MINUTES
UNIVERSITY SENATE MEETING
November 2, 1962

PRESENT: Mr. G. Jones, Miss Sterenberg, Mrs. Botty, Mr. Luginbill, Mr. Fisher, Mr. Paraska, Mr. Cernica, Miss Feldmiller, Mr. Evans, Mr. Carson, Mr. Ellis, Mr. Johnson, Mr. Gillespie, Mrs. Painter, Mr. Dehnbostel, Mrs. Dehnbostel, Mrs. Turner, Mr. Wilcox, Mr. Richardson, Mr. Powers, Mrs. Bridgham, Mrs. Worley, Mrs. Niemi, Mr. Lengyel, Miss Jenkins, Mr. Hahn, Mr. Malak, Mr. Yozwiak, Mr. Worley, Mr. McNamee, Mr. Dillon, Mr. Reilly, Mr. D'Isa, Mr. Clark, Mr. Behen, Mr. Evans, Mr. Sorokach, Mr. Campbell, Mr. Aurand, Mr. Ives, Mr. Cohen, Mr. Allan, Mr. Smith, President Jones.

President Jones presided. He commended the faculty on their Community Chest contributions. He called for 10 nominations for the Committee on Rules and Bylaws, 5 to be elected by secret ballot. The following were nominated:

> Professors Behen, Dykema, Clark, Hahn, Reilly, Ives, Baker, Malak, Sterenberg, Niemi.

Mr. Cohen was asked to report on a meeting of the Chemical Society last September in Atlantic City. He did some experimenting with programming in his chemistry classes. At the symposium, they had 7 or 8 speakers talking on programmed instruction. This method of instruction organizes the material in logical sequences or steps. Each step follows some information, some review and a question and if the steps are small enough each student can answer with fair accuracy. He can see he is coming to a logical sequence. Because programming has been associated with teaching machines, there is a negative reaction to it. You have the student following at his own speed. The student who can do it quickly will do so and will make the class much more useful. He feels that the good students get more opportunity to go ahead and bring in advanced work. He feels this is a challenge to the teacher as well as the student. You really find out how to teach. It is easier to pinpoint where you have slipped and he feels it is a distinct advantage to the teacher and the student.

The chairman announced that Mr. Baker and Mr. Bruce Riley will report on meetings attended at the next Senate meeting.

Dean Smith informed the faculty that the spring schedules will be given out to students with their pre-registration forms and they will have to buy extra copies through the bookstore. Copies are available for advisors in Miss Flint's office.

Dean Smith reported on action of the Academic Standards Committee in the absence of Mr. Dykema, as follows:

> Foreign students whose first language is not English may receive credit towards graduation for Communication and English courses in which their instructor feels that the general objectives of the courses have been achieved, even though the student's written English may not be entirely idiomatic nor entirely satisfactory in the mechanics of written expression; however, this credit will be entered on the student's permanent record without the usual letter grade, but merely with an indication that credit has been allowed and with a reference to a notation on his final transcript which will make clear the reasons for the exception.

Dean Smith moved adoption of this action. Seconded. After considerable discussion the motion was carried, with two dissenting votes.

The second action of the Academic Standards Committee was then presented:

> General degree requirements and course prerequisites may be satisfied by examination at the discretion of the school concerned, but no semester hour credit will be granted solely by examination. Any exceptions to this regulation must be approved by a majority of the members of the Academic Standards Committee.

Dean Smith moved adoption of this action. Seconded.

Amended to read: By committee of at least three members rather than school concerned. Seconded.

After considerable discussion and due to the lateness of the hour, the chairman suggested that we consider this action further at the next meeting. It was requested that the above action be presented in writing at the next meeting.

Edna J. Pickard, Secretary

Memorandum re: Committee on Rules and By-Laws

To: Dean Smith; Professors Dykema, Clark, Hahn, Reilly, Ives, and Baker.

I do not know, of course, what provisions the Senate will make for this year's Committee on Rules and By-Laws. But feeling that my contribution as chairman of last year's Committee was not very substantial, I have gone ahead with the preparation of some materials that the new committee should find useful.

Mr. Ives kindly worked out an extensive set of notes to serve as a guide in the committee's work. I have now had these mimeographed; you will find a copy attached. I had enough copies run off so the new committee will also have an adequate supply of the notes. (I should mention also that Mr. Baker has called to my attention several additional items that require study.)

In conclusion, let me express my thanks that to all members of the 1961-62 committee, to Dean Smith and others who participated in our deliberations, and most particularly, to Mr. Ives--the notes he prepared obviously are the fruits of a great deal of thought and many hours of work.

