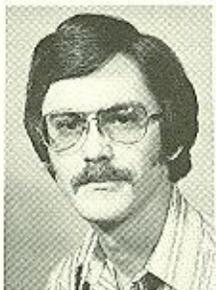


This review of issues in educational psychology looks at areas of innovation as well as areas of stagnation. The authors challenge researchers to find meaningful information which has utility in the development and improvement of teaching.

trends and issues in educational psychology

James S. Taylor



Larry D. Pound



Robert C. Newhouse



James Taylor is a doctoral candidate in the Department of Administration and Foundations at Kansas State University. His areas of interest are learning theory and applications, measurement and evaluation, and research methods. He is also an instructor of educational psychology at K-State. Previously he was a teacher and counselor in public schools in Missouri. He received his bachelor's and master's degrees from Missouri State University at Maryville.

Instructional improvement and learning theory are of interest to Larry Pound, a doctoral candidate in Curriculum and Instruction at Kansas State University. He is currently a staff member of the KSU Secondary Teacher Education Program, a CBTE program for science, social science, and math students. His degrees include an M.S. from Kansas State University in experimental psychology and a B.A. from Ottawa University, Ottawa, Kansas. He has taught in Kansas public schools and served as assistant director of a Community Action Program in eastern Kansas.

Dr. Newhouse is an assistant professor of Educational Psychology at Kansas State University. His former work was done at Western Michigan University, and at the University of Oregon where he obtained his doctorate. He is currently involved with teacher preparation, approaches to cultural awareness and research methodology.

The intent of this article is not to provide a synopsis of the vast field of educational psychology. Rather, it is hoped this article will inform the reader, stimulate interest, and serve as a catalyst that raises as many questions as it answers. The attempt is to discuss critically, rather than define, some of the major thrusts which have surfaced in recent years. The history of educational psychology has been one of rapid growth and self-improvement. It is this progressive trend which must be maintained if the field is to continue in its present direction. As educational psychology expands and becomes more complex, new and more difficult issues arise which must be dealt with by professionals in the field. Principles of psychology which education adopted only a few years ago have become outdated. The false security of traditional points of view must give way to innovative advances. First, a cursory review of the major areas within the field will be discussed. The important area of learning will then be expanded and dealt with in more detail from the theoretical and, more importantly, a practical standpoint. Finally, some critical suggestions will be provided in an effort to point educational psychologists away from the time-honored customs of general psychology and toward more relevant areas of educational concern and importance.

Mental Hygiene

With the uncertainty of our times, psychological adjustment and mental hygiene have become critical issues within the educational environment. It should be a major responsibility of educators to assist students in their efforts to achieve and maintain psychological well-being. To facilitate this process it is essential educators know and understand the principles of mental hygiene. Sound mental health within the school community contributes greatly to the quality of the instructional program. Psychological adjustment in teachers as well as students enhances the teaching-learning process and enables both to better understand themselves.

The typical child is insatiably curious. However, this does not always remain the case. Too often a few years of formal education turns learning into a painfully unpleasant experience. The children lose their natural inquisitiveness. A label is then created that brands the student as lazy and irresponsible. As if the violation of established psychological principles is not enough, these comments are noted on the students' permanent records. Perhaps teachers have failed to ask themselves some honest questions. Does teaching promote interest and curiosity? Is the learning required of the

students relevant to their needs? Do the students feel a sense of satisfaction or a rush of relief after completing a learning activity? Too often the educational experiences of students seem meaningless and fraught with continual frustration and failure.

When an instructional program fails to meet the needs of the students, disciplinary problems logically ensue. The most common repercussion is punitive action by the teacher. Punishment takes several forms. A firm foundation on the psychological principles of behavioral control is required to recognize those infrequent instances when it is effective. A teacher would be more effective by encouraging desirable behaviors through the use of reinforcements. Most importantly, teachers must realize that they are adult models which the students emulate, and that behavioral self-control is imperative if acceptable student behavior is to be anticipated.

Quite simply, mentally healthy teachers foster mentally healthy students. The prerequisites to this are knowledge of one's self, human behavior, and the principles of mental hygiene. One way to become informed is through the findings of educational and psychological research. It is the responsibility of educators to understand and promote these principles in the classroom.

Measurement and Evaluation

From the teaching-learning process it is possible to obtain vast quantities of observable evidence of pupil maturation, development, and learning. These data are secured through the process of measurement. Once obtained, the data must be meaningfully interpreted. This constitutes a form of evaluation. Together, measurement and evaluation are a vital area within the field of educational psychology. Through measurement and evaluation it is possible to determine the extent to which pupils are achieving specified educational objectives. Assessment then, must revolve around monitoring behavioral changes in students. If testing programs are not established, intuition becomes a major guide to evaluation. Without demonstrable evidence available through evaluation, there is little objective information from which to make meaningful decisions. Indirectly, pupil evaluation serves as a means of teacher self-evaluation. The greatest deterrent to the student's progress is ineffective teaching methods. Instruments which measure pupil strengths and weaknesses will reflect parallel aspects of teacher effectiveness.

