A Study within the Churchville-Chili Central School System to Determine the Emerging or Changing Role of the Teacher at Churchville, New York

Thomas A. Brennan

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A STUDY WITHIN THE CHURCHVILLE-CHILI
CENTRAL SCHOOL SYSTEM
TO DETERMINE THE EMERGING OR
CHANGING ROLE OF THE TEACHER
AT CHURCHVILLE, NEW YORK

THOMAS A. BRENNAN

SUBMITTED IN PARTIAL FULFILLMENT OF
REQUIREMENTS LEADING TO THE DEGREE OF
MASTER OF SCIENCE IN ELEMENTARY ADMINISTRATION

STATE UNIVERSITY COLLEGE
BROCKPORT, NEW YORK
AUGUST, 1967

APPROVED:

[Signature]
Faculty Advisor

[Signature]
Director of Graduate Studies
ACKNOWLEDGEMENT

The preparation of a research project is not the ultimate consequence of one individual effort.

Therefore, I extend my sincere appreciation and gratitude to my wife, Mary Therese, and to my three children, Michael, Kathleen, and Thomas, for their patience and cooperation through a trying period of time. To my advisor, Dr. Andrew Virgilio, a man of wide understanding, patience and wisdom, my appreciation is acknowledged.
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CHAPTER I
INTRODUCTION

The job of today's teacher has become virtually unmanageable. The increasing number of duties placed upon a teacher makes one ask himself if twenty-four hours a day is sufficient to meet all of these demands. Unless something is done to remedy the situation, creative, competent teachers will find themselves hopelessly bogged down in technical and clerical duties which could be performed by others. Or, they will be overwhelmed by so many complex and important things to do that few if any of the tasks will be done well enough to leave them with any sense of accomplishment. Denemark states:

Potentially outstanding teachers are growing discouraged over their inability to find the time and energy to be educators rather than technicians. And thousands of promising college students are turning away from careers in teaching.¹

Due to increased duties, what areas have suffered from over-worked teachers? Curriculum, the most important function in our schools is the first area to suffer. According to Littlefield:

Curricula will be standardized rather than individualized because schools keep their teachers busy collecting money, recording attendance, and supervising lunchrooms instead of counseling with students, planning learning experiences with colleagues, and analyzing recent teaching efforts.²

¹ George W. Denemark, The Teacher and His Staff, p.17.
Some of the many duties of today's teachers are:

1. Evaluation and reporting to parents
2. Counsel and advise students on academic, vocational, and personal concerns
3. Maintain a cumulative file of significant data on each student
4. Planning for teaching including gathering materials, writing plans, gathering resources, developing reading lists, outlines, study guides, drill sheets, and preparing tests
5. Curriculum planning involving curriculum planning counsels
6. Committee work, grade level or subject matter area planning
7. Type and duplicate tests and other materials for classroom use
8. Arrange for field trips, outside speakers, and other programs relevant to the learning objectives of the class
9. Supervision of homerooms, study halls, lunchrooms and playgrounds
10. Advise and chaperon extracurricular groups
11. Keep attendance and academic records
12. Collect money for various drives and sell tickets for school events
13. Order films and operate audio-visual equipment
14. Participate in professional and community affairs

15. Orient and assist beginning and student teachers

Denemark gives a very clear picture of the role of the teacher through the following:

The teacher should remain alert to significant developments in academic specialty and continue general education in order to avoid obsolescence of knowledge; be a continuing student of the educative process and keep current with respect to innovations in teaching methods and materials; plan with students and fellow teachers; and work with curriculum committees.

With all of these tasks facing the teachers, one might ask how much time if left for direct instruction of students?

Since teaching at Churchville-Chili is physically demanding and emotionally exhausting, a truly dedicated teacher who attempts to practice his calling at its highest level soon finds that to do so is impossible.

Can good teaching really go on in relation to such a difficult job assignment? Undoubtedly, good teachers will try, but the likely result is a growing neglect of the creative, developmental, analytic, coordination dimensions of the teaching process.

Statement of the Problem

Teaching is a complex, demanding process calling for scholarship, sensitivity, analytical ability, and considerable coordinating skill. The attributes are time consuming and are becoming more so as more and more demands are placed upon the teacher. This leads the author to the first problem to be considered. What is the role of the teacher in the Churchville-Chili School System? From this question the second problem arises. How can the Churchville-Chili District better utilize the talents and abilities of its professional staff and in so doing provide a program of quality education.
The Procedure of the Study

To examine these problems a committee of twelve teachers and three administrators was organized. The committee was chaired by Dr. James Hicken, the assistant district principal and co-chaired by the author. The committee met once a week between February 1966, and June 1966 to examine the above stated problems.

The remainder of this paper will be devoted to a description of the committee's procedure, its findings and its recommendations. In addition the writer has examined pertinent literature on the overall topic of the teacher's role.
CHAPTER II
THE REVIEW OF LITERATURE

In this chapter the author has reviewed the literature relative to the changing role of the teacher according to the following categories:

1. Individual and Small Group Instruction
2. Variable School
3. Large Group Instruction
4. Supplemental Teacher
5. Scheduling
6. School Organization
7. Team Teaching

The role of the teacher of tomorrow will be changed quite drastically compared to that of today's teacher. The teachers of today work an average of forty-eight hours a week. The high school teacher meets five different classes a day, five days a week, for a minimum total of twenty-five hours a week with students. In addition he supervises study halls, grades papers, keeps records, collects money, sponsors student activities, and performs a host of other tasks. Not enough time remains to do what professional teachers should do: keep up with developments in individual subject fields, plan and prepare lessons, develop imaginative instructional materials, and improve evaluation of student work. According to Trump:

Lack of time for professional work damages professional pride. About a third of a
teacher's day goes to clerical and sub-professional tasks, another third to work which could just as well be done by various kinds of automated devices. A situation that provides only a third of a day for performance of work he is trained to do - and finds satisfaction in doing - contributes little to the morale of a talented, conscientious teacher.¹

What will the role of the teacher of tomorrow be and in what ways will his potential be put to best use? It is this question that the author will attempt to answer by showing a variety of new tasks that face the teacher of tomorrow.

