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ABSTRACT
                This is a guide to the nature, purpose, and potential
uses of 12 course goal collections produced by the Tri-County Goal
Development Project through the cooperative efforts of school
districts and intermediate education districts of three counties in
the metropolitan Portland, Oregon, area. The Project initially
fostered collections of educational goals appropriate for use in
managing and planning at all school system levels and the coding of
these goals to make their curricular uses apparent and permit their
retrieval in various combinations from a computerized storage system.
A long-range purpose is to help bring consistency to the way school
districts develop goal structures for instructional planning and
evaluation. The collections are designed to be used when school
administrators make decisions about individualizing instruction,
planning cross-disciplinary education, and establishing
accountability. The collection can be used in long-range planning and
educational development, evaluating effectiveness of regular and
experimental instruction, teacher education, and
diagnostic-prescriptive instruction. The Project provides both
knowledge and process goals, and in this way offers alternative
learning outcomes of both the traditional
meaningful-reception/content-mastery type and the increasingly
important rational thinking process type. (Author/EA)

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DESIGNING BEHAVIORAL GOALS, K-12

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Needs to Which the Project Responds

This is a guide to the nature, purpose, and potential uses of twelve course goal collections produced by the Tri-County Goal Development Project through the cooperative efforts of school districts and intermediate education districts of three counties in the metropolitan Portland, Oregon area.

One of the most promising and potentially effective and liberating movements to reach school districts in recent years is the statement of measurable learning outcomes and the development of programs and evaluation techniques to support their attainment.

Despite the widespread interest in goal-based program development and evaluation, however, its alleged rewards have not materialized in most school districts due to the low level of technical support available and the lack of systematic help to teachers in defining, attaining, and evaluating their students' goals. On the contrary, over-enthusiastic and under-supported efforts have often resulted in demoralizing confusion on the part of citizens, students, and staff.

Nonetheless, the internal and external needs which led to the birth of the movement persist and continue to grow. Educators increasingly recognize the usefulness of measurable learning outcomes in planning and evaluation and for communicating about purposes in rapidly changing educational systems. At least 19 state legislatures and numerous boards of education have mandated the development of goal-based planning and evaluation systems to satisfy the public's increasing demand to know what is happening in the schools before they will approve and support their educational programs.

A research and development project aimed at meeting such needs is in its third year in the

metropolitan Portland, Oregon area. In 1971, 55
school districts joined together to share re-
sources and expertise for the purpose of cre-
ating a system to support the definition of
measurable learning outcomes and the aligning
of district instructional and accountability
systems with the goals selected. More recently
the Oregon and Washington State Boards of Edu-
cation have joined in the effort in order to
share the project results with all school dis-
tricts in the Pacific Northwest and beyond.

This Project has as its initial objective
the production of collections of educational
goals (learning outcomes) appropriate for use
in managing and planning at all school system
levels and the labeling of these goals with
codes which make their curricular uses apparent
and permit their retrieval in various combina-
tions from a computerized storage system. Its
long-range purpose is to help bring consistency
to the way school districts develop goal struc-
tures for instructional planning and evaluation.
It provides a non-prescriptive system of alter-
natives for the consideration of those school
planners seeking to answer the questions,
"What is to be learned?"; "How to help students
learn it?"; and "Has it been learned?" Thus,
while the Project is initially occupied with
the production and coding of "program" and
"course" level goals (over 15,000 have been pro-
duced and coded to date), it is also concerned in
the long run with the ways these goals are attain-
ed and measured.

The goal collections are designed for these

uses:

1. Making desicions about what the school
   should teach.

2. Individualizing instruction.

3. Planning cross-disciplinary education.

4. Establishing accountability.

5. Long-range planning and educational
   development.

6. Evaluating effectiveness of regular
   and experimental instruction.

7. Teacher education.

8. Diagnostic-prescriptive instruction.

Making Desicions About What the School Should Teach

If the growing movement to involve students,
parents, teachers, school board members, and
local community citizens in determining school
system goals is to be channeled into constructive
paths, it is necessary that the nature of edu-
cational goals be better understood and that
the roles of all groups pressing for greater
participation also be understood as they relate
to the legal responsibilities of state and local
boards of education. By providing a rationale and
a broad set of alternatives for generating goal
statements useful at various levels of management
and participation, it is hoped that the Project
will provide an important resource for improving
the effectiveness of these groups in decision
making.

Individualization of Instruction

The desire to treat students as individuals
in diagnosing and meeting learning needs is a
long-standing interest of educators, but one
that has been frustrated by the apparent organi-
zational and economic constraints under which
schools operate. With the advent of the computer

and the development of teaching systems and programs based upon carefully defined and detailed sequences of instructional objectives, hope rose anew for individualization of instruction. Such systems have largely been failures, however, since they have gained little or nothing in the economy of individualized instruction while sacrificing the adaptive and flexible support of the learner by the teacher.

The goal collections of the Tri-County Project can help individualization by providing learning options that teachers or students may locate easily from a variety of orientations. With the addition of goal-based aids to curriculum and instruction developed at the system level, and with the completion of the Project's assistance in evaluating the attainment of selected goals, the basis will have been laid for comprehensive and effective individualized instruction.

Cross-disciplinary Education

There is probably no concept in education currently more abused than "interdisciplinary education." The goals of subject matter learning are at least implicit in the textbooks and other materials used by teachers. but the goals of interdisciplinary education do not have even that questionable point of tangible reference. The Tri-County Project, by developing extensive coding and retrieval systems, permits selection of goals in terms of various combinations of subject matter, grade level, types of knowledge and process, subject matter and career education program goals, transdisciplinary concepts and values, and index words. This coding system

provides important cues to interdisciplinary planning. The goals being produced, although they appear in discipline-based collections such as science, social studies, mathematics, music, etc., may be related and grouped through computer retrieval by specifying one or more of the seven code parameters. Thus, for example, a teacher interested in teaching a unit on ecology is able to request from these files goals dealing with related concepts in science, social studies, art, language arts, mathematics, or any other subject field. A detailed discussion of the seven coding systems which facilitate this interdisciplinary use is provided in the section on "How to Read and Interpret the Materials in the Goal Collections" (page 14).

Accountability

Perhaps the greatest need addressed by the Project is for a sound basis for accountability in education. Accountability has been vastly over-simplified in the minds of most who have become interested in the concept. Most seem to regard accountability as a simple, straight-line relationship between the worker and his superior. The fact is that accountability in education extends in many directions. It has horizontal elements of management, support, and instruction, and vertical elements of federal, state, intermediate, local systems, and schools. It is the assumption of this project that accountability, though it may operate within state and occasionally federal guidelines, for practical purposes begins at the school system level and must undergo translations at the program (science, social studies, etc.), course (biology, bookkeep-

ing, or a mini-course), and finally the class-
room or teacher level.

If systems such as planning-programming-
budgeting or even general concepts such as manage-
ment by objectives are ever to reach the point
where costs and benefits can be related in any
meaningful way, it is essential to have logically
consistent operational definitions of educational
goals and ways to generate and relate them from
level to level in a school system. The Tri-
County Project provides such a system of defini-
tions and the tools required to make them opera-
tional.

If a rational system is established for
determining the degree to which the instructional
goals of a school system are being realized,
attention can be turned to other questions of
accountability such as the quality of services
that support instruction.

Long-range Planning and Educational Development

If the events of the past few years have
proved anything, it is that the potential bene-
fits of educational experimentation and develop-
ment are not being fully realized. In view of
the millions of dollars that have been poured
into educational development in universities
and public school systems, this statement is at
best disconcerting. However, it seems evident
that without clear, unambiguous, and consistent
statements of desired learning outcomes, the
ability of school systems to determine the
effectiveness of various innovations is virtually
nil. Through the efforts of the Tri-County
Project it is hoped to establish a set of goals
so comprehensive that almost any desired learn-

ing is represented within that set. To insure
this, the set is kept open and added to each
time teachers or curriculum planners specify
learnings not represented in the original collec-
tions. Any statement that is admitted to the
collection undergoes a rigorous process of state-
ment, definition, and coding to insure that its
utility to teachers is equal to those goals al-
ready in the collection.

