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Can You LIVE With Your Teaching Assignment?

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To paraphrase Charlie Brown, a well known cartoon character, "Happiness (for science teachers) is to have a teaching load they can live with." I shall proceed from this premise.

At the meeting of chemistry teachers interested in or teaching the CHEM Study course held at Roosevelt High School on December 7, 1963, concurrently with a meeting of biology teachers interested in BSCS and another meeting of PSSC Physics teachers, the problems of getting the new course more widely adopted were discussed. Several teachers who had been invited were not present, and the reasons for this were also discussed. Many of those present several of whom were teaching the course for the first time this year without having had any NSF Summer Institute Training in the course, pointed out that they were so busy that such meetings were difficult to take time to attend. They also felt that the heavy demands on teacher time to carry out the new, intensively laboratory oriented courses was the greatest deterrent in getting the new courses into the wider use which they deserve.

In other words, one of the greatest stumbling blocks to progress in science education, now that we have the tools to accomplish such improvement, seems to be the traditional course loads designed for a vastly different sort of effort. In the traditional course in chemistry, a few simple, unrelated, fill-in-the-blank type of cook-book activities that passed for science instruction could be accomplished with single laboratory periods and high student loads, although even under such conditions, the teacher seldom had time for creative thinking, professional reading, or for personal experimentation. Therefore, the pattern persisted far too

long. NSF Summer Institutes, competent curriculum studies such as CHEM Study, PSSC, BSCS, and CBA have done much to remedy the defects of the older courses. What we need is to get the necessary laboratory time and a student load which makes it possible to live with the increased demands on teacher time, and thus convince more teachers to use the materials.

Since several science teachers were at the meetings that day, we decided to make an informal survey of student load, hours per week spent by teachers at school and at home ordering materials, checking invoices, preparing laboratory experiments, making out tests, checking papers, preparing lessons, and the myriad of tasks related to science instruction by the laboratory approach to meaningful experience. We also checked on the number of classes per week, including laboratory periods, the number of preparations daily, the number of planning periods per week at school, and on the use of student assistants. In a sampling of about thirty of the teachers present in all three fields, we found that the average student load was about 116. The average time per week spent in activities directly related to academic work was 69 hours per week. The average number of contact hours weekly was 24. The average number of preparations was 2.5. The average number of planning periods was 5.5 weekly. Only 3 physics teachers surveyed used student assistants, and only 2 of the biology teachers did so, but six of the chemistry teachers had student help to prepare the many solutions, unknowns, and stock bottles of solids, needed in many experiments. Only three schools had any provision to pay for student help in this manner. Student loads ranged from 58 to 168 in the group surveyed,

and hours ranged from 45 to 100 per week. Needless to say the latter was for the teacher with 168 students.

Obviously teachers of laboratory science courses are being exploited by a society which doesn't understand the complexity of the task if we are to make use of the new tools available to do a better job of science education. The CHEM Study course was designed for a seven period week, and to be handled at all adequately there should be one double period for laboratory weekly. Many of these laboratories require several hours of preparation for each hour the students spend using the materials.

If a teacher is to fulfill any obligations to his home, family, church, and community, the professional organizations of science teachers must draw attention to the unreasonable demands on teacher time brought about by increasing enrollments, modern courses and their greater demands for laboratory preparation, and the general increase in clerical duties that come with larger classes and larger schools. **We should strive to get four classes of twenty-four students each to be recognized as an upper limit to teacher load in laboratory centered courses, with at least**

one double period for laboratory, extended tests, and problem sessions weekly. These are tough objectives to realize in this day of increasing enrollments, and budgetary difficulties, but the situation cannot improve without our concerted efforts. We may not have time to be professional, but we had better take time if we hope to continue to improve science education to keep up with today's demands for adequately trained citizens.

The purpose of this article is not to discourage anyone from attempting the new courses, but to try to arouse a concerted interest in reducing teacher load in laboratory courses so that the improved courses can be taught without undue demands on teacher time. Good teachers have, and will make sacrifices to bring better education to their students, but they should not, in all fairness, have to bear the whole burden. At the risk of seeming ungrateful for the aid in establishing new courses which we have received, we must make the situation known to get it corrected. An average of 70 hours a week is definite evidence of the need for an adjustment in science teaching loads. I think Charlie Brown might say, "Science Teachers are real people when they have time to live!"

HIGH SCHOOL SCIENCE

(Continued from page 4)

3. Written a laboratory manual to accompany the K-8 outline
4. Planned and stocked a materials resource center
5. Provided more references for our staff library
6. Provided in-service training for our teachers
7. Planned a film program
8. Set up field trips
9. Set up training sessions for new staff members to familiarize them with our science program.

The elementary staff has worked whole heartedly on this project. The

administration has been sympathetic toward the effort, and has shown interest in a tangible way by released time and financial assistance. Without the help of the high school science staff it would have been impossible to carry this project through to completion.

At Spirit Lake we are not complacent, however. We know there is much more to be done. We do take pride, though, in the fact that we are not accepting a packaged plan, but we are building our own. If we can be of assistance to anyone who faces these same problems we will be happy to share our experiences.