¹. J. Lloyd Trump, Focus On Change, p.8.
1. Individual and Small Group Instruction

The role of the teacher in a classroom with twenty-five to thirty-five children, will diminish to a class of fifteen or fewer pupils where small-group discussion can take place. In these classes, Anderson states:

Teachers will weigh pupil's reactions to lesson content and will assess pupil's knowledge. They will also observe pupil's ability to handle data and solve problems and, highly important, how they react to one another. Instructors will guide and stimulate students' thinking, directing discussion along useful, fruitfull lines; they will serve as consultants and advisors.¹

These small classes or groups show a definite change of the teacher's role according to Anderson. He explains four major changes of the small group as compared to the thirty pupil classroom. These changes make a definite changeover of the work required of the teacher. Anderson sees that:

these small-group classes provide opportunities for teachers to measure individual students' growth and development and to try a variety of teaching techniques which will be suited to the students' needs.

Offer the therapy of the group process, whereby students are induced to examine previously held concepts and ideas and to alter rigid, sometimes mistaken, approaches to issues and people. Students will learn, in other words, how to become group members.²

The students will be able to discover the significance of the subject matter involved and to discuss its potential uses, rather than just to receive it passively and return

2. Ibid., pp.76-77.
it in tests, as happens too often in today's classrooms.

The small-group classes will provide students with opportunities to know their teacher, on a personal, individual basis.

Teachers of small-group classes also will learn to act differently. They will be particularly skilled in establishing rapport with students. They will move away from traditional teacher roles, in which they tend to occupy the center of the stage and rely too much on asking questions and receiving answers. Instead, they will learn to point up concepts or to correct errors of fact or thinking from the sidelines of the class. In other words the teacher will be a guider of instruction, helping children to learn, having them bring out the ideas, rather than telling them what the ideas and answers are.

Small-group discussions will assume the importance they deserve in tomorrow's schools because the children will be bringing out the principles and ideas involved in their work and the teacher will act as a guide, instead of a lecturer. Teachers and parents alike will understand and value the function of small classes in their unique role in aiding students' growth and development.
2. Variable School

The second changing role of the teacher of tomorrow will be to provide many more opportunities for individual students' independent study, inside school as well as outside, during school hours as well as after them. The teacher will provide for differences in individual interests and abilities. She will meet the test of practicality, from the students' viewpoints, of studying something important and useful to him. It will allow the student to study in depth a subject area that makes sense to him and lead to interest and a search for information in related areas. According to Baynham:

> It will help him to develop the ability to go it alone, to learn by doing. It will produce in many students greater creativity and a sense of inquiry.

To implement this program the schools will need to build reading, listening and viewing rooms, cubicles, and laboratories. In this situation, teachers will suggest and guide rather than merely assign. It will be the teacher's role to gradually increase the student's responsibility in reaching individual goals, and to encourage students to select and carry through projects and to show initiative in seeking study materials and aids.

3. Large Group Instruction

The teacher of tomorrow will assist others in teaching anywhere from one hundred to one hundred fifty students per class. The teacher will meet this type of class anywhere.

from one to three times a day and from once to three times a week. This situation is possible through team teaching. Trump views this type of school in the following manner:

In tomorrow's schools, more students will be exposed to skilled teaching in all subjects because the most capable and experienced teachers in specific fields will teach large classes. Every teacher, inevitably, is more experienced in one subject or one phase of a subject than in another. So the students can be better motivated by contact with the very best teacher available for that phase of the subject. The large class will avoid duplication of effort required when teachers must teach the same subject matter to a number of classes, as in today's schools.¹

The teacher in a team teaching situation will see a remarkable change in his or her role. A team can be comprised of two teachers all the way up to eight with any number of added clerical help. Some teams will teach within a subject area, while others will cut across subject areas by organizing the curriculum on a related-learnings basis.

Variations in assignments and work loads will be based on the differences in what teachers do. Trump states:

That the number of hours per week with groups of students will typically range from ten to twenty, with an average of fifteen. Team leaders and specialists who help other teachers with small-group discussion, large group instruction, and independent study—those teachers, in other words, who must spend more time in daily preparation and contacts—will usually be assigned about ten hours before students. Teachers who are scheduled for twenty hours will be those who need to spend less time in preparing materials, developing curriculum

¹ Ibid., p.248.
and improving evaluation.¹

4. Supplemental Teacher

The use of a supplemental teacher between three teachers is another plan that changes the teacher's role and makes better use of the potential each teacher possess. The beauty of the plan is that it provides another pair of certified, trained hands, eyes and ears. Another qualified teacher is available to work with these groups. From an article in Childhood Education, the programs:

> Success is contingent upon effective working relationships, time to plan, and freedom to employ flexibility in the operation.²

The additional assistant or supplemental teacher is useful in several ways:

While the regular teacher is working in class, the assistant can be working with small groups. This procedure can also work in the reverse, while the assistant is working with the class, the homeroom teacher can be working with small groups. The additional teacher can take small groups from all three homerooms and work with them in an assigned room, library, playground, gymnasium, or a spot in the hall.

Field trips or walking trips can be done either by the assistant or regular teacher thus freeing one or the other to perform other necessary work. Special films or filmstrips can be shown to small groups or several classes at a time for enrichment in any of the subjects, while the regular teachers prepare other work.

3. Ibid., pp. 24-25.
These are only a few tasks that the supplemental teacher can assist in. With her use the regular teacher is partially or wholly set free to perform other tasks necessary for better teaching.

5. Scheduling

Another factor which will change the role of the teacher of tomorrow and make better use of her potential is the master schedule. The use of a master schedule is most efficient if it is set up properly. Schedule design must promote the most effective utilization of school resources. A staff should keep in mind that any master schedule is a device which is useful only to the degree that it allows students and teachers to work together in the most effective manner. What than constitutes a good master schedule that will make the best use of a teacher's talents and provide the best possible education for the students? Austin and Gividen suggest that:

The schedule is most effective when each teacher has an assignment consistent with his training, talents, and interests. The teaching load must be equitable and teachers aware of the equity. The teaching load of each teacher must be within the physical, emotional, and mental capacity of the teacher.

The schedule must make possible the most favorable induction of beginning teachers, and the schedule should be so arranged that instructional aids can be used to advantage. And last of all the classrooms (and specialized rooms) should be effectively and intelligently assigned and used.

