5: _____

_____

_____

_____

_____

Skill Area 6: _____

_____

_____

_____

_____

D. Now list your final skills mix as objectives in behaviorally stated

terms (The students will demonstrate their skill learning by....)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

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RESEARCH: STEP D - CHOOSE CONTENT

Content, as we use the word at the Project, refers to things: facts,
events, people, places. Some content is useful knowing for its own sake
(If you stick a hair-pin in an electric socket you will....If you do not
sign a check it will....). Some content may be useful to know because
tradition says that educated men know it (c-a-t spells....George Washing-
ton was the.....). Most content, particularly most fact, is   only useful
if it teaches us more about how to live now, or in the future. Someone
has said, "facts, like dead fish, smell after a bit." In this age of
knowledge explosion, we must select our content because it is useful
either to know, or for what it teaches us about how to live.

If you already have textbooks which you plan to use, then the con-
tent choice is already made, and you will be reviewing the text to see
what particular content portions to emphasize, what concepts you can
use the text to develop, and what skills relate well to the textual
material.

If you are following the curriculum development process presented
here, you will want to refer to your concept choices to let them trigger
the content you will be using.

Suppose, for example, that you have chosen the following critical
question for six weeks of study in a tenth grade social studies class:

Just how much does the balance of power among the leading countries
of the world in 1970 depend on purely military considerations?

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Skill Area 5: _____

_____

_____

_____

_____

Skill Area 6: _____

_____

_____

_____

_____

D. Now list your final skills mix as objectives in behaviorally stated

terms (The students will demonstrate their skill learning by....)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

This question contains:

Master Concept - POWER

Locational Concepts

      Actors   - COUNTRIES

      Theatre of Action - WORLD

      Time of Action   - PRESENT (1970)

      Type of Action   - MILITARY

Sub-Concepts - BALANCE, LEADING, DEPENDENCY

In developing content to go with this group of concepts there are three kinds of content to consider: Primary, Comparative, and Culture Specific. Primary content is the content central in each unit. Comparative content is similar material in other places and/or times. Culture Specific material is germane to student's own background. The ordering of content is up to the teacher.

In this case it might be wise to start with Culture Specific material, e.g., if you were teaching in Whiteriver, Arizona you would change the time to PAST, the actors to APACHE and 7th CAVALRY, the theatre of action to the U.S. SOUTHWEST then a beginning activity would look at the military aspects of the balance of power between those two forces--arms, ammunition, number fighting men, military strategy.

For Comparative Content, the teacher might decide that one of the battles between Sparta and Athens would illuminate the problem of balance of power.

Then the Primary Content might focus on the arms race since 1945

between the U.S. and the U.S.S.R., or the burgeoning military capability

of Red China.

The weight and length of time given to each kind of content would

depend on content material available, teacher's time and knowledge,

and assessment of student interest.

IMPLEMENTATION: STEP E - DEVELOP INSTRUCTIONAL OBJECTIVES

This step is the vital link between the research work you have been doing and the development of classroom strategy. If your objectives are clearly and fully stated, they become a set of "decision rules" that will guide you in your day-to-day lesson planning.

The first thing you want to do in this step of the process is get your concept, skill, and content objectives all together on one piece of paper so you can take a good look at them.

If you haven't already done so, you should state these objectives in behavioral terms: Ask yourself, 'What do I want my students to be able to do (or do better) at the end of this unit that they can't do now?' The more specific you are here the easier it will be to measure student progress and evaluate the success of your curriculum. The blank and completed forms on the next two pages may help you out.

...en you are defining your objectives you may get new ideas for classroom activities that will help you achieve your objectives. Jot them down beside the appropriate objective so they don't slip away.

MIX OF BEHAVIORAL OBJECTIVES

Concept Objectives: _____

_____

_____

_____

Skill Objectives:

    Concept formation: _____

    _____

    _____

    _____

    Thinking (cognitive): _____

    _____

    _____

    _____

    Feeling (affective): _____

    _____

    _____

    _____

    Doing (psychomotor): _____

    _____

    _____

    _____

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Practical: _____

_____

_____

_____

Communications: _____

_____

_____

_____

Content Objectives: _____

_____

_____

_____

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EXAMPLE

MIX OF BEHAVIORAL OBJECTIVES

Concept Objectives: _Demonstrate understanding of dynamics of change in the physical environment (in this case the local community)._

Skill Objectives:

Cognitive development: _Demonstrate ability to observe changes in local village + to raise questions that will reveal the causes of these changes_ - (field trips? design survey questionaire?)

Concept formation: _Demonstrate ability to relate experience in concrete language_ (oral reports on field trips?)

Affective: _Demonstrate ability to cooperate with peers_ (small group work?)

Psycho motor: _Extend drawing ability_ ? (mapping making)

Practical: _Demonstrate ability to make map + use it_ (map making (treasure hunt with map)

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Communications: <u>Demonstrate ability to</u>
<u>make oral report to class</u>
<u>(report on field trip?)</u>

Content Objectives: <u>Demonstrate familiarity with</u>
<u>physical elements of local community &</u>
<u>their layout.</u>

RANKING AND SEQUENCING OBJECTIVES

Once you get your behavioral objectives mix lined
up in front of you, two things should begin to come into
focus:

1.   Some objectives are more important than others
either because they provide a framework for the entire
unit (in the previous example these would be the con-
cept and content objectives) or because they respond
to critical student needs, (e.g., concrete language
for concrete things).

2.   You won't be able to begin work toward some objec-
tives until you have laid a groundwork of student achieve-
ment on prerequisite objectives. (To refer to our
sample again, student ability to observe changes
would precede the introduction of questioning the
causes of change.)

Sort through your mix of behavioral objectives and
identify those that either explicitly or implicitly provide
a framework for the entire unit. Then go back over the
list and sequence the rest of the objectives in the order

in which they will be incorporated into the unit. Double check the sequence to make sure that objectives dependent on prerequisites are preceded by them and that objectives responding to the most critical student needs are placed to their best advantage. (These latter may be scheduled into the unit more than once.)

On the next two pages are a sample format and a completed sequence.

SEQUENCE OF OBJECTIVES

A. Framework objectives: _____

_____

_____

_____

_____

_____

_____

B. Sequence of objectives in the order in which they are

to be incorporated into the unit: _____

_____

_____

_____

_____

_____

_____

_____

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SEQUENCE OF OBJECTIVES

A. Framework objectives:

Develop student familiarity with physical elements of

the local community

_____

_____

Develop student understanding of the dynamics of

change in the physical elements of the community

_____

_____

B. Sequence of objectives in the order in which they are to

be incorporated into the unit:

1. Introduce observation of changes

2. Introduce concrete languaging of experience and

3. Oral presentation

4. Introduce questioning causes of change

5. Extend concrete languaging of real experience

6. Extend oral presentation

7. Introduce map making and drawing

8. Introduce map reading

_____

_____

SCHEDULING OBJECTIVES OVER TIME

Before going on to developing your actual instructional
plan, you might find it useful to draw up a schedule illus-
trating how objectives will be worked into the unit over time.
A sample schedule appears on the next two pages.

SCHEDULING OBJECTIVES OVER TIME

W E E K 1

FRAMEWORK OBJECTIVES	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
1. Develop understanding of dynamics of change in physical environment.					
2. Develop familiarity with physical elements of local community.	Observation Skills (Field trip?)	Concrete languaging of experience	Observe changes (Field trip?)	Questioning Causality (design questionnaire or change?)	
		Oral presentation (Oral reports of trip?)			

SCHEDULING OBJECTIVES OVER TIME

WEEK 2

FRAMEWORK OBJECTIVES	DAY 6	DAY 7	DAY 8	DAY 9	DAY 10
(Continued)					

Observation
Data Collection Trip

Concrete Languaging of Experience

Oral Presentation (report data findings?)

Questioning Causality

Cooperation
Drawing
Map Making
(Map making in small groups?)

Map Reading (Treasure Hunt?)

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IMPLEMENTATION: STEP F - DEVELOP INSTRUCTIONAL PLAN

The Instructional Plan is where the battle for relevant curriculum
is won or lost. It brings together all the efforts of your research
stated in objectives and with all the skill you can muster, and determines
whether the classroom becomes a place of vital and mutual learning. It
is here that the ingredients of method, media and materials are added
to give life to the time you spend with students.

A good teacher, like a good cook, learns to build a classroom
experience by taking a bit of this, some of that and putting it together
in a way that makes a rich and palatable dish.

Each of you has your own style of preparation: careful outline,
short paragraph descriptions, wall charts, marginal notes, a good memory.
Use whatever works for you.

We suggest that you pay particular attention to the introductory
activity for each new unit or topic. This is often where student
motivation and continuing interest is determined.

On the following pages is a menu of methods, materials, and media
which can be used in building social studies units. One suggestion:
students are often conservative about new methods. It helps to get them
into an experimental mood if you ask them to participate in an experiment
in new ways of doing things.