David M. Behen
October 17, 1962

DMB/vag

SENATE MEETING, Nov. 2, 1962

ATTENDANCE:

George Jones
Elizabeth Sternberg
[illegible]
Paul G. [illegible]
E. J. P. Fisher
N. Paraska
[illegible]
Clayton Feldmuller
[illegible]
Wm. J. Carson
[illegible]
H. N. Johnson
John P. Gillespie
Edith Painter
R. H. [illegible]
Nellie G. Dehmbostel
Mae Turner
[illegible]
L. Richardson
William L. Powers
Catherine M. Bridgham
[illegible]
[illegible]
Louis [illegible]
Elena Jenkins
Philip Hahn
Frank J. [illegible]
Bernard J. Yozwiak
Clair L. Starley
Robert G. McNamee
[illegible]
E. T. Reilly
[illegible]
F. M. Clark
Behen
E. Mark Evans
Robert J. Sorokach
Robert A. Campbell
C. H. [illegible]
David S. Ives
[illegible]
Wm. P. Allan

Report to University Senate, November 2, 1962. I. Cohen

Ordinarily a report on a meeting of the American Chemical Society would not be of interest for a general meeting of the Senate, but at the September meeting of the ACS in Atlantic City , I did meet with something that I think is important to talk about. I should first like to give some background describing how I happened to go to Atlantic City, then to describe briefly what happened there, and finally to draw some conclusions.

First as to background. For about 5 years I have been teaching a course in chemistry for liberal arts students, business students, and education students. (Chemistry for people who hate chemistry.) There are good students in the course, but at best, they have no background, aptitude, or special interest in the subject. In the course, I try to skim over the details necessary for a science student and instead to confront the fundamental issues of science. In the classroom we can follow--more or less-- the development of chemistry as a science from Aristotle and Democritus to Einstein and Bohr.

But what can be done in the laboratory? Conventionally, the student in the laboratory follows a set of directions which will lead him to observe a demonstration of some principle or technique. This is pedagogically better than having him watch the lecturer perform the demonstration because in this way the student is more actively and more personally involved. Thus, in the beginning chemistry class, laboratory work consists largely of individualized demonstrations. But this is not science. It is as removed from science as the reading of a play is from the writing of one. The analogy can be pursued one step. Just as a play is written to be enacted and watched, not read, so scientific principles and techniques are created to be used and tested, not demonstrated. Not that we should abandon reading plays and demonstrating principles. But something is missing. The essence of science, as of art, is creativity. But the problem is more difficult in science. We can have a freshman write a composition, and if it is a bad one there is not much harm done. But if he is allowed to design his own experiments in the chemistry laboratory--what chaos would follow?

About 3 years ago, after mulling over the problem of how to present analytical chemistry to these students in some really meaningful manner, I devised this laboratory problem: Here are 4 white solids. See if you can find out how to differentiate them. When you have devised a method for doing this, you will be given an unknown material, one of the 4, which you then will identify. The students are given a number of hints as to what they may try to do with the solids to differentiate them. They are chosen so as to be quite safe and so as to present a very simple problem in analysis. Good students invent an analytical method and identify an unknown in very short order, and even the poor students can solve the problem, if more slowly.

The experiment was a successful one. The students were more personally involved in their work than usually. They were interested and almost always successful. Therefore in the following years I expanded the program to several laboratory periods, and last semester to the whole of the second semester. The program consists of a gradual extension of the list of given substances so as gradually to introduce more difficult and sophisticated analytical problems. At the end of a semester of such lab. work, at least some of the students have a fair idea of what is involved in analytical chemistry.

Last May, I noticed a final announcement of plans for the September ACS meeting, and final call for papers. One of the proposed sessions was a symposium on Programed Instruction in Chemistry. This attracted me because, first, one needed to submit only an abstract instead of a full paper for a symposium (and in May we have little time for writing papers) and second, this lab program in analysis was, come to think of it, perhaps an application of the ideas

of programing, which I had been reading about for some time. I wrote to the program chairman of the Division of Chemical Education, and he immediately wired back instructions to send in the abstract.

And this brings us to Atlantic City. Since the total ACS membership is over 90,000, and since there are about 10,000 at a typical September meeting, the meeting proceeds by means of a great number of small meetings with an attendance of usually several hundred at each. At the symposium on Programed Instruction, there were 8 speakers, including myself, on various aspects of programing in chemistry. In preparing for the symposium, in writing up the full paper for it, in the discussions at Atlantic City, and in correspondence and readings since, I have found out a little more about programing, and to be quite impressed by it.

Programed Instruction is a method of teaching in which a student is guided through a pre-tested sequence of steps which anticipates the needs of the students for mastering each aspect of the subject matter. That is a description offered by Arthur Lumsdaine, professor in the department of Education at UCLA and one of the leaders in the development of programing. A further important characteristic is that the student proceeds through the program at his own pace. The good student is not held back nor is the poor student left behind. Programed instruction was originated some 5-6 years ago by B. F. Skinner (Prof in psychology, Harvard) although its roots go farther back in his and others' researches. Prof. Skinner prefers to handle programs on so-called teaching machines, and therefore (I think unfortunately) the idea of programed instruction has popularly become mixed up with mechanized, mass-produced conformism. Actually programing represents a liberation for the student from the lock-step of contemporary classroom methods.

