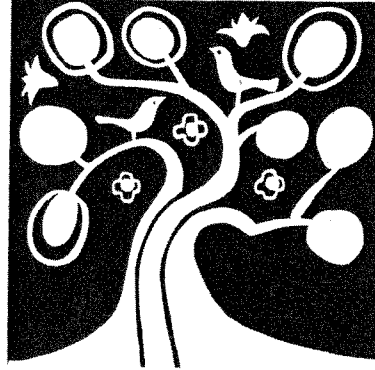


The Anisa Model

A New Basis for Educational Planning



During the past 50 years a large number of research findings have accumulated in support of the old adage "as the twig is bent, so grows the tree." Consistent with the intuitive judgments of teachers through the years, these findings indicate that the early years may be even more critical than was formerly realized. Thus, the growing concern for modifying the institutions which have a direct influence on the lives of children is not misplaced. Poor schools and deleterious social conditions have bent millions of "twigs" into stunted trees and have been rightfully blamed for contributing to the impairment of the growth and development of children. The awareness of such conditions became so widespread by the 1960's that Congress provided extensive support for many new programs (such as Head Start and Title I of the Elementary and Secondary Education Act of 1965) which promised to counter the destructive effects of educational and social disadvantage.

Successive assessments have shown that the promise is not being fulfilled; the results, for the most part, have proved disappointing. And yet, in spite of this, many educators are still optimistic that a significant breakthrough in early childhood education is in the offing. The continuing trend of providing greater varieties of educational programs and services for the young is evidence of that optimism. While this is in one sense encouraging, perpetuation of the tendency to implement new programs without regard for careful thinking, long-range planning and painstaking evaluation is disturbing. Logically, such thinking and planning would draw upon the vast body of research findings concerning

the development of children and provision would then be made to apply those findings systematically and to assess their practical utility. But even those who would be inclined to make that use of research findings are frustrated and discouraged from doing so because their fragmentary and sometimes contradictory nature makes translation into practice difficult, impossible or inconsequential. Thus, after a decade of the most extensive social legislation in our history and the investment of billions of dollars into inadequately conceived and hastily implemented programs for children, we find ourselves at a critical juncture. Either we must find a way of translating what we know into a powerful and comprehensive system of educational practice or face the continuation of insignificant results that inevitably comes from piecemeal, short-term and therefore necessarily superficial program planning.

Such a translation cannot take place unless we can organize knowledge from experience and research into a useable form and this cannot take place without the formulation of a coherent body of theory. But theories themselves, if they are not to be trivial or conflicting, must have some means of defining their scope and securing their integrity. Huxley referred to this need as a need for a noetic integrator—"symbolic or conceptual constructions which serve to interpret large fields of reality, to transform experience into attitude and unify factual knowledge and belief." We felt con-

vinced that education would remain ineffective until it finds its noetic integrator. Thus, the Anisa Model was developed. It is the product of an intensive effort to discover such an integrator for the field of education and to articulate the "conceptual constructions" which comprise it so that theory may significantly increase the efficacy of practice.

Anisa

Anisa means "tree of life" and symbolically represents never-ending growth and fruition in the context of protection and shelter, and signifies the blending of the useable and fruitful past with a new sense of the future. It thus takes on contemporary significance as the symbol for this effort to provide that noetic integrator, that comprehensive conceptual scheme for organizing the vast amount of information critical to helping teachers work effectively with children. From its beginning nine years ago, the Anisa project¹ has been a multi-disciplinary enterprise. It has culminated in the formulation of a philosophical base, from which we derived a theory of development, a theory of curriculum and a theory of teaching—all in service of one overarching goal: the creation of a comprehensive educational system that would be unique in its power to release human potential.

The unifying force of the Anisa theory derives in part from the fact that it extracts and preserves from the past those elements of experience which serve to keep us in touch with reality while creating an awareness of potentialities

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¹ In 1971, The New England Program in Teacher Education (NEPTE), an affiliate of the New England Regional Commission, granted substantial financial assistance to The Center for the Study of Human Potential, School of Education, UMass at Amherst, for the purpose of fully developing the Anisa Model and a teacher preparation program based on it.

for development in the future. In other words, it blends knowledge of the past with a vision of the future. To disregard the past would render us impotent to determine where we are going. Rootlessness in the past forces one into a pattern of living entirely in the present, reacting rather than initiating action, always responding on the basis of impulse rather than careful thought. This pattern of living is devoid of a sense of future; it is without long-range goals that provide the perspective needed for wise decision making. When educators follow this same pattern professionally, they produce a flurry of hastily conceived and crisis-oriented innovations accompanied by an exaggerated emphasis on change for change's sake. One of the unavoidable consequences of this approach is a parade of short-lived changes that fragments experience for both teachers and children. Innovations lacking solid roots in the past can hardly serve a vision of the future. They inevitably bring about their own extinction after having consumed valuable resources. The "do-away-with-tradition" idea of innovation that characterizes many of the new programs in education today are prime examples.

Our approach to change has been to draw from the past what has served man well and to merge it with a new vision that expresses the noetic principle required to fuse tradition with a sense of destiny. To appreciate this approach necessitates a knowledge of how education came to be what it is. Once that has been grasped, one is better equipped to determine what new directions it ought to take.

