

4-1938

## A Preliminary Report On A Study Of College Science Courses Considered Valuable By High School Science Teachers

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### Recommended Citation

Wissink, G. M. (1938). A Preliminary Report On A Study Of College Science Courses Considered Valuable By High School Science Teachers. *Journal of the Minnesota Academy of Science*, Vol. 6 No. 1, 75-76. Retrieved from <https://digitalcommons.morris.umn.edu/jmas/vol6/iss1/16>

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## Science Education Section

### A PRELIMINARY REPORT ON A STUDY OF COLLEGE SCIENCE COURSES CONSIDERED VALUABLE BY HIGH SCHOOL SCIENCE TEACHERS

#### ABSTRACT

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The graduates from Mankato State Teachers College are more often placed in the Junior high school than in the Senior high school. Many are called upon to teach General Science rather than any specific science such as biology or chemistry.

A course of study was set up to prepare teachers for this field. The requirements as they appear in the 1937-1938 catalog for the General Science major are as follows:

Biology	12 hours	College Physics	12 hours
Chemistry	12 hours	Geography	12 hours
Health	8 hours	Physical Science	4 hours
Teaching of General Science		4 hours	

This course of study is very much in agreement with that proposed by Webb,<sup>1</sup> Curtis,<sup>2</sup> and Peet.<sup>3</sup> In most cases students take additional courses in specific fields of science so that they obtain minors in specific fields and so become prepared to teach in these as well as General Science.

In most cases, courses of study are prescribed by college science teachers who are often far removed from high school teaching situations. This is true in our institution.

In order to determine whether or not our courses were of greatest value to the teacher, questionnaires were sent to the teachers in southern Minnesota. Three hundred fifty questionnaires were sent to superintendents. Eighty-three science teachers responded.

The courses listed on the questionnaire were typical academic and professional courses listed in the catalogs of several midwestern teachers colleges. There was some variation in regard to the titles of courses, but the title most often used for a certain course description was used on the questionnaire.

From these returns, the first 15 choices ranked as follows:

<sup>1</sup> Webb, Honor A. Training of Science Teachers for Secondary Schools. Science Education. 15: 1-8. 1930.

<sup>2</sup> Curtis, Francis D. What Constitutes a Desirable Program of Studies in Science Education for Teachers of Science in Secondary Education. Science Education. 15: 14-23. 1930.

<sup>3</sup> Peet, B. W. Training of High School Science Teachers with a Suggested Curriculum. Science Education. 17: 199-202. 1933.

1. General Chemistry	65	9. Biology Survey Course	38
2. College Physics	59	10. Nature Study	37
3. General Botany	55	11. Astronomy	36
4. Human Physiology	49	12. Vertebrate Zoology	34
5. Teaching Technique	49	13. Geology	32
6. Teaching of General Science	47	14. Conservation of Natural Resources	32
7. Practice Teaching	47	15. Quantitative Analysis	31
8. Hygiene and Sanitation	40		

We were also interested in the teaching combinations of the science teachers. These are listed in Table I and from these it can be seen that of the teachers who responded, thirteen taught general science only; eleven taught general science, biology, chemistry and physics; six taught general science and biology, etc. It was interesting to note that twenty-three teachers taught science and mathematics.

### Summary

In view of the fact that less than fifty per cent of the science teachers responded, very little can be done with these data except to determine to some extent the feeling of the teachers in the field.

It is necessary to know what high school science teachers feel is the desirable content, as well as the amount of time which should be devoted to an individual subject, before many changes can be made in the requirements necessary to train science teachers. Further study to determine these facts is being planned.

TABLE I. TEACHING COMBINATIONS AS SHOWN BY SURVEY

General Science	Biology Botany Physiology	Chemistry	Physics	Geography	Mathematics	Number of Combinations
X	---	---	---	---	---	13
X	X	X	X	---	---	11
X	X	---	---	---	---	6
X	X	X	X	---	X	5
X	---	X	X	---	---	5
---	X	---	---	---	---	4
X	X	X	X	X	---	3
X	X	X	---	---	X	3
---	X	X	---	---	X	3
X	X	X	X	X	X	2
---	---	X	---	---	---	2
---	X	X	X	X	---	2
---	---	X	X	---	---	2
---	X	---	---	---	X	2
X	X	---	---	X	---	2
---	X	---	X	---	---	2
X	X	X	---	---	---	1
X	---	X	---	X	---	1
---	X	X	X	---	X	1
---	---	X	X	---	X	1
X	X	X	---	X	---	1
X	X	---	X	X	X	1