There is a wide continuum of attitudes with respect to the efficacy of establishing a testing program. An increasing number of educators are placing confidence in the value of measurement instruments. These educators understand a test's uses, interpretation, and limitations. The increased refinement of these instruments has made the use of tests more worthwhile and informative. Interpretation of test results is a responsibility all competent teachers should assume. In a compromising sense, it is necessary to realize that no test is perfect. There are errors of measurement inherent in all testing instruments. However, with skillful administration and interpretation the results can be a valuable diagnostic aid.

One purpose of education is to produce academic progress

in students. To determine and improve upon the relative merits of the overall instructional process, formal evaluation of the behaviors of pupils must take place. It is hoped that the efforts of educational psychologists to advance measurement and evaluation will inspire teachers, counselors, and administrators to gain a working knowledge of the area.

Readiness

Another primary area of educational psychology is readiness. Readiness refers to the time when learning can be accomplished with maximum efficiency. The concept had its origins in motor learning. It pertains to the time when physiological development has reached an optimal level for the learning of a given motor task, such as walking. It is now assumed by many that the same concept can be applied to cognitive learning. The familiar operation levels of Piaget (1961) are examples of readiness at the cognitive level.

Readiness seems to be primarily dependent upon two factors, 1) maturation, and 2) experience. Before learning can occur, it appears that a certain amount of maturation must be achieved. Evidence relating to motor skills indicates that practice of a task is ineffective if a minimal developmental state has not been reached (Piaget, 1961). Once the necessary developmental level has been reached, however, practice is effective. There is also evidence (Piaget, 1961) that learning delayed too long after the onset of readiness is less effective than learning at the proper time. This evidence further indicates that if experience and practice are delayed for an extended period, at least some skills can never be fully developed.

As readiness is so important, a key issue in education should be the appraisal of readiness for various tasks and levels in a systematic and comprehensive manner. This should involve planning of learning activities relative to the readiness of the student. If the learning activity is too early or too late it is ineffective, hence timing becomes a critical factor for educators to consider.

Intelligence

The main focus of formal educational assessment has been on intelligence testing. Since Binet (1909) made the first crude determinations of "intelligence," there has been a great deal of emphasis on attempting to assess the "native ability" of individuals for both research and educational purposes. Intelligence has been viewed as a global phenomenon, divisible into a number of factors; e.g., the "G" factor (Spearman, 1927), or as an incredibly complex structure; e.g., Guilford's (1954) "Structure of Intellect." Many years have gone into assessing intelligence and attempting to come to some understanding of the concept. With the advent of intelligence testing in educational settings, there arose a host of educational evils. In many cases, an I.Q. has come to represent a student to teachers and counselors. Groupings of students based primarily upon I.Q. are not uncommon. Improper interpretation of the results of an I.Q. test is very common. Frequently, teachers and others classify irrevocably on the basis of an I.Q. score. Those who are truly knowledgeable about testing recognize that at best an I.Q. score is only an approximation of intellectual ability. Since

the I.Q. test is, in essence, only an achievement test, those with limited experiential backgrounds are severely handicapped in taking them. As the tests are culturally biased, almost all except the white middle class student is at a disadvantage. The test that truly assesses intellectual potential is a myth perpetrated by ignorance. The educational heritage of classifying students on the basis of I.Q. and the free dissemination of I.Q. scores to teachers is a disservice to the student and the educational institution. Yet, removing this assessment technique would seem to place the educator in a relatively weak position for making decisions about the needs and abilities of students. A logical solution is to begin efforts to assess readiness for a given learning task and plan on the basis of that readiness. Experiential programs can be implemented to make up deficiencies in given areas, thereby allowing the students to be realistically classified according to their skills and background.

Learning

A fifth and extremely significant area of educational psychology is learning. Because of its scope, it is appropriate to first discuss the two major philosophical camps of learning, their resultant theoretical stances, and their practical significance to the educator.

Since educational psychology is an outgrowth of the more general discipline of psychology, many of the same philosophical and theoretical divisions are present in both. The two major divisions are represented by the humanistic and the behavioristic approaches to learning.