6. School Organization

The nongraded school is another program that will bring change in the teachers' role. Just what is the nongraded school? Goodlad and Anderson describe it in this manner:

The nongraded school is designed to implement a theory of continuous pupil progress: since the differences among children are great and since these differences cannot be substantially modified, school structure must facilitate the continuous educational progress of each pupil. Some pupils, therefore, will require a longer period of time than others for achieving certain learnings and attaining certain developmental levels.¹

How is the nongraded school organized? Existing nongraded programs do not follow any uniform pattern with respect to grouping practices, although it is quite clear that progress in reading is one of the major factors in making most decisions about grouping. In a number of ungraded primary plans, the children are grouped according to reading-achievement levels, usually for the purpose of reducing the range of abilities with which the teacher must cope in language-arts instruction. It is assumed that reading achievement is approximately correlated with achievement in other curriculum areas, and that some degree of homogeneity is obtained by using reading as the yardstick when assigning children to classes.

The nongraded school is usually set up on a K-3, 4-6 program. The children are allowed to move within a program

according to their achievement, and may also move to the next program when sufficient evidence of achievement is obtained.

What are the differences between the graded and nongraded structures? Goodlad and Anderson make these major comparisons of the two schools:

<table>
<thead>
<tr>
<th>GRADED STRUCTURE</th>
<th>NONGRADED STRUCTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A year of progress in subject matter seen as roughly comparable with a child's year in school.</td>
<td>A year of school life may mean much more or much less than a year of progress in subject matter.</td>
</tr>
<tr>
<td>Each successive year of progress seen as comparable to each past year or each year to come.</td>
<td>Progress seen as irregular; a child may progress much more rapidly in one year and quite slowly in another.</td>
</tr>
<tr>
<td>A child's progress seen as unified: advancing in rather regular fashion in all areas of development; probably working close to grade level in most subject areas.</td>
<td>A child's progress seen as not unified: he spurts ahead in one area of progress and lags behind in others; may be working at three or four levels in as many subjects.</td>
</tr>
<tr>
<td>Specific bodies of content seen as appropriate for successive grade levels and so labeled; subject matter packaged grade-by-grade.</td>
<td>Bodies of content seen as appropriate over a wide span of years: learnings viewed vertically or longitudinally rather than horizontally.</td>
</tr>
<tr>
<td>Adequacy of progress determined by comparing child's attainment to coverage deemed appropriate to the grade.</td>
<td>Adequacy of progress determined by comparing child's attainment to his ability and both to longterm view of ultimate accomplishment desired.</td>
</tr>
</tbody>
</table>
Inadequate progress made up by repeating the work of a given grade; grade failure the ultimate penalty for slow progress.

Rapid progress provided for through enrichment: encouragement of horizontal expansion rather than vertical advancement in work; attempt to avoid moving to domain of teacher above.

Rapid progress provided for both vertically and horizontally: bright children encouraged to move ahead regardless of the grade label of the work; no fear of encroaching on work of next teacher.

Rather inflexible "grade-to-grade movement of pupils, usually at end of year.

Flexible pupil movement: pupil may shift to another class at almost any time: some trend toward controlling shifts on a quarter or semester basis.

The nongraded school will offer a challenge and create quite a changing role for the teacher. It must be remembered that such a program will only be successful if the teachers involved understand it, and support it as far as they are able.

7. Team Teaching

A teacher with a subject specialty can take leadership in curriculum projects centering on his specialty, develop and make available to fellow teachers files of instructional materials, and otherwise serve as a consultant and resource to the instructional team of which he is a member.

Teachers who are specialists in certain subjects are but one possibility for experienced classroom teachers. New images of teaching encourage use of a wide range of media, a variety of teaching styles, flexible patterns of grouping, and greater awareness of the influence of societal and cultural forces on children's learning. Remedial or tutorial instruction, lecturing, TV, and large-group presentations are fields that some teachers might develop a specialty in. Others might be skilled in leading discussions, demonstrating scientific processes and manipulating laboratory apparatus. Some are particularly able in working with children in a counseling relationship, while others are talented in planning and writing curriculum materials. Some are vitally interested in community affairs, others knowledgeable about the design and execution of research projects and evaluations of instructional content, methods, and materials. Each special interest can become a significant resource for the school in improving the learning opportunities for the children it serves.

The preceding programs are only a few of the ways that the new role of the teacher will be forthcoming. Other programs such as the point weighting system, dual salary schedule, IBM and automatic data processing systems are just a few more examples that will demand a new teaching role.
Just as science creates a new and changing life, so to will the teacher of tomorrow find her role traveling in the same orbital path.
CHAPTER III
PROCEDURE

The role of the teacher at Churchville-Chili covers a magnitude of tasks. With this role increasing due to changes in education, the administrators and teachers at Churchville-Chili found it necessary to examine the role of the teacher, to determine just how important the teachers regard their various tasks, and to find out how much time is spent on the tasks. Once this was accomplished it was then possible to suggest ways to provide more time for planning, gathering of materials, and in general provide more time for the instruction of students.

To find the various answers to these problems a committee of three administrators and two teachers from each of the five schools was organized. Dr. James Hicken who is the assistant district principal chaired the committee with the author acting as co-chairman. The group meet every Thursday from February, 1966 to June, 1966.

By the end of the fourth meeting, the committee had discussed very thoroughly, the various tasks the teachers faced at Churchville-Chili. These tasks were arranged by the chairman and the author at random as shown below:

Curriculum Planning - Dept. or Grade Level Planning
Direct Instruction of Students
Counseling Students - With an Individual Student or Students - Group Counseling - Career Choice - Academic Direction, etc.
Clerical Tasks - Specifically related to Teaching
Meetings - P.T.A., Community Organizations, etc.
Professional Growth - In Service, Individual Study, etc.
Evaluation - Giving Tests of all Kinds, Talking with Students, etc.
Creating & Maintaining the Teaching Environment (Bulletin Boards, Displays, etc.)
Extra - Curricular - Activities, Dances, Clubs, etc.
Conferring with Parents
Curriculum Planning - Districtwide Planning
Supervision - Lunchroom, Study Hall, Hall Duty, Buses, etc.
Curriculum Planning - Individual Teacher Planning

The next step was to find out from the committee members which of the tasks was considered the most important and which task the least important, with all other items falling between in rank order. To accomplish this, the author conferred with each committee member and had the individual place number 1 on the item he considered to be the most important job of the teacher at Churchville-Chili, and number 13 on the item he considered to be the least important. The item which was considered the next most important task of the teacher was labeled number 2 and out of the remaining items, the one considered the least important was labeled number 12. This procedure continued until all items were labeled. An example of this can be seen in Table I., p. 21.

