Educational Aims, Objectives,

And Other Aspirations

Finally, there should grow the most austere of all mental qualities:

I mean the sense for style. It is an aesthetic sense, based on admira- tion for the direct attainment of a foreseen end, simply and unthout waste. Style in art, style in literature, style in science, slyle in logic, style in practical execution have fundamentally the same aesthetic qualities, namely, attainment and restraint. The love of a subject in uself and for itself, where it is not the sleepy pleasure of pacing a mental quarterdeck, is the love of style as manifested in that shy

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No concept is more central to curriculum planning than the concept objectives. The recurrent for its importance is straightforward. I will try to provide it.

Behavioral Objectives

Objectives are the specific goals that one hopes to achieve thatch the educational program that is provided. In order for educational planning to be meaningful, not only must foals be formulated, but they must also be formulated with precision and with clarity. To formulate them with precision and clarity it is best not to use words that have referents that are difficult to observe. Words such as understanding, insight, appreciation, and interest refer to qualities that cannot be observed directly; the require one to make inferences about their existence through the observation of manifest behaveior. Thus. Useful objectives should be stared in behavioral terms or. In more current jargon. Performance terms. When objectives are stared behaviorally, it is possible to have specific empirical referents to observe: thus, one is in a position to know without ambiguity whether the behavioral objective has been reached. An objective that seeks to help students appreciate the insights of great poetry needs to be recast in terms far more specific and precise. What would a student do to

demonstrate that such appreciation has occurred? what behavior would he or she display? What task is he or she to perform?

It should be noted, as it is by those who advocate the use of specific behavioral objectives in curriculum planning, that the objective is to be stated in rerms of desired student behavior. It should not describe what the teacher is to do. If an objective stared that "the objective of the course is to introduce students to great ideas of the western world,' not only would the behavior be obscure- the term introduce for a behaviorist is vague- the objective would logically be achieved when the teacher introduced the material to the students. The objective in this case is stated in terms of teacher behavior, not in terms of the desired behavior of the stated in terms of teacher behavior, not in terms of the desired behavior of the student.

A further condition for formulation of meaningful behavioral objectives is that both the behavior and the content be identified. Appreciation For example, is always of some thing or idea. Understanding always has a subject matter. One does something to something else and in some context.

Thus, objectives that are adequately behavioral will not only refer to student rather than teacher behavior, will not only minimize the need for inference- the closer to manifest behavior the better- but meaningful objectives will also identify the particular subject matter in which the behavior is to take place, for example, the student will be able to identify the major causes of the westward movement in the United stares during the period 1840 to 1870.

Even with these criteria, for had line behaviorists, the foregoing objective is still too diffuse. What is missing is a statement of the specific criterion level the student will have to meet in order to demonstrate that the objective has been attained. There might be five major causes for the westward movement. How many of these must a student identify- one, two, three, four, or all five? Thus, not only must an objective have the characteristics I have already described, but also, perhaps most importantly,

it must specify the criterion level that must be achieved to demonstrate competency in reaching the objective. Perhaps the best spokesperson for this view is Robert Mager(1962):

An objective is an intent communicated by a statement describing a proposed change in a learner- a statement of what the learner is to be like when he has successfully completed a learning experience. It is a description of a pattern of behavior (performance) we want the learner to be able to demonstrate. As Dr.Paul Whitmore once put it, "the statement of objectives of a training program must denote measurable attributes doubtable in the graduate of the program, or otherwise it is impossible to determine whiner or not the program is meeting the objectives."

When clearly defined goals are lacking it is impossible to evaluate a course or program efficiency, and there is no sound basis for selecting appropriate materials content or instructional methods. After all, a machinist does not select a tool until he knows what operation he intends to perform. Neither does a composer orchesuate a score until he knows what effects he wishes to achieve. Similarly, a builder does not select his materials or specify a schedule for construction until he has his blueprints (objectives) before him. Too often, however, one hears teachers arguing the relative merits of textbooks or other aids of the classroom yeses the laboratory, without ever specifying just what goal the aid or method is to assist in achieving I cannot emphasize too strongly the point that an instructor will faction fog of his own making until he knows just what he wants his students to do at the end of the instruction (p.31).

What Manger and others holding this view are trying to do is to develop a highly precise technology to do for statements of objectives that they believe will improve the quality of teaching and learning. For many behaviorists, one of the major problems of goal statements is that they are vague, and determine, usually through measurement, whether it has been achieved. To the extent that there is ambiguity in

the statement, its meaningfulness and until city are diminished. Furthermore, if a curriculum planner knows exactly what kind of behavior he or she wants students to display, it is easier to select content and formulate activities that are instrumental to the desired end.

The Roots of the Objectives Movement

The tendency toward high levels of behavioral specificity is, of course, not new in American educational planning. Franklin Bobbitt, whose ideas we encountered earlier, listed ten areas for such objectives in his book How to Make a Curriculum, which was published in 1922 Although Bobbitt 's objectives, too, are vague by today' s standards, the spirit of behavioral specificity is the same. Indeed, the general thrust toward the study of behavior rather than expedite has been characteristic of American educational psychology since the turn of the century. Thorndike, Watson, Hull, and skinner participate in that tradition, and it provides the theory ethical backdrop for this approach to the formulation of behavioral objectives.

There are two other traditions associated wilt the behavioral specification approach to objectives, one of these is found in Indy, the other in Military training. They have two features in common: the characteristics of the performance to be produced are known in advance. And ideally the specifications of the objectives and characteristics of the individual performance are isomorphic- that is. A perfect match between objective and behavior is desired in industrial settings such as in automobile production.

The same conditions hold. A prototypical form is created for the cars to be assembled. This form is described both physically and mechanically for each model. Subsequently a component analysis is made of the prototype. A task analysis follows that prescribes the steps to be taken in production and their sequence, and production begins. The manager of the assembly line has the task of ensuring that all operations are performed in the order specified. The goal to be achieved is the creation of an

isomorphic relation ship between the original prototype and each car coming off the line. If these cars do not match there is a call-back, and the problem is identified and readjustments are made. An efficient and effective assembly line produces identical cars day after day that in every aspect match the model that was originally created.

Military training programs have similar features. New recruits are processed through a program that specifies in almost every detail what is to be done and how. The slogan there is a right way a wrong way and an Army way is not altogether inappropriate. When one has a training program, a program that intentionally attempts to help another acquire a known, specific performance system to be used to achieve a known goal, the acquisition of known behavioral routines might be appropriate.

Personal ingenuity and idiosyncratic behavior are discouraged both on the assembly line and in the boot camp. The armed forces justify such an approach on the basis that it is of paramount importance for soldiers to learn to follow orders: prediction and control of troops are required in time of war. Industry employs such and approaches because it is efficient; more cars can be produced in better fashion when systematic, reutilized procedures are followed.

It is interesting to note that the earliest efforts at specifying goals and prescribing the methods through which those goals could be attained occurred during the so called efficiency period in American education from about 1903 to 1925 (Callahan, 1962) . During this period, school administrators were being criticized in the press for running slack schools, schools that had much swathe that did not give the poplin a fair return on its investment. These men, vulnerable as they were (and are) , sought what they could to make schooling more rigorous and in the process discovered the work of Frederick Taylor, an industrial management consultant and the father of time and motion study. Taylor would go into industrial plants with a team of colleagues and study the movements of the work force, measure the current

level of productivity, and then prescribe minute steps to be taken by workers to eliminate excess waste in movement. By using his methods companies such as Bethlehem steel were able to increase their level of productivity significantly. Raymond Callahan (1962)…, a historian noted for his work pertaining to this period. Writes:

The first element in the mechanism of scientific management listed by Taylor was time and motion study and the development of unit times for the various components of any job. This traitor regarded as by far the most important element in scientific management, and it was the basic element in achieving his first principle of the development of a true science for a particular job. Frank Gilbert testified on this point by stating that any plan of management that does not include Taylor s plan of time study cannot be considered as highly efficient. We have never seen a case in our rock where time study and analysis did not result in more than doubling the output of the worker. Not only was time and motion study thus conceived by the engineers themselves, but also it was apparently identified in the mind of the average American as the key element of the system. Milton Nadworny notes, although scientific management employed many identifiable and characteristic mechanisms, its most pediment tool was a stopwatch, the popular symbol of the scientific management movement. The stopwatch symbolized the new approach to management: management based on measurement (p.28).

It is not surprising when one is in a vulnerable position; a superintendent of schools were and are, that one should embrace any new idea that promises to reduce that vulnerability. Scientific management, as Taylor called it, appeared to provide the mantle of scientific respectability that schoolmen needed and waned. By wrapping themselves in a scientific cloak, they believed they could protect themselves from the criticism that they were inefficient stewards of the schools.

It is, I think, particularly important to take note of the language that was used during this period. The society was viewed as the consumer of the schools products. The children were the raw material to be processed according to specifications laid down by the consumer… And the teachers were the workers who were to be overseen by supervisors. All of this was to take place under a superintendent. Although the modern concepts of quality assurance and quality control were not used then, a similar spirit was at work in those good old days.

