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Research in the Use and Purposes of Instructional Materials

This article examines the status of current research in the use and purposes of instructional materials.

A CASUAL observation on this topic might be that the area of instructional materials has produced a great deal of research. In the reading field alone, it is estimated, there are more than twenty thousand pieces of research. The *Journal of Educational Research* publishes annual summaries by William S. Gray relating to reading investigations. Non-book instructional materials have opened up a new research field particularly in the past thirty years. While the most recent comprehensive summary in the audio-visual field was contained in the 1950 edition of the *Encyclopedia of Educational Research*, numerous books and periodicals have made an effort to bring together more recent findings. One purpose of the *Audio-Visual Communications Review* is to bring to the attention of the teaching profession research in the whole area of communications. One of the first issues of that magazine in 1953 reviewed the television findings to date. A recent book, the *Audio-Visual Reader* devoted a section to research and also proposed many topics for needed study. A new magazine, *Teaching Tools*, now in its second year presents as a regular feature two double pages of pictorial reporting on recent research in the use of materials.

This article is intended to consider all classroom materials which help the school carry out its responsibility for improving the learning process. It will not differentiate between the more concrete materials commonly called audio-visual materials and the more abstract book materials. It will not treat one group of materials as aids and another as essentials, because the term, "aids," seems to imply the auxiliary and supplementary. Materials are here assumed to be a real and necessary part of all teaching and learning. Materials will not be called supplementary to the tool subjects. The tool subjects are not here assumed to be ends in themselves. Materials and content are two of the means for developing responsible democratic citizens in today's changing world.

What Research Tells

A check on the investigation concerning the use and purposes of instructional materials shows there are many studies merely attempting to demonstrate the superiority of one type of

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learning material over another. "Should a single textbook or many supplementary books be used?" "What are the better teaching media: audio-visual materials or textbooks?" Many audio-visual studies use films as the materials to be tested. There seem to be comparatively few studies concerned with the use and purposes of field trips, demonstrations, dramatizations, filmstrips, slides, charts, graphs, maps, records, transcriptions, radio programs. Much of the research relating to use and purposes of television has been completed by the military services.

An interesting exception to the usual one-medium experimentation, however, is a study by Witty and Fitzwater[1] in which a combination of materials was used to facilitate the learning going on in the classroom. This reports the average progress made by 27 second grade children in each of six Chicago schools during a semester in which four films were presented following the reading of the associated film reader. One conclusion reached was that the use of motion pictures accompanying reading material provides needed basic experience and fosters the attaining of skills in reading. "It not only leads to clearer grasp of meaning but also enables the pupils to hear the correct pronunciation of words and phrases in a meaningful setting." [2]

William C. Allen has summarized some of the utilization research as follows:

> The use of a variety of materials will lead to greater learning. There is some evidence that films are excellent for initiating a study, that many kinds of materials help the development of a unit and that student-produced materials are effective as summaries and conclusions.[3]

The *Encyclopedia of Educational Research* states that, in harmony with findings of the American Council on Education study, good utilization means that the teacher is acquainted with the materials before he attempts to use them, that the class group is prepared to use the materials and that there is follow-up activity after the materials have been used. [4]

Dale, Finn and Hoban conclude that audio-visual materials properly used can serve the following purposes:

> Supply a concrete basis for conceptual thinking and hence reduce meaningless word-responses of students;
>
> Provide a high degree of interest for students;
>
> Supply the necessary basis for developmental learning and hence make learning more permanent;
>
> Offer reality of experience which stimulates self-activity on the part of pupils;
>
> Develop a continuity of thought;
>
> Contribute to the growth of meaning and hence to the development of vocabulary;
>
> Provide experiences not easily secured by other materials and contribute to the efficiency, depth and variety of learning. [5]

[1] Paul Witty and James P. Fitzwater. "An Experiment with Films, Film-Readers and the Magnetic Sound-Track Projector," *Elementary English* XXX (April 1953), p. 232-41.