Evaluating Effectiveness of Regular and Experimental Instruction

The course goal collections provide a re-
source for school districts to improve the
quality of their research and evaluation. By
identifying goals for conventional learning areas
like reading and mathematics that are accepted
as valid for the entire system, experimental pro-
gram methodologies can be varied as desired to
secure better achievement of the same goals. With
common goals it is also possible to use common
measuring instruments, selected for their conformity
to the goals selected. This insures greater
measurement validity and eliminates problems of
interpretation that always arise where goals vary
in some degree from program to program.

Basic to evaluation of regular instructional
programs is the importance of well defined goals
in all areas of instruction in a school system.
This permits evaluation not only of an experimental
program, but attendant effects on program affected
by a trade-off of resources made to provide the
experimental program.

The twelve volumes of the tri-county collec-
tion give comprehensive coverage of curricular
areas that assists school districts in developing

goals and evaluation programs for almost every type of program commonly offered in the public schools.

Teacher Education

"Competency based teacher education" is performance oriented. It is concerned with developing specific skills and knowledge useful and necessary in good teaching. Among the important skills a teacher in training can acquire are the ability to select appropriate educational goals, formulate plans for their attainment, and evaluate student progress in terms of goals. The tri-county goal collections provide an ideal resource for helping prospective teachers and teachers in service to acquire these skills. The coding of goals in terms of values, concepts, and the various subcategories of knowledge and process permits exploration of sophisticated planning methods to insure balance among types of learning represented in an instructional plan, experimentation with interdisciplinary planning, and examination of learning rationale.

Diagnostic-Prescriptive Instruction

There is intense activity on the part of publishers and educators to produce diagnostic-prescriptive learning systems for use in classrooms. Criterion-referenced tests are a part of this general movement, aimed at providing teachers and students more clearly-defined relationships between goals, learning experiences, and evaluations. The tri-county goal collections provide yet another resource for developing diagnostic-prescriptive mastery learning approaches, both programmed and teacher managed.

It should be pointed out that goals in these collections are defined at levels that are both discrete and general, and that many would require reduction to more specific levels of definition to serve effectively in instructional diagnosis and prescription.

Tri-County Base of Participation and Support

Although the idea for the Project originated in the Evaluation Department of the Portland Public Schools and the first work of defining program goals was done there, it was evident that to launch upon the larger undertakings just described would involve a degree of financial and personnel support that could not be achieved with Portland's resources alone. Involvement of all districts in the tri-county area appeared to be the most logical way to secure the needed financial and personnel resources. This proved feasible because of the relatively dense and compact population of the region. Three intermediate education district offices provided leadership and services, and the excellent teaching staffs of the urban and suburban school districts offered a fine resource for staffing the numerous committees required for the work.

Careful measures were taken to secure highly qualified teachers for writing the goals of the collections. Inservice training sessions were given in writing goals of the type desired. These were held prior to the goal-writing workshops and teachers worked under the close supervision of subject matter specialists and project personnel. One of the major benefits to participating districts has been the training in goal-

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based planning their teachers received which has
enabled them to assume leadership roles in their
districts.

In the first year support came from the
budgets of the Portland School District, the
three intermediate education districts, a
small grant from the Regional USOE Office, and
a small grant from the Oregon Board of Education.
In the second year these sources of funding
were continued, but in addition, school districts
throughout the tri-county area supported their
own teachers who were selected for participation
in the Project. In the third year, increased
support from the state education departments of
Oregon and Washington supplemented that of local
and intermediate education districts. From these
contributors, budget resources were built from
approximately $30,000 in the first year to
around $80,000 in the third year. In-kind con-
tributions of time and service have been almost
triple the budgeted resources in each year.

Content and Form of the Goals

Types of Goals

Three major goal types have been identified
and coded in the collections: knowledge, process,
and value. These form the basis for a set of
sub-types as described below.

Knowledge and process goals. Goals were
classified as knowledge or process depending upon
whether they deal with something that is to be
known or something the student is able to do.
These goals, therefore, begin with the words,
"The student knows..." or "The student is able
to..."

By providing both knowledge and process
course goals, the Tri-County Project offers al-
ternative learning outcomes of both the tradition-
al meaningful-reception/content-mastery type and
the increasingly important rational thinking pro-
cess type. The increasing need for the latter
type of goal is supported by the following obser-
vations: (1) Comprehensive mastery of the facts
in most fields is doubling in something less than
ten years. By the time one knows "the facts" a
new set has emerged. (2) "Established" facts
change causing many fact-bound curricula to be-
come obsolete during the approximately five-year
lag between their conception and their widespread
dissemination. (3) Social mobility and true
cultural pluralism make it increasingly difficult
to identify the "important" facts. (4) Rapid
social change makes it increasingly difficult to
use the needs of students as criteria for select-
ing important facts since future needs will be
very different from today's needs.

The influence of these factors is more or
less according to the nature of the discipline.
the "facts" about the structure of the natural
number system in mathematics are not subject to
change. The "facts" about the state of develop-
ment of treatments for cancer in health are open
to rapid evolution. In all discipline fields,
however, for a given teacher, group of students,
and situation there is a best combination of
facts to be remembered and processes to be learn-
ed. By offering both knowledge and process
learning outcome alternatives, the Tri-County
Project provides a resource for the finding of
that combination.

Twelve categories of knowledge have been used in classifying the course goals. Five basic process categories have been tentatively identified: communication, inquiry-problem solving, production, service, and human relations. However, only one, inquiry-problem solving, has been used in coding the collection. Over seventy inquiry-problem solving sub-elements have been identified under the following headings: acquiring information, validating information, organizing information, interpreting information, using information to produce new information, acting upon the basis of information, and communicating information.

The knowledge and inquiry-problem solving process categories are represented in Tables A and B following. It will be noted that these classifications owe a partial debt to earlier researchers; notably, Benjamin Bloom, David Krathwohl, Robert Glaser, Henry Walbesser; and Ralph Tyler in Education; Robert Gagné and Robert Miller in Psychology; Jean Piaget and Jerome Bruner in Child Development; and others. Major differences appear, however, in the manner in which the categories are organized and in their content. This is in large part due to validation and revision from applying our original a priori categories to 15,000 goals from a variety of areas. Notice, for example, that the knowledge categories do not deal with knowledge of generalizations as a basic cate-

gory, but rather assume that any goal representing a generalization must also deal with one or more of the basic categorizations. Generalizations as a class of knowledge are therefore given superordinate status and divided into two classes: principles and laws, and simple generalizations. Also, notice there is no category of knowledge of specific facts as found in Bloom, for we have been able to subsume all such goals under the basic ten categories. New categories not found in Bloom include knowledge of properties, parts, characteristics, features, elements, dimensions; knowledge of contexts, locations, orientations; knowledge of operations, methods, functions; knowledge of causes and effects including costs and benefits, advantages and disadvantages; and knowledge of relationships that are not cause-effect.

Perhaps the most significant departures from Bloom concern the process categories under problem solving and inquiry. First, the entire taxonomy is intended to represent standardized or conventional processes of problem solving and inquiry that can be taught and learned rather than psychological processes as is the case in Bloom's handbook on the cognitive domain. This difference is important to teachers who have found it difficult to deal with learning goals within the context of Bloom's taxonomy, because it is not clear how descriptors of psychological processes can be treated instructionally.