The analogy between industrial processes and educational processes is a deceptive one. When one is working with inert material for ends that are uniform and specified, the task of determining effectiveness and locating inefficiency or ineffectiveness is comparatively simple. After all, when 1,000 pounds of pressure is placed on 30- gauge steel within a 1 – inch diameter, the reaction of the steel to the pressure is quite predictable. As long as there is no human error or mechanical failure, the result will be the same time and time again. Industrial managers bank on it. Such conditions, hoverer, seldom are obtained in the classroom. Children are far from inert, and so are teachers. They respond differently to the same stimuli, because how the stimuli are perceived- indeed, whether they in fact stimulate- depends as much on the characteristics of the student as it does on the objective characteristics of the stimuli themselves. Furthermore, the realization of outcomes that is common to all students. The production of educational products all having identical features. At best suits only a small array of those aims that most educators seek in the course of teaching. One major problem I see in the admonition to teachers and curriculum planners to specify their aims in behavioral terms is that the limitations of such objectives are seldom acknowledged that are offered as though one were not really professionally competent without a list of objectives that one could pull out for each set of curriculum activities formulated.

In identifying what I believe to be an oversimplified view of the character of educational aims, I am not taking the position that there is no place for clearly defined behavioral objectives in a school curriculum when specific skills or competencies are appropriate, such objectives can be formulated, but one should not feel compelled to abandon educational aims that cannot be reduced to measurable forms of predictable performance.

Conceptions of method should serve as tools and heuristic devices for improving the quality of educational experience, not as constraints on teachers, teaching, or what students have an opportunity to learn

Limitations of Behavioral Objectives

Let me provide a description of some other limitations behaviorally defined objectives have in the design of educational programs. I identify these limitations not as a wholesale condemnation of their use but as an attempt to increase the sophistication of the dialogue about them.

One limitation of discursively defined behavioral objectives deals with the limits of discourse itself. Much, perhaps most, of what we aspire to and cherish is not amenable to discursive formulation. Take, for example, our image of human sensitivity… Although we could describe discrete behaviors that were intended to characterize a sensitive human being- say, one who was responsive to the feelings of others and compassionate- discrete forms of human performance would ultimately fail to capture what we are able to recognize in others. Language is, after all, a surrogate for experience. We try to articulate in words what we know in nonlinguistic ways. For much of our experience, discursive language performs rather well. But for the subtleties of human experience, for our knowledge of human feeling, for modes of conception and understanding that are qualitative, discourse falls far short. How many words would it take to describe insight, perceptivity, integrity, self-esteem?

How would one describe how water tastes? How would one describe the qualities of a late Beethoven quartet in precise, unambiguous, measurable terms?

The point here is not an effort to inject the mystical into educational planning but rather to avoid reductionistic thinking that importations to be either verbally describable or measurable is to expect too little.

A second problem with the use of specific behavioral objectives is that those who evaluate them often fail to distinguish between the application of a standard and the making of a judgment. Dewey (1934) makes this distinction quite clear when he says the following:

There are three characteristics of a standard. It is a particular physical thing excising under specified physical conditions; it is not a value, the yard is a yardstick, and the meter is a bar deposited in Paris. In the second place, standards are measures of definite things, of lengths, weights, capacities. The things measured are not values, although it is of great social value to be able to measure them, since the properties of things in the way of size, volume, weight, are important for commercial exchange finally, as standards of measure, standards define things with respect to quantity. To be able to measure quantities is a great aid to further judgments, but it is not itself a mode of judgment… The standard, being an external and public thing, is applied physically. The yardstick is physically laid down upon the things measured to determine their length.

Yet it does not follow, because of absence of a uniform and publicly determined external object, that objective criticism of art is impossible. What follows is that criticism is judgment; that it is directed to qualities which are nevertheless qualities of an object; and that it is concerned with an individual object, not with making comparisons by means of an external reestablished rule between different things. The critic, because of the element of venture, reveals himself in his criticisms. He

wanders into another field and confuses values when he departs from the object he is judging. Nowhere are comparisons as odious as in fine art. (Pp.307-308)

Standards are crisp, unambiguous, and precise. A person can swim five

Lengths of the pool or cannot. Someone can spell aardvark or cannot. Someone knows who the 27th president of the United rarest was or does not. Someone can multiply two seals of three- digit figurer correctly or cannot. For such performances, standards are specifiable and applicable by anyone or by any machine that knows the rules through which the Standards are to be applied. But what about the rhetorical force of a students essay? What about the aesthetic quality of her painting? What about the cogency of his verbal argumentation? What about her intellectual style? What about the ways she interprets the evidence in a science experiment, the way in which historical material is analyzed? Are these subject to standards? Think not…

But to say that such qualities cannot be measured by standards is not to say that judgments cannot be made about them. It is not to say that one can have no criteria through which to appraise them. Judgments can say much about such qualities. Not by the mechanical application of prosperities Standards, but by comparison of the quailed in question to a whole range of criteria those teachers or others making the judgment already possess. How much weight does one give to insight and how much too logical argument? How does one compare this essay, or this statement, or this project? or this painting, to the one or ones the student did before? Judgments about such qualities are not will-o the wisp Cavalier, irresponsible conclusion. They are complex appraisals that use an extraordinarily wide range of knowledge to arrive at what, on balance, are a warranted human judgment. The multiple choice test is simply not adequate for everything.

A third problem with the demand that all objectives be behavioral and defined in advance deals with the assumption that the specification of goals is the rational way in which one must always proceed in curriculum planning. This assumption is rooted

in the kind of rationality that has guided much of western technology. The means-ends model of thinking has for so long dominated our thinking that we have come to believe that not to have clearly defined purposes for our activities is to court irrationality or, at the least, to be professionally irresponsible. Yet life in classrooms, like that outside them, is seldom neat or linear. Although it may be a shock to some, goals are not always clear. Purposes are not always precise, As a matter of fact. There is much that we do, and need to do. Without a clear sense of what the objective is. Many of our most productive activities take the form of exploration or play in such activities. The task is not one of arriving at a preformed objective but rather to act. Often with a sense of abandon wonder curiosity. Out of such activity, rules may be formed and objectives may be created.

The relationship between action and the formation of purpose is well known to artists… In a particularly telling passage describing the work of the abstract expressionist, Harold Rosenberg (1965) one of Americas leading art critics, writes:

At a certain moment the canvas began to appear to one American painter after another as an arena in which to act-rather than as a space in which to reproduce. Redesign, analyze or express an object, actual or imagined.

What was to go on the canvas was not a picture but an event.

The painter no longer approached his easel with animate in his mind; he went up to it with material in front of him. The image would be the result of this encounter… (p. 25)

What Rosenberg describes of the abstract expressionists is to some extent an echo of Aristotle's remark more than 2,000 years ago. "Art." He said, "Loves chance." "He who is willing to err is the artist."What both Aristotle and Rosenberg poking out is that purpose need not precede action. Purposes may glow out of action. Unfortunately Out cultural tendency to eschew play and praise work makes it

sometimes difficult to explain why play is justified in its own right and why in a broad sense it may be among the most product tide forms of human activity

Problem- Solving Objectives

What would a broader, more generous conception of educational aims look like? Are there ways of thinking about objectives and outcomes that are not constrained by the kinds of criteria that are prescribed for behavioral objectives? I believe there are. But before desorbing two other ways of conceptualizing educational aims, let me reiterate that I believe behavioral objectives to be appropriate for some types of educational aims, even though I recognize that they are in no way adequate for conceptualizing most of out most cherished educational aspirations. When it is opiate to formulate specific types of educational exercises thug aim at, ligulae deniable skills, the use of such objectives may be warranted: one must be able to swim four laps of the pour to be able to swim in the deep end. But one should not, in my view. Attempt to reduce all of our goals in such forms. To do so rob them of the very qualities of mind one may be seeking to foster.

In figure, two types of objectives and one kind of outcome are presented that can be planned in the design and evaluation of educational programs. The first of these, the behavioral objective, has already been described, and I will not restate its feasted here. The problem solving objective differs in a significant way from the behavioral objective. In the problem say, to find out how deterrents to smoking might be made more effective, or how to design a paper structure that will hold two bricks 16inches above a table, or how the variety and quality of food served in the school cafeteria could be increased within the existing budget.

In each of these examples the problem is posed and the criteria that need to be achieved to resolve the problem are fairly clear. But the forms of its solution are virtually infinite. Some students might increase food quantity and variety by finding new sources of supply or by establishing a student volunteer system to work with the

kitchen off. Others might decide that the not effective solution would be for incepted students to set up their own kitchen facilities on school premises, and others to set up their own kitchen facilities on school premises, and others might formulate an ordering system so students could place orders for some good Chinese and Italian food at a local inexpensive restaurant.

The point is that the shapes of the solutions, the form they take, are highly variable Alternative solutions to problem- solving objectives could be discussed in class so that the shapes of the solutions, the students could begin to appreciable their practical costs.

This form of objective is not unknown in the design field and in science laboratories. Designers, for example, are almost always given a set of crier

Behavioral Objective
Behavioral Activity
Expressive Activity
Expressive Outcome
Problem- solving Objective
Problem-solving Activity

Figure 2 Relationship of curriculum objectives to curriculum. Activities

Ria or specifications and asked to create a product that will satisfactorily meet those criteria. Often they are asked to create several solutions so that the client can compare alternatives and decide which suits his or her need best.

In architecture, the client provides the architect with a set of specific tins beget, site, personal life-style, preferred achieving requirements impose their demands. The building has to stand, the cantilevered deck must not fall, and the foundations must not sink. Within these design con-satins, the architect must create viable and constructive solution.

