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ABSTRACT

A summary position statement of the Eastern Regional Institute for Education presents its mission of changing elementary education toward the direction of process education. The first of three basic parts reviews the three completed chapters of a monograph, "What is Process Education? An Emerging Rational Position," in terms of a definition of process education, student behaviors toward which process education is directed, the requirements for process curricula, and the nature of instruction in process education. The second part reviews the pupil and teacher materials for Man: A Course of Study and for Social Science Laboratory Units with reference to learning outcomes, instructional systems, pupil and teacher roles, and teacher skills and techniques. The last part discusses the differentiation of process from non-process curricula. (Author/KSM)

E.R.I.E. AND PROCESS EDUCATION

(With Reference to M:ACOS and SRA-SSLU)

A Summary Statement

K. E. Ripple and Associates

This is a summary position statement representing E.R.I.E.'s mission of changing elementary education toward the direction of process education. It relies heavily on a comprehensive monograph in progress by Henry P. Cole of the E.R.I.E. Staff. Three chapters of the monograph, entitled What Is Process Education? An Emerging Rational Position, are completed. Two more chapters are in preparation. It should be noted at the outset that for a more substantive grasp of E.R.I.E.'s position with regard to process education, the reader is referred to the Cole monograph. For an even more comprehensive understanding of E.R.I.E.'s program, the reader is referred to the Basic Program Plan document.

In the course of this summary position statement, two currently available curricula will be referred to for examples. These are Man: A Course of Study (M:ACOS, Educational Development Center) and Social Science Laboratory Units (SSLU, Science Research Associates).

This document is organized in three basic parts. First, the three completed chapters of the Cole monograph are reviewed in terms of a) a definition of process education, b) student behaviors toward which process education is directed, c) the requirements for process curricula, and d) the nature of instruction in process education. Second, the pupil and teacher materials for the M:ACOS and SSLU curricula are reviewed with reference to a) learning outcomes, b) instructional system, c) pupil and teacher roles, and d) teacher skills and techniques. Third, the differentiation of process from non-process curricula is discussed.

I. A Review of What Is Process Education?

a) A definition of process education

Process education is defined as formal intervention directed toward facilitating and developing skills in the pupil that are essential to his dealing effectively with information and experience for the purpose of meaning-making and attaining goals. Education directed toward the purposeful and deliberate facilitation of such skills is process education.

Skills are considered to be behavioral control systems that incorporate, select, and direct different response patterns and attitudinal tendencies together with behavioral capabilities in a series of actions toward some goal. Skills are plans, programs for action, means by which behavior is organized and directed toward goal attainment. They are organized behavior sequences directed toward the end of rendering one's experience comprehensible and, in turn, to solve one's problems and meet one's needs. Collectively, skills comprise the process of meaning-making.

b) Student behaviors toward which process education is directed

Content is considered secondary to the fostering of skills in process education. However, a process of any type demands a content to operate. Therefore student behavior focused around skills developed on content of significance and scope is the optimum context for process education.

The delineation of skill categories to use as a basis for stating student behaviors intended to be fostered by process education is difficult because multiple organizational schemata exist. An initial list of categories developed at E.R.I.E. for the identification and

analysis of process curricula included: attending and orienting; flexibility and divergence; classification; translation and transformation; and problem solving. These categories subsumed basic tool skills (reading, writing, speaking, listening, etc.), analytic thinking skills of scientific inquiry (observing, inferring, interpreting, hypothesis forming, etc.), and affective and interpersonal skills (expressing, valuing, relating to and empathizing with others, etc.).

In the program priority matrix of E.R.I.E.'s recent Basic Program Plan, two clusters of "processing skills" are identified for emphasis--data collection and analytic thinking. These two arbitrary skill clusters, though interrelated and behaviorally redundant, are intended to subsume some of the prominent sets of skills mentioned in the preceding paragraph. Given these arbitrary categories, the specific student behaviors toward which process centered instruction will be directed (stated in terms of skills) are defined in terms of specific curricula. Examples of some of these in terms of M:ACOS and SSLU follow in Part II.

c) Requirements for process curricula

Based on the definition of process education and the student behaviors toward which it is directed as presented above, it is apparent that the central requirement for process curricula is that they are clearly and purposely intended to promote specified "processing skills". Other requirements are that they have a sound rationale based in theory and research, are economically realistic and available, and have been exposed to systematic evaluation. The basic requirement of process curricula is that they be instructional systems (specifying materials, activities, methods, and conditions for the interaction of pupils and teachers) designed for the deliberate promotion of skills.