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METHODS

Group study
Independent study
Structured situations
Unstructured situations
Lecturing, talking to the class

Group discussions: small groups
                    large groups

Changing the physical environment (set up) of class: (some possibilities)

> form desks into large circle instead of rows;
> get rid of desks and replace with round tables;
> divide room into work areas;
> remove teacher's desk;
> give each child wall space for his/her display
>   area - for work displays;
> put students in charge of displays;
> consider room a workshop for learning;
> ask children how they would like the room arranged;
> have desks along edge of room, facing wall.

Students and teachers building own equipment: scientific
                                               environmental
                                               artistic - sets for plays
                                                        - dances
                                                        - flags, etc.

Reading: aloud to class
          class silently to themselves
          class aloud as group
          class aloud, individually

Reports: oral
          written
          in groups

Students writing their own: plays
                             stories
                             songs
                             poems
                             books, (booklets)
                             newsletters, newspapers
                             biographies
                             observations, case histories, etc.

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Writing: in workbooks
          on worksheets
          essays
          letters

Singing: as a group
          listening to others

Dancing: choreography
          observation
          participation

Photography: taking pictures, developing them
          making films

Drama: role playing
       pantomime
       watching plays
       writing, directing, acting, in plays
       reading, studying specific plays
       rewriting plays

Questioning: asking questions
       answering questions, or purposely not answering questions
       writing questions
       researching questions

Art: painting
       drawing
       block printing
       sculpture
       pottery
       weaving, embroidery

Listening: to lectures
       panels
       each other
       sounds of environment
       music

Field trips: half day
       day
       week-end

Volunteer Work

Teaching: students teach section or all of their own class
           students teach another grade
           student teaches a specific skill

Tutoring: the student tutors another individual in own or other class
           the teacher tutors a student

Games: playing
           observing
           contests
           designing your own
           card, board
           physical
           intellectual

Experimenting: with ideas
                approaches
                materials - scientific
                            non-scientific

Testing

Observing and recording observations: tape
                                        writing

MATERIALS – MEDIA

Books: library books – all kinds
        workbooks
        textbooks
        story books
        books, newspapers, letters – they have written
        comic books

Worksheets

Magazines

Newspapers: all kinds
             writing their own

Radio
Movies: professional, semi-professional, home made by teachers and/or students
Television
Slides
Photographs
Drawings
Puppets (finger puppets)
Bulletin boards
Felt boards
Room dividers
Blackboard
Opaque projection
Overhead transparencies
Maps

Records: musical
          story
          readings – plays, poetry

Singing
Musical instruments: to play
                      to listen to others play
                      to make – (cigar box guitar, coffee can drums,
                            salt shaker rattles, etc.)

Tape recorder: to record on
                to listen to

Living, growing things: animals
                         plants - aquatic
                                - terrestrial

Dancing
Drama
Poetry
Games: contests
        card
        board

Simulations: of real or imaginary situations
              of processes - mechanical
                           - biological
                           - social, etc.

Painting
Pottery: clay
          plasticine, etc.

Sewing: weaving
         embroidery
         wall hanging
         textures

Building materials: wood - carpentry materials
                     blocks - cardboard, wood, plastic

Cooking
Sports equipment
Resource people - professionals - doctors
                                - policemen
                                - teachers

                - non-professionals - parents
                                    - formal and informal community leaders, etc.

There are several purposes for evaluating student performance beyond the grading requirement. First, how students do is a reflection on the quality of curriculum and particularly its objectives. Second, student performance relates to teacher skill (although admittedly finding out from students how you've done as a teacher takes a bit of courage). Finally, evaluation helps us reassess our student resources so that we can make appropriate revisions in curriculum for the next go round.

While some teachers will continue to use true/false and multiple choice tests, and others written essays, to determine student success against the objectives of an activity of unit, there are many other ways to find out how students are doing. Problem solving tasks set for individuals or groups, simulation exercises, games, group contests, independent projects--all can contribute to knowledge of both individual and class performance--and be a lot more relevant and exciting to students as well.

One of the most useful devices for the teacher to develop is the Pre/Post test which measures how much more a student can do and knows at the end of an activity than he did at the beginning. Used well, this also has the effect of teaching students something about how to set goals and measure goal attainment.

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GUIDELINE QUESTIONS

Over the past year and a half the Project staff has asked itself a lot of questions about the curriculum material it has been producing. We offer these questions for your use in testing your own or someone else's curriculum. You should get a "yes" a majority of the time. If you don't, the curriculum you're looking at may not be adequate without further work.

We don't claim completeness in the questions listed below. One of the continuing mandates of the Project is to extend and refine the "decision rules" which guide our work.

I. General

1. Does the curricular material meet real concerns relevant
to the lives of the students who will be experiencing
the curriculum?

2. Is the material relevant to the present and future needs
of the student?

3. Does the material promote an active role for the student
in gaining his education?

4. Does the material promote understanding of the real value
in the acquisition and use of knowledge?

5. Does the material provide the opportunity for experiences
which will increase the student's understanding of his own
worth?

6. Does the material promote a climate conducive to academic
success?

7. Is involvement with the material directed to increasing
those skills which enhance freedom of choice with respect
to decisions about life style and vocation?

8. Does the material demonstrate ways in which cultural
conflict can be resolved?

9. Is the material open to controversial content chosen for
   perspective on cross-cultural value conflict?

10. Does the material indicate how failure can be used as
    a learning device for establishing individual goals?

11. Does the material convey the attitude that both the student
    and teacher are valued?

II. Indian/Eskimo Specific Goals (STEP A)

1. Does the material assist in establishing the student's own culture as viable?

2. Does the material assist in reconciling possible conflict between the student's perception of the world and those of his parents and their peers?

3. Does the material attempt to increase the sensitivity of the teacher to the values of the student's culture?

4. Are suggestions given for ways to make the material specific to the student's culture?

5. Is conscious understanding and valuing of the student's culture contained in the material?

6. Does the material promote a mature and prideful racial identity as one possible means to self-fulfillment and social contribution in a pluralistic society?

7. Does the material draw on the student's cultural heritage through biography and history as a way of illuminating contemporary problems?

8. Does the material provide insight into other Indian and Eskimo specific materials as a way of enlarging the student's culture-specific concepts?

9. Does the material promote an active interest on the
   student's part in discovering his own culture through
   reading and research?

10. Does the material promote the student's interest in
    exploring his own culture's values as a means of
    securing self-identity?

11. Is the material within meaningful range of the student's
    life experience so that he can operate successfully with-
    in the parameters it establishes?

12. Is the material receptive to inclusion of the child's
    life experience as curriculum content?

III. Concepts (STEP B)

1. Does the material deal in a significant way with one of the five master concepts (i.e., interaction, change, conflict, power, and valuing) which are to appear through the entire curriculum?

2. Do the major elements of the Locational Concepts appear in every unit and every activity module in some significant way?

The Dimension	The Sub-Concepts	The Question Form
The Actor	self, others, group, community, nation, family, father, mother, brother, sister, cousin, uncle, aunt, grandfather, grandmother, clan, child, adult, husband, wife, son, daughter, friend, enemy, stranger, teacher, principal, boss, colleague, worker	WHO AND WHY?
The Theatre of Action	land, thing, place, mountain, valley, river, ocean, object, air, sea, jungle, forest, plain, plateau, mesa, building, house, school, store, hospital, court, jail, market, voting booth, office	WHERE?
Type of Action	political, economic, socio/cultural, psychological, technological	WHAT AND HOW?
Time (the dimension)	past, present, future, real, imagined, unknown	WHEN?

3. Are important sub-concepts derived from the Master and Locational Concepts included in the material?

IV. Skill Development   (STEP C)

1. Thinking (Cognitive)

a) Does the material enhance one or more of the following
   intellectual skills?

> Knowledge of specifics: terminology, facts, identi-
> fication, observation, enumeration, description,
> recall.

> Knowledge of methods: conventions, trends, classifi-
> cation, criteria.

> Knowledge of rules: abstractions, generalizations,
> principles, understandings, theories, structures.

> Comprehension: translation, interpretation, extra-
> polation.

> Application

> Analysis of: elements, relationships, organizational
> principles.

> Synthesis: creation, planning, derivation, hypo-
> thesis.

> Evaluation: based on internal and external evidence.

b) Do the materials relate appropriately to the cognitive patterns of the student?

c) Does the vocabulary and the experience established to make that vocabulary meaningful, dovetail with the student's verbal ability?

d) What is known about the developmental stage of the student at the level the materials are being developed for?

e) In what ways can what the student already knows be reinforced by dealing with the material?

2. Feeling (Affective)

a) Does the material provide an opportunity for expression of both negative and positive feeling?

b) Does the material promote understanding of internal emotional states?

c) Does the material promote sensitivity to others' feelings?

d) Can the student emotionally handle the content and method set forth in the material?

e) Can the student do anything with what he has learned so he will not be unreasonably confused or frustrated?

f) Has the material capitalized on the student's emotional strengths, and is it appropriately responsive to his emotional weaknesses?

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3. Doing (Psychomotor Skills)

   a) If manipulative skills are required in dealing with
      the materials, are they within range of the student's
      ability?

   b) Has sufficient attention been paid to the need of the
      student for physical activity in developing the material?

