

CURRICULUM DEVELOPMENT TO FOSTER MENTAL STRENGTH

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THE term "ego" denotes a concept of rising importance in the fields of mental health and education. This word is a collective term covering the numerous executive decision making and thinking functions of the mind. As Eli Bower (1) amusingly describes it, "the ego is the dark mysterious tunnel between the input of perceptions into the mind and the output of thoughts and behaviors." Increasingly the ego analysts, the ego psychologists and now the curriculum developers have become interested in what goes on inside that tunnel. What mysteriously different mental processes go on inside the mind? What are the processes of the ego that are instrumental in producing an integrated personality that is competent and effective?

For years, many of our predecessors in education have espoused the thesis that the teaching of algebra and Latin somehow "trained and strengthened the mind." Behind these statements was the expressed hope that these two subjects were not only of substantive value but that somehow they also cata-

lyzed or nurtured the development of certain specific intellectual processes that are basic to success in other mental endeavors. Now thanks to an ever growing volume of conceptualization and research on ego processes by behavioral scientists, we are, I believe, much nearer to the achievement and development of a "double purpose curriculum"—a curriculum that blends, more than ever before, the transmission of heritage and knowledge with the catalyzation of specific mental abilities.

What are the emerging ideas that make this curricular blend more possible? What are some of these ego strengths or mental capacities that we could nourish within our present curriculum methods and content? How can we create this so-called "double payoff curriculum"? Let me share with you what I consider to be some of the better cues we have available.

Information Processing

It is almost certain that the information explosion will continue and that we must somehow prepare the minds of the future to cope with a

floodtide of knowledge that could possibly engulf us in a cognitive overload. Intellectual survival in the days to come will depend more and more, as Jerome Bruner (2) puts it, on growth in our students' abilities at grouping and encoding information. Through these skills what is known is grouped in simpler, more usable form, is categorized in ways that establish connectedness and in ways that maximize recombination and inventive regrouping of data.

The ability to conceptualize categories is a basic mental strength that we can foster while teaching grammar, vocabulary, biology, mathematics and other subjects. Already we are teaching the classification of biological phenomena by homologous structure or by analogous function. Chemistry is loaded with opportunities to teach categorization by common elements, common derivation, qualities of relationship, and consequences of interaction. Mathematics is a royal road to the study of various types of relationships such as linear, reciprocal, parallel, geometric, and algebraic. I believe we already present many of the principles of categorization at widely divergent points in our present courses of study, yet I wonder if we specifically identify and foster these important information processing methods that are so vital in data analysis in research or in the understanding of human behavior? Do we demonstrate their transferability to other kinds of data and problem solving situations?

We need to provide more learning experiences that range over the various analytic, inferential, relational and functional methods of grouping data in

a concerted and planful way. We perhaps should provide learning settings that not only confront the student with concrete (sensory) and symbolic data (words and figures) but also with semantic data (meanings) and behavioral data. Now that tests are emerging that will allow us to assess a student's levels of conceptualization and abstraction, we should be able to provide a more comprehensive coverage of the various information encoding processes of the mind while teaching the same courses we now teach.

Differentiation of Mental Abilities

The matter of stimulating and maturing the differentiation abilities of students is not solely a matter of training them to make finer and finer discriminations, although such perceptual training is an important part of education in art, music, chemistry and other subjects. We can go beyond this to help pupils acquire trained abilities in separating and identifying and analyzing the factors and elements involved in a process.

For instance, history provides a magnificent medium for teaching how to read cues about man's behavior, to acquire the analytical and inference making abilities vital to comprehending a process. Let me illustrate the range of thinking styles that could be taught along with historical content.

Any group of events in history, such as a world war can be read: first, *inductively*, as items in an incomplete puzzle or an unfolding phenomenon. Practice in this type of analysis leads to nurturance of predictive ability. Second, the same events can be read in *deductive* fashion, as descriptions of

whole phenomena requiring factor analysis to understand. Third, in addition to these usual camera angles of approach, history can be read as a *distorted whole* filled with hidden valuable cues requiring thoughtful elimination of irrelevant elements followed by re-synthesis of relevant items. Fourth, a historical event can be viewed as an exception or as an *illustration of negative evidence* which must be reversed in order to assess its meaning. Or fifth, a historical event can be viewed as a *product of conflict* in which one must detect the biases involved in order to place it in perspective.

Even this rapid listing does not exhaust the various analytical and differentiation techniques that can be taught with historical content. Certainly the social science curriculum can serve as a fascinating preparation for a

future life in which the major input of information will most likely be subjective, incomplete, distorted or irrelevant data. Ego strengths in differentiation and analysis are needed for research and creative occupations. Such strengths are prerequisites for analyzing some of the complicated human behavior problems that beset society.

