

*Results:* Students who received instruction by television compared favorably with those receiving regular instruction. There were no differences with respect to self-insight, attitudes, and interest in subject matter, with the exception of the on-campus television group which had less interest and poorer attitudes. Eighty percent of the students who were enrolled in conventional classes but who also participated in television classes preferred the conventional ones. There were more effective and also more ineffective incidents in conventional than in televised instruction. Experience suggested that television should be placed within the administrative organization of the instructional area of the college. Under the existing conditions, it is feasible to offer a lecture-discussion course for 950 students and a more expensive course with a minimum of 1440 students. (These two reports contain much additional information not touched upon here.)—L. TWYFORD

## ■ FILMS

**Noall, Matthew F., and Winget, Lerue**  
"The Physics Film Project"

*Bulletin of the National Association of Secondary-School Principals* 43:181-95; January 1959

*Purpose:* To determine whether it is possible to teach physics effectively with the Harvey White physics films even though instructors are inadequately prepared and laboratories ill equipped.

*Procedure:* Ten experimental and 10 control schools in Utah were used in the experiment. Achievement progress was measured with the *Cooperative Physics Test*. Interest was measured with the *Strong Vocational Interest Blank*. Large interschool differences prevented analysis using matched groups.

*Results:* No differences between experimental and control groups were obtained with large and small schools. Medium-sized schools showed a significant difference in favor of regular instruction.

There were no differences in interests or drop-out rates between groups. There was some tendency for medium ability students to do better in the film course. Students and teachers responded positively on a questionnaire. It was concluded that physics can be taught effectively with the filmed course.

—L. TWYFORD

## ■ TRAINING AIDS

**Horowitz, Milton W., and Fromer, Robert**

*A Set of Discriminable Surface Colors and Symbols for Coding in Animated Training Panels.*

Technical Report NAVTRADEVEN 20-OS-52. U.S. Naval Training Devices Center, Port Washington, N.Y. May 5, 1959. 19 p.

*Purpose:* To develop a color-code and a symbol system for use on animated training panels for indicating the organizational and functional relationships among components and showing changes in the physical state of matter (for example, fuel) as it is burned.

*Procedure:* The procedure in this experiment included a literature study to evaluate earlier attempts, a preliminary choice of promising color and symbol codes, and laboratory testing of the preliminary choices against selected backgrounds. The laboratory procedure for color coding involved the discrimination of Landolt broken rings of various colors in four positions against 10 pre-selected background panels. The procedure for symbol coding involved the ranking of pairs of symbols presented in two spatial orders.

*Results:* The colors selected and the federal specification numbers were: red, 21136; orange, 22246; yellow, 23538; green, 24108; green-blue, 24325; blue, 25102; violet, 27144; white, 27886; gray (light), 26440; gray (dark) 26044. The symbols included diamonds, pyramids, dashes, squares, wavy line, straight line, large dots, and small dots.—L. TWYFORD