An initial list of eight criteria and an operationally expanded and detailed form of these criteria (related to the requirements stated in the preceeding paragraph) appear in the E.R.I.E. document Analysis of Process Curricula. Using these criteria a process curriculum search and selection study was conducted by E.R.I.E. Staff. The results of this study are reported in Encounters In Thinking: A Compendium of Curricula for Process Education. Five of these instructional programs have been installed in E.R.I.E. laboratory and network schools.

d) The nature of instruction in process education

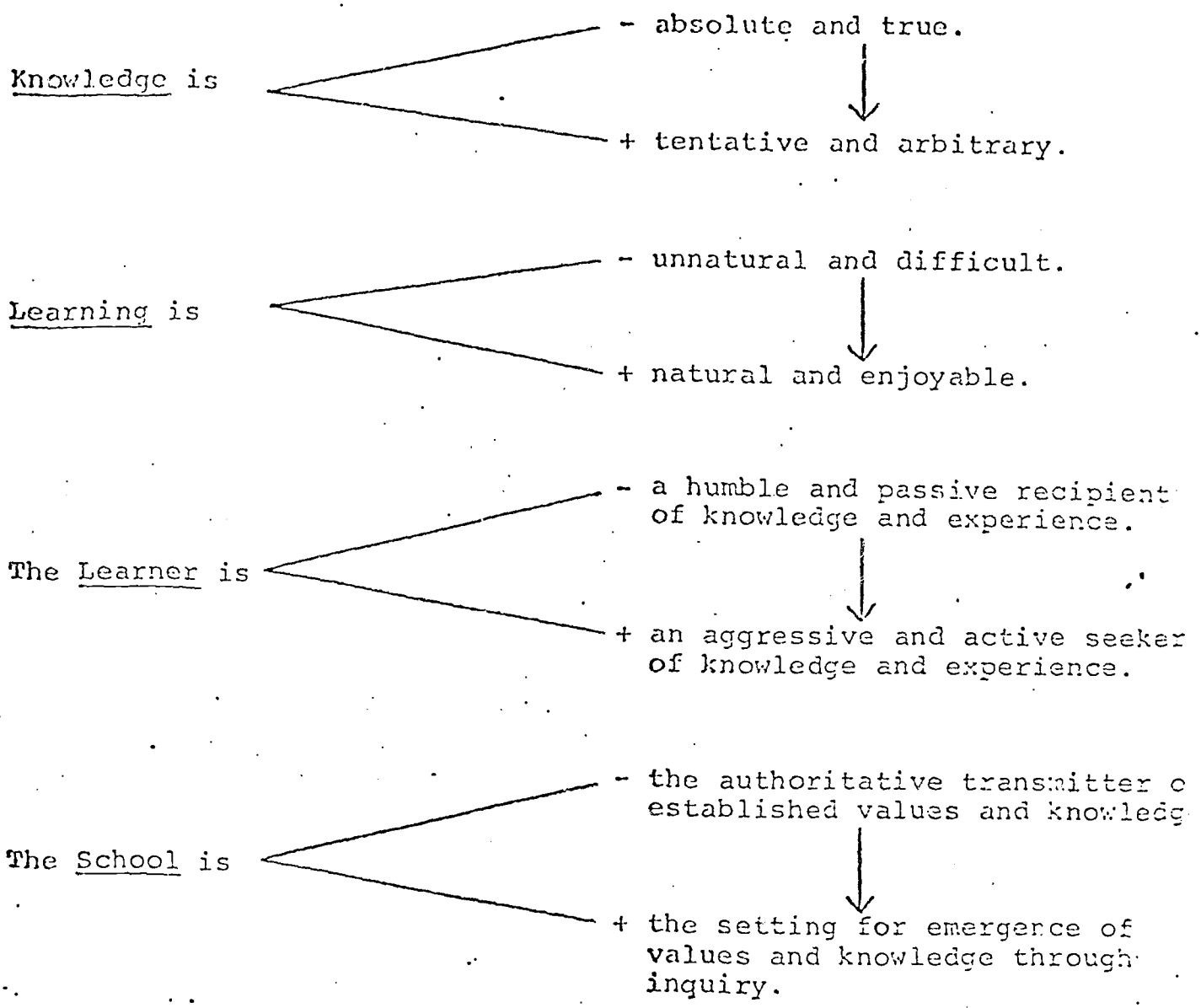
The successful practice of process education does not reside in curriculum materials, but in how these materials are used in the interaction between pupils and teachers in classrooms. The proper and effective use of such curricula requires pupils and teachers to consistently play different classroom roles than is customary.