Needed Ego Strengths

Speaking of society and its problems, let us focus on another set of ego strengths needed in the minds of the future, namely the ability to tolerate ambiguity, to delay gratifications (3), and to live with problems and processes requiring long continued effort in their solution. As our cultures grow more complex, we are finding that many of the human problems we face will not respond to simple black and white so-

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lutions. Some of our social problems are so complex and human variability is so great, that oversimplified solutions only create program failures and more unmet needs.

We must step by step foster the intellectual and emotional strengths that will prepare men for the frustrations, the non-resolution of problems and the ambiguity of modern living. I believe we could create planned learning experiences with a graded series of simple, then more complex problems to solve. During this sequence we would gradually increase the number of stimuli, slip in irrelevant data to be detected, and then call for tailoring the solutions for various consumers. Such learning experiences would lay the foundations for the kind of process thinking and flexibility of application that the future requires.

Progression on to teaching "process problem solving" would help us move beyond oversimplified packaged solutions. To the extent that we can make visible the idea that problem solving in physics, chemistry, and human affairs is a process, requiring a chain of related responses to a sequence of cues, we will be preparing minds with the techniques, the persistence and the emotional stability required in much of modern living.

Competence in process thinking is already being explored in fourteen school systems by the Commission on Science Education of the American Association for the Advancement of Science. Robert M. Gagné (4) recently reported on teaching processes and content used for training in observation and ordering of data. These curricula, like Suchman's inquiry training,

are providing opportunities in prediction, inference making, formulating hypotheses, making operational definitions, and learning how to change or control variables in a process.

Combined Intellectual and Emotional Strengths

Out of the studies of men like Piaget (5), Guilford (6), and Cattell (7), as well as a host of others, is emerging evidence on the discrete existence of certain abilities, their time of emergence in the personality, and the manner in which these capacities mature in response to environmental and school stimulation. More than ever we have conceptual and testing handles on these functions to guide a more definitive educational effort.

The recent writings of Nevitt Sanford (8), Eli M. Bower (1; 9) and others have helped us to see that the cognitive and affective aspects of mental functioning are inextricably intertwined. There is growing recognition that there are ego strengths such as tension tolerance, tolerance of moderate guilt, capacity for empathy, and the ability to enter into mutually enhancing relationships that are blends of important intellectual and emotional abilities. The capacities of the individual to obtain reasonable enjoyment, enforce reasonable prohibitions of conscience, formulate and pursue aspirations, as well as the ability to forge and maintain a favorable self image are seen as such blended strengths.

Slater (10) reports that rigid intolerant parents (and perhaps this might apply to teachers as well) cripple ego development, while warmhearted supportive parents tend to produce buoy-

ant, spontaneous, gregarious children. Elizabeth Drews (11) is using the identification mechanism as a way of building a broader self image and of diversifying the vocational choice potentials of gifted children, while Pauline Sears (12) has shown that, for average children, the emotional meaning of liking (both ways) between student peers, as well as between teacher and pupil, is a key prerequisite in the process of developing an identity and self image. These are evidently mental strengths that can be reinforced by the interaction style of the teacher and the classroom peers.

Integration Functions

Perhaps the highest level ego processes to strengthen are those functions called "the integrative functions," or the synthetic functions of the ego. The culmination point of man's abilities to perceive, assimilate, order, differentiate and symbolize is his ability to recombine these symbolized experiences into new ideas, new concepts, as well as goals, values, and new behaviors.

Through our current widespread curricular experimentation for the benefit of gifted children, we are learning more and more how to foster divergent thinking, innovation and creativity as well as how to help children integrate learning styles. According to Kagan (13), some children who approach learning tasks with an analytic style appear to achieve more success in our present curricula than those who adopt a relational style. At San Francisco State College, Hilda Taba (14) is studying the step by step process of how various children integrate their learnings and she is translating this

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analysis into the specifics of the teaching role.

The works of Piaget, Erikson (15) and Havighurst (16) have focused our attention on certain important integrations of the self through what are called key developmental tasks. There is experimentation to ascertain what kinds of interpersonal encounters and what kinds of school experiences expedite the development of such important personality integrations as basic trust, autonomy, self identity and one's self image.

Using different methods of factor analysis, Cattell and his colleagues (17) are identifying, assessing and following the lifetime development of certain clusters of functioning that are really ego styles. He has defined basic patterns of behavior such as "hypo-maniac smartness, executive factors,

critical practicality, social willingness, and others."

With the further development of this kind of behavioral research, the teacher of the future will, I am certain, be provided with more specific profiles of the existing and latent ego strengths of each pupil. Then we will have more information about the learning styles and behavioral styles of our students to guide us in the curricular task of assisting each pupil to high competence. Such developments will place education right in the middle of fostering the integrations of new mental and behavioral abilities. Education will then become, more incisively, a prime instrumentality in actualizing the mentally healthy person.

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