4. Concept Formation

   a) Is the student's language ability consonant with the
      level of abstraction contained in the curriculum material?

   b) Does the student understand the concepts being taught in
      such a way that his comprehension extends beyond word
      definition?

   c) If concepts are not being brought into the classroom
      directly, is the learning experience such that it will
      lend itself to later conceptualization?

5. Practical

   Does the material promote the development of practical skills
   the student is likely to need? E.g., budgeting, voting,
   planning, simple data collection and analysis, alternative
   model building, practical judgment, willingness to act,
   map-making and reading, filling out forms, asking and
   answering questions.

6. Communication

a) Does <u>each unit and activity</u> promote an increasingly effec-
tive understanding and use of verbal and written forms of
expression?

b) Is the student encouraged by the material to express himself?

c) Does the material foster listening skills in both student
and teacher?

d) Does the material allow the student to make mistakes in
oral and written expression without requiring a negative
response from his peers or the teacher?

V. Content and Comparative Content   (STEP D)

  1. Content

    a) Is the content sufficiently limited to be covered in depth?

    b) Is the content interdisciplinary?

    c) Is the content worth knowing from the point of view of concept introduction or enlargement?

    d) Does the content serve as a useful model for solving problems the student is likely to encounter at some time during his life?

    e) Has the content real substance, particularly with respect to the lower grades?

    f) Is the content, or can it be, significantly related to what the student already knows or has learned?

    g) Has the content been considered with respect to grade and student achievement level placement?

    h) Is the content accurate, and the result of the best scholarship to date?

    i) Is the bias, if any, contained in the content made explicitly clear?

j) If the content is historical in nature, is it being taught in a way which will assist in building a chronological sense?

k) Is the content open to a method of presentation which will motivate students?

l) Is the content oriented to questions students have asked or might ask?

2. Comparative Content

a) Does the comparative content extend the student's familiarity with cultural similarities and differences?

b) Is some aspect of the comparative content particularly identifiable with the world the student knows? (e.g., other children, different but exciting places)

c) Does the comparative content illuminate some similarity or difference of another culture with respect to values, place to place, time to place, or time to time?

3. Culture Specific Content

a) Does the primary content (if not culture specific) have a parallel in material from the student's own history and culture?

b) Are there local resources who can develop and/or present culture specific content with integrity?

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VI. Instructional Objectives   (STEP E)

1. Are the instructional objectives stated in such a way that they can be measured by something the student does?

2. Do the objectives stay away from large abstractions or at least define them in recognizable situational terms?

3. Are the objectives clearly stated in a way that students can understand and act on them?

VII. Instructional Plan   (STEP F)

1. Method
   a) Does the method of presentation encourage the student's questions in an atmosphere of open-ended inquiry?

   b) Does the method promote an attitude of inquiry?

   c) Does the method provide an opportunity for in-depth study?

   d) Does the method support development of the power to make viable decisions about individual and community goals?

   e) Are the concepts in the material clearly identified, and where appropriate stated in a question form which can be made implicitly or explicitly clear to the student?

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f) Are the methods used representative of the wide range
   of educational possibilities: lecture, role-play,
   discussion, card sort, simulation, games, case analysis,
   problem-solving, filming, map and chart making, research,
   drawing, recording, field-trips, fantasy, drama, inde-
   pendent study, competition, cooperation, induction,
   deduction, classification, analysis, synthesis, oral and
   written presentations, non-verbal techniques, object
   manipulation, story completion, debate, group activities,
   reading?

g) Does the opening activity of the unit frame the scope
   and sequence of the unit in a way which will motivate
   student involvement?

2. Media

a) Does the material make sufficient use of the available
   media: film, slides, stills, opaque projection, over-
   head transparencies, art materials, picture books, narra-
   tives, television, radio, newspapers, books, quantitative
   data, maps, charts, primary and secondary resource material?

b) Does the use of media techniques support the objective
   of the unit, or is it being included to avoid confront-
   ing substantive problems?

c) Are alternatives included if the media support recommended
   cannot be carried out because of lack of equipment?

d) Are media inputs signalled in way that a teacher will
   have sufficient lead time in getting films or equipment?

3. Student Activity Materials

   a) Are the activity materials designed to motivate students to use them?

   b) Are materials clearly identified by color coding, type face, and other appropriate means?

   c) Are the materials sequenced in a clearly discernible way?

4. Teacher Materials

   a) Are instructions, guidelines, narratives for the teacher easy to handle and clearly sequenced?

   b) Are teacher materials straightforward, honest, and direct?

   c) Is there an easy way for the teacher to get a rapid overview of the sequence of activities, equipment and student material requirements?

   d) Are teacher materials written and presented in such a way as to promote amendment and intelligent deviation?

5. Teacher and Student Attitudes

   a) Does the tone of the material support the teacher and student in seeing themselves as real resources contributing to the learning process?

   b) Does the material support an attitude of interdependence between teacher and student?

VIII. <u>Evaluation Procedure</u>   (STEP G)

1. Can the success or failure of the student's response to
   the material be measured against clearly stated behavioral
   objectives?

2. Are the objectives spelled out clearly for both units
   and activity modules?

3. Are evaluation instruments, and explanations of their purpose
   and use included in the unit?

4. Do the objectives require the student to demonstrate what
   he has learned rather than what he understands?

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A MODEL NARRATIVE SCOPE AND SEQUENCE K-12

The following represents the kind of narrative scope and
sequence that teachers might develop from the Project NECESSITIES
Curriculum Bank.

GRADES K-3

HOME

I. What is home? (Description)

Space A. Layout--Land

Man   B. Personnel

Time   C. Activities (eating, sleeping, playing, working)

II. What does home provide? (Analytical)

        A. Shelter, food, clothing = security and services

        B. Family roles--each member's "part"

III. What are the dynamics of the home? (Process)

        A. How to get what you want: persuasion, exchange
            (chores), force (with siblings)

        B. Family history: location and relocation, new
            siblings

MASTER CONCEPTS

1. INTERACTION: consumption, distribution, influence, exchange

2. CHANGE: family history, heritage

3. CONFLICT: favoritism, rivalry, competition, mood

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4. POWER: parental roles, love, hate

5. VALUING: order, disorder, stability, good/bad

SCHOOL

I. What is school? (Descriptive)

Space A. Layout, mapping, placement

Man   B. Personnel (teachers, administrators, service people, students)

Time   C. Activities (study, play, daily life)

II. What does school provide? (Analytical)

A. Basic needs (shelter, food, services)

B. School roles (especially student and teacher)

III. What are the dynamics of the school? (Process)

MASTER CONCEPTS

1. INTERACTION: teaching/learning, influence, exchange (reward system), peer-play, consumption

2. CHANGE: time/space, classroom schedule

3. CONFLICT: favoritism, classroom rivalry, play cliques

4. POWER: teacher role, administrator's role

5. VALUING: "good" behavior, "good" performance, success/ failure (academic, classroom), good/bad

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HOME VS. SCHOOL

I.   How are home and school alike? How different? (Descriptive)

     Space A. Layout

     Man   B. Personnel

     Time   C. Activities

II. Comparison of home and school (Analytical)

           A. Different basic purposes

           B. Same provision for basic needs

           C. Roles: student/teacher vs. child/parent, peer group

               member vs. sibling role

III. Comparison of home and school (Process)

           A. Persuasion, influence, force in both settings

           B. Different calendars, histories

MASTER CONCEPTS

     1. INTERACTION: parent-student-teacher, dynamics of home

         compared to school

     2. CHANGE: transition from home to school

     3. CONFLICT: similar peer-sibling rivalries, more competition in

         school, more voluntary grouping in school, dominance by

         personal characteristics

     4. POWER: "pecking orders," adult/child

     5. VALUING: competition, verbal ability, aggressiveness at school

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COMPARATIVE HOMES AND SCHOOLS (other places)

I. White middle class and black lower class urban America

   Space A. Facilities of home and school

   Man   B. Family structures--school system organization, personnel

   Time   C. Activities--home and school (day school)

II. Another tribal society, perhaps African polygamous

           A. Same functions--purposes (no formal school?)

           B. Same provision for basic needs

           C. Similar roles, different institutions

III. A little-known American Indian tribe for comparison

           A. Valuings on different social dynamic modes

           B. Different histories, important occasions

MASTER CONCEPTS

   1. INTERACTION: Social dynamics of three other children's worlds.

   2. CHANGE: 3-step comparison--space warp, not time.

   3. CONFLICT: A difference in modes of resolution in three settings.

   4. POWER: Same power roles in three settings.

   5. VALUING: Recognition of other value systems and their whole-

              ness.

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GRADES 4-6

COMMUNITY (village or boarding school as total institution)

I.   What is a community? (descriptive)

     Space   A.   Facilities, resources--layout, institutions

     Man   B.   Personnel--concentration of people in limited

                  space;   elementary demography.

     Time   C.   Community history (local input required)

II. What does community provide?

             A.   Goods distribution centers

             B.   Community services

III. What are dynamics of community?

             A.   Economic exchange--money as a medium

             B.   Political exchange--vote as a medium

             c.   Informal and formal voluntary associations

MASTER CONCEPTS

     1.   INTERACTION: Exchange media, communications patterns.

     2.   CHANGE: Community history, economic cycle, political

                  succession.