The reason for labeling the items in this manner was to
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>Curriculum Planning - Dept. or Grade Level Planning</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Direct Instruction of Students</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Counseling Students - With an Individual Student or Students - Group Counseling - Career Choice - Academic Direction, etc.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Clerical Tasks - Specifically related to Teaching</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Meetings - P.T.A., Community Organizations, etc.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Professional Growth - In Service, Individual Study, etc.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Evaluation - Giving Tests of all Kinds, Talking with Students, etc.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Creating &amp; Maintaining the Teaching Environment (Bulletin Boards, Displays, etc.)</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Extra-Curricular-Activities, Dances, Clubs, etc.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Conferring with Parents</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Curriculum Planning - Districtwide Planning</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Supervision - Lunchroom, Study Hall, Hall Duty, Buses, etc.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Curriculum Planning - Individual Teacher Planning</td>
<td></td>
</tr>
</tbody>
</table>

The Direct Instruction of Students was considered the most important task of the teacher, while Meetings - P.T.A., Community Organizations, etc. were considered the least important task.
insure accuracy, as far as possible, when ranking the items. After all the questionnaires were completed the author then totaled the points for each item. Since the item that was considered the most important was labeled number 1, then the item with the lowest value is considered the most important task by the committee members. It can then be seen that the item with the next lowest points is considered the second most important task. The number of points each item received is shown in Table II, p. 23. It can be concluded that the item receiving the lowest value is considered the most important task by the committee and as the points increase, the items become less important.

The ranking of the thirteen items made the role of the teacher very clear to the committee. From this questionnaire it was decided to find out how much time is spent on these various items.

The chairman and the author condensed the thirteen items to six items. These six items cover the major role of the teacher where she spends most of her time in her work.

These six items were used for the second questionnaire. Each committee member was asked to return to their respective schools and interview the teachers on an individual bases. After eighty-three teachers were contacted the results were tabulated on an average bases for the kindergarten, elementary, junior, and senior high levels.
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Direct Instruction of Students</td>
</tr>
<tr>
<td>26</td>
<td>Curriculum Planning - Individual Teaching Planning</td>
</tr>
<tr>
<td>45</td>
<td>Evaluation - Giving Tests of All Kinds, Talking with Students, etc.</td>
</tr>
<tr>
<td>53</td>
<td>Curriculum Planning - Department or Grade Level Planning</td>
</tr>
<tr>
<td>53</td>
<td>Counseling Students - With an Individual Student or Students - Group Counseling - Career Choice - Academic Direction, etc.</td>
</tr>
<tr>
<td>57</td>
<td>Professional Growth - In-Service, Individual Study, etc.</td>
</tr>
<tr>
<td>68</td>
<td>Conferring with Parents</td>
</tr>
<tr>
<td>69</td>
<td>Creating and Maintaining the Teaching Environment (Bulletin Boards, Displays, etc.)</td>
</tr>
<tr>
<td>89</td>
<td>Curriculum Planning - Districtwide Planning</td>
</tr>
<tr>
<td>104</td>
<td>Clerical Tasks - Specifically related to Teaching</td>
</tr>
<tr>
<td>112</td>
<td>Supervision - Lunchroom, Study Hall, Hall Duty, Buses, etc.</td>
</tr>
<tr>
<td>114</td>
<td>Extra-Curricular-Activities, Dances, Clubs, etc.</td>
</tr>
<tr>
<td>119</td>
<td>Meetings - P.T.A., Community Organizations, etc.</td>
</tr>
</tbody>
</table>
The results of this survey are shown in Table III, p. 25. From Table III the author was able to construct a second table comparing the average hours that the teachers of the various levels spent on the tasks. This is seen in Table IV, p. 26.

After the committee had studied the final results of the time spent in carrying out the various tasks of the teacher, it recommended various solutions to better utilization of teachers time. Various recommendations such as: Team Teaching, Point Weighting System, Flexible Scheduling, Dual Salary Schedule, Efficient Student Teaching Program, Use of Lay Personnel, Departmentalization in Intermediate Grades, Independent Study Programs, Summer Curriculum Work, and Plant Changes were made with a strong emphasis placed on Team Teaching to help relieve the situation. Team Teaching was highly recommended by the committee and consequently, directed the author to make an intensive study of team teaching (Appendix B).

Since the study has been completed a form of team teaching was employed in September of 1966, where one hundred seventy-eight six graders were instructed in the school gym. The program was such a success that an addition to the Chestnut-Ridge Elementary School of over one million dollars was approved in the spring of 1967, employing team teaching as the focal point of instruction.
TABLE III

The average number of hours per week the teachers in the various schools spend in carrying out their tasks.

1. How much time do teachers spend in one week in direct instruction?

<table>
<thead>
<tr>
<th></th>
<th>Senior</th>
<th>Junior</th>
<th>Chestnut-Ridge</th>
<th>Fairbanks</th>
<th>Kindergarten</th>
<th>Elementary</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>20\frac{1}{2}</td>
<td>13</td>
<td>22\frac{1}{2}</td>
<td>22</td>
<td>28</td>
<td></td>
</tr>
</tbody>
</table>

2. How much time do teachers spend working with individuals during direct instruction and after school?

<table>
<thead>
<tr>
<th></th>
<th>Senior</th>
<th>Junior</th>
<th>Chestnut-Ridge</th>
<th>Fairbanks</th>
<th>Kindergarten</th>
<th>Elementary</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>1\frac{1}{2}</td>
<td>4</td>
<td>5</td>
<td>5\frac{1}{2}</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

3. How much time do teachers spend in guidance activities with groups or individuals?

<table>
<thead>
<tr>
<th></th>
<th>Senior</th>
<th>Junior</th>
<th>Chestnut-Ridge</th>
<th>Fairbanks</th>
<th>Kindergarten</th>
<th>Elementary</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>4</td>
<td>3</td>
<td>2\frac{1}{2}</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
</tbody>
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4. How much time is spent for lesson planning and the grading of papers?

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>High</td>
<td>15</td>
<td>10</td>
<td>10\frac{1}{2}</td>
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<td>14</td>
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5. How much time is spent in departmental or grade level planning?

<table>
<thead>
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<th>Fairbanks</th>
<th>Kindergarten</th>
<th>Elementary</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>1\frac{1}{2}</td>
<td>1</td>
<td>1</td>
<td>\frac{1}{2}</td>
<td>3</td>
<td></td>
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</tbody>
</table>

6. How much time is spent in collecting money, marking the register, typing out various materials, etc.

<table>
<thead>
<tr>
<th></th>
<th>Senior</th>
<th>Junior</th>
<th>Chestnut-Ridge</th>
<th>Fairbanks</th>
<th>Kindergarten</th>
<th>Elementary</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>9</td>
<td>10</td>
<td>5\frac{1}{2}</td>
<td>1</td>
<td>1</td>
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</tr>
</tbody>
</table>
TABLE IV

The average number of hours each level spends in carrying out their tasks.