[2] *Ibid.*

[3] William C. Allen. "Research Verifies the Value of Audio-Visual Materials," *The Audio-Visual Reader*, ed. James F. Kinder and F. Dean McClusky. Dubuque, Iowa: William C. Brown Co.; 1954. p.331-32.

[4] Edgar Dale, James Finn and Charles F. Hoban, Jr. "Audio-Visual Materials," *Encyclopedia of Educational Research*, ed. Walter S. Monroe. New York: The Macmillan Co.; 1950, p. 92.

[5] *Ibid.*

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Extensive research by small committees furnishes material for firsthand reporting at local historical spots.

Many of the studies are disturbing in their evaluation of purposes of instructional materials in terms of only verbal responses on objective tests of factual information. Yet, the *Encyclopedia of Educational Research* points out, "in addition to conveying information [films] are useful in forming proper attitudes and developing critical thinking." There seems to have been little reported research in the latter areas, which are admittedly more difficult to measure. Yet, day by day working in classrooms with teachers and children reveals many interesting examples of very personal attitudinal reactions when the group has a feeling of freedom to work with materials and to think about their use.

Of course, most studies involving instructional materials cite the importance of the role of the teacher in the learning process. Such observations as the following are common:

Materials are not good in and of themselves. Overoptimism is cautioned against.

The effectiveness of the [materials studied] must be expected to vary with the subject taught and with the learning outcome measured.

Effectiveness further depends upon the age and background of the children or group using the materials, the skill and method of presentation and the influence of the teacher.

Some Questions and Observations

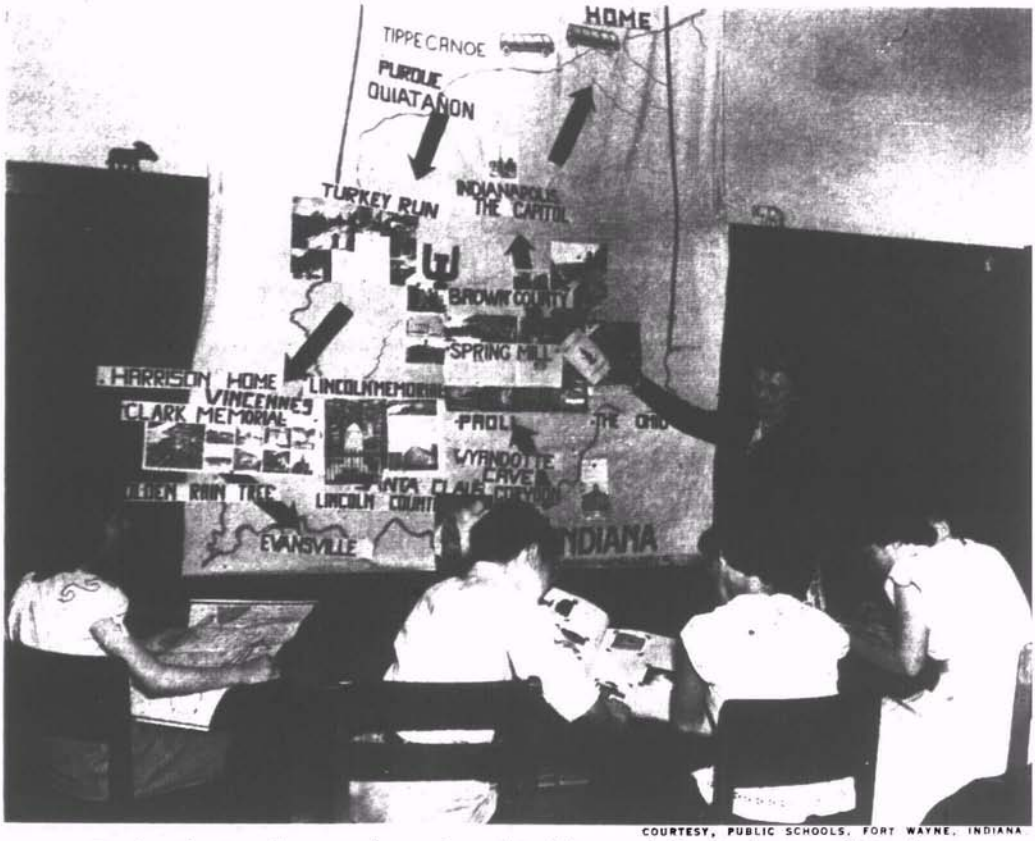
Accepting the fact that the teacher is a key to classroom learning, practical questions to consider might be: What influence did the teacher exert in each of the following actual classroom situations? How did the teacher's own beliefs about the role of instructional materials help bring about these reactions in children? What kinds of reactions did the children have chiefly because of the materials used by sensitive teachers?