A key difference in these approaches lies in the way man is perceived as responding to his environment. To the behaviorist, responding to the environment is the product of two factors: 1) the stimulus situation at the time, and 2) the reinforcement history of the organism. If the reinforcement history of the organism and the stimulus complex in which the organism is currently embedded are known, prediction of behavior is possible. To control behavior, one needs to control contingencies. To ensure that learning occurs, reinforcement should be arranged so that desired behaviors are encouraged and undesired behaviors go unrewarded.

To the humanist, this view of man is too mechanistic and limited in scope. The humanist perceives man as a growing, flowering creature. To achieve maximal growth, it is necessary to understand the nature of man and to structure the environment so as to allow the developmental processes to proceed. Self-actualization and learning are the results of properly guided experiences and circumstances. The innate tendency for growth in man and his interaction with the environment provide the bases for all learning and development. Man reacts to his world as he perceives it to be, not, as the behaviorist would say, in accordance with the dictates of the stimulus situation. Man's experiences are organized and patterned. It is this organizing and patterning that provides meaning. To correctly understand behavior, the complex of experience must be understood. In a given stimulus situation, the reaction of an individual is in relationship to his experience and not in reaction to the stimulus itself. The stimulus interacts with the organization of experiences, thus providing the basis for reaction.

Learning is the same as the development of all responses to

the environment. Learning requires the incorporation of ideas and experiences into some organized structure. This structuring may be accomplished in several ways. For example, Bruner (1966) is a strong advocate of learning by discovery. This approach has the student guiding his own learning. He learns through his experiences. In this way, learning (in an educational sense) is accomplished in basically the same way that learning occurs in everyday life. New information and experiences are incorporated into the experiential complex.

Another point of view is represented by Ausubel (1968). He criticizes the discovery learning approach, claiming that it is a very time-consuming and nonadvantageous method. He proposed the use of "advanced organizers" to prepare the student to incorporate new ideas into his conceptual framework. In both cases, however, the key to learning is to establish some organization of individual data bits into a conceptual framework. According to Wertheimer (1959) this is where the behavioristic approaches fall down. These techniques teach bits and pieces, failing to supply the conceptual framework necessary for understanding. The organization of concepts is the key to learning. The structuring of learning is more than simply getting the student to memorize bits of information. It involves incorporating this information into existing schemata. This may be accomplished in a number of ways. Each individual learns best in his own way, so the same type of learning situation is not effective for all. Part of the task of the educator is to guide the learner in forming perceptions into meaningful relationships, potentially requiring an individualized program.

To the behaviorist, man is a product of an environment that shapes him through selective reinforcement. The behaviors that are reinforced are those that are likely to be repeated. The control of behavior can be arranged by controlling reinforcement contingencies. Any type of abstract, philosophical rationale for behavior is unnecessary and probably misleading. The only scientific approach to learning and behavior is through objectively verifiable fact. There may be "mentalistic" processes that operate during learning and behavior, but they are subjective and not amenable to empirical verification.

Based upon research findings, Skinner (1953) introduced a teaching technique known as programmed learning. Acquisition can be assured by following a number of sequential steps. First, it is necessary to actively involve the learner. This is accomplished in programmed learning by requiring the learner to write out his answers (as opposed to a more passive procedure such as selecting one of a given set of alternatives). Second, modified forms of the same item are given repeatedly. This performs the function that drill once assumed in education. Third, the item is varied slightly from presentation to presentation so that the learner sees it in different contexts. Fourth, the learning occurs in small steps that virtually guarantee the learner will be correct in his responses. The advantage in this approach is that there is little failure experienced by the learner and he is less likely to form incorrect associations. Fifth, immediate feedback is given to the learner. When the learner is correct, Skinner (1953) assumes that knowledge of results is reinforcing. Not

only is reinforcement immediate, but it is frequent. Skinner perceives this as one of the strong points of programmed learning. According to Skinner (1953), the classroom teacher is simply incapable of providing the tremendous number of reinforcements necessary for each student in his/her class. The teaching machine assumes that responsibility for the teacher. Finally, complex learning is made up of a step-by-step build-up from simpler items. To learn this type of material, one starts at an elementary level and builds to a more and more difficult one.

In summary, it can be seen that human learning, to the behaviorist, is similar in nature to the learning of infrahuman organisms. The principles observed in the laboratory can be directly applied to education. It is unnecessary and undesirable to postulate complex cognitive processes to account for human learning. The obvious strength of such an approach is its reliance on observable and quantifiable behaviors.

In a theoretical sense, then, a clear distinction exists between humanism and behaviorism. From the teacher's standpoint the operational interpretation of these theories becomes less well defined. The transition from textbook to classroom blurs the difference between these approaches.