     3.   CONFLICT: Political contests, economic deprivation.

     4.   POWER: Community leadership roles.

     5.   VALUING: Individual expression through association.

CREATING A CLASSROOM SOCIETY (class co-op projects summarizing K-5 concepts)

I. Setting up a hallway candy store

    A. Investment by teacher--allocation of capital.

    B. Wholesale/retail--return on investment.

    C. Profit and its distribution (→ saving, re-investment).

II. Setting up class voluntary associations

    A. Dividing on basis of hobbies/interests of students.

    B. Group goals, purposes (newspaper, collections, etc.)

    C. Organization, leadership, roles and contributions.

III. Setting up a class government

    A. Constitution--procedures (different decision rules for

       group, such as majority, unanimity, plurality), leadership.

    B. Choice of a school/classroom issue.

    C. Delineation of alternatives.

MASTER CONCEPTS

    1. INTERACTION: Class relation to student body market (I),

                     internal (II), school administration (III).

    2. CHANGE: Transforming class into an institution.

    3. CONFLICT: Decision-making experience.

    4. POWER: Classroom leadership in different activities.

    5. VALUING: Setting group objectives, procedures.

FUTURES/UTOPIAS (creating own society)

I. What would be an ideal community? (Descriptive)

    Space A. Layout--what would it have to look like?

                  What facilities?

    Man   B. Personnel--what sort of people?

    Time   C. Activities--work, play, etc.

II. What would it provide (Analytical)

           A. Must make provision for basic needs.

           B. Any role differentiation? Problems foreseen

              where everyone is alike.

III. How would it operate? (Process)

           A. Schemes of distribution (to each according to his

              needs or to each according to his contribution?)

           B. Historical case studies of Utopian experiments:

              Amish rural/farming as current example; nineteenth

              century crafts village experiments. These vs.

              world at large.

IV. System wholeness

           A. Trade utopias among class groups.

           B. Find system inconsistencies in Utopias dealing

              with MAN, SPACE, TIME interrelations.

           C. Revise, see system ramifications of societal

              components.

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MASTER CONCEPTS

1. INTERACTION: System interrelationships.

2. CHANGE: Community histories, failures.

3. CONFLICT: Community relations with outside world.

4. POWER: Ideals of decentralization.

5. VALUING: Ideals as basis for social organization.

GRADES 7-9

1. INTERACTION

Theaters

Economic--How does an isolated community meet its needs?

Economy of the reservation (trading post)--monopoly--alternatives
to monopoly--the cooperative--credit, loans.

Political--How does a community make decisions of policy?

Comparison of types of tribal decision-making structure--rule
by unanimity vs. rule by plurality. Comparison to decision-making
in the dominant culture--plurality in elections, unanimity in jury
trials. Causes of each method, effects.

Social--How is a family structure organized in different American
Indian tribes?

Comparison of family structure, child-rearing, etc. in two
southwestern tribes--isolated rural Navajo, concentrated population
of Pueblo (e.g., Taos).

Cultural--How are self-contained communities in different parts of
the world similar and different?

Comparison and contrast of American Indian reservation and
Israeli kibbutz.

Psychological--How are attitudes formed in individuals and groups?

Advertising, the media. Authority and leadership figures. Peer
pressure, group, dyadic.

Historical--How were the reservations formed?

Discussion from American Indian point of view of the reservation policies. Three types of reservations: pre-existing (Isleta Pueblo); roundup of nomadic tribes (Rosebud); forced migration of Eastern tribes (Oklahoma).

2. CHANGE

Economic--How do events affect the way a community supports itself?

The Navajo reservation gets a plant with 1500 jobs at Shiprock; automation eliminates most jobs in an Appalachian county. Economic planning for a reservation.

Political--How is political power gained and lost?

Legal action--suits for recovery of treaty lands--Democracy as a scheme for the formalization of political change. The leader-- Sitting Bull; the coalition--Iroquois Confederation; the movement-- Red Power, Cesar Chavez, Ruis Tijerina.

Social--What is the nature of change in generations?

Eskimo, Plains, Southwestern. Past generation to present; current patterns of sociological change among reservation Indians. Projections for future development.

Cultural--How do tribal societies in different parts of the world respond to contact with other societies?

The Yana of California (Ishi) and the Polar Eskimos of Greenland (i.e., non-adaptation to perceived alien culture).

Psychological--How do people, as individuals and as a group, respond to immersion in an alien culture?

The Indian child (both English-speaking and non-English-speaking) enters school.

Historical--How does contact with an alien culture affect the social, economic, political, and cultural characteristics of a community?

The Crow Indians discover the horse.

3. CONFLICT

Economics--How do the interests of consumers and producers conflict, and how can each maximize his gains?

Monopolies, trusts, comparative buying, etc. Unlimited wants vs. limited resources.

Political--How does conflict between groups arise, and how can it be resolved?

Conflict between Sioux and South Dakota legislature over control of tribal functions; conflict over use of hallucinogens in religious services.

Social--How does conflict arise within groups, and how is it resolved?

Case studies of sociological-political disputes in two tribes-- over acceptance of a proposed factory in a reservation, over educational policy in another.

Cultural--How do different societies deal with problems posed by
conflict between individuals within the society?

Where physical violence is necessitated by cultural and
political tradition-- or instances where physical violence
is prohibited by cultural and political tradition--the Utes;
where conflict between individuals is resolved by both personal
means and political-cultural institutions.

Psychological--How do individuals resolve conflicts within them-
selves and between themselves and their environment?

The traditional Indian response--stoicism, a modus operandi
with land and environment; the traditional "dominant culture"
response--adjusting the environment to oneself by technology,
immigration, etc.; the twentieth century middle class response--
changing one's will to "adjust" to the environment.

Historical--American domestic history from American point of
view--case study approach--Massachusetts from 1620 through
King Philip's War; the Cherokee try to "play ball" with the USA;
relocation and the Indian wars; the reservation policy; the
termination policy.

GRADES 10-11

4. POWER

Economic--What is economic power and how is it applied?

Case study of a rural New Mexico County (Anglos, Hispanos,
Indians) where Anglos control job distribution, banks ai.d
credit, food sales, feed sales, etc. How is this to be altered?

Indian economic power in the Southwest, United States in
general - what are the solutions?

Political--How is political power achieved and applied?

A comparison of degree of personal autonomy vs. reservation
autonomy.

Social--What determines power within a society?

Comparison of determinants of power for individuals and
groups in   a) Southwestern reservation   b) relatively uninitiated
Plains community   c) Anglo urban center.

Cultural--How is power divided between dominant majorities and
indigenous conquered minorities in other parts of the world?

Arabs in Old Jerusalem, French in Canada, Americans in
Soviet Armenia.

Psychological--What is the meaning of power to the individual?

Readings: Chief Joseph, Thoreau, and so forth - political
power, the family structure, control of existence with the

environment, religion, artistic creativity, power to hunt/help, etc.

Historical--How has the United States exercised power in its relations
with other countries? International history of the United States
(from the First World War?).

5. VALUING

Economic--'Price,' 'value,' and 'utility' of goods and services,
degrees of correspondence among these three ways of valuing
economic goods. The role of 'work ethic' in production tied to
individual employment-work attitudes. The dominant society
emphasis on future rewards - postponed gratification. 'Conspicuous
consumption' as a modern ethos.

Political--Political parties, 'liberalism,' 'conservatism.'
Role of valuing in national priorities - social conscience vis-à-vis
poverty, civil rights; the Indian case of both. Law and its
interpretation as valuing set concretely. Qualities looked for
in leaders as representations of national values.

Social--Values as interpreted by dominant society media. Compare
with priorities set by Tribal Council. Different reference groups
for values: family, clan, tribe, peer group, village, race, nation.

Cultural--(See above) Compare major traditional tribal values
with those of the dominant culture.

Psychological--What are your personally most important values?

What are their reference groups? How have your values and their priority changed since childhood? Why?

Historical--List newspaper headlines from last several years. What national value trends do they show? (technology/progress, peace, pro-violence, pro-equality, regionalism, world unity, nationalism).

GRADE 12 - INDIVIDUAL RESEARCH PROJECTS

(Topic to be chosen on joint agreement of teacher and student to
be a compromise between student's interests and teacher-perceived
conceptual learning deficiencies.)

List of topics:

Individual--Biography or autobiography in form of life cycle time
line, not text.

Family--Kinship chart, geneological table, capsule biographies
of interesting individuals.