From Past To Present

The history of psychology, particularly

as it emerged from philosophy to set up its own household, sheds an interesting light on the present state of education. When psychology declared its independence from philosophy it borrowed concepts from an existing scientific tradition then dominated by Newtonian physics. Consequently, psychology's view of man was strongly influenced by mechanistic conceptions of reality far in excess of the influences of man's own experience as reflected in his history, his ideals, his art and his religion. This led to a basic flaw in western psychology, namely, the assumption that one can know the totality of something by examining the pieces or parts that comprise it. The whole of something has a reality that is more than its component parts represent. Thus, this atomistic, mechanistic view of man misguided psychologists into believing that elementary sensations, reflexes and conditioned responses are sufficient to explain the entire nature of man, and that freedom, dignity, sense of purpose, aspiration, will and creativity are mere illusions that have no place in a scientific understanding of man. An application of this belief rests on the assumption that one can understand man by looking at the behavior of lower forms of creation. We see this as a fundamental error, for it ignores those aspects of human functioning that are characteristically unique to man. Educators who would follow this mechanistic line of reasoning and adopt it as a basis for an entire educational system will find it woefully inadequate and ultimately unworkable. Its utility as a comprehensive theory for understanding man is too restricted and fails to integrate all that we know about human beings in a way that would enable us to create an educational system that maximally fosters growth and development.

To avoid this, we took pains to develop a philosophical basis for the model broad enough in scope to explain phenomena characteristic of lower-order beings, while at the same time dealing with the unique qualities of man, such as consciousness, articulate speech and his capacity for purposeful and future-oriented behavior.

The Philosophy of Organism

We have drawn heavily on Whitehead's philosophy of organism as the means of rationalizing a new vision that can integrate the massive knowledge about child development in a way that illumines the nature of man and accounts for the phenomenon of purpose and its role in the continual actualization of human potentialities. Without a philosophical base there is no hope for creating an educational system that is consistent, coherent and free of the contradictions that make practice ineffective.

The chief feature which distinguishes man as organism from man as mechanism is creativity guided by purpose and expressed by the two fundamental capacities of man, namely, his ability to know and his ability to love. All potentialities of man are expressions of these two capacities broadly defined; their actualization represents man's becoming and his essential reality. Since every actualization constitutes a new basis for further expressions of creativity, the creation of further potential is itself one of man's potentialities. The capacity to perpetually move beyond himself is indicative of man's superiority over all other created things. The Anisa educational system, therefore, views man as the apex of creation, capable of endless expression of an unlimited potential.

From this conception of man's nature we derived a definition of good education as the process of translating potentiality into actuality at an optimum rate. One of the primary goals of the Anisa Model is to enable each child to become fully conscious of the process and take charge of it, thereby securing the power to shape his own destiny. The capacity for consciousness itself is inherent in the nature of man, but its quality is dependent upon the experience of the organism, the accumulation of its past stored as memory (a form of immanence) and the contrast of that past with the experience of the immediate present in preparation or anticipation of the future (a form of transcendence). These qualities of immanence and transcendence — prerequisites of consciousness and self-awareness—define man's essential being in spiritual rather than material terms, a central proposition of the philosophical basis of the model. This is not to be construed as a sectarian or denominational definition of man, but rather an acknowledgement of obvious characteristics of human functioning which distinguish man from animal. These characteristics underlie man's ability to determine his own future and make it possible for him to escape the limitations of materiality. In other words, a higher ontological principle is operable in the life of man. It is evidenced by man's ability to structure the unknown and to form ideals which express subjective aim or intention which in turn guides the process of becoming — perpetual self-transcendence. It was that self-transcendence to which Teilhard de Chardin referred when he said that man is like the tip of an ever-ascending arrow, the "last-born, the keenest, the most complex, the most subtle of the succes-

sive layers of life"—a view reaffirmed by Huxley in his statement that man is "the only repository of cosmic self-awareness in the universe," a quality of his being that makes him managing director of the biggest business of all: evolution.

A teacher who accepts this view of the nature of man will see each child as a creature of unlimited potentiality who can never be classified as uneducable. The very atmosphere of an educational system staffed by teachers who consciously affirm the spiritual nature of man is much more likely to release the potentialities of its students than one whose staff denies this fundamental characteristic. Understanding how the actualization of any potentiality creates further potential alters perception and feeling about children and enables one to approach teaching differently. The Anisa Model defines those experiences which teachers may use to actualize given potentialities of their students in ways that continually and actively create further potential while at the same time providing a conceptual means for identifying suppressive experience that should be avoided.

A Theory of Development: Defining the Process of Becoming

The process of becoming has basically three interrelated characteristics: growth, development and maturation. Within the discipline of child development, the term "growth" usually refers to a biological increase in the size of the organism; "development" means an increase in the complexity of organization both physiologically and psychologically; and, "maturation" refers to a genetically determined timetable that influences the extent to which and the rate at which other developmental potentialities become actualized. Developmental pro-

cesses are inextricably bound up with growth and maturational processes; all take place as the organism interacts with its environment. Thus, we have incorporated growth and maturation within our theory of development. The theory broadly defines development as the process of translating potentiality (biological and psychological) into actuality; makes that process synonymous with creativity as the fundamental and inherent dynamic characteristic of the organism; establishes interaction with the environment as the general means by which the process is sustained; provides for a definition and classification of potentialities and environments; explains the nature of essential interactions underlying the release of both biological and psychological potentialities; identifies nutrition as the primary element in the development of the former and learning as the key factor in the development of the latter; and, accounts for the emergence of personal identity—the self—in terms of the structuring of potentialities as they are actualized.