The numbers in the left hand column pertain to the items as seen in Table III.

<table>
<thead>
<tr>
<th>Senior High Level</th>
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<th>Elementary Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 20 3/4</td>
<td>13 1/13</td>
<td>24</td>
</tr>
<tr>
<td>2. 1 1/3</td>
<td>4 1/3</td>
<td>6</td>
</tr>
<tr>
<td>3. 4 1/4</td>
<td>3 1/2</td>
<td>3</td>
</tr>
<tr>
<td>4. 15</td>
<td>10 1/2</td>
<td>11</td>
</tr>
<tr>
<td>5. 1 1/3</td>
<td>1 1/3</td>
<td>1 1/4</td>
</tr>
<tr>
<td>6. 9</td>
<td>10 1/5</td>
<td>1</td>
</tr>
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CHAPTER IV
ANALYSIS OF DATA

The following pages of the study present a detailed analysis of the data evolving from the committee work, two teacher questionnaires, and an evaluation the author was able to obtain from the questionnaires.

1. The thirteen points that cover the teacher's role.

After four committee meetings, the group had arrived at thirteen points that covered the teacher's role at Churchville-Chili. The points cover a range from direct instruction of students to P.T.A. meetings and community organizations (Table I, p. 21).

2. The ranking of the thirteen items by the committee.

The committee members ranked the thirteen items from most important to least important. The Direct Instruction of Students was considered the most important role of the teacher and Meetings - P.T.A., Community Organizations, etc., was considered the least important role. The ranking was very definite in that the ratings covered a range from 12 to 119 points and only two items received the same rating of 53 (Table II, p. 23). The teachers placed those tasks dealing with the direct instruction of students with primary importance and activities outside of the room such as meetings and community organizations were ranked secondary.

3. The significance of the thirteen items.
The rank order of the thirteen items in Table II shows the items the teachers at Churchville-Chili consider to be their role. The thirteen items deal with the welfare of the student in one way or another.

4. The amount of time the teachers spend on their various tasks.

Once the teachers indicated various roles the chairman and the author drew up a set of questions based on the thirteen items to find out the amount of time the teachers spend on these various tasks (Table III, p. 25). It was learned from this questionnaire that the different levels spend various amounts of time on these tasks (Table IV, p. 26).

5. The analysis of Table V, p. 29, which is a detailed description of the five schools relative to how much time the teachers in those schools spend on their various tasks.

In Table V the numbers under each school pertains to the average number of hours the teachers in that school spend on that item. On number one (How much time do teachers spend in one week in direct instruction?) the kindergarten spends the most time with 28 hrs. per week, followed by the Chestnut-Ridge Elementary with 22\(\frac{1}{2}\) hrs. per week, the Fairbanks Elementary with 22 hrs. per week, the senior high with 20\(\frac{1}{2}\) hrs. per week, and dropping down to the junior high with only 13 hrs. per week.

On item number two (How much time do teachers spend working with individuals during direct instruction and after school?) the Kindergarten leads with 9 hrs. per wk.
TABLE V

The number 1-6 in the left hand column correspond to the questions below.

The average number of hours the teachers in the various schools spend in carrying out their tasks in one week.

<table>
<thead>
<tr>
<th>Senior High</th>
<th>Junior High</th>
<th>Chestnut-Ridge Elementary</th>
<th>Fairbanks Elementary</th>
<th>Kindergarten Elementary</th>
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<tbody>
<tr>
<td>1</td>
<td>20 3/2</td>
<td>13</td>
<td>22 1/3</td>
<td>22</td>
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<tr>
<td>2</td>
<td>1 1/2</td>
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<td>3</td>
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<td>3</td>
<td>2 1/2</td>
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<td>5</td>
<td>1 1/2</td>
<td>1</td>
<td>1</td>
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<tr>
<td>6</td>
<td>9</td>
<td>10</td>
<td>1/2</td>
<td>1</td>
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</tbody>
</table>

1. How much time do teachers spend in one week in direct instruction?

2. How much time do teachers spend working with individuals during direct instruction and after school?

3. How much time do teachers spend in guidance activities with groups or individuals?

4. How much time is spent for lesson planning and the grading of papers?

5. How much time is spent in departmental or grade level planning?

6. How much time is spent in collecting money, marking the register, typing out various materials, etc.
followed by Fairbanks Elementary with 5½ hrs. per week, Chestnut-Ridge with 5 hrs. per week, junior high with 4 hrs. per week, and the senior high with 1½ hrs. per week. Notice that the two elementary schools and the junior high are very close in time spent on this task.

In item three (How much time do teachers spend in guidance activities with groups or individuals?) all schools are fairly close with the senior high and kindergarten tied at 4 hrs. a piece per week. The junior high follows with 3 hrs. per week, and the two elementary schools Chestnut-Ridge and Fairbanks with 2½ and 2 hrs. per week respectfully.

The time spent on item four (How much time is spent for lesson planning and the grading of papers?) is fairly close once again with the senior high at 15 hrs. per week, kindergarten 14 hrs. per week, Chestnut-Ridge 10½ hrs. per week, junior high 10 hrs. per week and the Fairbanks Elementary with 9 hrs. per week.

Item five (How much time is spent in departmental or grade level planning?) shows a close relationship with the kindergarten at 3 hrs. per week, senior high 1½ hrs. per week, junior high and Chestnut-Ridge Elementary tied at 1 hr. per week and the Fairbanks Elementary at ¾ hr. per week.

In item six (How much time is spent in collecting money, marking the register, typing out various materials,
etc.? there is a big differential between the elementary level and the junior and senior high levels. The junior high leads with an average total of 10 hrs. per week, followed close behind by the senior high with 9 hrs. per week. The drop off is considerable, going all the way down to the kindergarten and Fairbanks Elementary at 1 hr. a piece and only \( \frac{3}{4} \) hr. per week for the Chestnut-Ridge Elementary Schools.