Community--Descriptive: history time line, geography map or
successive maps (including resources, not just topography).
Flow chart of decision-making process: major actors
by role; crucial decision areas, topics; rules for decision
finalization in community.
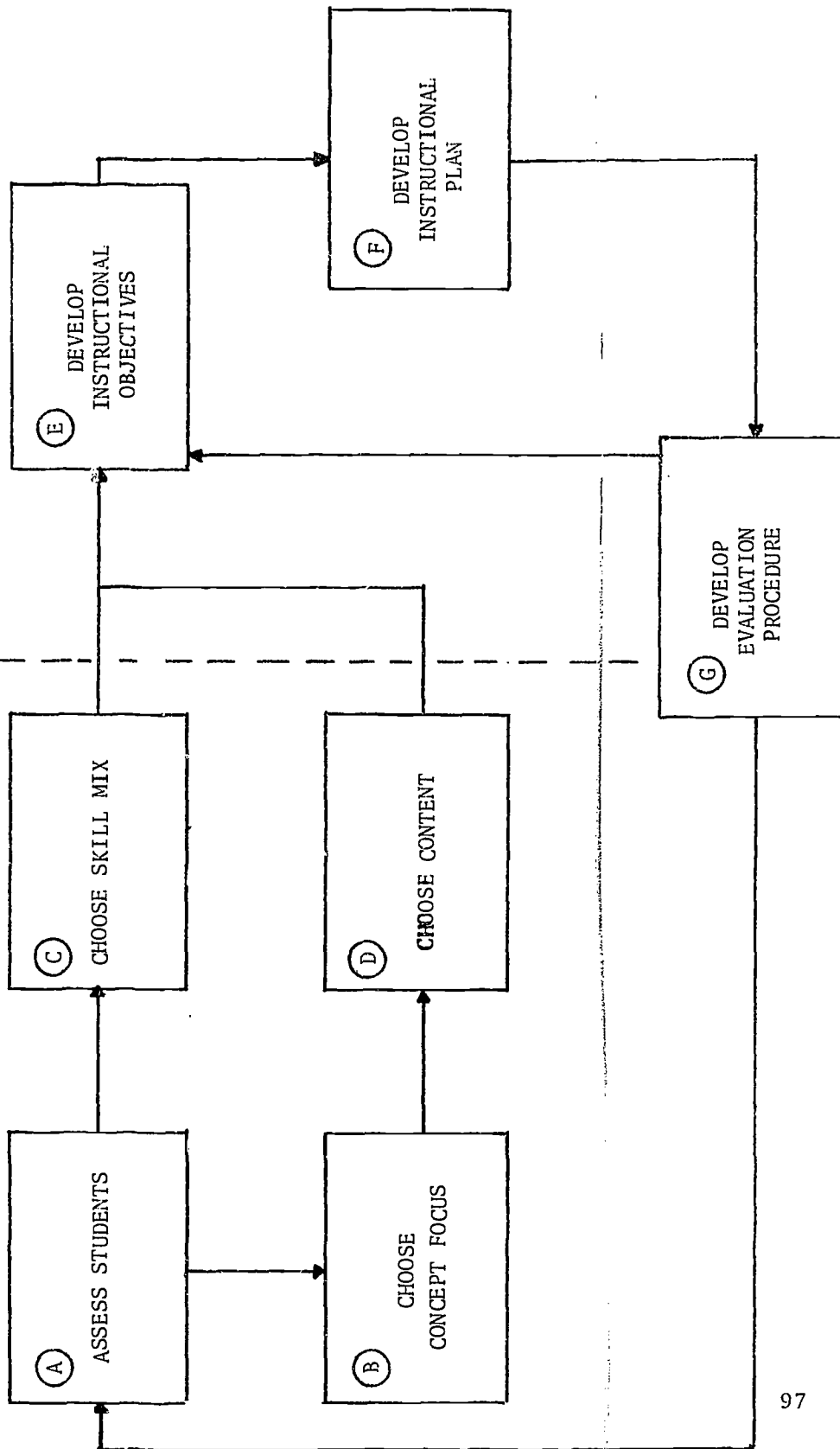
Tribe--(Same as above)

City Case Study--Crucial geographical features in original
location; changing physical boundaries and facilities. Demographic
history; scheme of political organization; economic base and
changes in same.
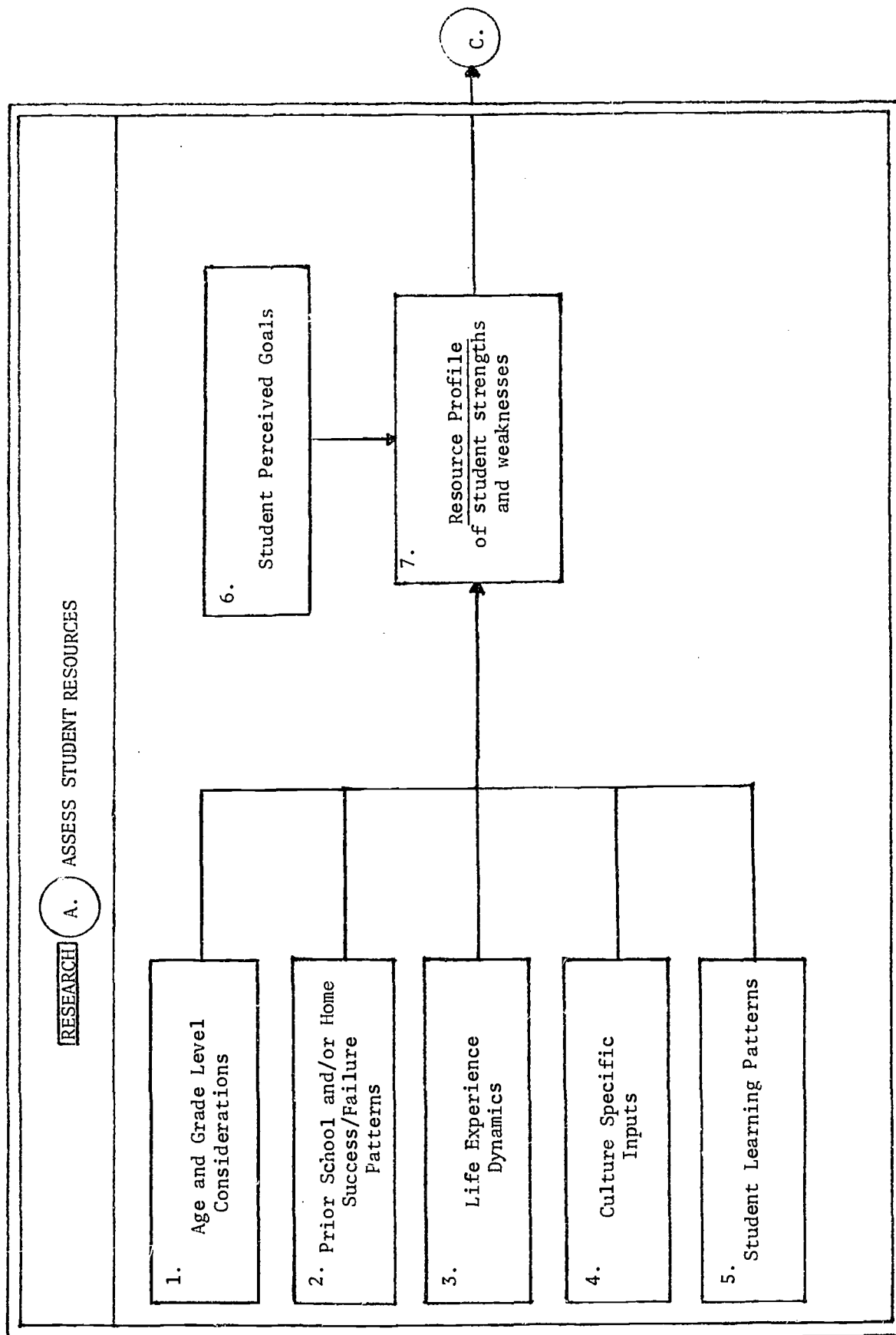
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THE CURRICULUM PROCESS FLOW CHARTS

This last section includes a master flow chart showing the linkage between the seven STEPS of the curriculum process, and an individual flow chart for each individual STEP.