The theory also emphasizes the importance of timing in the process of becoming. That process has an order, a rhythm. Certain needs arise at particular times. If the needs are not met at these times, developmental impairment may result.² Such times are known as sensitive or critical periods. It is well established that such periods exist in the physical development of the human organism. During embryogenesis, organs or tissues which enter a period of rapid growth tend to be more sensitive to positive or negative influences whereas either before or after that period there may be little

² Diagnosing needs and/or developmental levels is prerequisite to individualizing instruction and without individualizing learning experiences there can be no equalization of educational opportunity.

effect. The deleterious effects of rubella during the first three months of pregnancy, the damaging consequences of taking certain drugs such as thalidomide during pregnancy, the impairment of vision due to absence of sufficient light stimulation to the retina during the first few months of life and the retardation of language acquisition, if no linguistic models are provided between eight months and two years, are all evidences of the existence of critical or sensitive periods. Thus, timing in the organism's interaction with its environment is an important factor in the actualization of both biological and psychological potentialities.

Nutrition and the Actualization of Biological Potentialities

One basic form of interaction is the assimilation of nutrients from the external environment. From these nutrients come the materials for building and maintaining the tissues of the body and the energy to sustain their functioning. Poor nutrition means a deficient body and inadequate functioning; it is a suppressor of potential.

The Anisa Model therefore has a strong emphasis on proper nutrition and good health. It makes a provision for intervening in the anticipated life of a child a year or so before his conception by insuring that the nutritional status of the mother and father is maximally improved in preparation for his genesis. Since the provision of adequate nutrition remains important throughout life, the model provides for collaborative efforts among community, school and home to maintain an optimum nutritional status in all students and staff. There are countless examples that demonstrate the necessity for a strong nutritional component in any comprehensive education-

al model: the effects of thiamine deficiency and its relationship to anxiety, irritability, depression and increased sensitivity to noise and pain; the effects of nicotinic acid deficiency and its relationship to lassitude, apprehension and depression; Vitamin B-12 deficiency which can cause mental confusion; a lack of iodine which may lower the metabolic rate and cause physical or mental languor; and, insufficient iron which tends to result in lowered hemoglobin which reduces the capacity for the blood to carry oxygen, thereby lessening motor activity. The above in no way exhausts all the ramifications of proper nutrition and its relationship of the development of the human organism, but merely highlights the need to provide adequate nutrition throughout life. The implications for education are fairly obvious. Not only is proper nutrition essential for maintaining the biological integrity of the organism, but it is also indispensable for the release of psychological potentialities because biological integrity is a necessary, though not sufficient, condition for their expression.

Learning and the Actualization of Psychological Potentialities

The role of educational institutions is to provide a means for the continuous engagement of students in the process of actualizing potential and to enable them to gain conscious control over it. The key factor in the process is learning; being in charge of the process by knowing how to learn is what is meant by learning competence. The Anisa Model thus defines the role of the teacher as a facilitator of the attainment of learning competence rather than as a disseminator of information only. Failure to attain learning competence makes the child more a victim of

his environment rather than a master over it—a prey to the manipulative elements of society and certainly someone who is not in charge of his own destiny nor attracted by the mystery of his own becoming. Any successful educational system of the future must redress those forces which destroy the attraction of that mystery—the limitless potentialities of knowing and loving. This necessarily involves helping students to develop an inner acceptance of responsibility for developing their own infinitude of potentialities through the acknowledgment and cultivation of a sense of purpose as it relates to aspirations and ideals.

Thus, the quality of any educational system of the future will be determined by the extent to which it can help children translate potentiality into actuality—a process Alfred North Whitehead describes by the term “conrescence” (1929). Conrescence not only includes everything normally conveyed by the word development but also encompasses man’s unique ability to go beyond himself—the ability to accumulate the past, bring it to bear on the present while structuring the future, thereby moving perpetually beyond any present state of being. Learning is the means of that “moving beyond” which Whitehead calls the “creative advance into novelty.” Such a creative advance means transcending apparent limitations. We have many examples of man’s ability to go beyond such limitations through learning. Using instruments invented by man, we can see beyond the capability of the naked eye, hear beyond the limitations of the ear, and can experience phenomena for which we have no sense receptors (i.e., radio waves) and which would remain inaccessible to

the organism if it were left to function alone. Therefore, this broadly conceived notion of learning which fuses immanence with transcendence in a conscious pursuit of destiny accounts for the means by which man is able to leap over his material and biological limitations and move beyond them. Such a notion is completely incompatible with any idea of fixed intelligence and in fact predicts the eventual formulation of a new definition of intelligence that will be far more comprehensive than the one reflected in traditional IQ tests, and one which is more congruent with our definition of learning competence.

Without learning competence there is little likelihood of attaining high levels of self-actualization. Thus, to be effective, any institution which has educational responsibility will have to maintain a staff which understands the nature of learning competence and how it can be achieved. The function of the theory of development is to explain learning competence and the means of attaining it.

