

Research in Review

Column Editor and

Contributor: Walter B. Waetjen

This new department, initiated by the ASCD Executive Committee, will review significant curriculum research. Purposes of the department are threefold: (a) to report brief digests of research having educational significance; (b) to give specific bibliographical references for reader follow-up; and (c) to raise questions about curriculum development and curriculum research.

Motivation

HOW rare it would be to find an educator who does not use the term "motivation"! We are keenly aware of the fact that motivation is necessary for learning to occur and that individuals have varying amounts of motivation. Other than these few, but important, ideas the usual teacher knows little about that quality of human functioning that energizes behavior.

Of late there has been a stream of research which does not treat motivation as a global concept but specifies one motive. The motive is that one having to do with achievement. A recent study (4) explored the relationship between achievement motivation and the child-rearing practices of parents from certain social classes. Forty boys, ten years of age, were matched by age, social class, I.Q., and race. Half of the boys had high achievement motivation, half had low. However, for each of the achievement motivation groups half of the boys were from the middle class and the other half from the lower class.

The boys were given five tasks: block

stacking, anagrams, patterns, ring toss, and hatrack building. The block stacking required the boys to build a tower out of irregularly shaped blocks, using one hand and wearing a blindfold. This created a situation in which the boy was relatively dependent upon his parents. However, the parents were told they could not touch the blocks even though they were permitted to say anything they wished. The parents were asked to give an estimate of the number of blocks their son would stack, which indicated parental aspirations for their son. Records of the parents' comments gave indication of the help given their sons. While the other four tasks were different, they, too, gave evidence of the parents' aspirations for their son and the degree of autonomy granted him in the task.

There are numerous findings from this carefully conducted research; however, findings with special interest to educators are these:

1. Boys with high achievement motivation are characterized by general competitiveness and persistent striving.

2. Fathers of sons with high achievement motivation give more autonomy in the decision-making process, but the reverse is true in the case of mothers. Mothers of low achievement motivated boys grant greater autonomy to their sons.

3. Mothers of high achievement motivated boys express significantly more warmth to their sons than mothers of low achievement motivated boys. However, they express more rejection to their sons than do mothers of boys with low achievement motivation.

4. When I.Q. and achievement motivation are held constant, social class affiliation *does not* seem to influence performance. Middle-class parents are warmer and less rejecting than parents from the lower class.

5. Parents of boys with high achievement motivation tend to be more com-

petitive, took more pleasure in the problem-solving experiments, and put out more affective acts than parents of boys with low achievement motivation. The factor of *involvement* makes the greatest distinction between mothers of high achievement motivated boys and mothers of low achievement motivated boys.

6. Fathers of high achievement motivated boys tend to beckon from ahead (independence training) while mothers of these same boys push from behind (achievement training).

These findings tell many things about the respective roles played by parents of boys with varying degrees of achievement motivation. We know nothing about the teacher's role in the development of pupils' motivation to achievement. This is something we will need to explore and such questions for exploration will be raised later in this article.

As pointed out earlier, teachers are

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quick to recognize that motivation is basic to learning. As a matter of fact, the position is taken that if a little motivation is good, then a lot of motivation is that much better. What support is there for this intellectual posture?

Bruner *et al.* (1) give us reason to question these beliefs about high motivation being conducive to learning. Admittedly, the evidence they offer stems from animal experimentation; nevertheless, it gives us pause to consider how much of the evidence is germane to human behavior. The experiment in question was one in which animals were placed in a discrimination apparatus for the purpose of determining the range of cues to which the animal responded in the course of its discrimination learning. In interpreting the findings it is well that we focus our attention on two things: (a) the degree of motivation involved, and (b) the range of cues utilized in

learning. Bruner and associates found the relationship of these two things to be:

... the more pressing the requirement that an organism reach a goal rapidly, the more hindering will be a set for considering many alternative cues. Thus, to speed up goal attainment, an organism sacrifices breadth of attention and consequently breadth of learning.

Extreme motivation impelling an organism to the attainment of a specific goal may provide almost a paradigm of the kind of adjustive requirement that compels speed and efficiency with respect to minimal cues. Thus, we can summarize the matter by saying that strong motivation has the effect of speeding up learning at the cost of narrowing it. (1: p. 8)

The last sentence makes us question the belief stated earlier; but before we make too hasty decisions we caution, again, that these findings come from animal experiments, and the cues spoken of are *environmental* cues.

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The third general aspect of motivation to be considered in this article has to do with the quantity and quality of stimuli necessary to keep the individual behaving and learning. Since a motive may be defined as that which energizes or gives rise to behavior, then we need to be interested in the way in which stimuli have an impact on motivation. The studies conducted at McGill University, by Hebb (2) reveal that people who are placed in perceptually isolated (stimulus poor) environments can endure this for only relatively short periods of time. Typically, these experiments place people in situations where patterned vision is precluded (reduction of visual stimuli), where arms and legs are encased in cardboard cylinders (reduction of tactile and proprioceptive stimuli), and where a low masking noise pervades (reduction of auditory stimuli). Ordinarily subjects are able to tolerate

such a situation for only a few hours and while in the sensory poor situation their restiveness increases, they become verbal, anxiety rises, it becomes increasingly difficult to concentrate on specific problems, and visual imagery increases noticeably.