In such situations the potential answers are not known beforehand. What is known is the problem; what constitute appropriate solutions remains to be seen after the work has been done.

In the sciences, this type of problem- solving activity is characteristic, at least for most scientists. The concept of normal science, a term coined by Thomas Kuhn, aptly describes the work of the typical scientist. Such a person works within a given theory, a theory that he or she does not question.

The problem is to find solution to problems posed within the terms of the theory. Kuhn (1962) writes:

Mopping up operations is what engages most scientists throughout their careers. They constitute what I am here calling normal science. Closely examined, whether historically or in the contemporary laboratory, that enterprise seems an attempt to force nature into the preformed and relatively inflexible box that the paradigm supplies. No part of the aim of normal science is to call forth new sorts of phenomena; indeed those that will not fit the box are often not seen at all. Nor do scientists normally aim to invent new theories, and they are often intolerant of those invented by others. Instead, normal- scientific research is directed to the articulation of those phenomena and the theories that the parading already supplies… (p.24)

Like the architect, the scientist tends not to reef the givens, in this case the basic theoretical premises by which he or she has been professionally socialized and that serve to define not only the problem, but also the scientist's expertise.

One very important difference between the problem- selvage objective and the behavioral objective is that the solution to the problem in problem solving objectives is not definite. The problem is, in a significant sense, a genuine one. Behavioral objectives have both the form and the content defined in advance. There is, after all, only one way to spell aardvark. Civet the same set of behavioral objectives for a class of students, the successful teacher elicits homogeneous behavior at the end of an

instructional period that is isomorphic with the objective. This is not the case with a problem-solving objective. The solutions individual students or groups of students react may be just as much a surprise for the teacher as they are for the students who created them.

The issue concerning the form statements of objectives are to take is far wider than the character of the forms themselves. Although it is said that form follows function, the opposite is equally true: function follows form.

The form, in large measure, reflects an underlying set of assumptions that mint not them have been examined… The idea that goals should be specifiable in advance and that success in teaching consists primarily of bringing about predictable outcomes is themselves what is at issue. Such a set of beliefs, fostered not through an explicit educational rationale but rather embedded in the very techniques that one is encouraged to use, can have significant effects on the way the teachers role is conceive and what educators belier the are after. Surreptitiously but inexorably, techniques that go unexamined with respect to the ideology that they reflect can be debilitating. Training comes to be substituted for education.

The use of problem- solving objectives places a premium on cognitive flexibility, on intellectual exploration, on the higher mental processes. It tends toward the formulation of curriculum activities that are likely to be taken seriously by scholars. The reason I make these claims is that not only have I seen this happen in classes when students had such objectives, but also it is reasonable to expect that when students have a set of clear criteria and are free to meet those criteria in ways that require ingenuity, the will take a deeper interest in coping with the problem. The opportunity to use ingenuity breeds interest.

Expressive Outcomes

A third type of educational aim is what I have called, in previous writing expressive objectives (Eisner, 1969). Because I now see that term objective implies a

reformulated goal, something out of reach but to be attained, I think it desirable to change the term to expressive outcomes.

Outcomes are essentially what one ends up with Intended or not, after some form of engagement. Expressive outcomes are the consequences of curriculum activities that are intentionally planned to provide a fertile field for personal purposing and experience. Take For example Much of our ordinary activity say, going to the movies there is no one I know who for mutates specific behavioral objectives before going to a movie. Nor do I know anyone who formulates a problem- something interesting or exciting will happen to us there. We do not formulate specific goals that describe what our behavior will be after we leave... We do not establish criteria that the director and actors will have to meet in order to be successful. The fact of the matter is that we already have such criteria in ample abundance and retrospectively select from the ones we have those that appear appropriate for the particular movie we have just seen. If the movie is a comedy, we apply comedic criteria, if an adventure, dramatic criteria, and so forth.

But the problem of appraising the qualities of expressive outcomes is more complicated than I have just described. Even in life outside of schools. If the movie we have just seen was billed as the year's funniest comedy or if it is being shown in the finest first Run Theater charging the highest prices in town, we come to expect more than we would otherwise. If our favorite actor or actress in the film or if it was directed by fellini Bergman, or Huston We might make a more complex appraisal. If we have had the bad fortune of seeing a series of poor film during the last 2 months, our receptivity toward a somewhat better than mediocre film may be higher than it would otherwise be. The point here is that the appraisals we make as a result of activities we engage in are clearly complex and highly rational. Employing a wide range of criteria that although, not explicit, operate in our judgments the same holds true in classrooms.

I believe that it is perfectly appropriate for teachers and others involved in curriculum development to plan activities that have no explicit or precise objectives. In an age of accountability, this sounds like heresy. Yet surely there must be room in school for activities that promise to be fruitful, even though the teacher might not be able to say what specifically the students will learn or experience. Parents do this all the time... the trip to the zoo; weekends spent camping in the woods, the bicycle ride after dinner: no specific objectives or problems are posed prior to setting out on such activities, yet we feel that they will be enjoyable and that some good will comes from them.

Curriculum planning and schooling in general need not always be single-minded in their pursuits, forever focusing on objectives that are by define-minded in their pursues, forever focusing on objectives that are by define always out of reach. Purposes need not proceed activates; they can be formulated in the process of action itself.

In figure 2, not only is a distinction made among educational objectives, problem-solving objectives, and expressive outcomes, but they are also related to different types of curriculum activities. What we see in figure 2 is that in bout behavioral objectives and problem-solving objectives for the both participate in the standard means-ends approach to planning However, expressive activities precede rather than follow expressive out comes. The tack taken with respect to the generation of expressive out comes is to create activities that are seminal; what one is seeking is to have students engage in activities that are seminal; what one is seeking is to have students engage in activities that are sufficiently rich to allow for a wide, productive range of educationally valuable outcomes. If behavioral objectives and behavioral activities constitute the algorithms of curriculum Expressive activities and expressive outcomes constitute their heuristics.

These are not the only forms of language that are significant. The modifiers around the word objective have themselves changed significantly. In tylers(1950) curriculum monograph, objective was preceded by the word educational. Thus, what one was to formulate was an educational objective. Later the term was shifted by other writers to instructional. Still later the word became behavioral, and even later it was a performance objective that was to be formulated.

This shift in modifier is not an accident; it reflects an increased emphasis on the manifest behavior of the student and on discrete forms of student activity. It gradually moves from the general to the specific… But it is signify cant in other ways, as well. An educational objective supposedly has something to do with educational outcomes. An instructional objective, although not strongly normative, still participates in the context of education. But behavioral or performance objectives may or may not be educational; the normative aspect of education no longer is a part of learn. One can have a behavioral objective that aims at creating racists or paranoids. Such an aim could hardly be regarded as decagonal, unless of course, racism and paranoia were a part of ones conception of education.

These shifts in language are, in my opinion, mere minor metrical talon. Words, of course, have connotations as well as denotations, and it is often thecae active meanings that influence significantly the way we come to think about things. For new students of education, students who do not have the benefit of perspective, the new term, normatively void as it is, might appear as a natural entity. History sustains our memory and provides for depth of field.

It would be erroneous to assume that some fields, such as the fine arts have a monopoly on the use of expressive activities. This is not the case. Any activity- indeed, at their very best, activities that are engaged in to court surprise, to cultivate discovery, to find new forms of experience- is expressive in character. Nothing in the sciences, the home or mechanical arts or in social relationships prohibits or

diminishes the possibility of engaging in expressive activities and in the process of achieving expressive outcomes. The education problem is to be sufficiently imaginative in the design of educational programs so that such outcomes will occur and their educational value will be high.

What I hope comes through in the foregoing is the view that there is no single legitimate way to formulate educational aims. I have described there approaches or conceptions of objectives is to expand the array of options that those who plan curricula can use in their work once a conception of problem-solving objectives is formulated. It is possible education, and so forth- to plan activities is formulated. It is possible within each subject field social studies… Mathematics, Art, English, Physical education and so forth – to plan activities related to such objectives. The same holds true for expressive outcomes. Such outcomes are not the exclusive domain of the arts. Even in a field that appears as rule-governed as arithmetic, expressive activities designed to yield expressive outcomes are possible.

A second utility of these three conceptions of educational objectives or outcomes is to ameliorate the unrelenting force and narrowness that a single view of what counts as a legitimate objective tends to have. If there is only one correct way to do something those who hold other values or envision other means are going to be left out. If the scope of what is legitimate is broadened, the degree of freedom for teachers and for others who plan curricula will be wider than would otherwise be the case. Indeed, it is reasonable to believe that the types of objectives, outcomes, or aims that can be formulated are not exhausted by the three types I have described. It is reasonable to expect that as our conceptual ability and creativity are applied further to this important aspect of curriculum planning, other options will emerge.

It is , as I have already indicated, possible to use the distinctions that have been made to plan curricula in the various fields that constitute the program of the school it is also possible to use these conceptions as criteria for paralyzing existing curricula,

both teacher- made and commercial. To what extent is problem- solving objectives and expressive activities included? What is the ratio or rhythm among these types of objectives within a curriculum? Do the evaluation methods that are employed in the classroom or school district provide students with opportunities to deal with all three types of tasks, or do these evaluation methods provide only for behavioral objectives to be assessed?