A clear understanding of the nature of learning competence as it relates to the total body of theory underlying the Anisa Model is important because it can dramatically increase the teacher’s power to facilitate the release of potential by providing guidelines for gearing learning activities to each child’s developmental level. It also enables the teacher to take what is useful from any given theory, integrate that with pertinent aspects of other theories and apply them in teaching. This may help to avoid subjecting children to the inherent weaknesses that any single non-comprehensive theory may possess.

For example, stimulus-response theory defines learning primarily as a modification of behavior, views the individual as

relatively passive in the selection and regulation of mental processes, focuses on stimulus inputs, behavioral responses and reinforcement, ignores the importance of internal states of the organism and defines motivation as being dependent upon extrinsic factors alone. Yet reinforcement must take its definition from internal conditions of the organism, not the least of which are the intentions and purposes it may have at any given point in time. Because it ignores what goes on inside the organism, stimulus response theory is severely limited in explanatory power. This is not to say that it has no useful applicability to certain educational situations; rather, it is ill-suited to stand alone as a comprehensive theory of development for educational practice. We feel that process theories such as those developed by Piaget and Bruner are as a whole more congruent with the philosophy of organism. Process-oriented theories view the individual as active in the selection and regulation of his mental processes, deal with inferred mediational processes, include in the definition of learning the mastery of certain central processes termed operations or strategies and emphasize the role of intrinsic motivation including pre-dispositions toward resolving incongruities (Levitt, 1968).

While we acknowledge that drive reduction and extraneous stimuli can motivate an individual, the most powerful form of motivation is an intrinsic force which comes from a subjective confirmation that competence is being gained. Robert White (1959) calls this sense of competence "effectance."

My proposal is that activity, manipulation, and exploration, which are all pretty much of a piece in the infant, be considered together as aspects of competence,

and that for the present we assume the one general motivational principle lies behind them. The word I have suggested for this motive is effectance because its most characteristic feature is seen in the production of effects of the environment. At first, these effects may consist of any changes in sensory input that follow upon activity or exertion, but before long the child becomes able to intend particular changes and to be content only with these.

White describes effectance as a neurogenic motive, to distinguish it from viscerogenic motives upon which drive reduction theories of learning have been predicated. There is no doubt that viscerogenic motives, such as thirst, hunger or sex do exist. But White hastens to point out that they do not account for everything we do (as Freud has proposed in his theory of libido). We feel that effectance, which cannot be solely understood in terms of sensations, reflexes and physiology, is neither a neurogenic nor a viscerogenic motive, but a psychogenic motive which arises out of the structure of consciousness and, although it may depend upon nerves and physiology for its functioning, it cannot be wholly explained by them. Thus, effectance is expressed in the attainment in a variety of competencies which collectively define learning competence. As each of the competencies are strengthened, the organism becomes more effective in dealing with the environment and pursuing its own destiny.

Our procedure for developing the definition of learning competence was to review the major theories of learning and development in the hope of discovering a common denominator which could be reasonably expected to figure prominently in such a definition.³ We

³ Gagne's Eight Types of Learning, Walter's brain

found that the processes of *differentiation*, *integration* and *generalization* were common to them all. We thus define learning competence as the ability to differentiate experience, whether internal or external, into separate elements, to integrate them in a new way, thereby providing new information, new feelings, new skills and new perceptions which may or may not become expressed immediately in some form of overt behavior, and to generalize the integration. Through these processes—differentiation, integration and generalization—potentiality is translated into actuality. Control over them constitutes learning competence.

The processes of differentiation, integration and generalization are neither random nor haphazard. In most instances they are directed by intention or subjective aim, which determines what becomes abstracted, and how the abstracted or differentiated elements are then integrated and generalized. A teacher who understands these processes and who can teach in a way that enables the child to gain conscious control over them while assimilating information (content) about the world he lives in is an Anisa master teacher. Becoming a master teacher thus depends on knowing the coherent body of theory concerning development, curriculum and pedagogy and how to translate it into practice.

wave theory, Tolman's sign learning, Lewin's field theory, Snygg and Combs' perception theory, Bandura's modeling theory, Mowrer's two-factor learning theory, Newell and Simons' information processing theory, various mediation theories, Piaget's theory, the TOTE theory of Miller, Pribram and Galantar, Skinner's work on conditioning and Harlow's theory of learning sets were among the theories analyzed.

Development and the Theories of Curriculum and Pedagogy

The Anisa theories of curriculum and pedagogy are derived from theory of development which, as noted above, defines development as the process of translating potentiality into actuality and designates interaction with the environment as the means by which the process is sustained.

The theory of curriculum defines curriculum as two interrelated sets of educational goals and what children do, usually with the help of teachers, to achieve those goals. One set of goals is process-oriented. It rests on the classification of potentialities and the processes which comprise them. The other set of goals is content-oriented. It rests on the classification of environments and the organization of information one's culture has accumulated about them, including the symbolic systems used to convey that information. The two sets of goals, process and content in orientation, are integrated by the over-riding purpose of the model: actualization of the infinitude of potentialities of each child in a way that creates further potentiality and fosters the emergence of personal identity that is master of its environment and in charge of its own destiny.

The theory of pedagogy defines teaching as arranging environments and guiding the child's interaction with them to achieve the educational goals. Thus, teaching insures the achievement of learning competence (process) while assimilating information about the environments (content). Process and content are fused as potentialities are actualized and structured to form an identity—a self—with the characteristics of a competent learner.