As a group of Midwestern ten-year-olds touched the contours on a new plastic three-dimension map of the U. S. A., one said, "The Appalachians aren't really high compared to the Rockies. My dad said he didn't enjoy mountain driving when we went East to Washington, D. C., last summer. I wonder how he would feel if he ever drove west in Colorado." Another said, "I wonder when the pioneers ever would have gotten to the Midwest if the Appalachians had been as high as the Rockies." Another said, "If the Rockies were in the East and the Appalachians were in the West I wonder what national park Fort Wayne would be near."

How was the teacher's acquaintance with the importance of varied learning materials reflected in the following account?

In listening to a phonograph record dramatizing the completion of the first transcontinental railroad and the driving of the golden spike, a junior high student said, "When I shut my eyes and listen, I feel that I am right there in Utah!" Later, that same student moved to the library shelf to pick out the exact story book which the record had dramatized.

What kind of teacher-pupil partici-



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Books, charts, photographs and a pictorial map help students and teacher prepare for a class trip.

pation in the use of materials was helpful in bringing about the identification indicated in the following account?

A sixth grade group was discussing a filmstrip concerning the first voyage of Columbus. The class observed a frame showing Columbus riding horseback in a Spanish city in a triumphal parade celebrating the success of the first trip across the Atlantic Ocean. Some captive Indians whom he had brought back as evidence of reaching the Indies were walking along behind him. One child observed, "I feel sorry for those poor Indians in the parade, the way everyone is staring at them." Another said, "They don't even know what the people are saying."

What makes some school experiences dramatic referents?

A senior high school group was talking over a school journey it had made, while its members were in junior high school, to the Lincoln country of Indiana. They said the most memorable part was the feeling they had had while standing quietly on the land where Abraham Lincoln had once lived, and saying aloud the "Gettysburg Address."

In the April 1955 research issue of *Educational Leadership*, Maurice R. Ahrens observed that changes in curriculum involve first and foremost changes in the thinking of teachers. Perhaps the teachers willing to be involved in experiments with new learning materials were changed and thereby created an improved environment

in which learning could take place.

Suggested Research

If "relatively few decisions about instructional materials or methods are based upon scientific evidence,"[6] if studies of changes in attitudes and development of critical thinking do not lend themselves easily to scientific research, if the teacher is a key to learning—then perhaps action research in the individual school building and classroom is one means of exploring further the uses and purposes of instructional materials. A school staff which works sensitively with its students, thinking through some ways of expanding and deepening experience through materials, modifying what it does in the light of observation and evaluation is carrying on action research. Such a school staff, after seeing the motion picture, *The Mind's Eye*, which presents some of the experimentation in perception going on at Hanover Institute, may wish to re-examine its total school curriculum in terms of the common experiences the school assumes it is providing.

Other hypotheses can easily be set up by individual staff members and by groups: If I use a wide variety of instructional materials in teaching, then I shall appeal to more individuals by opening up more approaches to learning. If I make it a point to really become acquainted with a number of new learning materials each semester, then I shall feel that teaching is more fun and that learning is a pleasanter experience in my classroom. If our building staff will survey realistically the instructional materials available and those needed in terms of the job we are trying to accomplish, then, perhaps, local production can help fill in the gaps. If I as a materials (or other) consultant am willing and able to try out with teachers new ways of using instructional materials, then perhaps we can develop among us greater understanding of the cooperative part we can play in improving the total learning process.

[6] Stephen M. Corey. "Editorial: Research in Action." *Educational Leadership* XI (May 1954), p. 464.

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