The explanation is that exposure to a restricted range of stimuli results in habituation to the stimuli and people lose their capacity to maintain the organization on which alert, organized, learning behavior depends. This suggests that human beings need a constant flow of stimuli available so that the psychological organization needed for learning may be preserved.

This may be referred to as the "flow concept" of stimulation. A changing sensory environment seems essential for human beings to be motivated in such a way that learning occurs. Without this stimulation the brain appears to cease to function in an adequate way, the con-



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sequence being that abnormalities in behavior emerge.

Suppose a teacher takes cognizance of Hebb's research and provides for an ever-changing flow of sensory stimuli bombarding the learners in his classroom. Conceivably, the "flow" could be so rapid that learning suffers. The learner may not be able to attend to all the stimuli available at any given moment. McClelland alludes to this (3) when he states that motivational arousal takes place when a stimulus presents a discrepancy from the existing level of adaptation. However, a *small discrepancy* is appetitive to the learner and predisposes him to approach the stimulus, while a large discrepancy is displeasing and the learner tends to avoid the situation. Thus, the teacher is left with the idea that novelty in the learning situation is beneficial to learning but too much novelty is the enemy of learning.

Suggestions for curriculum and research: We do ourselves a disservice to believe that research findings from one discipline can be translated directly into action in a classroom. More likely these findings need to be tested in an organized and systematic way in a curricular setting. It is in that spirit that the following questions are raised or suggestions advanced.

First, the question should be raised as to how teachers can assess the motivational level of their students. Of course we know that teachers are able to report something about students' motivation but those reports are derived from casual observation which tends to be both selective and subjective. Our need is for some device which will enable teachers to learn something fairly specific about students' motivational patterns. And, to be even more specific, there is need for an instrument to measure the amount of achieve-

ment motivation that pupils possess. Such an instrument should be easily administered and scored so that a teacher need not be clinician to use it.

The research cited having to do with achievement motivation indicates that development of the achievement motive requires achievement training and independence training, with the former being somewhat the more important of the two. Also, it was indicated that greater autonomy (independence) was associated with low achievement motivation. If, indeed, the teacher *should* play any role in helping pupils to develop motivation to achieve, what should that role be? Can a teacher work on achievement training and independence training, the components of the achievement motive, without confusing the learners? The latter question can be answered, in part, by experimental research. It might be interesting to determine whether children who

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have had prolonged independence experience through the school grades have higher or lower achievement motivation than children who have had less independence experience.

The research done by Bruner suggests that we examine in terms of speed and/or breadth of learning involved those learning goals which are deemed important for children to attain. Conceivably, there are some goals to be attained for which speed of learning is of great importance, while other things to be learned necessitate attention to a broad range of cues but less speed. These factors will influence the *degree* of motivation required for the task as well as the extent to which a teacher will try to influence a learner's motivation.

We have learned that human beings need and thrive on a steady input of sensory stimulation and that to be deprived of this invites sensory habituation

with a resultant impairment of learning. Said in a different way, people learn only the unknown, and the new. Not too infrequently educators will avow that learning proceeds best when there is "sameness" to the classroom routine. Sometimes it is said that this sameness gives children "security" and enables them to learn better. Possibly this is so, but it is equally possible that degrees of novelty, differentness and uncertainty provide the sensory variation that serves as a tonic to the organism. And it is not beside the point for us to question the practice of giving lengthy examinations, lengthy periods of drill and having stereotyped daily schedules which may be sensory poor situations with a resultant "flattening" effect on learning.

Finally, we must address ourselves to the task of finding out more about children who have lived all their lives in

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and thoughtfully analyzing the forces and the arguments, calling them as he saw them, refusing to use the barometer of public opinion as guide to educational doctrine. No thread runs more consistently than his concern for democracy—for everybody; and he never made a more powerful statement of it than at Nashville, when he was teaching at George Peabody College, in the midst of the tensions surrounding integration.

But this is a review, not a eulogy. What is the book worth, in the open market? It is a very good book—of that there is no question—vitaly interesting to anyone concerned for education. Some of its more practical statements on curricula and good teaching are outstanding guides to practice. Its analyses of the social scene, of forces and dangers and hoped-for goals, rank among the very best in our educational literature.

But I suspect there is something more than this. For an intelligent layman who wishes to get inside a basic way of looking at education—the way a true professional thinks about it—this may be one of the best media at our command. The young teacher—or even more, the college student looking forward to his career—may see here how a thoughtful and devoted teacher hammers out his sense of values and his base of theory, and then shapes his actions to fit. And many a young supervisor or administrator could get from the book some added strength of backbone; for, if this book says any one thing beyond all doubting, it is that a schoolman need not be blown about helplessly by every storm of opinion, but can, with dignity and heart, stand by what he believes.

In other fields—science, for instance—the great biographies and autobiographies wield tremendous power. They teach by example a way of thought and

a way of life, and they bring young men not only toward understanding but also toward dedication. If *The Making of a Modern Educator* has not quite reached that strength, it is among the very few books in education that have come close.

—FRED T. WILHELMS, *Professor of Education, San Francisco State College, California.*

Research

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sensory poor environments (homes, neighborhoods or communities). Can these children recoup their loss? If so, what kind of curriculum will be the most enabling? The difficulty will be in the objective determination of the exact nature of a sensory poor environment. Should we be able to identify these children, we will need to take remedial steps early. It seems reasonable to conjecture that for some children the public school experience will begin as early as three or four years of age in a curriculum designed to remedy the sensory deprivation which they have experienced.

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