In conclusion for Table V item one the junior high and kindergarten school are several hours distant from the other three schools. The junior high spends 13 hours in direct instruction of students while the kindergarten spends 28 hours on the same task. The other three schools are very close in the time spent on the direct instruction of students. In item two, the senior high and kindergarten are about four hours away from the other schools. The senior high a minus four hours away and the kindergarten a four hour plus ahead of the other three schools. The schools in item three are fairly consistent. The senior high and kindergarten are ahead of the other schools with a plus four hours in item four. The schools in item five are fairly consistent where as in item six the senior high and junior high are about nine hours ahead of the other schools.

Why use average hours in place of exact hours. The reason for selecting average hours was to account for the
experienced teacher who is fairly consistent in time spent on various tasks as compared to the new teacher who has to spend a much longer time in all on her work. By using an average the results are more realistic and not slanted in one direction or another.

6. Committee recommendations for the utilization of staffs resourcefullnesses.

Various recommendations were made by the committee to utilize the staffs resourcefullnesses at Churchville-Chili. Some of them being Team Teaching, Point Weighting System, Dual Salary Schedule, Use of Lay Personnel, etc. Since our plant facilities are suited for Team Teaching the committee recommend that a thorough research be undertaken on Team Teaching. The author undertook this task and the results of it are seen in (Appendix B).
CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

The Summary

The purpose of this study was to determine the role of the teacher in the Churchville-Chili Central School System, and to determine how the district can better utilize the talents and abilities of the professional staff. The significance of this project is focused upon the conclusions and recommendations in establishing the role of the teacher and the recommendations for utilizing our teachers' talents and abilities that have evolved from the purpose of the study.

To arrive at a conclusion and comprehensive analysis of the problem, the author formulated three plans of investigative pursuit. To recapitulate the research procedure, the following outline is presented:

1. With the increasing number of tasks placed upon the teacher, her role has become unmanageable. To determine the role of the teacher at Churchville-Chili a committee of administrators and teachers was set up. After several meetings the committee suggested various tasks that cover the role of the teacher.

2. The many activities suggested by the committee were condensed by the chairman and co-chairman into thirteen points and submitted to the committee members to be ranked according to importance. From this
ranking the administrators and teachers in the school system are able to distinguish those tasks which the teachers consider to be most important and those tasks which are considered the least important.

3. From the establishment of the teacher's tasks it was decided to find out how many hours the teachers spend on each of these tasks. This questionnaire condensed the thirteen points into six major tasks, and then was presented to eighty-three teachers by the committee members. It was found that the various schools spend about the same amount of time each week on their work, but the time spent on a particular task varies from one level to another.

4. To better utilize the teacher's talents, the committee recommended several methods that the system might undertake. With plant facilities adhering to specific programs the committee recommended a thorough study of team teaching.
The Conclusions and Recommendations

To determine the role of the teacher and the utilization of her resourcefulness as the fundamental purpose of this study, the author has contemplated the important findings of the studies and deliberated upon the review of authoritative literature that accompanies this study. After examination of the information, conclusions have been formulated in reference to the two problems stated in the introductory chapter. On the following pages the problems are restated and accompanied with concluding thoughts and recommendations are offered in areas of concern with the desire that the school administration may make changes and implement these changes wherever possible.

1. What is the role of the teacher at Churchville-Chili?

The role of the teacher at Churchville-Chili indicated by the thirteen points scale shows the direct instruction of students being the most important task of the teachers. All of the thirteen points deal with the student either directly or indirectly. They do not cover all of those tasks required of teachers but do cover the major and many of the minor tasks that are demanded of teachers. If a teacher were to perform at her highest level on all thirteen items, it would be justifiable to assume that she is performing more than a satisfactory job.
2. How can the district better utilize the talents of its teachers?

On the basis of the study the committee felt that team teaching might be a better way of using the teacher's talents to accomplish the improvement of instruction.

Due to inadequate classroom facilities at the beginning of the school year of 1966, the six, six grades at the Fairbanks Road School were placed in the gymnasium for three weeks. It was here that a form of team teaching was employed to instruct the one hundred seventy-eight children. The program was so successful that a bond issue of over one million dollars was passed in the spring of 1967, to add a circular structure to the Chestnut-Ridge School where team teaching will be the focal point of instruction. After two years of instruction in the circular structure, a study will be made to determine the strength and weaknesses of the team teaching program.

The committee felt that in addition to team teaching the following should be investigated with regard to possible application in the Churchville-Chili School System: Point Weighting System, Flexible Scheduling, Dual Salary Schedule, Use of Lay Personnel, Organization of an Efficient Student Teacher Program, Team Teaching, Large Group Instruction, Closed-Circuit-Télévision, etc., Departmentalization in Intermediate Grades, Independent Study Programs, Summer
Curriculum Work, Plant Changes, Hiring Policy and Decreased Load.
APPENDIX A
BIBLIOGRAPHY

Books


Periodicals


TEAM TEACHING

A GUIDE FOR TEACHERS
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I. HOW IT GOT STARTED

Team teaching was conceived to solve a problem, which it has not solved, and which it might never even alleviate. Team teaching was intended to solve the teacher-shortage problem, and to be an improvement in instructional method.¹ In other words, team teaching was to be a logistical advance and a methodological one. But whereas it has failed thus far in its primary endeavor, it seems to have succeeded rather remarkably in the area of methodology. Of course, research in team teaching is still going on, so it is too early to state conclusively what the advantages are. Nevertheless, team teaching is no longer touted as a solution to the teacher-shortage problem, but it is being widely hailed as a great improvement in method.

Credit for conceiving team teaching does not appear to have been assigned to, or claimed by, any individual. Nor does any organization claim credit for the team teaching concept. But one organization could justly do so. That is the National Association of Secondary School Principals (henceforth referred to as NASSP). In January 1955, the Executive Committee of this organization authorized the Curriculum Planning and Development Committee to seek ways and means of meeting the teacher shortage at the high school level.


This lesser committee promptly contacted the Fund for the Advancement of Education and requested financial support, which was arranged. (Further financial support was later given by the Ford Foundation.) The next step was to find schools which would be willing to try attempts at better staff utilization. Numerous schools in various parts of the country indicated such a willingness. Thus, on January 21, 1956, the NASSP gave the go-ahead sign to its newly formed Commission on the Experimental Study of the Utilization of the Staff in the Secondary School (a labored but fully descriptive title, henceforth referred to as the Commission on Staff Utilization).

A good indication of the kinds of experiments conducted, as well as the nationwide participation, can be found in the table of contents of the NASSP Bulletin of January 1958. This issue of the Bulletin was devoted exclusively to the staff utilization study. A condensation of the table of contents follows.