Development As Value Formation: Implications of the Anisa Curriculum Theory and Teaching Theory

Since 1950, considerable interest has been shown in formulating a theory of curriculum and then defining the curriculum within that theoretical framework. Some educators, such as Taba (1962), Bruner (1966) and Beauchamp (1961), have made efforts to define the characteristics of curriculum theory which address basic issues rather than formulating an actual theory. Other curriculum specialists have drawn upon disciplines outside of education, such as systems analysis or decision theory, as a means of gaining a new perspective on curriculum development. While it is understandable that curriculum design can hardly be considered apart from curriculum theory, pressures for curriculum revision have been so great that curriculum designers could not wait for a theory. Many theorists, such as Elliot and Foshay (1963) and Tanner (1966), have suggested that it is premature for work on a comprehensive curriculum theory. We would agree that until a philosophy which discloses the nature of man's reality is adopted and a theory of development is derived from it, construction of a curriculum theory is impossible. Curriculum theory or a theory of teaching cannot be created in a vacuum.

Until we had established the philosophical base of the model and generated the developmental theory, it was not possible to identify the process and content aspects of the curriculum and clarify their relationship to teaching on the one hand and formation of values or character on the other. Following is a brief presentation on these aspects of the model.

Classification of Potentialities and The Process Curriculum

We have organized the potentialities or powers of man into five categories, each of which is comprised of processes that underlie learning competence and are the means through which those potentialities become actualized. The categories of potentialities are: psycho-motor, perceptual, cognitive, affective and volitional. Specifications on the basic processes in each category have been developed. These specifications constitute the process curriculum and include definitions of each process, its relationship to learning competence, a translation of the process into an educational objective in the form of operational definitions, explanations of pertinent developmental aspects of the process, a presentation of several prototypical learning experiences needed to master it and a statement concerning evaluation. There are no doubt an infinite number of processes in each category. Preliminary selection of processes for inclusion in the functional definition of the model was determined by the degree to which a given process appeared to engender effectance and the extent to which it constituted a fundamental prerequisite to other processes and therefore essential to the extension of further potentiality.⁴

A. Psycho-motor Potentialities

Competence in this area refers to a capacity to coordinate, control and direct the movement and position of the voluntary muscles. Starting at birth, a child experiences a variety of motor activities which become organized and represented internally. George Early (1969) refers to this internal representation as the motor-base. As the child comes to know where and what his body

parts are and how they work together, he attains a positional and functional awareness of the body as a reference point to which he relates the physical environment within a space-time context. Among the processes which comprise the motor-base are balance and posture with their subprocesses (laterality, verticality and directionality): locomotion, contact, manipulation, receipt and propulsion. It is important to point out that psycho-motor potentialities are not actualized independently; rather, they are associated with perceptual, cognitive, affective and volitional elements. However, any activity may have a major focus with a primary educational goal pertinent to a given process within a given category of potentiality. The formation of the motor-base and the achievement of psycho-motor competence comprise one of the most important developmental requirements of the infant and preschooler.

B. Perceptual Potentialities

Perceptual competence refers to the capacity to differentiate sensory information and then integrate that information into generalizable patterns which constitute interpretations of reality that enable the organism to make meaningful decisions and to act. Interpretation involves the organization of incoming stimuli in terms of past experience, present needs and aspirations or intentions which concern the future. It is through this process that the organism keeps in touch with reality and increases its effectance. Perceptual competence therefore rests upon

⁴ For example, discrimination of the color blue is a visual perceptual process, but achieving it alone gives rise to few other expressions of potentiality. However, discrimination of hue (all colors) is more fundamental and includes the above. Hence, the model contains a specification on hue discrimination.

the development of a perceptual-base, an internal structuring analogous to the motor-base, which functions as a set of rules generating and directing the basic processes of differentiation, integration and generalization as they relate to perception. Processes in this area include those associated with vision, audition, olfaction (smell), gustation (taste), the cutaneous senses (touch, cold, hot) and the vestibular senses (equilibrium). Both vision and hearing have been broken down into a large number of processes, mastery of each one of which is an educational objective of the model.

C. Cognitive Potentialities

Cognition is nearly always associated with some sensory input and it is frequently accompanied by muscular reactions, overt or covert, as well as emotions and some form of intentional behavior. While man has expended considerable effort over the years in an attempt to ascertain the elements which constitute thinking, a great deal of clarity is still needed. Like all other potentialities, thinking develops from interaction with the environment. Piaget says (1970, p. 104) "Actually in order to know objects, the subject must act upon them and therefore transform them: he must displace, connect, combine, take apart, and reassemble them." "Displace" and "take apart" are reflections of the general process of differentiation while "connect," "combine" and "reassemble" refer to the processes of integration and generalization. Through these differentiations and integrations internal structures develop which form the basis of cognitive competence. The cognitive processes which collectively comprise learning have been explored to some extent by Piaget, Bruner and others. All of them are inter-

related; some serve as developmental predecessors of others which are composed of differentiative and integrative functions operating in different ways at different levels. Among the thinking processes which make up cognitive competence are such operations as analysis, synthesis, classification, seriation, number relations, deductive and inductive inference, interpolation, extrapolation, analogy, and conservation. We have tentatively identified some forty processes on which specifications are being developed.