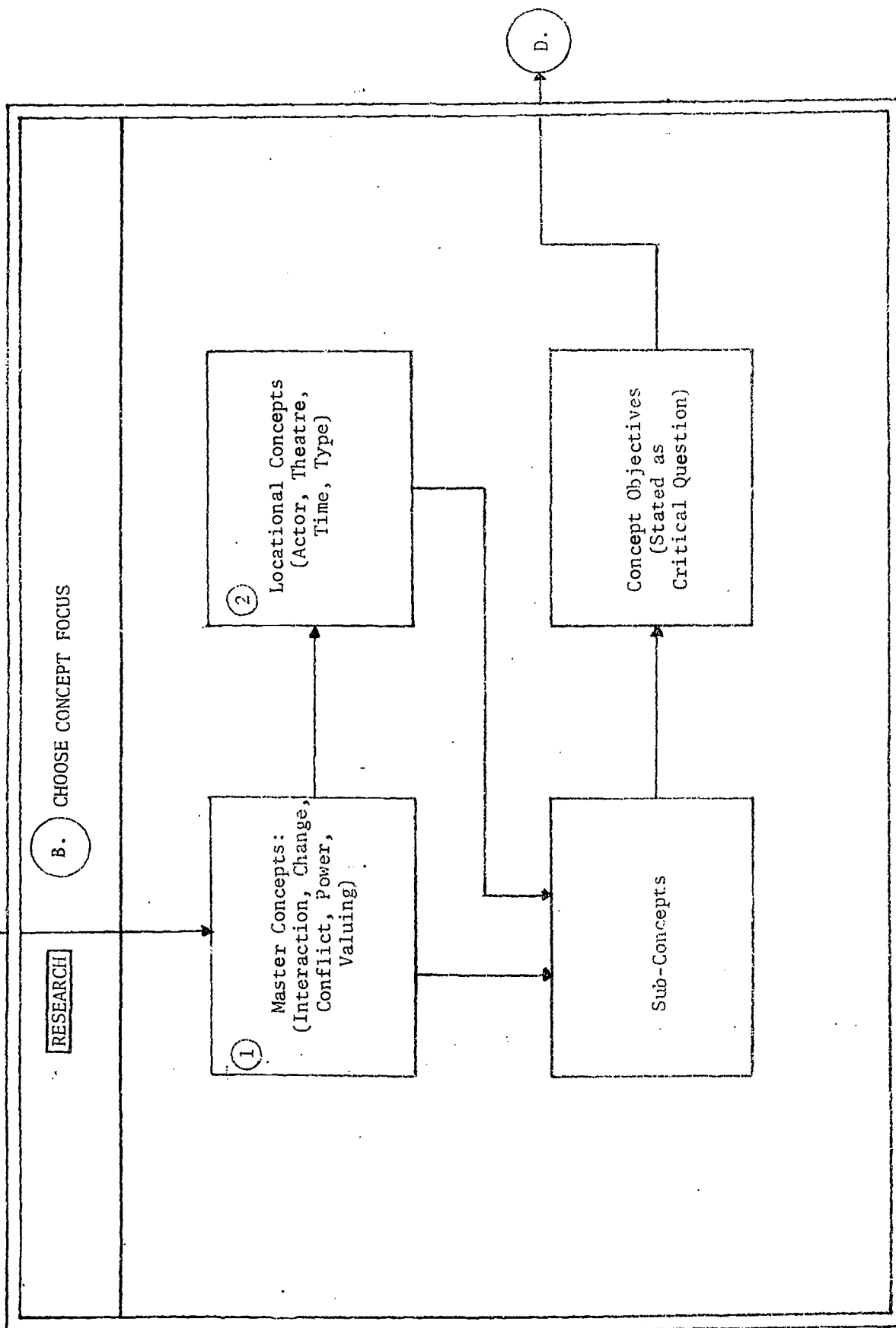For those of you who read this kind of short-hand it may be a useful way to rapidly visualize the whole system.

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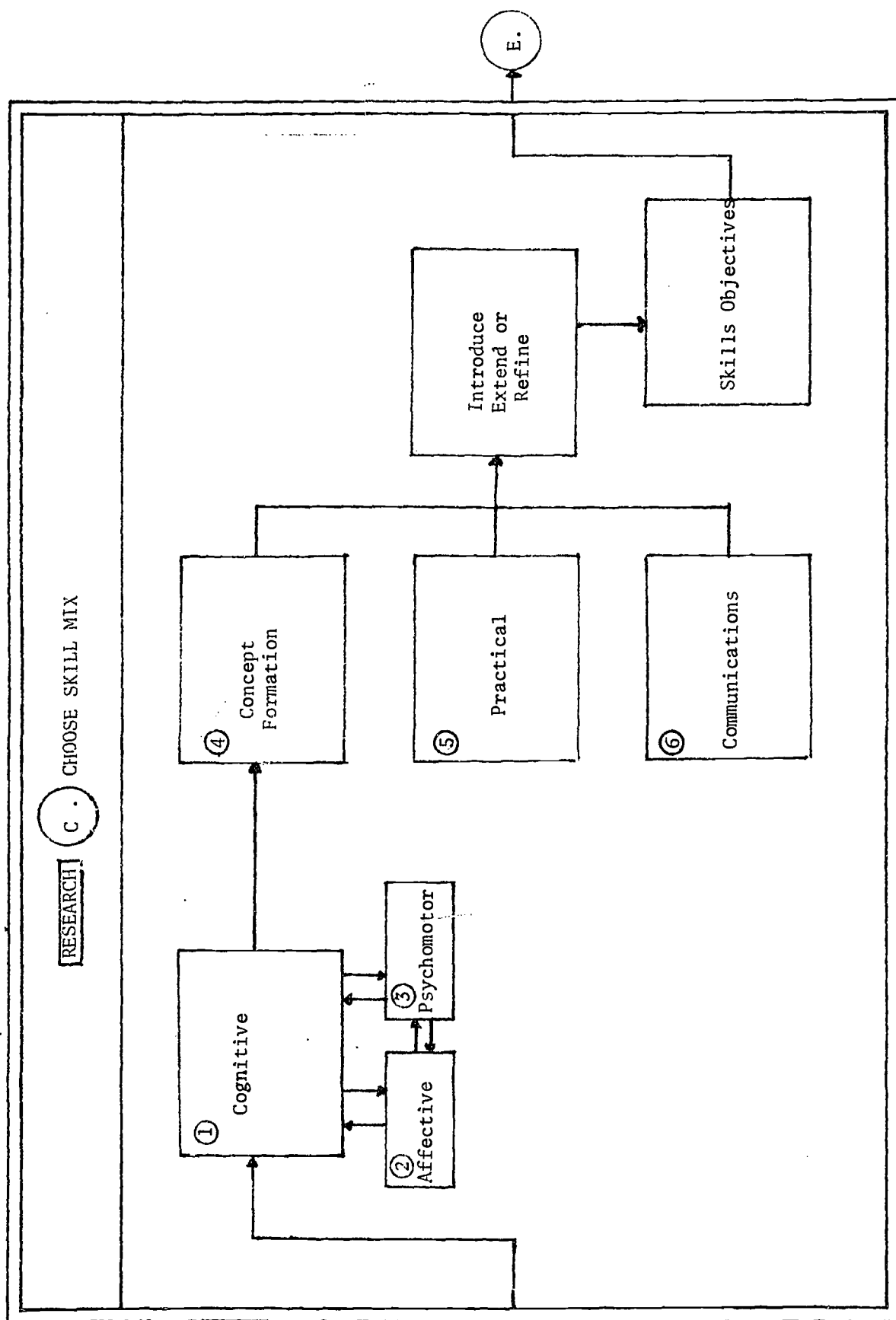PROJECT NECESSITIES CURRICULUM DEVELOPMENT PROCESS

(A) ASSESS STUDENTS

(B) CHOOSE CONCEPT FOCUS

(C) CHOOSE SKILL MIX

(D) CHOOSE CONTENT

(E) DEVELOP INSTRUCTIONAL OBJECTIVES

(F) DEVELOP INSTRUCTIONAL PLAN

(G) DEVELOP EVALUATION PROCEDURE

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RESEARCH A. ASSESS STUDENT RESOURCES

1. Age and Grade Level Considerations

2. Prior School and/or Home Success/Failure Patterns

3. Life Experience Dynamics

4. Culture Specific Inputs

5. Student Learning Patterns

6. Student Perceived Goals

7. Resource Profile of student strengths and weaknesses

A.   B.   C.

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D.

RESEARCH

A.

B. CHOOSE CONCEPT FOCUS

1. Master Concepts: (Interaction, Change, Conflict, Power, Valuing)

2. Locational Concepts (Actor, Theatre, Time, Type)

Sub-Concepts

Concept Objectives (Stated as Critical Question)

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RESEARCH D. CHOOSE CONTENT

Final
Content Mix

Content
Objectives

Primary

Comparative

Culture Specific

B.

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IMPLEMENTATION

G. DEVELOP EVALUATION PROCEDURE

Design Testing Experiences

Test Student Performace

Measure Student Performance Against Objectives

F.

A.

