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A Summary of a Survey of Science Taught in Hampton Elementary Schools

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In 1957 the Russians put an artificial satellite into orbit. Since that time science education in the United States has been experiencing a steady change. This change has not only been in course name and content but also in new methods of science teaching. The role of the science teacher is most important in the teaching of the new science materials. The instructor must be able to guide and direct the activities of the students, not just spew forth information. Often in the past, the instructor has taught as he had been taught. Most courses now are developed along these facets: concept development, inquiry, and the interdisciplinary action of the sciences.

With the above ideas in mind it was my objective to see how and what the elementary teachers in this system were doing to prepare their students for the newer type courses being taught at the secondary level.

I decided that my best course of action was to hand out a checklist of the topics covered by their textbook. The instructors were informed to add any additional topics that they had covered the previous year. This checklist might also give the high school instructor an idea as to why the background of the various students differs so markedly.

The checklist of the topics covered

varied extensively not only from grade to grade but among the teachers of the same grade level. I'm sure this school is no different from many other schools and although the teachers are all using the same textbook, the science material they teach varies. Following is a chart to emphasize my point.

GRADE 1	TEACHER				
Topics	1	2	3	4	5
Sun	x	x	x	x	x
We Find Out (The Senses)	x	x	x	x	x
Animals	x	x	x	x	
Children Grow	x	x	x	x	x
Seeds to Plant	x	x	x	x	x
Collections	x	x	x		x
Use of Air	x	x	x	x	x
Machines		x	x	x	x
Day and Night		x	x	x	
Taking Care of Rabbits		x	x		
Safety on the Bus		x	x		
Safety in the Classroom		x	x		
Safety in Play		x	x		
Different Places		x	x		
Weather		x	x		
Water		x	x		
Magnets		x	x		
Looking Up-Looking Down		x	x		
Another Look				x	
Space					x
Getting Ready for Autumn					x
Getting Ready for Winter					x

Sample of Chart

Analyzing the rest of the charts brought forth other conclusions. Simple machines are often covered in the textbooks, but many of the instructors

neglected to teach this topic. Many other areas are neglected but the physical sciences seemed to be the areas most often selected to omit. A study of the instructor's background would undoubtedly show the reason for this. The laboratory approach in science teaching has been emphasized the past few years, but in most instances this has not yet reached the elementary level in our system.

Problems have arisen with the movement of students between the various elementary schools within this system. Individual students will move to another area in the town and because of the elementary district boundaries, have to change elementary schools. This has brought to light the fact that one elementary instructor may teach science the first semester while another teaches health. If the student transfers, he then will take a whole year of science or a whole year of health. This problem could be solved by teaching science or health during the same semester in all the elementary schools.

A study of the literature on this subject brought forth many and varied ideas. Elin Hansen in *The Science Teacher* made the following statement, "The elementary science program is virtually non-existent as a coherent, consistent study. Generally, students are taught bizarre, amazing and totally unrelated facts about scientific discovery, with the emphasis on results rather than on logical consistency. The science class then defeats its own purpose."¹

¹ Hansen, Elin, "Youth Speaks on Education, Today's Educational System," *The Science Teacher*, November, 1968, pp. 28-30.

I, for one, do not believe that this has to be true. One might try some of the ideas that follow to improve the instruction of science at the elementary level. In most cases I believe it is the background of the individual instructor which causes the chaos. Many elementary instructors are inadequately prepared to teach science and have little interest in this discipline. In addition, they are not prepared to attack science teaching from the investigative approach. The latter problem might be corrected by offering some of the "new science" material as inservice training. In order to make the mandatory attendance at these meetings more acceptable, it might be possible to allow this attendance as partial requirement for meeting salary schedule barriers. Team teaching might be given consideration. This method has been tried and has proved successful in many schools, but in most cases remodeling and somewhat higher teaching costs have resulted. Dividing the school day into periods of time which must be used in the studying of a specific discipline would prevent the individual instructor from placing more emphasis on any one discipline. Some instructors and schools prefer ability grouping of the students.

Regardless of changes that might be made, we have to be selective. Many of the new science programs have no statistical evidence that they are superior to the programs now being used. The problem in selecting a new program becomes complex because we should select programs which have proven effective but which are adaptable to the commu-

nity and acceptable to the teachers of the system.

After reviewing the data I received from the checklist, I found that the problems our instructors encounter are no different from those in many other schools. It seems to me that they are doing as adequate a job as they can under the circumstances. Maybe, if we implemented some of the above ideas they could do even better.

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Instructional Aid on Science Lab Safety

"How to Provide for Safety in the Science Lab," another in a series of instructional aids prepared by the National Science Teachers Association, provides precautionary pointers for teachers of science laboratories at all levels. The booklet, written by James R. Irving, Consultant to Stansci Scientific Division, Fisher Scientific Company, Chicago, considers safety from the standpoints of physical facilities and the teacher's attitude and preparation.

An extensive checklist for the teacher or his supervisor should be of interest, as well, to those evaluating the science programs of their local schools.

Previous "How to . . ." instructional aids from NSTA include: "How to Use Photography as a Science Teaching Aid" and "How to Evaluate Science Learning in the Elementary School."

Copies of the booklets may be obtained at 35 cents per copy by writing the National Science Teachers Association. A discount of 10 per cent is applicable on requests for more than one copy to ten. With an order of ten or more aids, a 20 per cent discount applies. Payment should accompany orders for \$2 or less.