TABLE 1

<table>
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</table>

V. Bus Drivers Serve as Teacher Assistants in Driver Education at Richwood, West Virginia, High School
VI. Subject Matter, Students, Teachers, Methods of Teaching, and Space Are Redeployed in the Newton, Massachusetts, High School ...

VII. Tape Recordings Are Used To Teach Seventh Grade Students in Westside Junior-Senior, Omaha, Nebraska ...

VIII. Future Teachers Are Recruited and Plans Made for a Teacher-Trainee Group in the St. Paul, Minnesota, Schools ...

IX. A Variety of Improvements in Staff Utilization Are Tried in a Small High School at Beecher, Illinois ...

X. Changes in Class Size, Teacher Time, and the Use of Electronic and Mechanical Aids Are Made in Snyder, Texas ...

XI. Non-Certified Laboratory Assistants Are Used To Relieve Teachers and Extend Science Opportunities for Students at the Alexander Ramsey High School, Roseville, Minnesota ...

XII. Some Influences of a New School on Planning Staff Use and Curriculum Development Are Studied in Syosset, New York ...

XIII. Classes of 10, 20, 35, and 70 Under Varied Conditions Are Taught in Jefferson County, Colorado, To Discover Effects on Students and Teachers ...

XIV. Utah Uses Statewide Approach in Studying Utilization Effects of Junior High School Evaluative Criteria, Physica Films, and Core Programs ...

By 1961, sufficient success had been realized in these and other experiments to compel the Director of the Commission on Staff Utilization to write a book. The book is not a boring, statistical rehash of the various experiments. Rather, it is a concisely worded, well-illustrated program of
action. The title of the book is **Focus on Change: Guide to Better Schools**. J. Lloyd Trump is the author, and he is to be commended for having the good sense to engage the services of a professional newspaper reporter (Dorsey Baynham) as co-author. The book has become the now famous Trump Report.
II. WHO DOES IT

Team teaching can be conducted on various scales. And since it seems easier to think "down" to a small-scale program than "up" to a grand-scale one, this paper will briefly recapitulate the grandest-scale program of team teaching and let the reader use his imagination to envisage more modest programs. The program outlined by Trump is almost visionary in its grandeur (but the reader can decide that for himself).

Trump suggests that although team teaching might begin with only two-man teams, it can eventually be broadened so a single team includes several teachers from more than one subject area.¹ The suggestion that teams cross subject area lines is heartily endorsed by Julius Menacker, writing in the Chicago Schools Journal.² Menacker cites conditions under which subject area lines could be crossed with salutary results. For example, the "lost generation" was both a literary and historical period. As such, it can most completely and effectively be taught through the joint efforts of the


English and history departments. Countless other examples could be given to point up the desirability of crossing subject area lines. There do not seem to be any strong arguments against the feasibility of such an innovation, and it would seem that the desirability itself would have a positive effect on the feasibility.

Whether teams cross subject area lines or not, the size of the teams envisioned by Trump would be large enough to require some chain of authority. At the head of each team would be the leader. Malcolm Douglas suggests that the team leader be elected by his colleagues or appointed by the principal.1 The qualifications for team leader would include experience, academic background and leadership ability. The team leader would be paid more than the other members of the team. In the Franklin School of Lexington, Massachusetts, where team leaders are already operating, the salary is $1000 above that of the team members.2 In Norwalk, Connecticut, the team leader gets a supplement slightly in excess of $1000.3

Next in line to the team leader would be the senior teacher, the qualifications for which position, it is assumed,


would be the same as those for team leader. The senior teacher would be intermediate in salary between the team leader and the other members of the team. Again, the Franklin School pays its senior teachers an additional $500.1

Besides teachers, the team would have instruction assistants, clerks and general aides, and would be able to avail itself of the services of staff specialists (psychologists, guidance counselors, etc.) and community consultants. The instruction assistants would be used to correct the mechanics in themes, supervise laboratory work and conduct extracurricular activities. For this position college students could be employed part-time. This is the practice at the Alexander Ramsey High School in Roseville, Minnesota, where college science majors are employed to supervise laboratory sessions.2 And in St. Paul, Minnesota, students from the local teachers college are employed as assistants five hours a week until their senior year, when they are employed fifteen hours a week.3

The clerks would handle the paper work and duplicating machines.

To ascertain the number of clerks needed and the skills required, teachers can compile a list of clerical chores performed by themselves and the time spent on these.

The general aides would be used as monitors. They could also assist with the paper work and in the operation of audiovisual equipment. Generally, these aides would be older women with some experience handling children, e.g. Sunday School, and women whose own children were raised. In Norwalk, Connecticut, the teacher aides are paid $2800 annually.¹

In charge of all the people already mentioned would be, of course, the principal. Freed from the mechanics of administration by the increased clerical help, the principal would be responsible for coordinating the efforts of the various teams. He would also be expected to spearhead research, and perhaps even teach demonstration lessons. The reader may blanch at this prospect, but he should bear in mind that the new principals will be of a different caliber than many of those now functioning. (In Norridge, Illinois, even the superintendent teaches!² The various responsibilities which the principal in a team teaching situation can expect are shown in Figure 1.

---


The Principal's Role as Leader

III. How It Works

A teaching team would be responsible for approximately 100-150 students. Most of the schools reporting on their team teaching efforts point out that the teacher-pupil ratio is the same as it was with conventional teaching.1 At first these students would be taught in a body and then allowed to discuss the presented material in small discussion groups. (It has been suggested that prior to the introduction of the large group lectures, students be taught notetaking skills.)2 As time went on the students would be allowed ever increasing amounts of time for independent study. The total time allowed for independent study would eventually reach 40 per cent of the school day, though probably only for the older students. It should be noted, however, that independent study would not begin until some degree of student self-discipline had been evidenced. And students would be impressed with the fact that independent study time is not an irretrievable concession. On the other hand, students who display sufficient maturity will be allowed to spend their independent study time outside of school.3

When the team teaching program is in full swing, the student will spend 40 per cent of his time in large group instruction, 40 per cent in independent study, and 20 per cent in small group discussion. The conventional 35-50 minute uniform "periods" are abolished in favor of 20 minute modules of time with classes of varying durations. Just how the student's schedule might break down is shown in Figures 2, 3, 4 and 5.
Student Schedule in a Secondary School of the Future

Fig. 2.