At present in American education, criterion-referenced testing is becoming increasingly popular. Criterion-referenced testing is a procedure that directly relates the test content to the specific behavioral objectives that have been formulated for a course or a school district. The aim of criterion- referenced tests is to help educators determine whether or not students within a school or school district have achieved course objectives. This is unlike the norm- referenced test, which is designed to differentiate among students by sorting them out in relation to a normal distribution; the IQ test and most standardized achievement tests are norm- referenced. The criterion-referenced test is designed not to compare students with each other but rather to indicate which students have met the criteria-that is, the objectives. Because the objectives that are usually employed in school districts are behavioral in character, the use of criterion- referenced tests could inadvertently reinforce an emphasis on a limited conception of objectives. Testing for outcomes whose form and content are not easily predictable complicates the evaluator's task, yet it would surely be unfortunate to have educational aims determined by the technology of testing that is presently available. The educator who understands the alternatives and issues involved in curriculum planning and educational evaluation is in a much better position to provide educational leadership to a school or school district than one who believes that there is only one way to plan curricula or to evaluate legitimately the outcomes of educational practice.

Some General Questions about the Use of objectives in Designing Educational programs

After all of the analyses of the various types of objectives and the criteria that each should meet, one is still left with some basic question about their use in curriculum development and teaching. One of the questions deals with the matter of specificity and the educational unit for which they are appropriate or necessary. How specific should objectives be? Should they be formulated for the entire course, for parts of a course, for each curriculum activity that is formulated? It is clear that answers to these questions will differ depending on the view of educational planning that one holds. If one views curriculum planning and teaching, as, in their idealized form, an error-free type of program that moves a student as swiftly as possible from one condition at entry to another at exit- I use the technical jargon intentionally- It is likely that specificity in objectives and a large number of objectives would be desired. Yet I believe that in general one would do well to think through a set of objectives in some detail, particularly when one is not clear about the purposes or aims of teaching or when one needs for matter of public record a set of specific statements of educational goals. In other words, on the whole l sees no compelling need for a teacher to formulate or to have formulated for him or her highly specific set of behavioral objectives. For one thing, such a list, especially if prepared at the level of specificity that would satisfy a behaviorist, could easily run into hundreds of items for an elementary school teacher in a self –contained classroom. Assume for a moment that a teacher taught seven subject areas each week. Suppose father that the teacher divided the class into three ability groups and had one objective each week for 40 weeks in each subject area taught. Such a teacher would have 7*3*40=840 objectives. Obviously no teacher is able to make explicit 840 objectives or be in a position to remember them if they were presented in the form of a guide of manual How many objectives are feasible? Which ones should be omitted? For what scope of

curriculum content are they appropriate? At present there are no quantitative research data that are adequate for answering such questions. Nor do I believe there are likely to be.

What I want to claim is that teachers during the school vear deal with far more than 840 objectives in the classroom. These objectives are not found in lists. There are not written (although some school districts have compiled such lists of objectives in notebooks the size of the New York City telephone directory). These objectives are a part of the personal and psychological repertoire that teachers draw on each day when working with students.

What I am referring to is the kind of intelligent activity that teachers typically employ in working with students. The kind of intelligence that gives motive and purpose to their teaching that tells them when they should help a child feel better a bout himself. when she needs to work harder. When he needs a richer set of resources to work, when a closer analysis of the text is appropriate in thousands of ways, teachers draw on images of human virtue as criteria for the direction of their activity as teachers and for the directions they should take with their students. The storehouse of such images is large. And it needs to be. It is modulated according to circum-stances and context and with regard to the particular student with whom the teacher interacts.

From this point of view, 840 objectives is a paltry sum. Consider for a moment the range of problems Content, contexts. And individuals with which a teacher must deal. Not only must there be some sense of purpose or direction to the activities in which teachers are engaged. But also the priorities among those projects must be considered. Altered Or sustained when does a teacher, for the time being, wisely forget about the goal of helping a student learn to spell a set of words correctly or learn how to punctuate an adverbial clause and instead attend to other aims, aims that are also a part of his or her aspirations for the student but not an explicit part of that

particular segment of the curriculum? When does a teacher choose to make educational capital out of unexpected opportunities in the classroom- an offhand remark by a student or a keen insight by another- and in so doing depart from his or her previously specified objective? All of these happen in classrooms, at least those that are not rigidly tied to a set of single-minded aims. In particular, elementary school classrooms often acquire their own tempo; the students become immersed in what was to be a casual short-term project; and teachers often yield to such tempo, recognizing the need for an organic as contrasted to a mechanical treatment of time.

Thus, from one point of view, 840 objectives are far more than any teacher can reasonably be expected to focus on 420 would be equally difficult. Yet, at the same time, teachers operate with thousands of objectives in the form of their aspirations for the students with whom they work. The major difference is that their latter aims are implicit and contextual rather than explicit and prepared prior to the specific context in which they are to teach.

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Dimensions of

Curriculum planning

We need, that is both a way of passing from naked propositions and their logical connections to the human activities them their sense, and beyond those activates to the features of the world and human life within which they are at home; and also a reverse road, back from forms of life in the world to the specific activities in question, and so eventually to the original propositions again.

STEPHEN TOULMIN

Thus far, a variety of ideas, concepts, and theories have been discussed per-tainting to the design and evaluation of educational programs. The ultimate test of these ideas is determined by the extent to which they make educational planning more intelligent. As I have already indicated, education is not a field that will yield to simple prescriptions or recipes. Each situation in which educational decisions are made is significantly unique, not simply unique in the sense of time and place- all situations are unique in that sense- but unique in the sense that the goals, methods, people, and context to those differences if decision making is to be effective. What we can expect of ideas about curriculum planning is not that these ideas provide

formulas, but that they sophisticate our deliberations in planning preordains and, hence, contribute to educationally richer programs than might otherwise be provided. In short, we ought to view ideas as tools, not as blue-prints; they are things to use, not things to follow.

What Is Curriculum Planning?

Curriculum development is the process of transforming images and aspirations about education into programs that will effectively realize the visions that initiated the process. I use the terms images and aspirations intentionally. The initiating conditions of curriculum development are seldom clear-cut, specific objectives; they are, rather, conceptions that are general, visions that are vague, Aspirations that are fleeting. Much of what we value, quietly describe it. Furthermore, what we value and seek is often riddled with contradictions- even within the context of schooling- and must be compromised or negotiated in context. We want children to master the basic skills , we would like them to be supportive and cooperative with their peers and with adults, yet we also would like to them to take initiative, to be able to compete and not feel bound by rules that mint stifle their imaginations, curiosity, or creativity. Our images of virtue are in flux; because images can never be translated wholly into discourse, to that degree they are always somewhat beyond the grasp of written or verbal expression.

Curriculum development in the context of education is, in this sense, a process that seeks the realization of certain ineffable. It is a process that is engaged in by anyone who attempts to make that translation. One group continually engaged in that process is teachers. Teachers inevitably have a range of options that they can exercise in the selection, emphasis, and timing of curricular events. Even when they are expected to follow certain guides or books in which activities and content have already been determined, there are still options to be considered and choices to be made by teachers with respect to how those materials will be used and the says in

which what is done in other areas of the curriculum. These decisions are, of course, decisions bearing on the curricular; they influence the kind of opportunities for learned and experience that children will have

Who plans curriculum: the teacher s Role

But more typically, the scope of teachers freedom regarding what skills are to be taught, when, in what order and how is far wider than what the most highly structured programs provide for typically, the teacher will have a general guide of topics in a subject riled, a sequence among topics, a general set of aims, textbooks, and other instructional resources. With these materials and within the constraints set by time school couture, and the characteristics of the students, the teacher builds and educational program. Highly systematic planning; a teacher might try to develop a calendar of topics and activities that extend throughout the year or the teacher might plan on a week- to- week basis, without making any attempt to follow a specified timetable. The extent to which one or the other plan is selected can depend on the teachers need for order and predictability and on the teacher's view of the educational process. For example if a teacher believes that students should play a role in the development of curriculum that they should have opportunities to decide what they study and what ends they seek. Then it is not so likely that it will be possible to predict where a class or an individual student is likely to be a month or two in the future. The point in such a view of educational planning is to encourage the student to develop increasing amounts of competence and initiative and thus to assume greater responsibility for planning his or her educational program. The control of student progress and the prediction of learning at specific intervals order time are, given this view of teaching, beside the point. But even so, the teacher plays an important role in curriculum decision making, because it is the teacher who decides to give or not to give students the opportunity to assume curricular responsibility, and it is the teacher who ton of topics and areas of study.

In contrast to such a curriculum plan, consider the increasing tendency among school districts to specify particular performance objectives for students at interval within each grade level. In such a system the scope for teacher or student flexibility in curriculum define expected levels of student performance. The teacher and the students know what these expectations are, they know that they (both students and teacher) will be tested to determine their success in meeting these objectives, and hence their choices are circumscribed by the objectives. Options that might have otherwise been pursued are relinquished in favor of school or district wide goals.

Whether one week within a system that encourages truly individualized educational programs and that supports high levels of student planning or within one in which grade level expectations and curriculum content is specified in great detail, the role of the teacher in curriculum decision making is always important. It is important because the teacher serves as the interpreter of educational policulum content are specified in great detail, the role of the teacher in curriculum decision making is always important. It is important because the teacher serves as the interpreter of educational policy and because the teacher is the major mediator of what shall be taught- if not learned- in the classroom.