Table A

Knowledge Categories

G1   Principles and Laws

G2   Simple Generalizations

K1   Conventions: Name and Nomenclature

K2   Conventions: Symbols, Rules, Standardized Processes, Definitions

K3   Properties, Parts, Characteristics, Features, Elements, Dimensions

K4   Trends and Sequences

K5   Similarities and Differences, Discriminations, Classifications

K6   Contexts, Locations, and Orientations

K7   Operations, Methods of Dealing with, Functions

K8   Cause and Effect Relationships (Costs and Benefits)

K9   Criteria or Standards

K10 Non Cause-Effect Relationships

Table B

Inquiry-Problem Solving Processes

P1   Input.   Acquiring Information

                      P11   Viewing
                      P12   Hearing
                      P13   Feeling (tactile)
                      P14   Smelling
                      P15   Tasting
                      P16   Using sense extenders
                      P17   Using internal sensors of emotion

P2   Input   Insuring Validity and Adequacy
      Verification

                      P21   Evaluating authoritativeness of sources
                      P22   Evaluating logical consistency and accuracy
                      P23   Evaluating relevance to desired learning purposes
                      P24   Evaluating adequacy for acting or deciding
                              (comprehensiveness and depth)

P3   Preprocessing   Organizing Information

                      P31   Labeling, naming, numbering, coding
                      P32   Recording, listing
                      P33   Classifying, categorizing, grouping, selecting according
                              to criteria
                      P34   Ordering, sequencing
                      P35   Manipulating, arranging, transforming, computing
                      P36   Estimating
                      P37   Summarizing, abstracting

P4   Processing I   Interpreting Information (drawing meaning from data)

                      P41   Decoding verbal and non-verbal symbols (reading and
                              literal translating)

P42 Inferring, interpolating, extrapolating
P43 Analyzing
P44 Associating, relating, equating
P45 Comparing, contrasting, discriminating
P46 Synthesizing
P47 Testing against standards or criteria
P48 Generalizing

P5   Processing II   Using Information to Produce New Information

P51 Theorizing, predicting
P52 Formulating hypotheses
P53 Testing hypotheses
P54 Revising hypotheses

P6   Output I   Acting on the Basis of Information

P61 Reacting
P62 Making decisions
P63 Solving problems
P64 Restructuring values (adapting, modifying)
P65 Restructuring behavior (adapting, modifying)
P66 Encoding verbal and non-verbal symbols prior to communication
P67 Creating on the basis of knowledge and process

P7   Output II   Communicating Information

P71 Vocalizing (non-verbal)
P72 Gesturing, moving
P73 Touching
P74 Speaking
P75 Writing
P76 Using art media (painting, drawing, sculpting, constructing, etc.)
P77 Dramatizing
P78 Singing, playing instruments
P79 Dancing

The project is attempting to define process learnings that can be taught within the respective categories. We know that many are specific to particular fields of inquiry and that some, such as the formulation of hypotheses and statements of sound generalizations, are applicable in any field or inquiry. In the revised science collection such learnings are defined and distinctions have been made between those that are specific to the discipline and those that are of universal character. The universal process goals identified in the science collection apply to other areas of problem solving and inquiry including social science.

Since taxonomies have not been developed for the other main categories of process tenta-tively identified, no detailed reference will be made here to communication, production, service, and human relations processes.

Value goals. In the most recent collections (science, language arts, industrial education, home economics, business education, and second language) explicit value goals have been made a part of the collections. Similar goals will be added as the other six collections are revised over the next two years, and several of them already deal with values in terms of knowledge and process goals. Goals of two types are included: (1) goals relating to the process of value clarification, and (2) goals representing values that might be fostered in the context of the discipline. Included among the latter types

of goals are those thought to be most uniformly and consistently approved by society as conditions supporting the major aims of the discipline, elements or processes of the discipline esteemed by its experts, or means of satisfying human needs the discipline provides.

Value clarification goals are concerned with such matters as ability to understand the cognitive and emotional bases that underlie personal and social behaviors, the informational basis of beliefs, opinions, and judgments, and ability to develop and apply logical criteria for making judgments and taking action.

Social problems and issues provide an important medium for clarifying values, and a set of issues useful for this purpose are included in the science collection as an appendix.

Levels of Generality of Goals Chosen for Development - Program and Course

In public K-12 education there are many levels of interest, resource allocations, and activities. These include: national, state, local, school, classroom, individual teacher/ student pairings, and individual students. A goal statement which is appropriate to the interests, resource allocations, and activities at, say, the level of the state school system is not appropriate for helping an individual child move forward on a given day.

Four levels of goals will be discussed here. These are system, program, course, and instructional. For reasons explained later, only the program and course levels are the immediate concern of the Tri-County Project.

The board of education is responsible for approving statements of purpose at the system level (level 1). These statements generally reflect the expectations of the community and the larger societies of the state and nation regarding the kinds of learning that should result from school experience. The best of such goal statements:

A. Are sufficiently general to encompass all outcomes within relatively few statements. ·

B. Are expressed in terms of learnings serving the dual needs of the individual and his society.

C. Provide clear direction to program planners in establishing programs and defining curricular goals.

D. Are measurable in terms of broad indicators.

They are employed mainly to inform the citizenry of the broad aims of the schools and to elicit their financial and political support.

Examples of system goals are:

Every child respects the rights of every other child regarding his possessions, his physical safety, and the free expression of his ideas.

Every child is able to read and to comprehend what is read within unavoidable constraints of ability and physical and mental health.

Every child is able to set goals for himself, formulate plans for attaining them, execute his plans, and evaluate his efforts.

Every child attains that level of self-confidence and confidence in others required for personal and social effectiveness in this society.

Every child possesses sufficient knowledge of the facts and principles of science, technology, government, and human relations to make effective decisions as a person and as a member of this society.

Every child is able to communicate with others, both orally and in writing, in a manner that satisfies his own need for expression and the requirements of those under whom he may become employed or receive further education.

Every child is able to make effective use
of the resources of the school and community
in pursuing his learning interests.

A second level goal is required to elaborate
the meaning of each district level goal, and to
move from the political to the educational domain.
Such goals, which we designate as program level
goals, should be sufficiently comprehensive to
provide for the full implementation of any dis-
trict goals and should be sufficiently precise
to provide a basic reference for formulating the
goals of courses and other units of educational
experience. These goals may be chosen and formu-
lated by curriculum specialists at the district,
area, or even school level using the Tri-County
Project alternative program goals as a resource.
From 8 to 30 alternative program goals have been
produced in each of the twelve subject areas
addressed thus far by the Project. Program
level goals are used as a basis for defining the
outcomes of an entire area of instruction such
as mathematics, language arts, or health educa-
tion.

Examples of program level goals are:

Students are able to spell all words enjoy-
ing common usage in the English language.

Students are able to employ elements of
structure of the English language appropri-
ately in their oral and written expression.

Students are able to employ the conventions
of punctuation appropriately in written
expression.

Students are able to locate appropriate
references in doing research, to document
such references according to common conven-
tions, and to employ the findings appro-
priately in support of a conclusion.

Students are able to reach conclusions based
on the weighing of relevant facts and author-
itative opinion, and to alter conclusions
where new evidence indicates this should
be done.

The second level of specification should be
sufficiently general as not to suggest specific
grade placement, but as had been stated, specific
enough to provide a sound basis for generating
the subgoals of the courses and other units of
educational experience that will comprise the
program.

The third level of goal specification pro-
vides the basis for organizing educational ex-
periences within schools to accomplish the pro-
gram level goals. In this process, program level
goals must undergo both an elaboration of detail
and a differentiation in terms of learning levels.
Typically, these will be the learning goals of
courses (high school and departmentalized ele-
mentary schools) and areas of instruction (non-
departmentalized or non-graded elementary
schools). These goals may be chosen and formu-
lated using the Tri-County Project alternative
course goals as a resource and the chosen program
as a guide. From 750 to 4,500 course goals have
been produced in each of the twelve subject
matter areas.

