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ABSTRACT

A teacher training program in blind education is described which is based on Piagetian concepts of cognitive development. It is explained that the teacher is trained to be more concerned with process than with content. Four competencies of a process-oriented teacher (including skill in administering Piagetian reasoning instruments) are outlined, and training activities (such as field based practicum experiences) are reviewed. (CL)

COGNITIVE REMEDIATION OF BLIND STUDENTS A TEACHER TRAINING PROGRAM: DEVELOPING AND IMPLEMENTING PROCESS-ORIENTED TEACHING STRATEGIES

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Most educators probably would agree that the principle goal of education should be to provide the child with those types of learning experiences which create numerous possibilities for the invention and discovery of knowledge. To this end, our primary focus should not only be to increase the amount of knowledge acquired, but to promote the child's ability to apply what he or she has learned, and to seek new solutions to problems.

THEORETICAL BASIS FOR DEVELOPING A PROCESS-ORIENTED TEACHING APPROACH

The application and implementation of Piaget's theory of cognitive development seems to offer the educator an effective and efficient means of promoting the cognitive growth of the learner. Piaget has spent many years observing, assessing, analyzing, and interpreting the various factors of child growth and development in terms of a series of hierarchial stages which represent the different organizations and complexities of thought achieved by the individual. His theory holds that cognitive growth is achieved through four interrelated and interdependent stages of development: the Sensory-Motor, Pre-operational, Concrete Operational, and Formal Operational. The evolution of thought along this continuum involves the development of mental structures ranging from those that are basically reflexive in nature (sucking, grasping, kicking, etc.): to those that involve abstract hypothetico-deductive reasoning in problem solving, combinatorial logic, and in testing hypotheses. Piaget posits that the child's cognitive development occurs as he interacts with his environment, and as he acquires knowledge through a wide variety of experiences. The information acquired through experience forms organized thought structures which gradually become more complex as the individual progresses developmentally.

Without the accumulation of experience in performing certian behavioral acts the individual can not hope to expand his knowledge, skills or abilities. By manipulating objects and events the individual acquires the cognitive abilities to identify, describe, analyze, and synthesize characteristics and properties of such objects and events, which in turn make it possible for the individual to establish various relationships between them. This ability to coordinate actions made upon objects and to clearly understand the interrelationships between objects and events can come about only as a result of experience.

The fact that thought is qualitatively different at different stages of development has been demonstrated in Piaget's documentation of children's responses in situations which require reasoning. One of the major tenents of Piaget's theory is that all individuals pass through these stages of cognitive development in an invariant sequence. He does state, however, that the rate of progress through each stage varies from individual to individual as a direct result of the interplay of physical growth and maturation, experience, and social interaction. In order to employ a teaching approach designed to promote the growth and development of cognitive abilities in the learner, we must be willing to go beyond the content of learning in and of itself. Although the content of learning is important, our primary concern should be to understand what occurs in the thought processes which generates the content of the child's knowledge. To accomplish this goal the present project devised an indepth teacher training program designed to assist teachers in the application of Piaget's theory and implementation of process-oriented teaching strategies.

THE PROCESS-ORIENTED TEACHER

Just what is a Process-Oriented Teacher? By definition a Process-Oriented Teacher is an individual who's primary concern is to develop and implement learning activities which (1) permit the child to discover knowledge for himself: (2) focus on the child's actions and thoughts, and: (3) create situations where thought structures can be elaborated or developed. The process-oriented teacher is more interested, therefore, in the thought processes the student use to attain a particular answer rather than the "rightness" or "wrongness" of the answer itself. In other words, there is more concern for the process of thought than the mere product of thought. As a result of acquiring specific teaching skills and techniques, the process-oriented teacher can easily depart from or modify existing lesson plans in order to be responsive to each student's particular interests and levels of cognitive functioning. This type of teacher is able to use relevant assessment information to design learning activities which are appropriately matched to the child's identified cognitive skills or abilities. In terms of the use of instructional materials in the classroom, the process-oriented teacher places far less importance upon the material itself and is less tied to its prescribed uses. There is greater concern for use of material in order to promote the development of mental processes which are necessary for effective problem solving. Although most teachers may be satisfied with a particular response given during an assigned learning activity, and may interpret such responses as satisfying some externally imposed objective or objectives, the process-oriented teacher uses questioning strategies which permit greater flexibility in guiding and directing the child's thinking. The type of guidance provided by the process-oriented teacher facilitates the child's organization and development of new thought structures. Using the knowledge of developmental theory acquired through previous training experiences, the process-oriented

teacher understands the importance of presenting learning activities which are slightly different from the ones with which the child is most familiar. The resulting cognitive conflict tends to stimulate and motivate the child to interact with the presented materials or situations. There also is probability that the learning activities devised by the process-oriented teacher will effectively promote the development of cognitive-abilities which will generalize across a variety of learning situations.

