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ABSTRACT

An evaluation of research in the area of perceptual training suggests procedures for teachers to follow until more definitive information is obtained. First, educators should build their programs on broadly-based but accurate classifications of perceptual skills. They should also be aware of the theoretical assumptions which influence perceptual development and the basic neurophysiological components which underlie perception and learning. Second, a careful examination of the instruments used in perceptual training investigations would be a useful guide to selection of classroom tests. In addition, standardized testing should be supplemented with systematic informal observation, and clues to effective instruction should be searched for in well-controlled research. Third, teachers should support good programs of motor development which foster the general well-being of students even though direct correlation to reading is inconclusive. Finally, teachers must continue to consult research for answers about perception while also evaluating activities that seem to sharpen in children the response capacities necessary for reading. References are included. (VJ)

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PERCEPTUAL TRAINING - DOES IT RESULT IN READING IMPROVEMENT?

Evaluations, Conclusions and Implications

in the sequence on

Implications of Some Current Issues and Practices for the Reading Teacher

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The preceding review of research in the area of perceptual training leads quite justifiably to the generalization that results are inconclusive as to the effect that perceptual training has on reading achievement. Implied in many of the investigations cited is a cautious invitation to try certain kinds of training, provided that one does not expect too much in the way of improvement. Also implied is the possibility that "doing nothing" may provide the same results as "doing something" to provide perceptual experiences in the reading program.

The classroom teacher faced with the unknowns concerning perceptual correlates of reading behavior might be inclined to hold out for more tangible conclusions. But teachers of reading are presently faced with national manadates, which filter down to local system directives, which dictate the use of some methods and materials geared toward developing perceptual skills. It becomes imperative for teachers to be aware of the present status of research in order to make sound judgments as to what

should be included in the reading program.

The purpose of this paper is to draw conclusions and evaluations from present research which will help the classroom teacher to make interim decisions concerning perceptual skill development. Evaluation is presented in the manner of, "How to proceed until the evidence is in."

A perusal of the investigations cited seems to indicate that a primary responsibility of the teacher is to ferret out clear definitions and classifications of perceptual skills. Having accomplished this, the teacher can then delimit skill lists and hierarchies so that the behaviors to be modified are those which show highest correlation to reading achievement. In the area of visual perception Frostig's categories of visual abilities may be a useful delineation, but not all five aspects should be included as components of a reading program. For example, it may be helpful for kindergarteners and beginning first graders to develop an awareness of position in space by descriminating reversals and rotations of letter and letter-like forms. However, Liebert and Sherk (14) suggest that, as a general procedure, such instruction might be a waste of time in the second semester of first grade. And, in view of the results of the investigations cited by Dr. Robinson, little would appear to be gained by a tachistoscopic presentation of such tasks.

Similarly, comparisons can be made to illustrate research implications for auditory training. Flower (9) presents a hierarch of six auditory skills: sensitivity, attending, discrimination, memory, integration, and auditory-visual integration. He suggests that auditory

training related to reading might include attention to these skills in a sequentially structured program which begins with echoic reproduction of common phonemes and ends with phoneme-grapheme associations in word or word-like units.

However, Feldman and Deutsch (8) found that after 58 hours of training in the areas of sound recognition, attentivity, auditory discrimination, and auditory memory the reading achievement of third grade disadvantaged children with reading problems was not significantly improved. Duncan (7) also found that auditory discrimination abilities were not improved for third grade disabled readers who experienced auditory training based upon Flower's (9) model, but that the aspects of training related to synthesis and analysis of phoneme and syllabic elements were moderately effective. Perhaps for upper primary age children the lower-order skills in Flower's hierarchy are not conducive to modification by the types of training currently being employed. Instruction for this age children might be directed toward developing other auditory skills such as blending phonemes and syllables and translating graphemes into phonemes.

The inference from recent studies in both classroom and clinic is that rather broad definitions of perception, especially visual and auditory, are more appropriate foundations for training programs. Investigations in the area of modality by Birch and Belmont (3), Berry (2), Sterritt and Rudnick (20), Muehl and Kremanak (16), Jones (10), and others tend to establish that attention to intersensory transfer capaci-

ties should be included in the scope of instruction for beginning and disabled readers. On the other hand, not all facets of skill classifications should receive the same amount of attention. When looking to research findings for instructional guidelines, teachers need to examine the nature of the tasks involved, the possibility of voids in the program in terms of the types of tasks presented, and the relevancy of the program to the needs of the pupil for which it is being considered.

This kind of evaluation of instructional procedures and materials for developing perceptual abilities requires judgment in terms of several theoretical assumptions which are basic to learning in general. Implied in Dr. Robinson's review as well as in descriptive studies of visual and cross-modal abilities by Chang and Chang (5), Birch and Belmont (3), Sterritt and Rudnick (20), and others, is the assumption that maturation accounts for increases in perceptual abilities. As a general assumption this might be acknowledged. But, it is difficult to reconcile this assumption with the hypothesis of Deutsch (6) that disadvantaged and/or linguistically different children as a group have limited abilities to respond to normal verbal signals. Nor is the maturation assumption consistent with a small but persistent group of investigations by Silvaroli and Wheelock (17), Swanson (21), Silver and Hagin and Hersh (19), Ames (1), and McNeil and Coleman (15), which found substantial gains in perceptual skills associated with reading after brief periods of training.