D. Affective Potentialities

Attaining affective competence refers to the ability to organize one's emotions and feelings that energize the system and support in a positive manner the release of further potentiality. Emotions are associated with all other processes, though in varying degrees of intensity, and if they are not organized, the integrity of other areas will also be affected. How to feel about things is for the most part learned but rarely "taught" in any deliberate or conscious way. The organization of emotional life depends on being able to differentiate emotions, integrate them in reference to objects, events or ideals and generalize them in ways that provide a basic stability in life. Teachers can assist children to achieve affective competence through the relationships they establish with them, consistency of feedback being one important element in its achievement. While a detailed theory about emotional development awaits further research and elaboration, we have identified a large number of processes, pertinent to gaining affective competence, which involves inhibiting, coping, managing and facilitating emotions in terms of subjective aim or sense of pur-

pose. For example, coping with sadness or disappointment, managing anxiety, inhibiting a destructive impulse or facilitating expressions of joy and gladness are all manifestations of affective competence.

E. Volitional Potentialities

Recent trends in psychology have begun to address the theoretical vacuum created by psychology's rejection of volition, or will, as a meaningful aspect of human functioning. This was for the most part a consequence of the mechanistic, reductionistic view of man as a creature whose behavior is determined by external stimuli rather than intention or some intrinsic determinant. And yet the vast number of changes that happen within the organism between stimulus and response provide the meaning that defines the relationship between the two. In other words, it is virtually impossible to make sense out of anyone's behavior without ascertaining his intention or purpose. From our philosophical basis we would assert that purpose in the life of man is an element of behavioral causality just as physical forces or genetic inheritance are also part of causality. Whitehead places great emphasis on the role of purpose as a vital element in the translation of potentiality into actuality. It is through purpose, or subjective aim, that concrescence is guided and directed; it provides criteria for making choices among a variety of possibilities and enables man to achieve control over his own destiny. If one does not take charge of his own destiny, someone else will. Thus, the role of subjective aim or purpose in concrescence is basic. In summary, volitional competence is the capacity to form ultimate aims, differentiate them into operable goals and integrate

them into a perpetual flow of intentional behavior directed towards the achievement of those goals.

Some of the processes which relate to the development of volitional competence are attention, goal setting, self-arousal, perseverance, effecting closure and fantasizing a state of goal attainment. While a great deal of research is needed to understand the dynamics of volitional behavior, the above processes provide a rich, theoretical beginning that will enable educators to address that aspect of human functioning in educational planning.

Classification of Environments and the Content Curriculum

It is not only the individual person who can accumulate and store information about his experience and the world he lives in. Societies do, too. The collective memory of a society is its culture. As individuals, we do not have to start from scratch to discover things about the universe simply because millions before us have made countless discoveries and have passed them on as part of the cultures to which they belonged. Information about the universe in which we live—our total environment—constitutes the source of the content curriculum. In the Anisa Model, it is organized around a classification of environments.

A. The Physical Environment

This environment includes everything except human beings. It can be broken down into three sub-categories: mineral, botanical and animal.

B. The Human Environment

This environment includes all human beings with whom one may come in contact.

C. The Unknowns and/or Unknowables

Because consciousness enables us to know when we don't know and when we are dealing with unknowns or the unknowable, this aspect of the environment cannot be ignored. Knowing that we don't know is what makes us curious.

D. The Self

The Self is a reflection of the above three environments. It is made of physical materials and it is a human Self that has many unknowns about it. The unknowns in a Self include the nature of its as yet unexpressed potentialities, its future and the phenomenon of personal mortality.

Three interrelated symbol systems mediate the assimilation of both the content and process curriculum, one for each of the first three environments listed: math for the physical environment; language (i.e., English, Navajo, Swahili, etc.) for the human environment; and, the arts for the environment of unknowns. Since the Self is a reflection of the other three, all three symbol systems are used by the Self to assimilate information about its own self.

The way disciplines have been organized traditionally does not deviate significantly from the organization of the Anisa content curriculum. For instance, the natural sciences, natural history, math and technology constitute content organized around the first category; language (speaking, reading and writing), human relations, communications and the social sciences around the second; and art, aesthetics and the humanities around the third.

Value Formation: Structuring the Fusion of Content with Process

As the child interacts with the envi-

ronment, his potentialities (expressed through the processes) are actualized, i.e., they become powers. But these powers are not expressed in random fashion; they are structured. And as they are expressed, factual information (content) is fused and structured with them to form the attitudes and values which constitute the character and personality of the human being. The structuring takes place in relationship to the various environments with which the child is interacting. Thus, different value systems reflecting these environments emerge.

Interaction with the physical environment releases potentialities (psychomotor, perceptual, cognitive, affective and volitional) which, when blended with content (information) concerning that environment, are structured into material attitudes and values. On these values rest the technological competence of the person.

Interaction with the human environment translates potentialities into structured actualities or powers which, when fused with information about mankind form the social attitudes and values on which a person's moral competence rests.

To interact with an unknown is to structure it and to structure an unknown is to form an ideal, broadly defined. Such interaction leads to the formation of religious attitudes and values, on which spiritual competence rests. Again, "religious" and "spiritual" are used as psychological terms rather than as denominational ones. To structure an unknown requires an act of faith and is therefore religious in that sense.⁵

⁵ When a Buddha, a Christ, a Moses or a Mohammed "reveals" a structuring of the ultimate unknowns and large numbers of people accept it, a religion is founded. All people form religious values as we define them, including atheists, simply because there is no other way to relate to unknowns except on faith.