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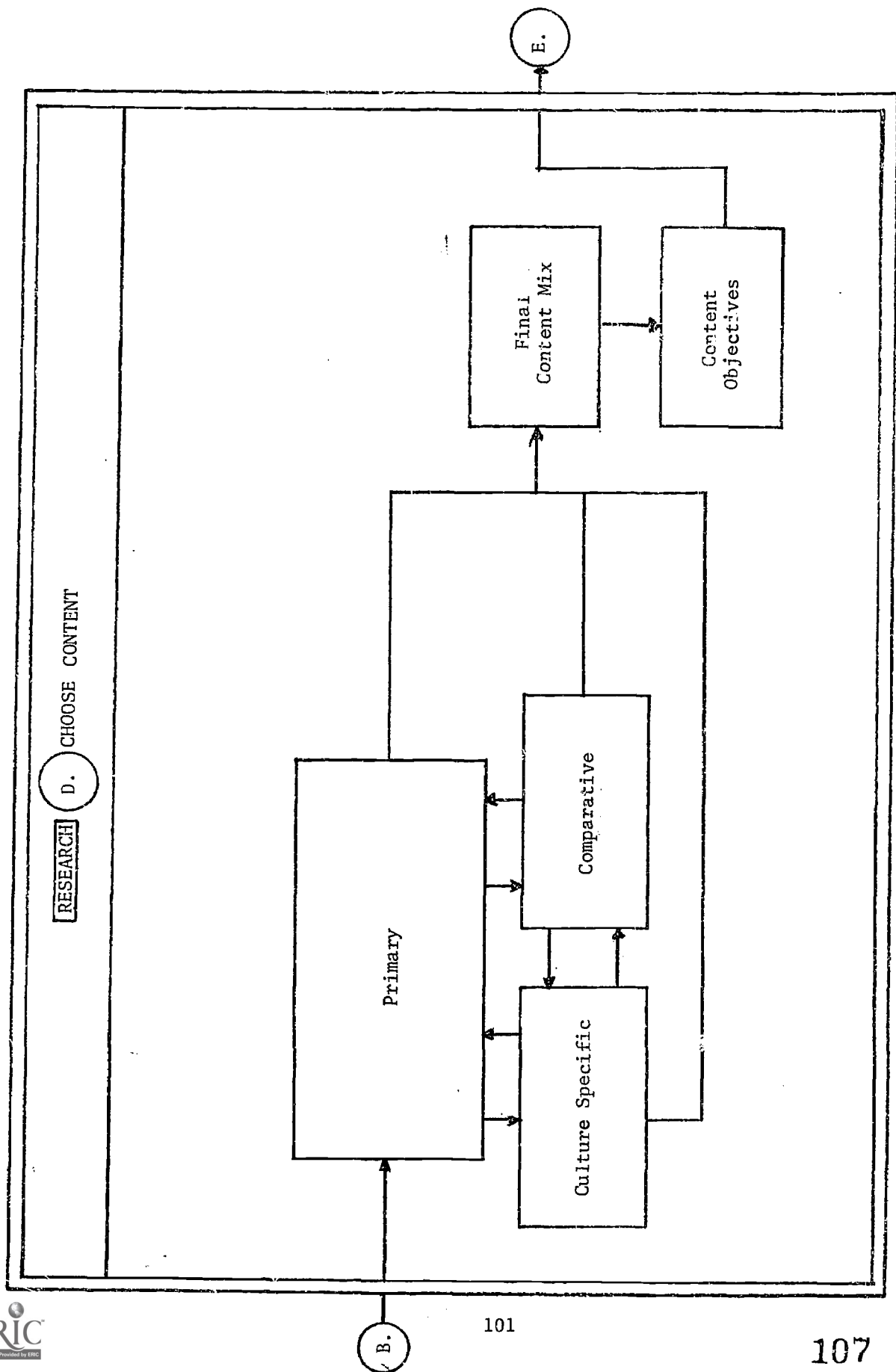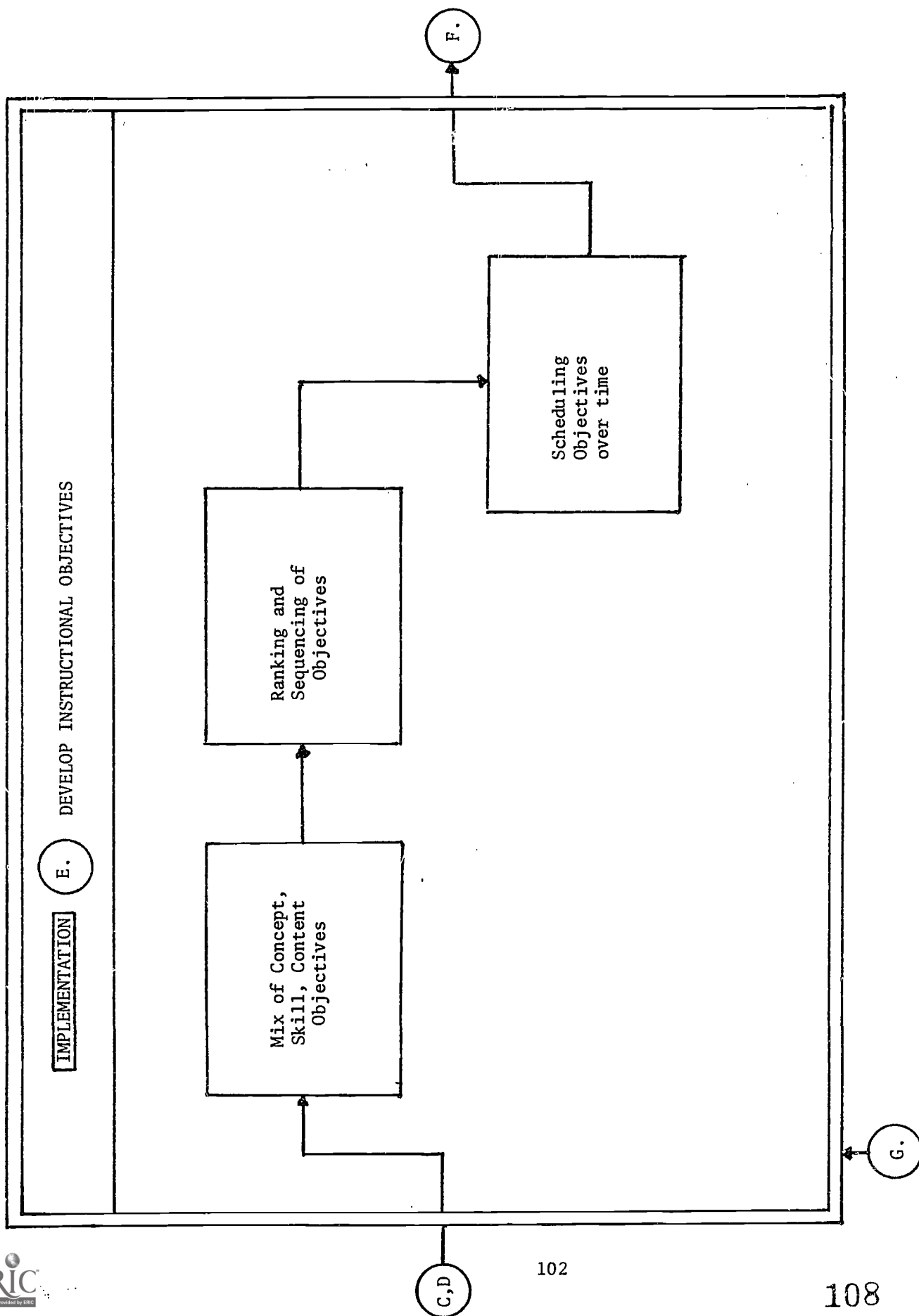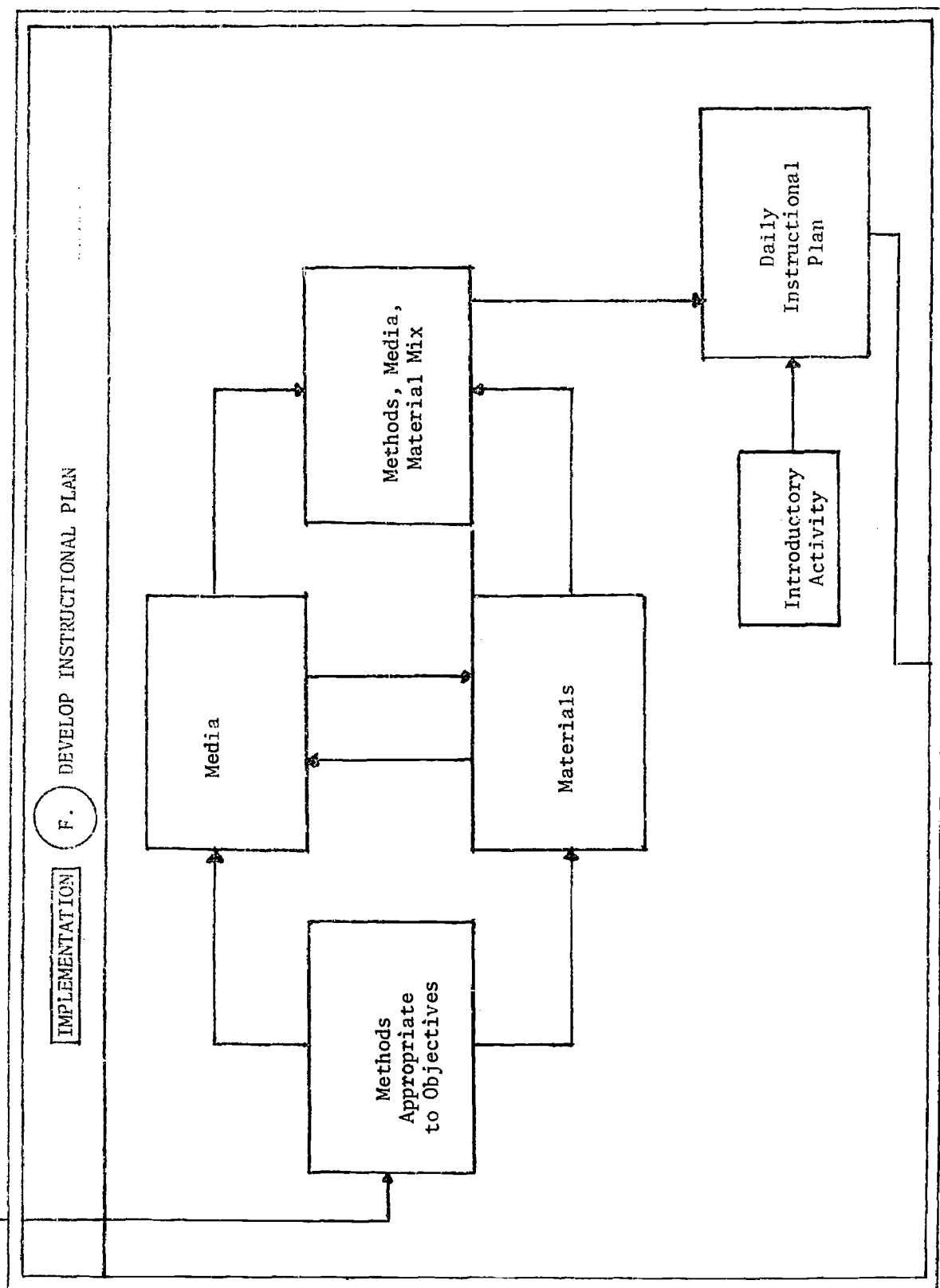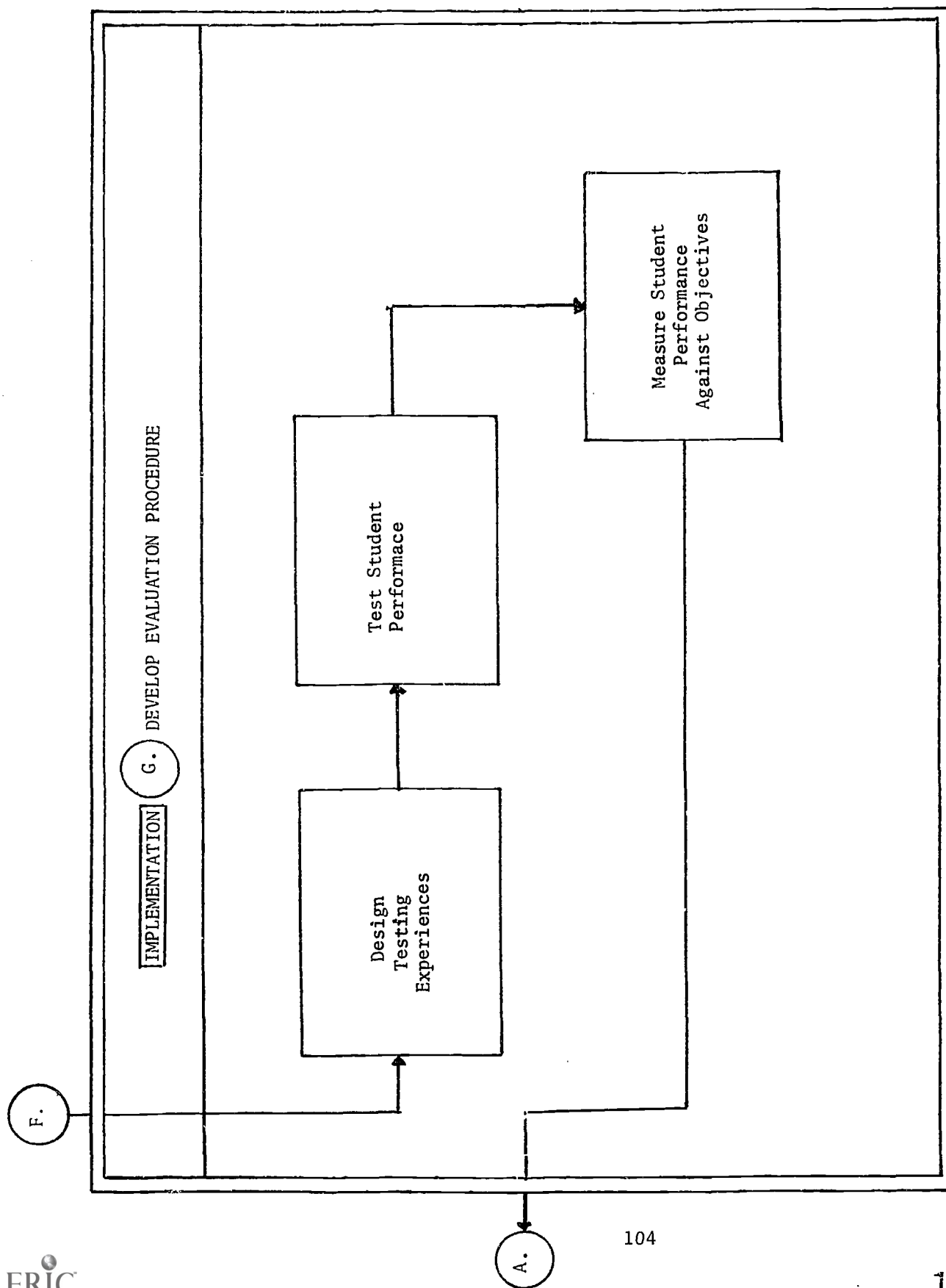
DRAFT UNIT DEVELOPMENT WORKSHEET

