

1967

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Recommended Citation

Philipson, W. D. (1967). Effectiveness of Selected Films on Learning Biological Concepts by High School Students. *Journal of the Minnesota Academy of Science, Vol. 34 No.2*, 187-187.
Retrieved from <https://digitalcommons.morris.umn.edu/jmas/vol34/iss2/29>

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Effectiveness of Selected Films on Learning Biological Concepts by High School Students

W. D. PHILIPSON
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Author's Purpose:

This study was performed to determine the effects of educational motion picture treatment in learning of biological concepts from a tenth-grade biology course.

Procedure:

One-hundred-and-seventy-three tenth-grade students were assigned from the student population of the Oswego Public Schools (Illinois). The honors sections, sixteen students, was carried in the experiment but was not considered as part of the sample. The sample of students was randomly assigned to sections. One section was randomly drawn as the control group and the remaining sections were assigned as experimental groups. The experimental class groups were shown the appropriate films for the units correlated with the BSCS material. Each class was pretested on the A.I.B.S. test form. Scores achieved on the Iowa Tests of Educational Development: Natural Sciences Battery were taken from the school files. Each class was post tested on the three test batteries used. Achievement on each test battery was analyzed in terms of educational film treatment affecting learning of biological concepts.

Findings:

The experimental groups showed a significant difference in achievement over the control on the test used for measurement. Comparisons between individual experimental and control class groups did not show a significant difference in learning of biological concepts as measured on the Iowa Tests of Educational Development: General Background in the Natural Sciences and Interpretation in the Natural Sciences. The honors class section did show significant differences on all tests. Comparison between experimental and control class groups did show significant difference in achievement performance on the BSCS test form.

Significance of Study:

Test results were used to inform the school administration that educational film treatment was apparently successful in teaching tenth-grade biology students biological concepts. Under controlled conditions students were motivated to an enrichment program of understanding biological science concepts. Duplication of the experimental program in school systems would prove valuable in selecting effective audio visual materials for the school curricula.

Evaluation of Study

The success of the study did verify the need for the following economies in a school instructional materials program. The implications were as follows:

1. A reduction in the total amount of time in preparing for classroom presentation of information will result in the teacher's ability to better serve individual differences.
2. Audio visual materials provide for easy student review of material at any time in the educational time table.
3. It is desirable to evaluate material in terms of design continuously. Improvement in design may result in additional learning and understanding.
4. Teachers may be more effective if they use audio visual media.
5. Teachers can benefit from a strong pre and in-service training program in the use of audio visual material.

Selection of the measuring devices did not prove totally satisfactory. The Iowa Tests of Educational Development: Natural Sciences Battery did not show a positive correlation with the BSCS test which was designed to indicate achievement and understanding of biological concepts. Further followup study is needed.