As the Self interacts with its ownself (an environment always present in the life of each person), in the context of the other environments, all of the other values (structuring of actualized potentialities fused with what is known about those environments and its ownself) are integrated. This integration constitutes the structural and functional reality of personal identity. The development of the Self—the structuring of process with content, the formation of values—is the fundamental expression of creativity inherent in all human beings. On this integrated structuring rests personal effectance—mastery in dealing with the environment and thus the capacity for self-transcendence and continuing development. Personal effectance is "self-competence;" it is a combination and integration of technological competence, moral competence and spiritual competence.

It should be noted here that since the Self includes parts of the physical and human environments, all of which embody unknowns, the attainment of spiritual competence subsumes all other competencies. Thus, the future of an individual and the nature of his potentialities at any given point in time are unknowns. If he has no "faith," he cannot structure these unknowns, i.e., he cannot create a self-ideal and pursue a destiny consistent with it. This results in a suppression of all other potentialities, because, without that ideal-self (which is a combination of all the ideals derived from interaction with the unknowns inherent in each environment), there are no criteria by which the Self can make decisions will be its future. Without criteria, decisions will be made in terms of what brings immediate pleasure and what avoids present pain or discomfort. And since facing un-

knowns always produces the discomfort of anxiety, a lack of ideals set in motion a vicious cycle which causes the organism to avoid precisely those experiences needed to make that "creative advance into novelty" which self-actualization represents.

By now it is obvious that the Anisa Model embodies a comprehensive value theory. We found no way to explain values in affective terms alone; nor could we exclude content or information about the environments from the definition. All categories of potentialities (process) and information (content) are involved. Thus, we define values as relatively enduring organizations or complexes of information blended with actualized potentialities—psycho-motor, perceptual, cognitive, affective and volitional—which provide an orientation or predisposition to respond in a particular way to some aspect of the individual's environment, usually in terms of some purpose. They include an evaluative or judgmental element which clears the way for action. They are higher-order organizations of related attitudes centering around response possibilities to different elements of the environment. The total value system is composed of all the values integrated around fundamental aims, purposes or ultimate concerns that are inherent within the values. Thus, attitudes are values in their differentiated forms; values are integrations of attitudes; the total value system of the person is the integration of all his values; it is the character of the person—his identity. In the broadest sense of the word, then, education means the process of value formation which is synonymous with character formation.

The information represented in the content curriculum is imparted to chil-

dren as they interact with environments while at the same time all the processes which constitute learning competence are strengthened. Thus, the curriculum itself reflects both vertical (content) and horizontal (process) organization. In other words, all content would be taught in ways which strengthen process (learning competence). The horizontal organization facilitates the transfer of knowledge, an ability that is the hallmark of a competent learner.

Classification of Interactions with and Arrangements of Environments: The Anisa Theory of Teaching

A full understanding of teaching, defined as arranging environments and guiding interactions with them to achieve the goals specified by the theory of curriculum, depends on a classification of arrangements and interactions in terms of those goals. If the goals all relate to the achievement of learning competence and learning competence means the ability to differentiate, integrate and generalize aspects of experience, then we can classify environmental arrangements and interactions with them in terms of which aspect or aspects of learning competence they facilitate. For example, some arrangements⁶ and some interactions may facilitate differentiation, others may foster integration or generalization; some may do all three. Since children are differentiating, integrating and generalizing on different developmental levels, these must be assessed

⁶ The theory translates into thousands of applications. For instance, finger painting with only one color will not facilitate differentiation where visual discrimination of hue is concerned. Thus, the educational mileage to be gained from one-color finger painting is less than it might be. The environment needs to be rearranged (i.e., one or more additional colors provided) and/or interaction must be guided in a different way (i.e., child can be encouraged to use another color).

**The Anisa Process and Content Curriculum
Summary Table**

The Child:

actualizes these potentialities (process)	as he interacts with these environments,	assimilating these bodies of information (content) ,	utilizing these symbol systems,	thereby forming these values (content fused with process) ,	on which these higher-order competencies are based.
Psycho-motor	Physical	Physical and biological sciences, and technology	Math	Material	Technological
Perceptual					
Cognitive	Human	Social Sciences, history, human relations, communications, law, human rights	Language (s)	Social	Moral
Affective					
Volitional	Unknowns	Philosophy, religion, aesthetics, humanities, and	The Arts (as expressions of ideals or structuring of the unknown)	Religious	Spiritual
	Self	All of the above as they relate to Self (which is important for physical, psycho-social and spiritual health	All of the above applied to the Self	Personal identity or character (all of the above combined into the Self)	Personal effectiveness (all of the above combines into this aspect of the Self)

before one can know how to arrange environments and guide interaction with them. Thus, Anisa teaching is diagnostic and prescriptive where enough is known to make a good diagnosis. In the absence of sufficient knowledge to make such a diagnosis, Anisa teaching is speculative and experimental. In both cases it will be more or less improvisational. Through speculation and experimentation more becomes known about the child's developmental level in regard to given processes or contents and teaching can then become more prescriptive as needed. Ultimately, the child will come to participate actively in the diagnosing and prescribing and will eventually become a good teacher of his own self, i.e., he will arrange his own environments and determine his own interactions with them. He will become an independent learner.