Examples of course goals taken from the music
collection are:

The student knows that rhythm is the primary
element in music that elicits spontaneous
physical response.

The student is able to identify, describe,
and distinguish among rhythmic features in
music he hears.

The student is able to construct a metric
system for music.

The student is able to associate meter in
music with meter signature and conducting
patterns.

The student is able to devise a system for
notating sound durations.

The student knows the conventional ways music is rhythmically represented in notation (e.g., accents, main beats, bar lines, sub-divisions of beats, time signature, notes and rests, ties).

It is the prerogative and responsibility of the teacher and only the teacher to elaborate from level 3 to level 4, the instructional goal level. It is the teacher who must create instructional methods appropriate to carry out the planning done with the help of course goals in such a way as to satisfy the particular needs of the children in a given class or school. The very essence of teaching is combining a thorough understanding of desired outcomes with a perspective adaptation of methods to help children of many kinds and conditions achieve those outcomes. Any teacher who is provided a set of course goals should be able to design instructional goals and select appropriate methods of achieving them.

Figure 1

PLANNING	System Goal:	The student knows and is able to apply basic scientific and technological processes.	
	Program Goal:	The student is able to use the conventional language, instruments, and operations of science.	
	Course Goal:	The student is able to classify organisms according to their conventional taxonomic categories from observations, illustrations, or descriptions.	To be found in the course goal collections
	Instructional Goal:	The student is able to correctly classify as needleleaf, cuttings of the following trees: hemlocks, pines, spruces, firs, larches, cypresses, redwoods, and cedars.	
MEASUREMENT	Behavioral Objective:	Given cuttings of ten trees, seven of which are needleleaf, the student is able to correctly identify which of the trees are needleleaves.	Not integral part of Tri-County Project System of Goal-Based Planning
	Performance Objective:	Given cuttings of ten trees, seven of which are needleleaf, the student is able to correctly identify at least six of the seven as belonging to the class of needleleaves.	

Writing the Goals

The program level goals, as mentioned above, were initially written by curriculum specialists in each field and were revised by the course goal developers in the summer workshops. The criteria produced by the project planners and supervisors to guide the curriculum specialists in producing program goals are given in Figure 2.

Figure 2

Program Goal Criteria

1. Is the goal an important learning in the opinion of the public, the professional educator, and the student?

2. Is the meaning of the goal clear and concise?

   a. Is its meaning apparent to the general public?

   b. Do the words used have a common dictionary meaning?

   c. Is it parallel in construction with the other goals in the statement?

   d. Is the form consistent?

   e. Is it brief and to the point?

3. Is the goal expressed as a learning outcome?

   a. Does it identify the outcome of the learning rather than the method used to attain it?

   b. Can one identify what the student will be able to do, know, or value?

   c. Are the limits of the desired outcome clear?

4. Is the goal readily subdivided into goals suitable for course planning?

   a. Is the meaning of the goal so clear that its component meanings are readily derived from it?

   b. Can subpoints be generated which adequately represent the total meaning of the program goal?

5. Can behavioral indicators be identified that are likely to be agreed upon by professionals, the public, and students as representing the attainment of the goal?

6. Is the goal an important learning in terms of the needs of society and the learner.

7. Does the totality of program goals provide a comprehensive description of all learnings in the program?

The course goals were written by groups of teachers and curriculum specialists during the summer workshops after intensive (and continued) training in course goal writing. This work included a review of existing goal writing efforts and collections. The criteria used by the project planners and supervisors to guide the course goal developers in producing course goals are given in Figure 3.

Figure 3

Course Goal Criteria

1. Is the educational outcome stated potentially significant?

2. Does the goal begin with "The student knows..." if it is a knowledge goal and "The student is able to..." if it is a process goal?

3. Is the goal stated in language that is sufficiently clear, concise, and

appropriate? (Can the goal be stated in more simple language and/or fewer words?)

4. Does the goal deal with a single learning outcome (beware of "and")?

5. Can learning experiences be easily thought of that would lead to the goal's achievement?

6. Do curricular options exist for the goal's achievement? (Methodology should not be a part of the learning outcome statement.)

7. Does the goal clearly contribute to the attainment of one or more of the stated program level goals in its subject area?

8. Can the goal be identified with an approximate level of student development?

9. Is the goal stated so that evaluation criteria that indicate its attainment can be easily identified?

In producing program and course goals in twelve basic K-12 subject matter areas in accord with the two sets of criteria a ve, the Tri-County Project was extending the work of Bloom, Walbesser, Mager, and others. In the next section of this report we shall examine the coding systems developed to make these collections useful to clients with widely divergent curricular orientations. In this relatively uncharted area lies the chief innovative contributions of the Project.

How to Read and Interpret the Materials in the Goal Collections

Following this introduction there are four

sets of indexes for retrieving course goals indicated by four different colors: knowledge and process classifications, yellow; program goals, blue; career education program goals, green; and subject matter taxonomy, pink.

Numbers and/or letter codes on the course goals refer to the materials on the colored pages. The colors are to help you find the meaning of a code found beside a course goal. Below is a description of how to read and interpret a page of course goals and its codes. A sample page from the music collection is shown in Figure 4.

Figure 4

MUSIC

(1)
2. Reading Music (Orientation)

COURSE GOALS	Level P/I/U/H	Knowledge or Process Classifications (See Yellow Section)	Subject Area Program Goals (See Blue Sec.)	Career Ed. Program Goals (See Green Sec.)	Other Related Content Taxonomy Headings	(C) Concept/ (V) Value Words
	(2)	(3)	(4)	(5)	(6)	(7)
2.2 Pitch						
The student knows the conventions used to denote intensity, highness and lowness of pitch (e.g., large to	P I	K2 K7	1a 2a 2b		1.21	(C) Pitch

Figure 4 (continued)

MUSIC

2. Reading Music (Orientation)   (2)   (3)   (4)   (5)   (6)   (7)

COURSE GOALS	Level P/I/U/H	Knowledge or Process Classifications (See Yellow Section)	Subject Area Program Goals (See Blue Sec.)	Career Ed. Program Goals (See Green Sec.)	Other Related Content Taxonomy Headings	(C) Concept/ (V) Value Words
2.2 Pitch small, left to right, up and down as in acoustical and conventional organization of tones).						
The student is able to distinguish like and unlike patterns of pitch in configuration of visual symbols.	P I U H	P33 P41 P45	1a 2a 2b		1.21 1.512	(C) Pitch (C) Symbols (V1) Aesthetic perception
The student knows that pitch is indicated by letter names and is represented on the grand staff by symbols placed on the lines and/or spaces.	P I U H	K1 K2	1a 2a 2b		1.21 6.12	(C) Pitch (C) Symbols
The student knows the function of pitch symbols used in conjunction with notes on the grand staff (e.g., clef signs, ledger lines, sharps, flats, natural signs, 8va).	I U H	K2 K7	1a 2a 2b		1.21 6.12	(C) Pitch (C) Symbols
The student knows the functions of organizational devices in pitch nota-tion such as key signatures, chord designations, slurs and clef changes.	I U H	K2 K7	1a 2a 2b		1.23 1.322 6.12	(C) Pitch (C) Symbols
The student knows that any pitch may be indicated by various enharmonic spellings (e.g., F#-G , E - F).	I U H	K2	1a 2a 2b		1.21 1.321 6.12	(C) Pitch (C) Symbols
The student knows the reasons for a difference in enharmonic spelling of a tone in musical writing (e.g., sharps in chromatic scale going up, moving voices in chord resolutions to a different scale degree.	U H	K2 K8	1a 2a 2b		1.23 1.323 6.12	(C) Pitch (C) Symbols

Subject Matter Taxonomy Headings

The first and last sections from a subject matter taxonomy are given in Figure 5. The taxonomies of the twelve subject areas were first written by curriculum experts as a framework for guiding teachers in writing goals, and were revised by the teachers as they produced the goals. By looking through the taxonomy at the front of any one of the collections, a user can find what topics are covered and turn to the topic in which he is interested. Also, a taxonomy heading may be used along with one or more of the other codes to retrieve subsets of goals from the computerized system.