Five sets of unit worksheets follow. These blank worksheets
are laid out according to the seven step process presented in this
manual and may be useful to you in your own curriculum development
work.

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DRAFT UNIT DEVELOPMENT WORKSHEET

Unit Overview

Developmental Steps

A. STUDENT RESOURCES
    (Unit Specific)

B. UNIT CONCEPT MIX
    Master Concept/s:

    Locational Concepts:
      Actor/s

      Theatre of Action

      Time of Action

      Type of Action

      Sub-concepts

C. UNIT SKILL MIX
    Thinking (Cognitive)

    Feeling (affective)

    Doing (psychomotor)

    Concept Formation

    Practical

    Communications

D. UNIT CONTENT MIX
    Primary

    Comparative

    Culture Specific

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UNIT INSTRUCTIONAL
OBJECTIVES MIX

   Concept Objectives

   Skill Objectives

   Content Objectives

F. UNIT INSTRUCTIONAL PLAN

   Methods

   Media

   Materials

G. UNIT EVALUATION PROCEDURE

DRAFT UNIT DEVELOPMENT WORKSHEET

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(Unit Specific)

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Time of Action

Type of Action

Sub-concepts

C. UNIT SKILL MIX
Thinking (Cognitive)

Feeling (affective)

Doing (psychomotor)

Concept Formation

Practical

Communications

D. UNIT CONTENT MIX
Primary

Comparative

Culture Specific

UNIT INSTRUCTIONAL
OBJECTIVES MIX

Concept Objectives

Skill Objectives

Content Objectives

F. UNIT INSTRUCTIONAL PLAN

Methods

Media

Materials

G. UNIT EVALUATION PROCEDURE

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DRAFT UNIT DEVELOPMENT WORKSHEET

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   (Unit Specific)

B. UNIT CONCEPT MIX
   Master Concept/s:

   Locational Concepts:
      Actor/s

      Theatre of Action

      Time of Action

      Type of Action

   Sub-concepts

C. UNIT SKILL MIX
   Thinking (Cognitive)

   Feeling (affective)

   Doing (psychomotor)

   Concept Formation

   Practical

   Communications

D. UNIT CONTENT MIX
   Primary

   Comparative

   Culture Specific

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UNIT INSTRUCTIONAL
OBJECTIVES MIX

    Concept Objectives

    Skill Objectives

    Content Objectives

F. UNIT INSTRUCTIONAL PLAN

    Methods

    Media

    Materials

G. UNIT EVALUATION PROCEDURE

DRAFT UNIT DEVELOPMENT WORKSHEET

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   (Unit Specific)

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   Locational Concepts:
      Actor/s

      Theatre of Action

      Time of Action

      Type of Action

   Sub-concepts

C. UNIT SKILL MIX

   Thinking (Cognitive)

   Feeling (affective)

   Doing (psychomotor)

   Concept Formation

   Practical

   Communications

D. UNIT CONTENT MIX
   Primary

   Comparative

   Culture Specific

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UNIT INSTRUCTIONAL
OBJECTIVES MIX

Concept Objectives

Skill Objectives

Content Objectives

F. UNIT INSTRUCTIONAL PLAN

Methods

Media

Materials

G. UNIT EVALUATION PROCEDURE

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   (Unit Specific)

B. UNIT CONCEPT MIX
   Master Concept/s:

   Locational Concepts:
      Actor/s

      Theatre of Action

      Time of Action

      Type of Action

   Sub-concepts

C. UNIT SKILL MIX
   Thinking (Cognitive)

   Feeling (affective)

   Doing (psychomotor)

   Concept Formation

   Practical

   Communications

D. UNIT CONTENT MIX
   Primary

   Comparative

   Culture Specific

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UNIT INSTRUCTIONAL
OBJECTIVES MIX

Concept Objectives

Skill Objectives

Content Objectives

F. UNIT INSTRUCTIONAL PLAN

Methods

Media

Materials

G. UNIT EVALUATION PROCEDURE

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