It is important to note here that the teacher, himself, is a part of the human environment and how he "arranges" himself and guides the child's interaction with him is of critical importance. On that depends the emergence of the relationship between them, and on that relationship much hangs in the balance: whether or not the child falls in love with learning, desires to pursue his destiny with joy, being excited by the mysteries of his own potentialities and encouraged by a faith that somehow deep down says, "I can and I will."

Staffing Arrangements

Launching an educational enterprise of this magnitude requires not only a highly skilled and experienced staff, but a diversification of efforts that only specialization can provide. The model des-

ignates the master teacher as the key staff person. Preparation of the master teacher includes understanding the entire body of theory and the ability to teach so that children can become competent learners. This role is supported by the following staff positions: assistant teachers and aides; a diagnostician and evaluation specialists; curriculum and programming specialist; communication and media technologists; multi-arts specialists, who are competent in all the arts and know how to draw upon them as effective means for the development of learning competence; a family-community-school liaison worker whose job is to reduce cultural discontinuities between home and school and help to administer substantial parental and community participation in all activities; learning disabilities specialists; health and medical specialists; and the program administrators and their staff, whose function is to organize resources to achieve the educational goals with maximum efficiency.

Differentiated staffing represents a structural response to a need for the individualization of instruction through specializing staff assignments according to the needs of the child. Since teachers are not interchangeable parts within the educational system, teaching personnel must be employed in ways that are consistent with their areas of strength and preparation, thereby insuring the maintenance of an effective and comprehensive support system for the child. Such a differentiated staffing arrangement will also include the utilization of students to teach other students. This requires a particular kind of training for master teachers to enable them to train children to teach their peers. The ultimate benefit for the teacher-student—the child as

teacher—is the consolidation of his own learning.

The master teacher is envisaged as a new kind of generalist, one who possesses a wide array of competencies which make him effective in working with children and supporting staff. Among his roles are the arrangement of environments and the guiding of interaction with them, making decisions about instructional activities within the context of the various curriculum areas of the model; determining modes of instruction and selecting the appropriate media, supervising teachers and aides, orchestrating the assistance of the support staff as needed and to some extent participating in home-community-school activities which are arranged to maintain experiential continuity for the child.

The “learning competence” of a social system—the means by which the potentiality of the total group as a group becomes translated into actuality—depends largely on the same processes which release the potentialities in the individual: differentiation and integration. Thus, staff differentiation is essential to the model. The demise of a differentiated staff comes when the provision for its integration is neglected. Integration is only possible when those differentiated staffing roles become unified around well-articulated objectives that are related to the philosophical and theoretical bases of the model. A noetic integrator unites people as well as ideas. The philosophical basis of the model is therefore essential to the success of staff differentiation and its effective integration. The presence of purpose, agreed to by all staff members, enables the differentiation to be flexible and situationally determined on one hand and yet consistent and ever-present on the other.

Prospects

Education faces two critical and inter-related problems: how to improve education generally and how to equalize educational opportunity. Because the Anisa Model fully addresses these two issues, its prospects are promising.

General improvement of education will depend on the following characteristics, each of which the model incorporates:

1. Comprehensiveness;
2. Institutionalized self-renewal by perpetual up-dating through research and evaluation;
3. Broad philosophical base with coherent and clearly articulated body of theory which enables the system to translate research findings into practice;
4. Clear-cut specifications that embody goals stated in operational terms where feasible so that evaluation, modification for improvement and cost-effectiveness determination are facilitated;
5. Process emphasis coordinated with more logical and coherent organization of content;
6. Individualized and developmentally based curriculum which reduces failure and increases probability of success;
7. A competency-based staff preparation program which insures quality control in staff selection;
8. Provision for home and community collaboration in formation of total support system from conception on.

Equalizing educational opportunity depends on a number of the above factors. Equalization cannot mean providing everyone with the same experiences at the same time, determined by chrono-

logical age. Ultimately, it comes down to providing whatever experiences are needed, when they are needed, to release the potentialities of the child at an optimum rate by enabling him to become a competent learner. This is only possible if the curriculum is comprehensive, process-oriented and covers content important for effective dealing with environments, if the learning experiences are individualized and developmentally based and if it imbues the child with a sense of his own illimitable potentiality and commits him to perpetual learning. Finally, it means having competent learners as teachers, for more learning than we care to admit comes from living and working with good models. Thus, equalizing educational opportunity necessitates a radical reconceptualization of education itself—a new way based on a new vision.

We have presented a new vision of education as the transformation of man and a way to sustain it. "Every transformation of man," says Lewis Mumford, "except that perhaps which produced neolithic culture, has rested on a new metaphysical and ideological base; or rather, upon deeper stirrings and intuitions whose rationalized expression takes the form of a new picture of the cosmos and the nature of man" (1962, p. 171).

For us, the Anisa Model is a rationalized expression, in the form of an educational system, of those "deeper stirrings and intuitions" which we have sensed in so many dedicated teachers of young children. If that rationalized expression is a reflection of a fundamental truth about man that has begun to surface in those stirrings and intuitions, then Anisa may come to be the long-awaited renaissance in education. ☒

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