The ways in which teachers perceive the nature of knowledge, learning, the role of the learner, and the function of the school are critical in determining if instruction will be consistent with the aims of process education. Table 1 (on page 5) represents value positions focused around these four critical dimensions as they underly process education and conventional educational practice. Consider the four opposing pairs of values as representing extremes on a continuum. Each value position gives rise to a different and opposed set of role expectations for the teacher and pupil. To the extent that these expectations are used as guidelines for action they will be reflected in behavior pattern outcomes.

Interpersonal behaviors and instructional management behaviors of teachers flow from their positions on these four critical value dimensions. If process education is to meet its objectives, pupils

TABLE [1]

OPPOSED VALUE POSITIONS UNDERLYING PROCESS AND CONVENTIONAL EDUCATIONAL PRACTICE [1]



[1] The value positions consistent with the justifications and assumptions of process education are indicated by a plus (+) sign. The opposed and prevailing value for current educational practice is indicated by a minus (-) sign. The desired direction of change for the implementation of process education is indicated by an arrow.

must become more independent, self directing, and have more part in determining the norms for learning activities in the classroom. Pupils' observations, ideas, feelings, judgments, and experiences must become positive and influential contributors to the interaction occurring in the classroom. The teacher must become much less directive than usual and must not dominate the learning activity.

Some qualities of teacher behavior that characterize the nature of instruction in process education are as follows. A didactic approach to knowledge and problem solving through appeal to authority yields to encouraging pupils to seek and organize their own preferred interpretations and patterns from among the multiple information sources and views available. The creation of ideas, relationships, and feelings is viewed as the primary goal of learning. Pupils are provided with a rich and varied set of ideas, materials and topics in relation to the content of what is being taught. Pupil interest and commitment to multiple tasks and activities are sought through instructional situations. The teacher recognizes himself as a learner and encourages pupil-pupil interaction without mediation through him. Pupils are expected to identify their own learning goals and patterns within broad outlines prescribed by the teacher and the school.

II. Pupil and Teacher Materials for M:ACOS and SSLU

a) Learning outcomes

Both M:ACOS and SSLU are one-year programs designed for upper elementary students (grades 5-6). Learning outcomes from both programs can be classified in three ways: knowledge outcomes, performance skills, and attitudinal outcomes.

Knowledge outcomes relate more specifically to the content of the programs. For M:ACOS the content is man and is focused around three

questions: What is human about human beings? How did they get to be that way? and How can they be made more so? It is intended that from an examination of activities related to these questions children will develop an appreciation for the humanness of man. After a set of introductory lessons using animal contrasts as a vehicle for the study of the humanness of man, then salmon, herring gulls, baboons, and the Netsilik Eskimos are studied in succession.

Seven units make up the content of SSLU which is described as "representing the disciplines that deal with man and his social world". While the main content vehicle is social psychology, concepts common to all social sciences define the program content. The seven units are entitled: learning to use social science, discovering differences, friendly and unfriendly behavior, being and becoming, individuals and groups, deciding and doing, and influencing each other. A prime objective of the program is to assist pupils in developing the intellectual tools associated with the role of a social scientist and to develop skills that allow participation in inquiries of values and behavior in order that they better understand why they hold the values they do and why others may differ in their value orientations and behavior.

Performance skills are related to program content. However, they involve generalizable skills operating on the content and can be stated in behavioral terms as shown in the following two examples. Given statements describing animal behaviors regarding food habits, learning, social groups, and life cycle events the pupil will identify which of these are unique to man, and which man shares with other animals (M:ACOS). When presented with a "puzzling behavior specimen", the pupil will state inferences relative to the possible causes of the behavior (SSLU). Similar examples for attitudinal outcomes as well as comprehensive treatment of pupil outcomes in all three categories for both programs are available in other E.R.I.E. documents.

b) Instructional system

Both M:ACOS and SSLU are more than simply sets of materials or statements of content to be learned. They are instructional systems specifying materials, activities, methods, and conditions for the interaction of pupils and teachers designed for the deliberate promotion of skills. They have grown out of the theoretical and empirical work of behavioral scientists, have clear statements of objectives, are accompanied by an effective teacher education program, and have been evaluated through field testing in school situations.