As any teacher can attest, no single theory can serve to answer all of the complex questions inherent in the learning process. It therefore becomes the responsibility of educational psychology to translate these many theoretical principles into operations which can be employed by teachers. Research in educational psychology confirms what the effective teacher already knows: the best learning principle to use in a given situation is the one that works most satisfactorily, regardless of theoretical origin. When faced with the realities of the classroom, one must replace his allegiance to a particular theory with the realization that the complex nature of learning can only be dealt with effectively through an eclectic approach.

Education is not limited to cognitive-field theory and discovery learning, or to reinforcement theory and programmed learning. All can be highly effective. More importantly, there exists a continuum of approaches between these extremes. The teacher must be capable of adapting. One cannot be truly effective if limited to one or two methods of teaching. The more flexible the repertoire of instructional approaches, the more compatible the teaching will be with the needs of the students. This freedom of movement involves more than being able to change completely from the strict interpretation of one approach to that of another. An eclectic teacher is, in a sense, using his/her own theory; one which changes fluidly with the demands of the situation.

Many highly effective teaching methods can be classified as descendants of both humanism and behaviorism. Across theories, some seemingly opposing constructs have considerable similarity when applied. For example, the importance of past experiences in determining present behavior is universally recognized. To the reinforcement theorist, past experiences involve the conditioning of the organism by his external environment. This acquisition of conditioned behaviors constitutes the person's reinforcement history. To the cognitive-field theorist, experiences are acquired as a

result of a purposive, self-directed person interacting meaningfully with his environment. The thrust of the former theory is toward the dominant role of the environment, while the emphasis of the latter theory focuses upon the person. What one admits as evidence of learning, the other clearly rejects; e.g., Skinner would totally reject the assumption that internalized needs and values played any meaningful role in the learning process. Although these theories differ in the paths they choose to follow in explaining learning, in the final analysis they are addressing themselves to essentially the same developmental process. It is these more important underlying common denominators which must be brought to the attention of classroom teachers. Whether a student is self-motivated or encouraged through external reinforcement, the result is active involvement in the learning process. The teacher's task is to be able to recognize and implement the proper strategy for each student in a given situation. The point is simply that learning becomes more efficient and effective for the teacher who has a working knowledge of many theoretical points of view. Clearly, this necessitates a broad understanding of the principles of learning. If this knowledge is to have utility, educational psychology must act as the liaison which translates the conceptual abstractions of theory into the meaningful operations needed by the teacher.

An example of an eclectic program is the currently popular performance/competency-based education movement. In a philosophical sense, P/CBE is more closely allied to the humanistic school, but as an educational practice, it draws from both humanism and behaviorism.

From the humanistic school of thought, several ideas have been incorporated into P/CBE. For one, the students are actively involved in planning and organizing the direction of their learning experiences. Alternative modes of learning are available to students. This is an attempt to insure at least one learning route that each student can use effectively. In addition, a high degree of teacher/student interaction is encouraged. This facilitates affective development and provides a positive learning situation.

From the behavioristic school of thought, P/CBE has also drawn several guiding principles. First, an attempt is made to provide feedback to the student more quickly than in a traditional program. A high degree of positive reinforcement is used to maintain student interest and effort. The learning approach in P/CBE is virtually non-failure, since a student can keep attempting a unit of study until he successfully completes it. Successful completion of a unit is based upon a criterion referencing system, not upon competition within the group. Finally, the teacher's expectations are made clear to the student via behavioral objectives.

Although P/CBE has not met with universal approval, it does appear to be an effective approach to the teaching-learning situation. In large part that success is due to the willingness of those involved to draw from both humanism and behaviorism in establishing their program. With further assistance from educational psychologists, P/CBE should be able in the future to more fully define and explicate the philosophical and theoretical underpinnings which constitute its foundation.

Educational psychology must become involved in efforts

to foster a clearer understanding of the overall value of eclecticism. This, however, is not enough. Educational psychology must also develop specific methods of study which result in educationally relevant information that is not subject to risky generalizations. It would, however, be remiss to exclude mention of the fact that education as a whole must also take strides to conduct research which maintains adequate standards of internal validity. The artificial sterility of laboratory studies and the vague misinterpretations of field inquiries must be integrated in order to gain maximum benefits. The goal of educational research is to find meaningful information which has utility in furthering the development of teaching. The means must accommodate the goal.

It is hoped that this discussion has touched upon some of the advances in educational psychology as well as its areas of stagnation. Trends within the field are proving to be highly productive, but the issues which remain unresolved reflect the need for further growth and realignment of thought. If educational psychology is to become a well-grounded entity

within the field of education, it must become its own source of knowledge. The benefits of psychology, in general, are innumerable, but to effectively deal with educational issues, educational psychology must stand alone.

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