IDENTIFICATION AND DEVELOPMENT OF DESIRED TEACHER COMPETENCIES

The principle goal of the teacher training program is to develop teacher competencies which promote a shift from being concerned with the product of learning, to a concern in the process of learning. To this end, four areas of competencies required of a process-oriented teacher were identified.

1. Teachers with an understanding of the major principles of developmental theory must acquire skill in administering Piagetian reasoning assessments.

2. Having demonstrated ability to assess cognitive development through the use of reasoning assessments, teachers must acquire the ability to score and analyze reasoning assessment responses.

3. As a result of evidencing skill in using the scoring procedures, teachers must acquire ability to profile reasoning assessment information in a meaningful way and to accurately identify the reasoning patterns of the child assessed.

4. After using assessment information to identify the reasoning patterns of the child, teachers must acquire the skills necessary to develop individually appropriate reasoning activities, then to implement them and evaluate their effectiveness.

Let us now take a brief look at the basic sequence of teacher training activities which bring about these competencies.

In order to develop teacher knowledge of theory and competencies in the administeration of reasoning assessments, teachers are provided a variety of demonstration and real-life experiences. Lectures, demonstrations, and small and large group discussion center on developing the teacher's understanding of the major stages of cognitive development as outlined by Piaget, namely; the sensory-motor, pre-operational, concrete operational, and formal operations stages. The primary information base from which these teacher compentencies are developed come through assigned readings of selected texts and journal articles, and through observation of actual assessment interviews conducted by trained staff. Additionally, videotapes, autiotapes, and films are used to augment these live demonstrations. Subsequent to these lecture-demonstration experiences, teachers are provided opportunity to engage in a structured role playing session. The intent of this activity is to promote skilled use of the reasoning assessment procedures and techniques. Following the role playing session, trained

staff conduct small group discussion sessions which are designed to provide teachers with constructive evaluation of their initial assessment experiences. Upon completion of these practice activities each teacher is given an opportunity to conduct an actual assessment interview under the direct supervision of a trained staff member. Critical analysis is then provided each teacher regarding both the techniques employed during assessment, and the protocol generated. Succeeding activity sessions, largely field based practicuum, provide each teacher additional opportunities to acquire experience in conducting assessment interviews and in refining their assessment skills.

Once there is demonstrated ability to conduct assessment interviews, subsequent experiences focus on developing skills in the area of scoring the responses generated during the earlier assessment sessions. These activity sessions center on discussion of sample protocols (previously scored by trained staff) which serve as the basis for explaining and describing the general scoring procedures used for analysis of reasoning assessment responses. Additional scoring opportunities are provided each teacher; and through group discussion discrepancies in interpretations are analyzed and compared. The major intent of these activities is to generate a general concensus on prescribed techniques for scoring reasoning assessment protocols. Following the sequence, the next activity involves teacher scoring of the assessment protocol which she previously has generated. Each teacher now develops a detailed report concerning the scoring of assessment responses. Staff evaluation of these reports is accomplished through both individual and group discussion. Thus, supervisory personnel provide each teacher feedback, recommendations, and suggestions designed to assist in refining the teacher's skills in scoring reasoning assessment responses.

Competency in interpretation and profiling of reasoning assessment information arise from teacher involvement in several demonstration and practicuum experiences. Using the sample protocols from previous sessions, teachers profile and analyze the assessment responses in order to identify reasoning patterns. Discussion activities and demonstrations provide each teacher with constructive suggestions for the improvement of their assessment techniques. Supervised experiences are initiated which promote use of a variety of questioning strategies. There is emphasis that the methods employed and types of questions asked a child during assessment are critical in eliciting the child's best response and in understanding his or her thought processes. Primary sources of information are texts and journal articles and, actual tape recordings of assessment interviews conducted by trained staff.

The next phase is designed to develop competencies in devising or adapting individually appropriate learning activities which are based upon the results obtained from reasoning assessments. Teachers begin to develop remedial activities that address specific deficit areas identified through assessment. Using the previously mentioned protocols, trained staff, provide the teachers opportunity to discuss the rationale for designing reasoning activities. Each teacher develops

remedial activities for the child he or she initially assessed under the supervision of trained personnel. Then these activities are critiqued and an evaluation summary provided each teacher. The next step is teacher refinement and implementation of these initial activities with the child initially assessed, while being observed by a trained staff member. A final evaluation summary is prepared by trained personnel and provided for the teacher for his or her review.

ONGOING IN-SERVICE TRAINING

The teacher training experiences mentioned thus far are not an end in and of themselves. Following these initial training activities provisions are made to conduct in-service meetings on a periodic basis. The major intent of such in-service sessions is to provide ongoing consultation, assistance, and support to the teacher. Activities during these in-service sessions provide opportunity for the teacher to acquire and develop additional skills and permit a general dissemination of new techniques, skills, and materials as they become known. Such in-service meetings are designed to assist each teacher in examining the specific aspects of Piaget's theory in greater depth to insure a better understanding and appropriate application of the concepts underlying learning. These follow-up activities help insure and encourage the teacher to maintain his or her process-oriented teaching skills.