Regardless of the impact of genetic control, it appears that the day is long past that educators can wait for the organismic capacities to unfold. When teachers intervene to try to boost the perceptual capacities of students, they should be cognizant of the specific aspects of perceptual training which have produced success; such as brief work periods, immediate feedback and reinforcement, and instruction which helps children make the transfer to normal reading tasks.

In addition to these criteria it seems obvious that decisions should be made to determine which skills are of sufficient importance as to merit participation by most of the group and which are needed only in specific remediation of cases of individual deficits. Teachers of beginning readers and disabled readers would probably be well-advised to develop perceptual profiles of their students, such as those recommended by Silver and Hagin (18). In addition, the question of which tasks require structured lessons at the appropriate developmental level and which can be introduced or practiced in informal situations would seem to be of ultimate importance. Discrimination of similar graphemes or phonemes, for example, may be better handled in a well planned lesson; while construction of rhyming elements may lend itself to a less structured activity.

Another underlying assumption was indicated when Dr. Robinson distinguished between two categories of perceptual training studies: attention or set and deficit area training. The first category suggests that there may be certain components of neurological functioning which are common to all perceptual areas. Attending behavior

would certainly be one of these components. It is obvious that learning cannot proceed without involvement of the learner in the stimulus situation. In a discussion of the function of imagery in memory Bugelski (4) postulated that when one is attending it is possible to learn even that which one does not want to know. It would seem apparent that lesson plans and materials used in perceptual skill development should be scrutinized as to format consistency, orientation procedures, and provision for redundancy in an effort to help the learner to develop an appropriate set which will enable him to focus quickly on the task presented.

Another underlying component of all perceptual skills seems to be sequencing--a behavior which might include such components as memory, chunking, synthesis-analysis processes, and temporal and spatial organization. Lashley (13) viewed this phenomenon as not exclusive to language, but as part of a general neural organization which accounts for a continuum of behavior from such primitive acts as the pacing of gaited horses to the complex arrangement of words in paragraphs. However, he does make a distinction between lower-order functioning and complex verbal production. Evidence for the fundamental influence of sequencing has been found in several of the studies of auditory-visual integration.

The implication of these assumptions for teachers is that perhaps attention to basic aspects of behavior such as attending and sequencing may be the important elements of training programs. More

investigation seems to be warranted with regard to these important aspects.

Several conclusions from research in perceptual training seem relevant to the consumer responsibilities of educators. An examination of the instruments used to test and to evaluate training programs demonstrate that many are restrictive in terms of normative ranges, are complicated in format, and need to be administered individually. In addition, few have undertaken intensive tests of validity, as did Feldman and Deutsch (8) who found that the instruments which they constructed all seemed to measure auditory memory when submitted to factor analysis. These conclusions suggest that those who select tests to measure the effects of perceptual training programs need to be concerned with the basic considerations of test validity and reliability, format, and ease of administration. In addition, the increased use of informal observation in the manner of behavioral check lists and systematic anecdotal records should be encouraged.

Reference has been made previously to the types of tasks which are included in commercial perceptual training mater ; and the degree to which they are compatible with research results. It would seem important, for example, to rearrange the presentation of sight words to adhere to the findings of King and Muehl (11), that learning rate is faster for dissimilar words, but that letter discriminations are more easily made in the presentation of similar words.

The teacher who is involved in perceptual training, either in a developmental situation or in a remedial situation, would benefit from building a skill development activity file. These activities would be developed in accordance with accurately defined skill classifications, with emphasis on those skills which seem to occur as frequent areas of deficiency.

A final observation is related to the impact of motor-training upon reading. This is a difficult subject to describe in terms of research because motor involvement is included in investigations of visual, speech and tactile perception as well as in studies of gross-motor oriented programs recommended by Delacato, Kephart and others. It would appear that substantial evidence is lacking to connect directly training with a motor emphasis and reading achievement. As with much reading research, studies involving motor training tend to be limited by the Hawthorne Effect, lack of randomization, experimentor bias, and other common sources of research contamination.

But, it is difficult to fault good programs of motor development simply because the direct relationship to reading is untenable. It seems logical that activities of the sort that enable the child to have better control of his body are going to effect him in the academic situation as well and are certainly going to enhance his self concept. As Klesius (12) suggests, "Reading instruction may be paramount to the development of reading adequacy but sometimes other learning experiences assist in achieving the desired outcome."

Summary

The purpose of this paper has been to present an evaluation of research in the area of perceptual training. Implications were drawn to suggest appropriate procedures for teachers until more definitive information can be obtained.

It was recommended that educators involved with the development of perceptual skills look to research for broadly-based but accurate classifications of perceptual skills upon which to build programs. It was further indicated that teachers should be aware of theoretical assumptions which influence perceptual development as well as basic neurophysiological components which might underly perception specifically and learning in general. An awareness of these correlates would appear to be helpful in organizing instructional procedures and in selecting materials.

In discussing the consumer responsibilities of educators it was observed that careful examination of the instruments used in perceptual training investigation would be a useful guide to selection of tests for typical classroom use. The classroom teacher was encouraged to supplement standardized testing with systematic informal observation. The suggestion was made to search for clues to effective instruction in the findings of well controlled research. Responsibility for developing accurate systems of instruction at present seems to be that of the teacher.

A final recommendation was made with regard to the inconclusive and ill-defined area of research in motor training. The conclusion drawn was that teachers should support good programs of motor development which foster the general well-being of students even though direct correlation to reading is not in evidence.

Teachers of reading must continue to consult research for answers to the many unknowns of perception. In the meantime, they must also continue to try to evaluate activities which they hope will help children to sharpen the response capacities necessary for reading.

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