The M:ACOS instructional system, for example, is based on ideas of Jerome Bruner that curriculum content should be more capable of question raising than question answering as well as being designed deliberately to promote intellectual and interpersonal skills. The content and wide range and variety of materials should be rich in ambiguity and uncertainty for motivational purposes. The curriculum should be constructed around unifying themes that serve to provide a framework and a means by which knowledge is rendered worth knowing and made useful in application beyond the immediate learning situation. Curricular materials and content should be sequenced in a spiral fashion around each major theme with concepts being introduced early in the course and re-introduced many times thereafter in more complex settings. The media and pedagogical strategies of the curriculum (e.g., simulation games, film, written material) should represent and correspond to the three phases of cognitive development and ways of knowing Bruner has conceptualized -- enactive, iconic, and symbolic.

Given the ingredients of instructional systems, the model for instruction in such systems (e.g., M:ACOS and SSLU) will be characterized by the value positions and qualities of teacher and pupil behavior as presented in Id of this document.

c) Pupil and teacher roles

The role of the pupil in process education is to acquire and apply the competencies and attitudes which comprise the "processing skills" of meaning-making. As the pupil plays this self-directed role he learns: key concepts and generalizations from the academic disciplines; instrumental skills (including the tool skills of language, reading, computation, and knowledge referencing); generalizable skills essential to inquiry, analytic thinking, and problem solving (e.g., observing, data gathering, inferring, forming and testing hypotheses), and generalizable skills in the affective, expressive, interpersonal, and social interactive areas.

The role of the teacher in process education is not dissimilar to the role of the pupil. The teacher must become a continuing, self-directed learner along with the pupil. The role of the teacher must be perceived as a means toward the goal of developing desirable, generalizable behaviors in pupils.

A primary purpose of M:ACOS and SSLU is for the pupils and the teacher to make meaning, to build knowledge and generalizations from their own unique experience and from additional experience provided by the rich array of multimedia materials which present the content of the program. They learn that the basic resources for creating knowledge are one's own feelings and experiences coupled with skills such as observation, data collection, inference, hypothesis formation, and testing. Both programs are also directly concerned with the facilitation of affective and interpersonal skills. Objectives include the reduction of ethnocentrism and an increased awareness and sensitivity to value systems different from one's own.

d) Teacher skills and techniques

If the role of the teacher in process education is to be a partner with the pupil in inquiry aimed at meaning-making, it follows that he must be exercised in the generalizable skills of inquiry himself. Also, he must have command of key concepts, generalizations, and relationships which form the body of knowledge in the area or academic discipline he teaches. Further he must be skilled in: fostering the attitudinal tendencies in pupils which underlie the "will to learn"; providing a learning environment rich in ideas, topics, and materials; and stimulating and guiding independent pupil learning.

With regard to M:ACOS and SSLU the skill and technique requirements for the teacher to be effective are a function of the nature of the content of these programs, the wide variety of materials which accompany them, and the inquiry skill development intent of the programs. The teacher education component of M:ACOS and SSLU are aimed at assisting teachers to meet these skill and technique requirements specifically.

Some of the skills and techniques consistent with teaching inquiry in M:ACOS and SSLU (and process education generally) follow. The teacher entertains unusual ideas with respect and without anxiety or tension. Open-ended questions are used rather than questions with a "right" answer. Pupils are encouraged to consider questions for which they do not have the answer. The teacher encourages the pupil to take responsibility for self-initiated learning -- to go beyond the assignment. A wide variety of assignments is made designed for individual pupil requirements. Creative thinking is encouraged and practiced along with other

process skills. Decision making is shared by the group. Much group work is arranged to meet the needs of particular learning situations. Physical movement is free and a function of the learning situation.

III. Differentiation of Process From Non-Process Curricula

Of necessity, E.R.I.E. seeks guidelines for selecting curricular and instructional vehicles for implementing process education. These guidelines will lead to an inclusion-exclusion rule for process curricula.

Modification of a master model by Havelock for the dissimination and utilization of new knowledge arising from innovations in any field of human endeavor is instructive in generating guidelines for a set of procedures to develop an inclusion-exclusion rule for process education. In brief, this model (described in detail in Chapter 4 of the Cole monograph) and its utility in selecting curricular and instructional vehicles useful to implementing the practice of process education (described in detail in Chapter 5 of the Cole monograph) is based on two factors -- 1) the value positions and derivative pupil and teacher role expectations discussed earlier, and 2) the user or client (school) needs and implementation objectives. The basic question to be answered in the affirmative to include a curricular or instructional vehicle for process education is as follows. Are the fundamental elements in the curricular or instructional vehicle (broad objectives, teaching-learning strategies, content) supportive of value positions and derivative pupil and teacher role expectations consistent with process education, and are they appropriate to the user needs and implementation objectives?