Although curriculum development can and often does take form in the creation of materials, curriculum development more frequently wields no materials but, rather, plans that might be no more than sketchy notes. For example, a teacher might decide that a particular activity would be educationally beneficial in a classroom, say, a discussion of a book or film that students have read or seen. And the teacher might also decide that after the discussion he will ask the students to express their ideas about what they have read or seen in a painting or short story, a poem or a play. What the teacher wants to do is to help children recognize that ideas can be expressed in different ways and that they can have a choice in the way in which they choose to express what they know. Suppose further that the teacher thinks that it might be

interesting and useful to follow up this activity by having a poet or a painter visit the class to talk with the children about her work. In this episode, the teacher is engaged in curriculum plan prepares some notes to himself or develops a fairly elaborate lesson plan, but the latter is not a necessity. Teachers engage in such planning most of the time, and to do so is to make curriculum decisions, to engage in a form of personal curriculum deliberation. This too is one way in which curriculum development occurs. Indeed, it would not be possible to have a school with out some form of curriculum development. The form might be as loose as is used in a neoprogressive school or as tight as a highly systematic training program that leaves virtually nothing to chance. The point here is not the form that curriculum planning takes, but the fact that it must occur.

District-wide Curriculum Planning

A second group involved in curriculum development is that working under the aegis of the school districts. Many school districts appoint committees made up of subject specialists and teachers to work jointly in the creation of curriculum materials that are considered singularly suitable for their particular school district or some portion of it. School districts under the leadership of the assistant superintendent for curriculum materials are needed in the area of human relations. The district serves a community that has a wide array of ethnic and racial minority groups and after having conducted a national search for available curriculum materials decides to create its own materials, materials that will draw on the talents and resources of people living in the community. A committee is appointed by the superintendent to work on such a project, and a budget is made available to compensate teachers and others for the additional work that they will be required to do.

Such a group might work two afternoons each week after school for 6 months to develop the structure and format for the curriculum, to create the activities, and to secure the necessary materials so that what is created can be used in the classrooms.

At the end of its work, this committee will have prepared written, visual, and perhaps audio material relevant to the children living in the community the school district serves. Such work might be followed up with in-service education programs for principals and selected teachers, so that the aims of the project are gradually realized. If as a result of such a trial the materials are found to need revision, revision will occult. The expectation is that these materials, especially created for this particular school district, will become a regular part of the curriculum of each school. The materials represent the vehicles through which the initial aspirations of the lay group will be realized.

It is obvious that it is one thing to create plans for oneself and quite another thing to create plans and materials that others are to use. All teachers do the former: relatively few do the latter. What one can consider in developing materials for others to use will be described in detail later. For now it is important to recognize the difference.

State curriculum planning

A third major group to engage in curriculum development are the staffs of state departments of education or the committees that work under the aegis of the chief state school officer.

Curriculum development at the state level can take the form of specific curriculum materials to be used in the classroom. Or, as is more typically the case, it can take the form curriculum outlines that can be used as guides by local school district. In California, for example, the state superintendent of school appoints committees to develop new state guidelines. Or, as they are called in California, sate curriculum frameworks, for the teaching of particular subject areas prescribed in the state education code. These committees, made up of representatives from professional groups in education and laypeople, might be appointed for a 1-to 3-year period to meet, say, monthly, and to carry out the deliberations, consultations, and

preparation of a new framework for teaching mathematics, social studies, art, music, the humanities, and so on.

The function of such statewide curriculum committees is to make use of knowledgeable people in the subject field in order to upgrade the quality of educational programs in the various fields of study. It provides an opportunity for the state to update what it offers school districts and in the process be instrumental in guiding the direction of educational change.

In developing a statewide framework for a field, a curriculum committee is faced with a variety of difficult decisions. How specific should the materials be? In they are highly specific, they might be inappropriate for particular populations within the state. If they are very general, the translation from the guidelines to practice might be very difficult. Who should be consulted in preparing such guidelines? In a statewide framework committee on which I served, a circuit of hearings was held throughout the state with relevant professional groups. We wanted reactions to the ideas we as a committee had created and we wanted the groups to feel that they, too, participated in the process of planning the framework they would eventually use. As it turned out, this process was a form of in-service education for those of us on the committee as well as for those who participated in 20-odd meetings that were held throughout the state, we learned a great deal about what teachers and university professors regard as appropriate goals and they had the opportunity to reflect on some ideas about the content and goals of curriculum that they might not have otherwise considered.

This planning process lasted about 3 years, at the end of which a statewide framework for the visual arts department of education, and disseminated to all public schools and colleges in California. In addition, the work of the state curriculum framework committee was given a central place in art education. What occurred was a spin-off whose effects were much wider than the work that the committee did on

the written document itself. The position the committee developed with respect to the curriculum for teaching art in the state had an intellectual set of consequences for the way in which art education was conceptualized.

One should not underestimate the importance of state-endorsed programs or curriculum materials. The ultimate legal responsibility for education belongs not to the local school district but rather to the state. The constitutions of the various states assign that responsibility to the state board of education, which in turn develops a state education code that provides the guidelines, standards, and mandates for local school districts. The state superintendent of schools, through his or her staff and with the assistance of the county school superintendent, is responsible for monitoring local school districts to assure that the requirements of the state education code are met. Although relatively few county superintendents execute primarily a monitorial function, the authority of the office and that of the state department of education carry weight. In many states, the withholding of funds to local school districts is possible if the mandates provided in the state education code are not heeded.

The point of all of this is to underscore the importance of state sanctions in the area of curriculum policy, particularly when a statewide educational policy is backed up by funding options that the state department of education holds.

It should be noted also that the state board of education is in some degree guided by the advice of the state superintendent of public instruction, particularly with respect to matters dealing with what should be taught and for what amount of time in some states, the education code specifies which subjects will be taught at each grade level and how many minutes of instruction will be provided for these subjects each week. In addition, the state prepares a list of acceptable text books or provides state-adopted text-books for the local school districts, because many teachers build their programs around them; these resources have a great impact on the content with which students come into contact. If a textbook in science devotes three chapters to

ichthyology, students using that textbook study ichthyology, if a textbook on the social studies presents a black perspective on the civil rights movement, students study that material. Because access to content is a condition to learning that content, questions of content inclusion-content exclusion are extremely important. In effect they define much of the opportunity succulents will have within the school to deal with certain topics and ideas.

Research and Development Center

A fourth group that engages in curriculum development are those working in university research and development (R&D) centers and in regional educational laboratories. Research and development centers. All of which are affiliated with universities, conceive of their mission as conducing research and facilitating educational development by devising products and programs that are primarily experimental and, in principle, related to ongoing research. Educational laboratories do, however, engage in the creation and testing of curriculum materials, the marketing of which is handled by commercial publishers.

Educational laboratories engage in the development of curriculum materials in mathematics and in the area of aesthetic education. The main function of educational laboratories is to use federal funds to pioneer new methods and programs that require the skills of sophisticated curriculum specialists and others and the kind of risk capital that commercial publishers are unwilling to provide. Thus, with average annual budgets of millions of dollars, the laboratories conceptualize, develop, test, and document these materials for use in classrooms throughout the country. In addition, some laboratories have created teacher centers to train teachers in the use of the materials they have designed. Once produced, the materials are often published commercially, and school districts, with the aid of federal funds, may

purchase from a commercial publisher what has been developed through the support of federal funds at the laboratory or the university- related R&D center.

Educational laboratories are generally larger and have larger budgets than R&D centers; they occupy often elaborate and at times sumptuous quarters and have a staff that consists not only of curriculum specialists, but also social scientists, designers, photographers, managers, secretaries, and the like.

In their ideal form, educational laboratories and university R&D centers should undertake programs of curriculum development that are high risk, forward looking, and based on the highest professional standards of the field. Agencies supported by the taxes of citizens have a special obligation in my view that exceeds that of commercial publishers. Unfortunately, the competition for federal funds has created in both laboratories and R&D centers a need to "look good", to project an image of success that too often hampers candor. Laboratories and R&D centers should be places where it is all right to fail. Indeed, a laboratory without failure is a contradiction in terms.

Commercial Publishers as Planners of Curriculum

A fifth group And in many respects the most influential group aside from the classroom teacher in the area of curriculum development, are commercial publishers. And the most influential material published is the textbook. Textbooks are not typically looked on as curricula, but they are certainly important curriculum materials. In the first place, textbooks are, for many teachers, the hub around which programs are built. When a school or school district adopts a textbook in social studies, science, or mathematics, this book, de facto, defines a significant portion of the content of what students and teachers for supplementary activities and in these ways further define what students will do in the classroom. In addition, accompanying teacher guides provide guidance to the teacher regarding the kinds of

questions or issues that can be used for discussion, and some contain tests that can be used to determine of the students have learned what the textbook taught.

Increasingly, however, publishers are developing not only textbooks, but also multimedia kits designed to teach what publishers believe will sell in schools. Most of these material- and they come in video cassettes, film-strips, audiotapes, computer software, graphic displays, and educational games are designed to provide short-term units rather then semester- or year-long programs. The creation of these materials originates from at least three factors: the possibilities that new technology provides the marketability of the materials to schools and hence their profitability for publishers and the realization that the channels through which students learn are multiple and the range of sensory modes that can be used for facilitating learning is wide. Yet despite the plethora of such materials- a visit to national convention of teachers and school administrators will provide a mind-boggling array of such materials displayed by publishers- the single most important resource influencing what children study in school, aside from the teacher, is still the textbook.