Figure 5

Music Subject Matter Taxonomy

1. The Elements of Music
   1.1 Rhythm
       1.11 Duration
       1.12 Pulse
       1.13 Accent
       1.14 Meter
       1.15 Tempo
       1.16 Augmentation and diminution
       1.17 Polyrhythms

   1.2 Melody
       1.21 Pitch
       1.22 Intervals
       1.23 Scales

   1.3 Texture
       1.31 Monophony, polyphony, homophony
       1.32 Harmony and tonality
            1.321 Intervals
            1.322 Chords
            1.323 Chord progression
            1.324 Cadences
            1.325 Modulation
       1.33 Polytonality and atonality

6. Creating Music
   6.1 Knowledge and process in creativity
       6.11 The compositional framework
       6.12 Composition
       6.13 Rehearsal and performance
       6.14 Evaluation
       6.15 Other dimensions in creativity

7. The Role of Music in Society
   7.1 Arts
   7.2 Cultures
   7.3 Careers
   7.4 Technology

8. Valuing and Evaluating Music
   8.1 Formulation of musical values
       8.11 Affective response
       8.12 Aesthetic response
   8.2 Bases for comparing different kinds
       of music
   8.3 Bases for judging (evaluating) the
       worth of music
   8.4 Commitment to music

Course Goals

In the left most column of Figure 4 under the heading 2.2 Pitch are the course goals themselves. Some goals in this column may have a bracket to their left. The goals inside the bracket are logically related and may be viewed as a unit.

Level P/I/U/H

This code provides an estimate of the level or levels at which the learning is appropriate. Here appropriate level has been interpreted as "grade" level with "P" referring to K-3, "I" to 4-6, "U" to 7-8, and "H" to 9-12. In several collections where the formal instruction is concentrated in high school (e.g., business education), it was decided to interpret level as level of "skill" not "grade." Thus, P/I/U/H refers to four possible levels of skill attainment independent of grade location. The meaning of level in each collection is discussed in its introduction. Many times the nature of the goal suggests continued learning over several levels in which case all levels involved are coded. These levels are approximate, for it is evident that the appropriate time for learning varies with the interests and abilities of students and the organization of the school.

Knowledge or Process Classification Systems

The classifications referred to are described at the front of the book on the yellow pages. All goals are roughly classified as knowledge or process, or values, depending upon whether they deal with something that the statement is able to recall, something the student is able to do, or the student's value-attitude processes. All goals, therefore, begin with the words, "The student knows..." or "The student is able to..." or "The student values..."

The familiar knowledge/process distinction is further subdivided into twelve knowledge (e.g., K8) and numerous process (e.g., P45) categories

to which all course goals have been coded. The values goals have not yet been similarly classified and are simply coded as "V".

Subject Area Program Goals

In this column we find the number of one or more of the music program goals found in the front of the music book on the blue pages. This type of goal was discussed earlier. Here it is enough to recall that program goals are more general than course goals and that a set of program goals should constitute a description of the major learning outcomes expected from a program. Each course goal is cross coded to the number of the program goal(s) to whose attainment it is more directly related.

Career Education Program Goals

In this column we may find the code of one or more of the career education program goals found in the front of the book on the green pages. Career education, as envisioned by the coders, concerns the total life of an individual including life roles as a citizen, user of leisure, and family member as well as worker. Nearly every course goal bears at least an indirect relationship to career education viewed in that manner. Only those course goals, however, which have a "direct" relationship to a career education program goal have been coded to that program goal.

A "direct" relationship was interpreted to exist if a teacher could easily and naturally attach some career meaning to the instruction relating to that course goal and thus readily integrate the teaching of career education into the teaching of his subject. The restriction of the codings to direct relationships as just defined means that codings to career education program goals are relatively rare in some parts of the course goal collections.

A teacher may use this coding as a help in integrating a discipline and career education and vice versa by asking himself the following question: "When I am teaching this goal, is there some aspect of career education that can usefully and naturally be brought to the attention of my students?"

Besides the cross coding to the appropriate career education program goal of every course goal bearing a direct relationship to career education, the six most recent collections (and several of the prior collections) have a section concerning the relationship of career education to the discipline. In the revisions during the next two years those collections lacking such a section will have one added. In this section are included explicit learning outcomes to help effect integration of career education and the discipline.

The career education code used with the discipline goals and the career education goal sections makes them the first operational resource for "integrating career education and the rest of the curricula." These resources greatly facilitate planning for making learning more effective, motivated, and useful.

Other Related Content Taxonomy Headings

This code is provided since goals are often rightly classified under more than one subject

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heading. The numbers in this column refer again to the subject matter taxonomy on the pink pages at the front of the book.

(c) Concept/(V) Value Words

This code is one of the newest and potentially most useful ways to describe and retrieve sets of goals, especially for interdisciplinary learning. Words designating major concepts or values to which a goal relates directly are written beside that goal in this seventh column. Words identifying concepts are preceded by "(C)" to distinguish them from the value words which are preceded by "(V)".

Words chosen to characterize values represent constellations of behaviors normally described by such words. Thus, to value "freedom" connotes certain behaviors associated with the ideal state. Likewise, a word like honesty characterizes a set of behaviors which viewed from a societal perspective characterize an individual as "honest."

Although explicitly singling out the concepts and values dealt with in goals is theoretically very interesting and useful, in practice it is very difficult since no valid lists of such concepts and values exist yet in the various subject areas. Such lists are being developed by the Project but meanwhile the concept and value word codings should be viewed as experimental and subject to change and refinement.

A final code is the Index Word. Although it does not appear on the printed pages, it is keyed to each goal for retrieval in much the way documents are coded for retrieval in the familiar ERIC retrieval system. Users will have available

lists of index words by discipline and across disciplines. The index to the course goals found at the back of each book was generated from this code.

Organization of the Project

It is impossible in this limited space to relate in detail the roles played and the numerous participants involved in the effort to achieve the project goals. Figure 6 summarizes the major functions and the main classes of participants for one year of the project, and shows their interrelationship. A few of the classes of participants not discussed elsewhere will be singled out here for special brief comment.

The steering committee is the policy making body of the Project. By its representation it has guaranteed a broad base of support and involvement in the Project so that its outcomes are of potential use to every type of K-12 teaching/ learning environment--rural, suburban, and urban. Besides providing funding and policy direction they have kept constantly before the project workers the necessity for outcomes of real use to teachers and for means to make them readily accessible.

The media specialists reviewed each of the twelve collections, adding goals that concern the relevant print and non-print materials available to support the learning of each subset of goals. In this way they have represented the first stage in developing the relationships of the goals to materials and curriculum.

The State Board of Education in Oregon and the Office of the Superintendent of Public Instruc-

tion in Washington, through their administrators and specialists, provided financial, moral, and professional support.

By-Products of the Project

One of the major side effects of the Tri-County Project is the development of training materials for objective-based educational planning and the evolution of a core of teachers and others from throughout the tri-county

area sophisticated in the use of goals as a resource for improving the teaching/learning system. In the course of developing the course goals produced so far, extensive training was undergone by the more than 200 developers and their support personnel in the courses of which the assumptions, definitions, and procedures of the project were refined and extended.