There is another--I think greater--advantage to programing. This is the insight it gives the teacher who attempts to write his own program. I have been a visiting prof on occasional summers at WRU for several years. Students there are highly selected. Upper 1/3, and mostly upper 20%. Some of the subjects which I have had difficulty with here, go over more easily there. But many don't. And this means that what I had thought was a clear, sound presentation, was not at all. I think that it can very easily happen that we assume that poor learning is the result of a poor class rather than poor teaching. I do. These accidental discoveries at Reserve have been enlightening. But now we have a surer way to find out. You sit down and write up a program. You find this is difficult and time-consuming. You test the program--it isn't a program till it's tested--by giving it to a student or two. Note that the program is tested, not the student. You find that some parts are too simple and more often that some parts are not clear or are too difficult. In contrast to the usual student in difficulty, these test students can show you exactly where the trouble is. You can fix this. You will finally revise the program many times. When you end up, you will have discovered three things: 1. Many of the students you thought were hopeless (not all) will be able to learn the material pretty well.

2. The better students learn faster, ask better questions, make the class work more interesting and more worthwhile for both teacher and student.

3. You have found out quite a bit about how to teach. And this is transferable--you will find yourself using this technique in other areas to improve your presentation.

Programing is not perhaps a cure-all but it is the first major breakthrough since the printing press. The technique is still in its infancy. In Jan '61 there were 32 commercially available programs, including such topics as contract bridge. In Sept, '62 there were 122 for schools and colleges alone, including about 30 for college usable without machines. (Dept HEW) The idea is growing and gaining interest. Mrs. Miner has set aside a meeting of the AAUP next spring to discuss programing. We should learn about programed instruction and, most important, we should make up some of our own programs. I have some samples here of a simple program which you may pick up on leaving. ["Kith and Kin" by Jay A Young]

KITH AND KIN

by Jay A. Young

(Or, count the greats and grands and be able to tell who is who at a family reunion.)

1
Everyone knows how to tell if a boy and girl are brother and _____. If a boy and girl are brother and sister, their "nearest shared relatives" are their mother and _____. (Write the correct words in the blanks; then fold the right side of the paper inward and check your answer. Unfold the paper and continue.)

2.
Next, we can consider first cousins. If their nearest shared relatives are one pair of grandparents, a boy and girl are _____ cousins.

3.
After first cousins, we can consider second cousins. If their nearest shared relatives are one pair of great grandparents, a boy and girl are _____ cousins.

4.
And so it goes. To tell what kind of cousins two people are, we determine their nearest _____ relatives.

5.
If these two nearest shared relatives are # GRANDparents, they are first cousins. An easy way to remember this is to notice that in the word "grandparents" there is one word-part beginning with a "G." ONE word-part corresponds to FIRST.

6.
If the two nearest shared relatives are GREAT GRANDparents, since there are two word-parts that begin with a "G," GREAT and GRAND, the boy and girl are _____ cousins.

7.
If the nearest shared relatives are GREAT GREAT GREAT GRANDparents, the boy and girl are _____ cousins, because, in "GREAT GREAT GREAT GRANDparents" there are _____ word-parts beginning with # "G."

8.
Next, we can consider the nature of relationships such as third cousin, once removed. In many instances, the nearest shared relatives, for example, are grandparents to one person and great grandparents to the other. To find out what kind of cousins these two people are, we count the greats and grands, as before. In the example we are considering here, the same two nearest shared relatives are GRANDparents to one and GREAT GRANDparents to the other. That is, we have, for the one, a single GRAND as a word-part. This tells us that the two people are _____ cousins.

(continued on the other side)

Fold in; the answers are on the other side.

removed

three
one

first

two

twice

grand
Second
great
great
grand

once
great
great

3 greats, 1 grand

6 greats, 1 grand

BALLOT FOR SENATE COMMITTEE ON CONSTITUTION & BYLAWS

W. Baker 𝍸𝍸𝍸𝍸𝍸 = 27 ✓

D. Behen 𝍸𝍸𝍸𝍸𝍸 = 27 ✓

F. Clark 𝍸𝍸𝍸𝍸𝍸 = 26 ✓

K. Dykema 𝍸𝍸𝍸 = 19

P. Hahn 𝍸𝍸𝍸𝍸𝍸 - 29 ✓

D. Ives 𝍸𝍸𝍸𝍸 = 25

F. Malak 𝍸𝍸𝍸𝍸 = 20

E. Niemi 𝍸𝍸𝍸𝍸𝍸 = 31 ✓

E. Reilly 𝍸𝍸𝍸𝍸 = 24

E. Sterenberg 𝍸𝍸𝍸𝍸 = 24

VOTE FOR NOT MORE THAN 5

E. Niemi

P. Hahn

W. Baker

D. Behen

F. Clark

The ballot is to be put in a sealed envelope with the name of the voter on the outside of the envelope. The ballot is to be deposited in the office of the Dean, Main 110. Deadline for voting is Nov. 12, 1962.