Federal influences on curriculum

There is another source that although seldom involved in planning curricula nevertheless has a significant effete on the curriculum that is offered.

That source is the federal government. The government has access to two important resources for influencing the curriculum: money and publicity.

When the government adopts a policy that will infuse $400 million into the teaching of science and mathematics in the schools and when the president of the united states speak to the nation and says that science and mathematics education is a national priority, the conditions are created for bringing about a new emphasis in these fields in the nations schools. With such funds, new curriculum development projects can be initiated, institutes for teachers to be retrained in these fields can be

created. Scholarships to encourage students to select these fields of study can be provided and increased salaries for science and mathematics teacher can be offered.

These are not trivial considerations. But perhaps even more important is the rationale for more science and mathematics in the schools. The president provides the nation with an economic rationale: we must emphatic size science and mathematics in school curricula in order to remain economically competitive with Japan, Germany, and other industrial nations. The reason is an instrumental one: students need to study in these areas for the economic well- being of the nation. There are, of course other bases on which to justify the teaching of mathematics and science. One might wonder what a purely economic justification does to the publics understanding of education when such rationales are provided from the high office of the president of the United States.

Furthermore, what will happen to other aspects of the school curriculum when only two subjects receive such massive support? How is a balanced curriculum to be sustained-assuming one wants balance in the curriculum? Such questions and issues need to be asked and addressed by school boards and professional educators... even when they are neglected by policymakers in Washington. The federal government, despite our commitment to state control of education, plays an extremely important role in shaping the school curriculum.

What we find, then, when we look at who does curriculum development and where and when it is done are a variety of groups engaged in the task. Teachers develop curricula when they plan for their classes. School districts engage in curriculum development through the creation of materials to be used in classrooms, and professional and lay groups develop curricula when they create state frameworks for teaching in particular subject field. Educational laboratories, R&D centers, and commercial publishers engage in curriculum development through the production of materials such as Man: A Course of study, SRA Reading Kits, DISTAR, CEMREL's

esthetic education program, program, and SWIRL's Basic Reading series. Finally, the federal government is very influential in reshaping what schools teach. All of these groups and individuals engage in curriculum development as they attempt to transform aspirations and images of educational virtue into plans and methods they believe are useful for realizing such ends.

Dimensions of Curriculum Planning

What are the factors that one might consider in the design of an educational program? What can one take into account in curriculum planning? As I have already indicated, I do not believe it possible in the field of education to prescribe formulas that one is to follow. But it is possible to provide concepts and generalizations that can heighten one's sensitivity to issues, problems, and possibilities to which one might attend. What follows is the identification and discussion of some dimensions of curriculum planning that can be considered by those attempting to design educational programs. The sequence of these dimensions is, to a large degree arbitrary. One need not begin or end with the factors or aspects as they appear here. Because for the purposes of writing some ordering is necessary, the sequence that follows seems to me to be reasonable, but one may proceed in curriculum development with a very different order.

It should be noted at the outset that the study of the processes of curriculum development as it actually occurs for individuals or groups is rare. It has only been quite recently that the process has been studied empirically. The reason for the general neglect is fairly clear. Individual and groups interested in developing curriculum materials or formulating curriculum policy have had those goals as their major priorities. The study of the processes through which decisions are made is seldom a part of their mission. Hence, what groups actually do in different contexts and circumstance is at present largely known through recollection rather than through. Say, naturalistic observation as an ethnographer might study the process.

What is clear from the case studies of curriculum decision making that have been published is that the process is far more convoluted, circuitous, and adventitious than on might be led to believe by reading the formal literature on curriculum planning.

Goals and their priorities

Perhaps the area in curriculum planning that has received the most attention in the literature is that of how objectives should be formulated. It one looks into the literature in curriculum, one will find distinctions that are made among aims, goals, and objectives. Aims are the most general statements that proclaim to the world the values that some group holds for an educational program. The aim of this school is to help students learn to participate effectively in the democratic way of life. From aims we sense detection, a point of views, and a set of values, to which the community or group subscribes. These statements form a kind of educational manifesto of cherished values, and, although such statements have been regarded by many as meaningless. If one were to contrast the statement of aims made in school districts in the united states which those found in the written material produced in china, Cuba , or Sweden, one work note significant differences in the spirit and outlook of what has been written. What such statements provide is an articulation of educational faith in a sense in the way in which the preamble of the Constitution or the Declaration of independence expresses general but still meaningful beliefs about the individual and his or her relationship to the society.

A second kind of aim is referred to as a goal. Goals are statements of intent, midway in generality between aims and objectives. Goals describe the purposes held for a course or school program. The goal of this course is to help students understand the causes of social revolution. The goal of the course is to develop skills in copper enamel jewelry making. These statements are considerably more specific than aims, but insufficiently specific for, say, instructional objectives. Goals are intended to provide a greater focus on anticipated outcomes and to provide curriculum planners

with the basis for the selection of curriculum content. In the standard curriculum literature, goals are supposed to be deduced from aims. Having deduced goals, one then deduces objectives. Having deduced objectives, one then proceeds to formulate curriculum activities, the planning process is supposed to be a step- by- step process from the general to the specific, from ends to means. The problem with this view as I have indicated earlier is that it assumes that curriculum activities that are educationally significant always have explicit goals or objectives, which they do not, And that the formulation of goals must precede activities, which is not always true.

Objectives are typically specific statements of what students are to be able to do after having experienced a curriculum or a portion of one. Objectives of the instructional variety are supposed to state with little ambiguity what particular forms of behavior the student will be able to display. Thus, the student will be able to create a clay bowl on a potter's wheel that is at least 12 inches high, having walls no thicker than 1/2inch, would be an example of an instructional objective.

Now the thrust of these comments is not essentially to restate the forms in which educational intentions are couched or even to describe their levels of generality but rather to point out that intentions are appropriate to consider in the development of an educational program and that priorities among goals must be determined.

The determination of priorities is influenced by the context in which programs are to function. For example, a school board, a community, or a school faculty might be convinced that a particular set of goals is of the utmost importance but at the same time recognize that the realization of these goals in this particular context is not possible at this time. Thus, goals, even those holding high status, are shifted in their operational importance. A faculty might believe that the critical study of local politics is crucial to the sound education of adolescents, but they might also recognize that the community would not allow such studies to be taught, or that there is in fact no one

on the faculty who has the professional competence to teach such a course well. In this case other areas and goals become practically more important.

Thus see I have discussed goals as then relate to and across subject matters. But within fields, too, there is a host of competing goals. What kind of goals should be emphasized in mathematics: comprehension of the structure of mathematics as a system or skills in computation? What kind of social studies should be provided: those that emphasize history or those that emphasize the methods of inequity of the social sciences? What sort of art program should be offered to students: one that enables them to appreciate the most significant works of art that have been created or on that aims at the development of skills needed to create art? Competent curriculum deliberation will consider the option within as well as among fields of study. In such consideration, educational values obviously come into play, and it is here that basic orientations to curriculum emerge among those who deliberate. But the ultimate resolution of those priorities always takes place within the constraints of the context. What one finally puts into practice is a function of the interactions and existing constraints.

Although acquiescing to existing constraints in educational planning can lead to an inert form of educational conservatism, regard for the constraints of the context is necessary for an intelligent form of curriculum deliberation. Curriculum planning cannot adequately be treated in a simple piecemeal fashion; there are always trade-offs in time, expected outcome, human and fiscal resources, community support and the like. To neglect the big picture is to court disaster, yet to regard the content only as a set of constraints rather than a set of opportunities is to embrace a maintenance model of educational management. Negotiating the balance between the desirable and the possible is one of the arts of school administration as well as curriculum planning.

The Content of the curriculum

Because goals seldom prescribe the content that can be used to achieve them attention to the selection of content is always an important curriculum consideration. If a curriculum development group working on the development of a curriculum in, say, biology agrees that the major aims of the program are to help students understand (1) that scientific inquiry always yields conclusions that are tentative and (2) that living organisms depend on the environment to survive, the specific content and the teaching methods that may be instrumental to such purposes are still not yet given. What the group must do is it identity the variety of potential content areas within biology or within the students experience outside of biology that will help them grasp these ideas. A curriculum development group might For example, choose a variety of content ranging from simple forms of plant life to complex forms of human behavior for exemplifying the relationship between organism and environment. Or the group might decide to create some analogies to nonbiological entities such as cities or nations in order to illustrate how similar principles operate in nonliving phenomena.

The point here is that groups concerned with curriculum planning have options in content selection. The problem is one of deciding which of the possible content options should be selected. One possible criterion for content inclusion, in addition to whether the content is likely to be meaningful to the children for whom the program is intended. Children bring to school wide varieties of experience that originate from the homes and communities in which they live. The kind of biological content that children living in a rural area might find meaningful can differ significantly from that which inner-city urban youngsters might find meaningful. One way of dealing with such diversity is to include in one's curriculum material options from which teachers and students can themselves choose. In other words, by providing different kinds of content to make the same point, the flexibility of the materials is increased.