Figure 6

PROJECT PLANNING
and
COORDINATION

MASTER CHART

FUNCTIONS — Phase I: Funding & Developing | Phase II

Participant	1 FUNDING	2 DEVELOPING	3 Selecting Taxonomy Writers	4 Writing Taxonomy	5 Revising Program Goals	6 Selecting Course Goal Writers	7 Assembling & Organizing Existing Collections	8 Defining Criteria & Formats	9 Training Goal Writers	10 Goal Writing	11 Goal Editing	12 Publishing Critique Edition	13 DISSEMINATING GOALS & COLLECTING FEEDBACK (Newsletter)	14 EVALUATING & REVISING GOALS	15 DEVELOPMENT OF TEST ITEMS & INSTRUMENTS	16 COMPUTERIZING & ASSESSING	17 PUBLISHING EXTERNALLY	18 DEVELOPING THEORY & INTRODUCTORY MATERIALS	19 RELATING GOALS TO MATERIALS & CURRICULUM
1. *Steering Committee	X	X	X		X		X					X		X	X	X	X	X	X
2. Project Coordinators	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3. Data Processing																		X	
4. Metropolitan Area Testing Program Board	X														X	X			
5. Taxonomy Writers		X		X	X	X	X	D	O	O	X							O	O
6. Goal Developers								X		X	X					O			O
7. Goal Editors										X	X				O	O			O
8. Media Specialists							X			X	X			X	X				O
9. Career Education Specialists							X			X	X				X				
10. District Goal Representatives	X	X	X			X	X							X		O			O
11. Feedback Review & Goal Revision Committee														X					
12. Evaluation Instrument Review & Revision Committee																X		O	O
13. Curriculum Development Comm.																			X
14. Distirct Curriculum Councils		X	D	O		O				O	O			X	O	O			X
15. State Board of Education	X	X		O	O	X	O		X	O	X			X	X	O			X
16. Teachers															X	X	X	O	X

KEY:
X = Certain Responsibility
O = Optional Responsibility

*STEERING COMMITTEE
  Tri-County Curriculum Dept. Representatives
  Tri-County Evaluation Dept. Representatives
  Tri-County Data Processing Dept. Representatives

Dissemination

Up to the present only limited printings of critique editions of the course goals have been distributed for criticism and review, and only a pilot version of the computer retrieval system is operational. In response to demand all twelve volumes of the goal books are being made available at cost from Commercial-Educational Distributing Services, P.O. Box 8723, Portland, Oregon 97208. Northwest Regional Educational Laboratory is disseminating information about the Project.

During the coming year the Project will concentrate upon developing the measurement dimension, validating and revising additional collections, and developing support materials. As these materials and systems are tested and perfected they will be made available.

The Project and its products are resources to be used by decision makers to fulfill their responsibilities more efficiently and effectively. It is envisioned for instance that school systems will select those goals they believe appropriate to the interests and abilities of students in their classes. Each selection will be made with the approval of the next higher echelon of authority; and once made will constitute the goals for which the school or teacher assumes responsibility. Nothing in this process is intended to preclude statement and use of goals not included in the collection, provided they are approved by the next higher echelon of authority. The purpose of making the collection is to expose to view a full range of learning possibilities, stated well enough to be helpful to classroom teachers in planning learning experiences for students.

Validation of the Goals

All course goal collections are first released as critique editions for limited circulation specialists. After one revision is made based on feedback from users, a second (revised) edition will be issued. This has already occurred with language arts and science.

An important step in this process is formation of a Review and Revision Committee in each of the twelve subject areas. Each committee will have experts in the discipline assigned to validate the content of the course goals. In this way, it is hoped to authenticate the information in collections and to eliminate bias. As previously noted, the science and language arts collections were the first to be revised using this process.

Continual Update and Revision

Updating and revision by the committees will be continual. Since the course goals are an open-ended collection of alternatives, there will be no difficulty in continually adding to, deleting from, and revising the goals to make them better reflect the range of learning outcomes any teacher might strive to attain.

Curricular Implications

A general concept of learning, and hence of curriculum design, has been assumed in the structure and coding of the goal collections. Processes such as communications, problem solving, inquiry, production, and human relations are normally carried

out within some kind of a learning context, and the interaction of these processes with the learning context produces knowledge and values. The components of this curriculum design, in terms of goals, are the various process learnings that can be developed within the learning context under the supervision of the teacher, and the knowledge and values outcomes that are desired and which will normally govern to a large extent the selection of the learning context.
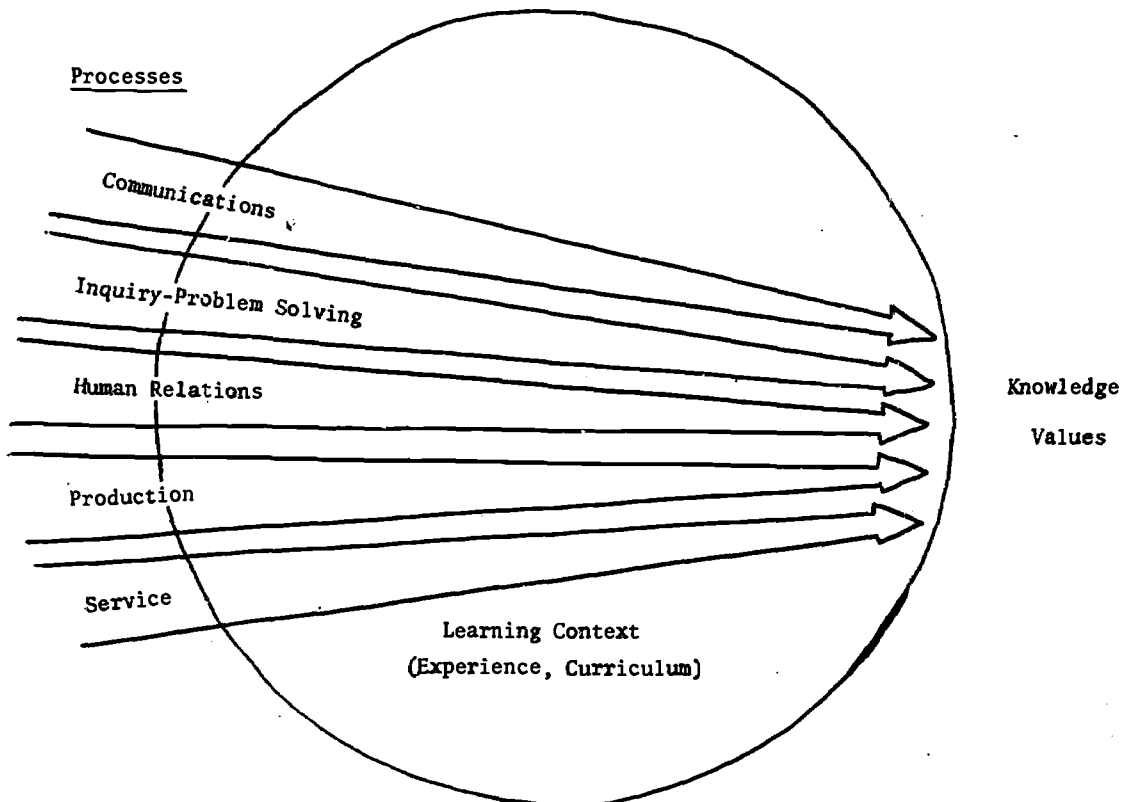
The following schematic (Figure 7) illustrates these components and their relationships. The learning context in this arrangement is in effect the curriculum. It is the set of structured learning experiences provided by the school, the teacher, or the student himself, under teacher supervision.

