

# Proceedings of the Iowa Academy of Science

---

Volume 73 | Annual Issue

Article 49

---

1966

## The Status of Chemistry in the State of Iowa in 1965 - 1966

Verne Troxel

*Let us know how access to this document benefits you*

Copyright ©1966 Iowa Academy of Science, Inc.

Follow this and additional works at: <https://scholarworks.uni.edu/pias>

---

### Recommended Citation

Troxel, Verne (1966) "The Status of Chemistry in the State of Iowa in 1965 - 1966," *Proceedings of the Iowa Academy of Science*, 73(1), 337-339.

Available at: <https://scholarworks.uni.edu/pias/vol73/iss1/49>

This Science Education is brought to you for free and open access by the Iowa Academy of Science at UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact [scholarworks@uni.edu](mailto:scholarworks@uni.edu).

# The Status of Chemistry in the State of Iowa in 1965 - 1966

VERNE TROXEL

*Abstract.* The status of new and old chemistry courses in the State of Iowa is investigated in terms of grade level, average class size, the number of students in various classifications of chemistry classes, non-credit courses, time allotted to chemistry courses, vocational versus non-vocational courses, and required versus non-required courses. Sharp differences in various types of chemistry are noted throughout all of the above areas of investigation.

## PURPOSE

Inquiries at the University of Iowa into the status of chemistry courses in the State of Iowa precipitated the following research.

Although many types of questions were asked, the writer tried to deal with the most prevalent, and has categorized them into the following: (1) What different types of courses are offered? (2) How many students take each type of course in the state? (3) At what grade levels are chemistry courses offered and how many students are there in each grade level? (4) What is the average class size of each type chemistry course? (5) What is the difference in the number of vocational and non-vocational chemistry courses? (6) How many chemistry courses are required and how many are non-required? (7) Are non-credit chemistry courses offered? (8) How much time per week is allotted to chemistry courses?

## DATA

The classification used for types of chemistry courses (Table 1) is that used by the Iowa Educational Information Center at the University of Iowa. This classification includes Chemistry I, often called traditional chemistry, CHEM (Chemical Education Materials) and CBA (Chemical Bond Approach) which are all first year courses, and Chemistry II, which is a second year course in chemistry, normally a full year in length.

Table 1. Students in Chemistry in Iowa.

Classification	Number of Students	Percentage
Chemistry I	13,640	93.5
CHEM	770	5.3
CBA	70	.5
Chemistry II	106	.7
Total	14,586	100.0

It was found that all students taking chemistry are in the tenth grade or above. Table 2 represents the distribution of stu-

dents in the various classifications of chemistry courses according to grade level and sex.

Table 2. Number of Students According to Grade Level and Sex in Chemistry in Iowa.

Classification	Grade 10		Grade 11		Grade 12	
	Boys	Girls	Boys	Girls	Boys	Girls
Chemistry I	365	257	4438	3362	1721	3497
CHEM	44	14	335	182	90	105
CBA	10	10	15	19	12	4
Chemistry II	0	0	33	28	14	31
Totals	419	281	4821	3591	1837	3637

Table 3 indicates the total number of students in each type of course according to sex.

Table 3. Total Number of Students in Each Type of Course According to Sex.

	Boys	Girls
Chemistry I	6524	7116
CHEM	469	301
CBA	37	33
Chemistry II	47	59

Out of 743 chemistry classes in the state the majority are in Chemistry I, as one would expect from the data shown in Table 1. As is shown in Table 4 the percent of each type of chemistry class also compares favorably with the percentage in Table 1, i.e. the percentage of students taking different types of chemistry courses. The average size of the first year classes is approximately the same, with the average size of second year chemistry being markedly less.

Table 4. Total Number of Classes of Each Type of Chemistry and Average Class Size in Iowa.

Classification	Number of Classes	Percentage of Class	Average Size of Class
Chemistry I	690	93.0	19.76
CHEM	39	5.3	19.74
CBA	4	0.5	18.00
Chemistry II	9	1.2	11.77

As one would expect, not all chemistry courses in the state are college preparatory, not all are credit courses, and not all are elective. Table 5 indicates the distribution of those courses which are vocational, required and non-credit. Non-credit courses are defined as those which do not count toward graduation in the particular high school teaching them.

Table 5. Vocational, Required and Non-Credit Chemistry Classes in the State of Iowa.

Classification	Vocational	Required	Non-Credit
Chemistry I	56	17	42
CHEM	0	0	0
CBA	0	0	0
Chemistry II	2	0	0

The amount of time per week allotted to chemistry classes is quite varied. Approximately 66 percent of the classes are allotted 275 minutes per week for both laboratory and discussion. However, the writer found twenty four other classifications for time allotted to chemistry classes with the minimum allotment being 200 minutes per week and the maximum being 550 minutes. Table 6 indicates the total breakdown of all classes of chemistry in relation to the time per week spent in class.

Table 6. Frequency of Classes for the Different Time Allotments.

Minutes	Frequency	Minutes	Frequency	Minutes	Frequency
200	2	280	35	350	6
225	2	285	50	360	1
240	1	290	21	370	1
250	15	295	7	380	4
255	1	300	62	385	6
260	4	315	4	390	1
265	1	320	1	399	6
270	4	330	13	550	4
275	491				

#### DISCUSSION AND SUMMARY

Although the emphasis in Iowa still appears to be on the more traditional courses in chemistry, the use of the new courses (CHEM and CBA) seems to be increasing.

One might find useful also some standardization of the amount of time necessary for satisfactory completion of a course in chemistry, since it appears there is a wide discrepancy in opinion on the amount of time needed.

#### ACKNOWLEDGEMENTS

The writer wishes to express his appreciation to the Iowa Educational Information Center, the College of Education and the Data Computer Center at the University of Iowa.

Certain data for this publication were provided by the Iowa State Department of Public Instruction through facilities of the Iowa Education Information Center, University of Iowa. All analyses, opinions, or conclusions stated in this publication are those of the author and are in no manner endorsed, substantiated, or otherwise supported by the Iowa Educational Information Center.