In Sweden new curricula are being developed under the auspices of the Ministry of Education. Curriculum developers identify significant concepts and generalizations within particular subject areas. For example, in the social studies the concept might be role generalizations are the provided about role: societies tend to differentiate the roles people perform in order to deal with problems and social needs efficiently. Given the concept of role and the generalization in which it is embodied. The teacher, or the faculty of the school, works out the particular curriculum activities and specific curricular content that will make this concept and generalization meaningful to students. For students living in rural areas, exemplars of role may very well be different than exemplars for students living in urban areas. Thus, once the important concepts and generalizations are identified at a national level for a particular field of study, the way in which they are transformed into an operational curriculum for students is a task for the teacher or the faculty of the school. In this way both national and local needs can be met.

There are, of course, limitations on the number of options that can be provided. The physical size of the syllabus, for example, is not a trivial consideration- nor is the amount of materials teachers should be asked to read. More will be said about these considerations later: for now, the major point to be made is that goals do not prescribe content. Content selection, like goals, can be considered against a backdrop of option. Furthermore, curriculum developers, within the limits that seem reasonable can provide teachers with the content of options that are related to the aims of the curriculum.

Types of learning opportunities

Goals and content are necessary but not sufficient for the development of a curriculum. The educational imagination must come into play in order to transform goals and content to the kinds of events that will have educational consequences for students. This transformation requires that an event be conceptualized and have

sufficient educational promise for students to be used in an educational program. I say that the educational imagination comes into play because it is this task educational transformation that draws most heavily on the expertise of the teacher or curriculum designer.

If a group of citizens wanted to know what the most significant concepts and generalizations were in some branch of biology, the individuals most likely to provide such information would be biologist who know their field well and who were aware of the most recent developments within it. But to acquire such information from biologists is not sufficient for the creation of an educational program. Some educationally appropriate means must be created to enable students to interact with problems or situations that will yield an understanding of these concepts and generalizations. A biologist who has not worked with adolescents, who does not understand what teachers are able to do in a secondary school classroom, is not necessarily the best person to make such a transformation. It is here that curriculum expertise is crucial, for it is here that educational events must be planned and curriculum materials prepared to enable teachers and students to grasp those concepts and generalizations and to do it in a form that is consistent with one s view of education. For example, if one believes that the major mission of the school is to introduce students to the products of the best inequity in the arts and the sciences, one might decide to use a moderately didactic approach to instruction in, for example, the biological sciences. Such an approach could emphasize the big ideas and theories that biological greats have created. In such a view the work of Mendel, Darwin, wall, Muller, and Dobzhansky would play a prominent role in content selection. The thrust of the curriculum would be to help students understand the theories and concepts these biologists created, say, within the context of their time. To do this one might provide lectures and films and perhaps have students read excerpts from primary source material. But if one were interested in having students understand the

relationship between biological ideas and the methods through which those ideas were created, if one wanted to help students appreciate the tentativeness of scientific conclusions, then the type of learning opportunities one might use would give students experience in the conducting of biological experiments the transformation of the same content would take different forms because the basic orientation to education would differ significantly.

The options available to the curriculum designers are numerous with virtually any body of content and in the curriculum field as in education at large there has been a longstanding controversy on the relative importance of process as compared with product. Those who emphasize the importance to active inquiry such individuals want the student to inquire to think to act and in the process to learn the outcomes of the process are what children learn from the engagement. It is to be hoped that the field in which the inquiry occurred but that is not necessarily the major aim. The main aim is to teach children to think to act and to learn from the consequences of their actions.

Those who emphasize the product are more interested in what children learn of the conclusions of mature inquiry in specialized fields. Does the student understand the relationship between random mutation and natural selection? Does the student grasp the concept of dominant and recessive genes?

These views of what counts educationally have an extraordinarily important bearing on the kinds of learning opportunities that are created in the curriculum. The advocate, for example, of learning by discovery will frequently be interested in helping children learn to think like scientists. For such people the curriculum should be built around problems. The task of the curriculum designer is to create activities that help children either for-umlaut problems or try to resolve the problems posed within the materials.

Although I have emphasized the relationship between one's orientation to curriculum and the kinds of learning opportunities that might be provided, in practice the relationship between activities and goals is neither linear nor unidirectional. Indeed, teachers are more inclined to focus on what they might do than on what goals they intend to accomplish (see McDonald, 1965). This is because practical decisions always relate to the utility of action. What teachers want and need are ideas that have practical payoffs; ideas that for the most part lead to action. Projects that appear interesting, activities that seem heuristic, events that will be attractive and engaging to students are valued by teachers. Once students are fully engaged in such activities, one can guide them so that various goals and aims are achieved.

But goals and aims, unless they can be transformed into educational events within the classroom in a form that is interesting to students, and within the capacity of teachers, are only empty hopes that have little educational reality. One means through which types of learning opportunities might be created is a matrix of intellectual processes. One such matrix has been formulated by J p. Guilford, a psychologist long interested in creative thinking and in the structure of the human intellect. What Guilford has done is to conceptualize the variety of aptitudes or processes that the human mind is capable of. His scientific ambition has been not only to conceptualize these mental processes, but also to create instruments that can be used to assess them. We need not for our purposes try to evaluate the scientific validity of these instruments, but we can examine his model of intellect for its potential utility in the creation of learning opportunities within a curriculum. That is, we can use Guilford s model as a kind of mnemonic device to help us-if we so choose- to create learning opportunities that elicit different forms of thinking. These forms, once identified, could then be related to bodies of content considered important to so that sophisticated forms of thinking could be used to deal with educationally significant content.

Related to Guilford's structure of the intellect are the intellectual processes identified in the taxonomy of educational objectives in the so-called cognitive domain. The cognitive taxonomy lists not 120 mental processes, as does Guilford, but six. They are as follows

1. Possession of information.

2. Comprehension

3. Application.

4. Analysis.

5. Synthesis.

6. Evaluation.

Although these terms refer to kinds of objectives that one can formulate and to the kind of test items or tasks on tests related to those objectives, the taxonomy can also be used to formulate types of learning opportunities that can be made available to students. For example, one could design learning opportunities that were intended to elicit each or all of these processes. Of course, there can be and often is a gap between intention and reality, but nevertheless, the taxonomy can help focus attention to enable one to convert a learning opportunity from one that is parochial and prosaic into one that has intellectual significance.

A word must be said about the potential hazards of classification systems, taxonomies, theoretical models, and the liked. Such conceptual devices can be extremely useful for helping one differentiate and classify. In performing this function, they increase intellectual precision by helping us bracket the world in useful ways, but one must not forget that such bracketing is a construction of mind, that there are other ways to classify, and that one should take care not to reify concepts into realities and eventually constrain our understanding. Some of this has already occurred in the case of the taxonomy of educational objectives. These taxonomies differentiate the cognitive from the affective, the affective from the psychomotor, and

the psychomotor from the cognitive. Individuals in education and psychology sometimes conclude the so-called cognitive activities are independent of affective ones or that psychomotor activities are independent of affective ones or that psychomotor activities are neither cognitive nor affective. In actual experience, there is no clear lime between cognition and affect except within the definitions of the taxonomy. For example to have a feeling and not to know it. Is not to have it, to think about a feeling is to know it. In short the affective and cognitive pervade each other. Although in our culture we do find it useful to talk about our thoughts and our feelings, in education such talk can lead to theoretically devastating ideas and to practically questionable results. Some schools For example teach cognitive subjects in the morning and affective ones in the afternoons. My point here is not to argue that conceptual devices should not be used in the formulation of types of learning opportunities but rather to state that unless they are treated as tools. Such devices can interfere with the ways in which aims and activities are conceptualized.

The organization of Learning Opportunities

All educational programs occur over time. How events are planned within a period of time is one of the decisions curriculum planners can make. There are two images of curricula sequences that it may be useful to distinguish between. One of these is the staircase model already mentioned; the other is a spider web model.

The staircase model conjures up the image of a series of independent steps that lead to a platform from which one exits. This idea conceives of curriculum activities as building on what preceded them, preparing for what is to come. The movement as is true in the climbing of a staircase is always up ware.

This conception is metaphorically consistent with terms such as entry skills and exit competencies. The route is well defined, mechanical in construction, and efficient. There is little room for wasted motion or exploratory activities. Perhaps the most pristine example of such a model in curriculum is to be found in linear programs

used in computer- assisted instruction. The same image was used in teaching machine programs that were available several years ago. The task of the curriculum designer is to create a sequence of frames. That, like the staircase, leads the student to predetermined destination whose features are known by the curriculum designer and the teacher. One of the major needs of educators who wish to use the computers is to secure or create programs that are sufficiently flexible to respond to the purposes and decisions of the student. Most programs put the student in a responsive position; the task is presented, the student responds, and then, if the response is correct, he or she proceeds along a fixed path that has already been predetermined. Much of the work is drill and practice. As programs become intellectually demanding and computers for classroom use more sophisticated. Intellectual processes that are truly importunity will be cultivated through computer- use. We are as vet still far trims such a goal for most computer programs that are now being used in classrooms.