In most curriculum development work in the

past, too much attention has been paid to prescribing the specific learning experiences that it is believed will produce specified objectives. In fact preoccupation with curriculum has overshadowed the attention given to defining worthwhile learning, probably to the detriment of both.

By reversing this emphasis and stressing knowledge of learning outcomes on the part of the teacher, it is possible to achieve these advantages: teachers can employ those methodologies they are most effective in using; teachers are free to select learning experiences that are relevant to the interests of students; teachers can encourage students to find their own methodologies for achieving learning goals; and teachers and students can select learning experiences uniquely available in their own communities and neighborhoods.

Figure 7. Goal Based Curriculum Model

Processes

Communications

Inquiry-Problem Solving

Human Relations

Production

Service

Learning Context
(Experience, Curriculum)

Knowledge

Values

Areas in which goals currently being defined:

1. Universal inquiry-problem solving processes (in science collections)

2. Knowledge and discipline-related processes of communication, inquiry-problem solving, and production (twelve subject disciplines)

3. Values (indirectly through coding to knowledge and process goals thought to have a supporting relationship, and directly in the form of values goals)

Areas in which goals yet to be defined:

4. Universal human relations processes

5. Production processes

6. Service processes

Each of these points has significance when we speak of relevance, of individual learning styles among students, and of individual strengths and differences among teachers. All of the above advantages can be lost when curricular experiences are tied too directly and prescriptively to specific goals and objectives.

Measurement Implications

The accountability movement in education has joined hands with the behavioral objectives movement and the momentum attained by this alliance has carried it to the highest levels of state and national policy. The U.S. Office of Education revision of its manual of chart of accounts and its support of experimental PPBS programs under the sponsorship of the National Association of School Business Officials are two illustrations of national level policy attention, and the movement of several state governments towards state PPBS systems illustrates the strength of the movement at the state level.

Although the orientation of beginning PPBS programs in public schools has centered on accounting and budgeting practices primarily, a

substantial effort has been mounted in many states to produce a rational approach to the use of goals and objectives in these systems. In general these efforts have been unsophisticated and crude. The fact that measurement in education is still in a primitive condition no doubt plays a large part in the difficulties now being experienced by those who work toward educational accountability.

Underlying the problems of measurement and evaluation is the absence of a properly developed science of goal and objective formulation in the school systems of the nation. In the absence of systematic and rational approaches to the development of desired instructional outcomes of public school programs, it is not surprising that measurement and evaluation is in its present state because the validity of measurement and evaluation is totally dependent upon their consistency with the goals and objectives of the educational systems to which they apply. One of the goals of the Tri-County Project is to point the way to a more rational theory and practice of goal formulation in the public schools for it is believed that it will not be possible to develop a system

of educational accountability in the absence of this theory and practice.

In the Project there have been four major directions taken toward rational measurement. The first is the defining of clear and measurable learning goals. The second is the development of a hierarchial goal structure that corresponds to the organizational realities of school systems. The third is the analysis of knowledge and process learning to make clear the dimensions of what can be learned and the special measurement requirements of each type of learning.

The Project has already defined evaluation models appropriate for assessment of goals in each of the classes of knowledge and process. These models will be used to guide both psychometricians and teachers in the development of criterion-referenced test items appropriate for measuring each type of knowledge and process. As soon as theoretical formulations relating to values, generalizations, and concepts are refined and consistent, similar work will begin in developing evaluation models and items for those classes of learning.

The fourth and principal measurement direction currently being explored by the Project is the development of a set of test items related to each course goal. This set is to be so comprehensive that any teacher who selects a course goal and translates it into one or more instructional goals will be able to retrieve items, or at least models of items, appropriate to assess the attainment of his instructional goals.

Uses of the Course Goal Collections

We conclude this guide to the course goal

collections with a review of some of the uses to which they can and have been put. This is the crucial test of any educational research and development project -- can it be used to help students?

A primary use of the goals is as a starting point for reviewing what the schools should teach and the materials to be used to support teaching. The logical sequence of discussions about what is important to teach and learn is to move from broad policy goals to program goals to course goals, with appropriate community-board-staff-teacher-student representations at each level. The taxonomic classifications of this collection can serve as a check on higher order goal formulations, and the goals themselves can function as generators of lower order goals and instructional plans.

School systems may also use the collections as a yardstick by which to measure the adequacy of goals and objectives already in use. Goals and objectives of local courses of study and textbooks can be contrasted with the goals in this collection to see how complete they are and how well they provide for different interests, abilities, and levels of achievement. They can also be evaluated for conciseness, clarity, and accuracy using these course goals as models.

Such studies can be undertaken by teachers from all levels of a school system (to assure articulation and philosophic unity); across grade levels, divisions, or high school departments (to assure agreement as to goals and ways and means of attaining them) or by individual teachers.

The Project provides an important resource

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for improving the quality and extent of partici-
pation of students, parents, teachers, school
boards, and other citizens in deciding the mis-
sion of the schools.

Another use of the collection is to provide
a basis for teaching-learning accountability. If
a school approves all or part of the course goals
for its students, grade level, divisional, or
departmental representatives may choose from them
those that are best suited to individual or
group aptitudes and interests.

It is possible for teachers to review goals
with each student and contract for their attain-
ment if a completely individualized program is
desired. Or, it is possible to stake out a set
of goals for target groups (regular classes,
special classes, mini-courses, etc.). In any
event, the goals themselves are sufficiently
explicit that means of teaching them and of e-
valuating their attainment can be devised and
applied individually or to groups to suit the
needs of teachers and management.

Another use of the collection is in the
rewriting and development of courses and curricula.
By making curricular options explicit and shar-
able, the collection can help in the development
of new or modified courses of instruction and the
design or redesign of curricular experiences.
One important example of curriculum development

fostered by this collection is cross-disciplinary
education. This use has been referred to in
detail in the earlier discussion of "Needs to
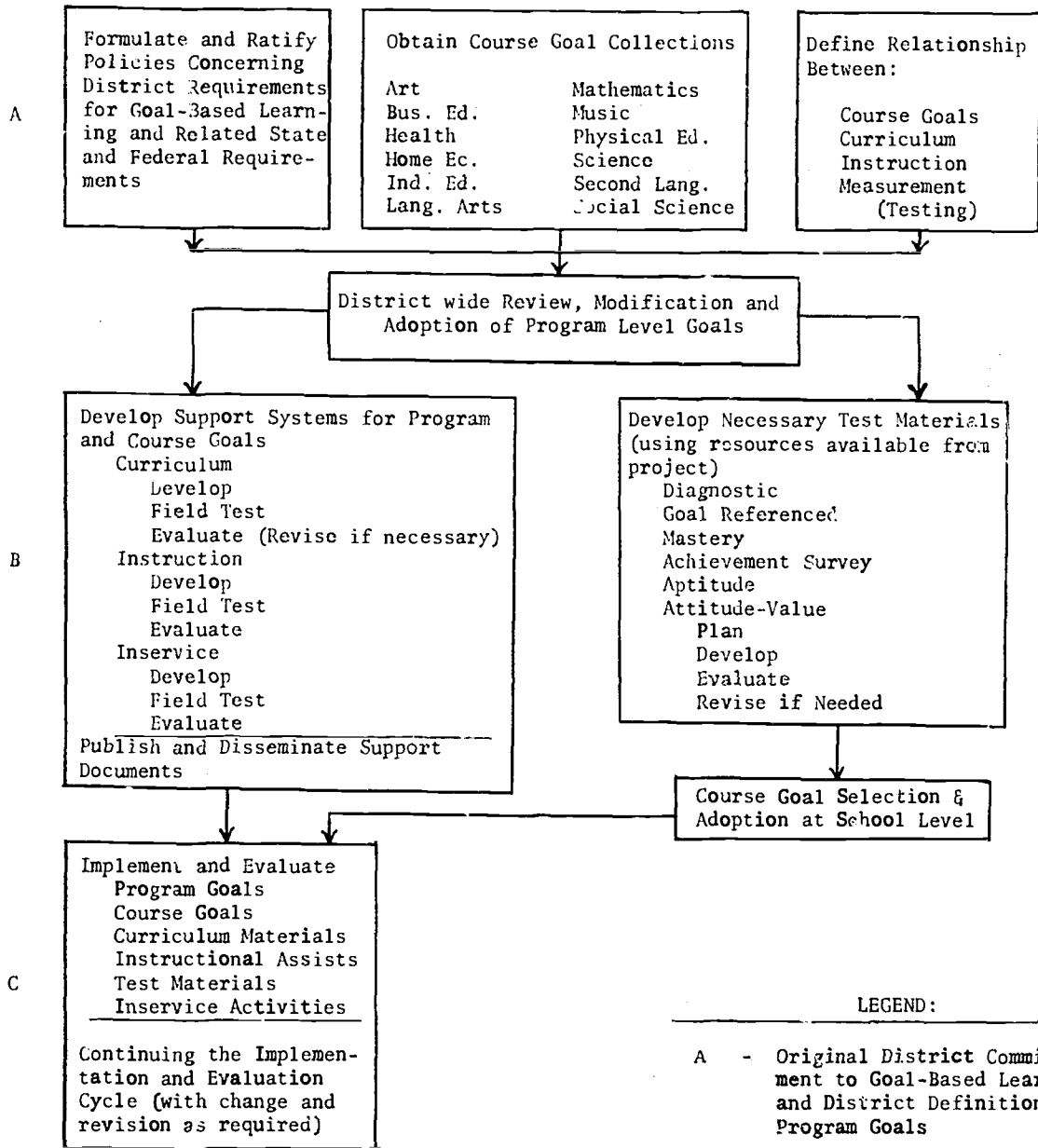Which the Project Responds" (see pages 1-5).