The spider web model is one in which the curriculum designer provides the teacher with a set of heuristic projects, material, and activities whose use will lead it diverse outcomes among the group of students. The assumption used in this model of curriculum organization is that what are needed are projects and activities that invite engagement rather than control. With engaging projects or activities students will create ideas and develop skills that they want to pursue. The task of the teacher is then to facilitate the interests and goals that students develop as a result of such engagement. As children bring with them different experiential back-grounds, it is reasonable to expect that the kinds of meaning they make will also differ. This is seen as a virtue rather than a liability, for it is in the cultivation of those interests that truly percolation resides.

To be sure, the kind of personalized education that is implied in a spider web model of curriculum organization places great demands on the inventiveness of the teacher. In this model the teacher cannot rely on shock responses to identical

problems or tasks among students. Some students will work independently, others will work in small groups, but all will require a teacher who knows what kinds of problems and interests the students have and who is prepared to provide or point them to the resources that they need to develop those interests or to resolve those problems.

I do not believe it possible to conclude that one mode of curriculum organization is more educationally beneficial than the other. It depends on one's view of education and on the readiness of students-regardless of their age-to cope with different types of problems or tasks. It requires, as whitehead (1929) implied. Attention to the rhythm of education.

Life is essentially periodic. It comprises daily periods, with alternations of work and play, of activity and of sleep, and seasonal period, which dictate our terms and our holidays and also it is composed of well-marked yearly periods. These are the gross obvious periods which no one can overlook. There are also subtler periods of mental growth, with their cyclic recurrences. Yet always different as we pass form cycle to cycle, though the subordinate stages are reproduced in each cycle. That is why I have chosen the term rhythmic, as meaning essentially the conveyance of difference within a framework of repetition. Lack of attention to the rhythm and character of mental growth is a main source of wooden futility in education. I think that Hegel was right when he analyzed progress into three stages, which he called thesis, antithesis, and synthesis; though for the purpose of application of his idea to educational theory I do not think that the names he gave are very happily suggestive. In relation to intellectual progress I would term them the stage of romance, the stage of precision, and the stage of generalization (p.29)

Yet notwithstanding the argument that there is no intrinsic value in the abstract for either of these models of curriculum organization. I think that it is fair to say that the spider web model has more appeal to those with the more conservative

educational bent. Those holding a progressive or child -centered. Philosophies tend to emphasize the differences among children and the belief that children should be given ample opportunity to formulate their own educational aims. The teacher is not to stuff the duck but rather to facilitate the achievement of aims born out of the interaction children have with the stimulating resources the teacher provides.

Those with a more conservative view of education believe that there is a body of content that children should learn and that the sequential organization of this material is the best assurance that it will be learned. The staircase model fits the view nicely because it is systematic, well organize, and linear. When this view prevails, providing for in digital differences usually means varying the pave through which children proceed to climb the same stairways rather than building different stairways leading to different goal for different children.

Historically these alternative models or conceptions of curriculum organization have been the subject of much dispute. In his classic book the child and the curriculum, john Dewey (1959) describes these camps this way one groups says:

Subdivide each topic into studies; each study into lessons: each lesson into specific facts and formulae. Let the child proceed step by step to master each one of these separate parts, and at last he will have covered the entire ground. The road which looks so long when viewed in its entirety is easily traveled, considered as a series of particular steps. Thus emphasis is put upon the logical subdivisions and consecutions of the subject- matter. Problems of instruction are problems procuring texts giving logical parts and sequences, and of presenting these portions in class in a similar definite and graded way. Subject-matter furnishes the end, and it determines method. The child is simply the immature being who is to be matured; he is the superficial being who is to be deepened; his is narrow experience which is to be widened. It is his to receive, to accept. His part is fulfilled when he is ductile and docile.

Not so, says the other sect. the child is the starting-point, the center, and the end. His development, his growth, is the ideal. It alone furnishes the standard. To the growth of the child-all studies are subservient, they are instruments valued as they serve the needs of growth. Personality, character, in more than subject- matter. Not knowledge or information, but self- realization, is the goal. To possess all the world of knowledge and lose one's self is as awful a fate in education as in religion. Moreover, subject- matter never can be got into the child from without. Learning is active. It involves reaching out of the mind. It involves organic assimilation starting from within. Literally, we must take or stand with the child and our departure from him it is he and not the subject- matter which determines both quality and quantity of learning. (p.95)

Nize what thev teach on the basis of what universities teach. Mhat follows represris one secondary schools effort courses that traverse disci –plinary lines:

Junior and Senior Offerings

Courses in the upper two years are generally available to both juniors and seniors. Very few requirements are placed upon upper class students since they are expected to exercise mature judgment in choosing their areas of specialization. Students are expected to sign up for approximately 30 units of courses per year, except by special permission from the faculty scheduling committee.

Science

300 How to fix it

Simple maintenance and repair of household items. I unit

301 Student Teaching in Science-3 W's or TBT (seniors only)

Students will teach science classes in consultation with science teachers.

Credit for mini-teaching. 2 units per trimester

303 Intermediate Biology

An inquiry into life and a study of the basic structures and functions of microorganisms, plants, and animals with emphasis on evolutionary steps, patterns of heredity, animal behavior, and ecosystems. 4 units

304 Advanced Biology 4 units

305 TBTI-(theories behind technology)

Inter- disciplinary course of physics and chemistry, Emphasis on scientific processes rather than accumulation of facts. 4 units

306 TBT II

An advanced continuatin of TBT I. 4 units

Social Sciences

310 Rebel

A study of the rebel in contemporary society-his reasons and his strategies. 4 units

311 Survival

Practical ways of understanding and surviving in the modern city 2 units

312 which way America

An in –depth approach to key events and people that shaped America

2 0r 4 units

313 Backgrounds of Contemporary America

Course starting with contemporary events as a springboard into their root causes. Use of historical factual data along with American literature to capture the American consciousness of today. Will include some emphasis on means of communicating these ideas. Can be used in partial fulfillment of state History and English requirements. 4 units

314 Black Humanities To be announced

A study of the writing of the Afro-American people with emphasis on the period from 1900 to the present, oral interpretation of recent Black writing in America and

the African nations… (Course design cold be a project of the interested students and faculty.) A Black teacher is being sought for this course. 2 units

What we see here is a set of course titles that reflect an interest in relating course content to the interests of adolescents. The topics chosen to serve as titles for the courses are not, as they are so often, U.S. History and Math l. They are rather which way America and Survival. Such course titles are in a sense symbolic of the faculty's desire to develop programs that address in a meaningful way the interests of students who are likely to enroll in them. In this sense, the faculty is making an effort both to capitalize on what students already are interested in and to tantalize them with descriptions that it hopes will satisfy.

These course titles are, for the most part, Out of fashion in 1993. They were taken from a list of courses offered in a secondary school in Chicago in 1968. Our fashion today is more academic, demanding less pizzazz and more convention. Whether one believes the shift from 1968 to 1993 is educationally beneficial or detrimental depends on the way in which one views the purposes of the secondary schools and the needs of the particular population in a school or school district.

Mode of presentation and Mode of Response

One of the least-considered options in curriculum planning deals with the modalities through which students encounter and express what they learn. For the vast majority, of subject fields in schools, the mode of presentation that students encounter is either verbal or written language. The teacher talks or students read textbooks containing the information and ideas they are to acquire. To demonstrate what they have learned. The students are expected to write or take examinations that are also presented in written form. Out of traditional expectations, we have inadvertently allowed one mode to so dominate how expression is to occur in school that we have come to believe that to have any understanding at all the student must be able to demonstrate it in verbal or written terms.

Yet the forms through which knowledge and understanding are constructed, stored, and expressed are considerably wider than verbal or written discourse. What can be known, say, about autumn can take from in scientific propositions that deal with chemical changes in trees, in astronomical propositions about the location of our planet in relation to the sun, in poetic expression disclosing the smell of burning autumn leaves, in visual images that present to our consciousness the color of a Vermont landscape, and in auditory forms that capture the crackle of leaves under our foot- steps. Autumn, in short, is known in a variety of ways and the ways in which it can be known are expressible in a wide range of expressive forms.

Now the significance of this fact for the development of educational programs is considerable. What it implies is that educational programs that aim to help children gain an understanding of the world need to recognize that understanding is secured and experienced in different ways. What one is able to know though forms of musical expression cannot be known in discursive form, and vice versa… Humans employ different performance systems to express what they know about the world. For the curriculum designer this implies are to understand phenomena in the variety of ways in which they can be understood, they need to have the opportunity to encounter, forms that express ideas about those phenomena in different ways. Furthermore, it lippies that if teachers are to understand what students know about something, then students should be given options in the ways in which they can express what they know. In short, students need nor be restricted to one way of expressing what they have learned, curriculum designers need not use verbal forms of expression as the only means of presenting ideas to students.

When one also recognizes that there are aptitude differences among students with respect to the knowledge and performance systems they use best, the grounds for using diverse modes of presentation and response become even stronger. One could argue that by withholding such opportunities from students, a significant

proportion of them are denied equal educational opportunity and that certain modes of presentation and forms of response deny them the opportunity to display what they have learned in the forms that most suit their aptitudes.

What I have tried to do thus far is to identify some of the factors that onecan take into account in the process of curriculum development. In particu lar in the design of materials that may be of help to the teacher in his or her work. These factors, or considerations, are to be viewed as heuristic: they are tools to be used, not rules to be followed. There are no rules or recipes that will guarantee successful curriculum development. Judgment is always required. And if this task is a group effort. Sensitivity to one s fellow workers is always necessary.

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