Other uses can be cited, but districts will
discover these. In all of the above activities
districts are encouraged to use the collection
selectively and to add their own goals wherever
this collection is insufficient to their needs.
A broad model of how a district might organize
to develop the capacity to make the above and
other uses of the goal collections is provided
in Figure 8. A more detailed model concerned
solely with the goal definition process is
found in Figure 9. A broad picture of how the
basic elements of a goal-based planning and eval-
uation approach might interact once such an
approach was implemented is given in Figure 10.

Conclusion

The efforts described in this report are
directed to the development of a complete, dynamic,
open system for goal-based learning and evalua-
tion. Such a system will be a useful resource to
all those seeking to improve their understanding
of what should be learned, how it should be
learned, how evaluated, and the application of
that understanding to the growth and development
of our students.

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Figure 8

A Model Overall Plan For District Use of
Course Goal Collections For Goal-Based Learning

A — Formulate and Ratify Policies Concerning District Requirements for Goal-Based Learning and Related State and Federal Requirements

Obtain Course Goal Collections

Art	Mathematics
Bus. Ed.	Music
Health	Physical Ed.
Home Ec.	Science
Ind. Ed.	Second Lang.
Lang. Arts	Social Science

Define Relationship Between:

Course Goals
Curriculum
Instruction
Measurement
(Testing)

District wide Review, Modification and Adoption of Program Level Goals

Develop Support Systems for Program and Course Goals
  Curriculum
    Develop
    Field Test
    Evaluate (Revise if necessary)
  Instruction
    Develop
    Field Test
    Evaluate
  Inservice
    Develop
    Field Test
    Evaluate
Publish and Disseminate Support Documents

Develop Necessary Test Materials (using resources available from project)
  Diagnostic
  Goal Referenced
  Mastery
  Achievement Survey
  Aptitude
  Attitude-Value
    Plan
    Develop
    Evaluate
    Revise if Needed

Course Goal Selection & Adoption at School Level

B

Implement and Evaluate
  Program Goals
  Course Goals
  Curriculum Materials
  Instructional Assists
  Test Materials
  Inservice Activities

Continuing the Implementation and Evaluation Cycle (with change and revision as required)

C

LEGEND:

A — Original District Commitment to Goal-Based Learning and District Definition of Program Goals

B — Development of Support Systems and Building Definition of Course Goals

C — Implementation and Evaluation

eric

Figure 9

Model For Participation in Goal
Defining, Selecting, and Adoption

	Superintendent	Principals	Board of Education	Pupils	Teachers	Curriculum Specialists	Parents	Community
1. Defining and selecting (recommending) program goals				X	X	X	X	X
2. Approving program goals, district level			X					
3. Defining and selecting course level goals		X		X	X	X	X	X
4. Approving course level goals	X	X			X	X	X	X
5. Selecting and defining instructional goals						X		
6. Approving instructional goals		X		X	X			

Figure 10

Basic Elements:
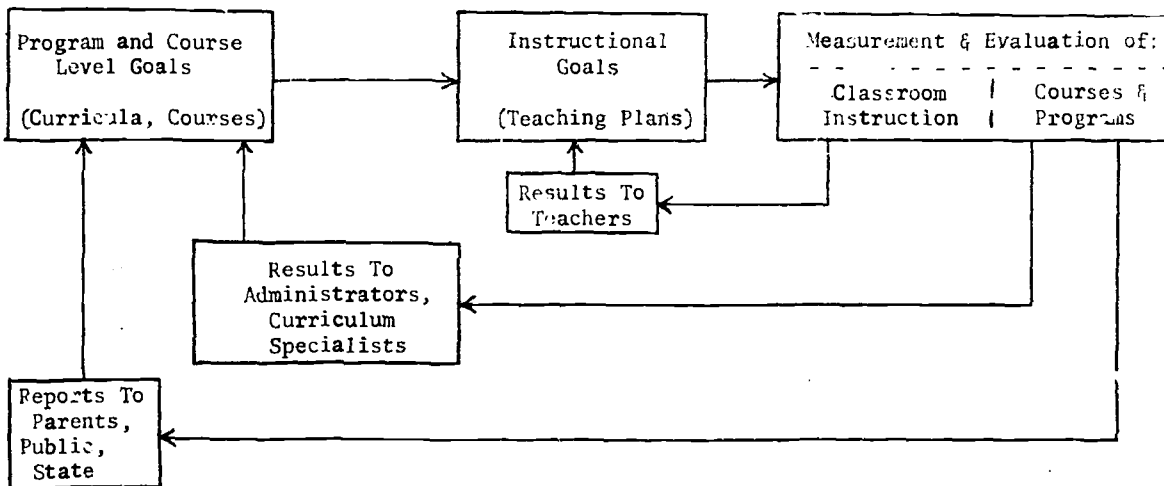Goal-Based Planning and Evaluation

Figure 11

Publications of The
Tri-County Goal Development Project

Course Goals in Art, K-12, Critique Edition

Course Goals in Biological and Physical Science, K-12

Course Goals in Business Education, K-12, Critique Edition

Course Goals in Health Education, K-12, Critique Edition

Course Goals in Home Economics, K-12, Critique Edition

Course Goals in Industrial Education, K-12, Critique Edition

Course Goals in Language Arts, K-12

Course Goals in Mathematics, K-12, Critique Edition

Course Goals in Music, K-12, Critique Edition

Course Goals in Physical Education, K-12, Critique Edition

Course Goals in Second Language, K-12, Critique Edition

Course Goals in Social Science, K-12, Critique Edition

Program Goals and Subject Matter Taxonomies for Course Goals in
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Education, Home Economics, Industrial Education, Language Arts,
Mathematics, Music, Physical Education, Second Language, Social
Science, Career Education, K-12

Introduction to Course Goals for Educational Planning and
Evaluation, K-12

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