How An Average 14-Year Old Student Might Spend His School Time

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>Average Minutes Per Week</th>
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<tbody>
<tr>
<td></td>
<td>Required</td>
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<tr>
<td></td>
<td>basic education</td>
</tr>
<tr>
<td>English</td>
<td>100</td>
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<td>Health-Physical Education</td>
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<td>Recreation</td>
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</tr>
<tr>
<td>TOTAL</td>
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</table>

extra hours available for independent study in educational facilities open & supervised additional hours, days & weeks.

large group
small group
independent study
depth in his own areas

Fig. 3.

1. Ibid., p.54.
Average Student's Clock

Division of hours in a 30 hour week

NUMBER OF HOURS

all areas of knowledge required of all students

depth in his own areas

extra hours available for independent study in educational facilities open and supervised additional hours, days and weeks.

- large group
- small group
- independent study
- depth in his own areas

Fig. 4

1. Ibid., p. 56.
Pupil's Daily Schedule

<table>
<thead>
<tr>
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<tr>
<td>1</td>
<td>Large group--social studies</td>
<td>Individual work, reports, math themes, exploration</td>
<td>Large group--social studies</td>
<td>Individual work, conferences</td>
<td>Large group--English</td>
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<tr>
<td>2</td>
<td>Seminar --Social Studies</td>
<td>Seminar --social</td>
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<td></td>
<td>Medium group--biology</td>
</tr>
<tr>
<td>3</td>
<td>Time for resource work</td>
<td>Large group--Conference biology</td>
<td>Seminar--biology with advisor math</td>
<td>Seminar--biology</td>
<td>Seminar--social studies</td>
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<td>4</td>
<td>Lunch</td>
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<tr>
<td>5</td>
<td>Medium group--English</td>
<td>Medium group--English</td>
<td>Medium group--English</td>
<td>Medium group--social studies</td>
<td>Medium group--math</td>
</tr>
<tr>
<td>6</td>
<td>Physical education</td>
<td>Seminar--English</td>
<td>Seminar--English</td>
<td>Individual work</td>
<td>Physical education</td>
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<tr>
<td>7</td>
<td></td>
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<tr>
<td>8</td>
<td>Extracurricular activities</td>
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</table>

Fig. 5.

The Large Group

For the large group lecture a variety of audio-visual aids could be employed. The overhead projector is especially well suited to large group instruction, as are films. The research at Hagerstown, Maryland, and at the University of Pittsburgh has shown the utility of closed circuit TV in large group instruction. And the "results of previous demonstrations indicate that, in general, students learn just as well by instruction over TV as they do in traditional classroom work."

But, needless to say, the mechanical devices would only supplement the well prepared and executed lecture. This lecture would be given by the team member most eager to do so because of his interest in, and familiarity with, the material to be taught. (The proponents of team teaching never concede the possibility that some topics could come up in which no member of the team is interested or versed. But even if this problem were to arise, it could be quickly resolved by drawing straws or by rotating teachers through the unwanted topics. In conventional teaching there is no problem - the teacher simply grits his teeth and plods on.) At any rate, it can reasonably be expected that the team members will not all have identical backgrounds and interests. In a Jefferson County, Colorado, high school, for example, an English team consists of a teacher with graduate work in drama and

literature, another who knows foreign languages, and a third whose undergraduate major was journalism. This kind of variation should be an important criterion in setting up a teaching team.

Outside specialists, whose time is valuable, would address all the students at once in the large group. Their addresses could be taped for playback in later years. A list of available community specialists could be compiled and kept current.

Whether questions would be allowed in the large group lecture would be left to the discretion of the lecturer, who would have to judge the suitability of the acoustics, the time available, and whether the questions might better be answered elsewhere. To offset any acoustical difficulties, it might be decided to have the questions written out and then read by the lecturer, using the microphone.

In concluding this section on the large group, it should be mentioned that, tentative as the research conclusions now are, students in large groups seem to learn as well as those in conventional classes. After one semester of team teaching the Gates-Chili High School, Gates, New York, sound that those pupils who had been taught did as well on mid-term exams


as those who had been conventionally taught. The same conclusion was reached by the educators in Jefferson County, Colorado, after two years of team teaching. Because this conclusion is so fundamental to the future of team teaching, it should be noted that Douglas and Dillman also support it.

The Small Group

The small group, numbering approximately ten students, clarifies and elaborates on the material presented in the large group lecture. The small groups can be set up on a basis of homogeneity, allowing the individual needs of the pupil to be more easily met. This means that the pupils are grouped on the basis of their over-all ability, as is usually the case in conventional teaching. In the small group introversion can be erased and leadership developed. If the group interacts well and is studious, it could select its own leader and proceed without adult supervision (though a teacher would always be available for consultation on knotty issues.)

The small group provides opportunities for the teacher to measure a pupil's progress. And, in turn, it gives the student

an opportunity to know the teacher on a personal, individual basis. In the informal atmosphere of the small group, students become more critical and challenge that which they would not challenge ideas in the small group, they challenge each other. Gradually they begin to develop a respect for views which oppose their own. This may be the most important accomplishment of the small group.

Neither is the small group a lark for the teacher. As many teachers now know, guiding small group discussions can well be more difficult than presenting large group lectures.¹

Independent Study

Independent study is designed to allow the student to pursue those aspects of a subject which are of particular interest to him. Naturally, the student is expected to submit evidence of his investigation. The teacher will not assign projects, although he might suggest some to a drifting student. At least one of the teachers would always be free to assist students in their respective investigations. By examining the student's records the teacher would be able to tell if the student was progressing at a rate commensurate with his

¹ Available data indicate that results in this area are not all that might have been expected. A study done at three schools in Claremont, California, shows that the team teachers know their students neither more nor less than the conventional teacher.²


ability. The student's project demanded sufficient initiative.

By plunging into a research inquiry which interests him, the student would quickly learn to master the tools of research and the research procedure. In addition, he would gain experience in organizing the results of his research in some kind of lucid exposition. Through independent study the student will learn to educate himself. He will no longer be merely a passive recipient of the teacher's information who regurgitates biweekly on a test. In Trump's words:

"The role of the secondary school will be to place the teacher more in the role of a consultant and less in the role of a taskmaster."¹

IV. WHERE TO BEGIN

Planning

Considerable planning is required if the team teaching program is to succeed. Because team teaching is inherently flexible, many changes will take place along the way. However, desirable these changes may be, they are bound to cause some confusion and dislocation. Therefore, it is essential that the changes be limited to ones which could not be foreseen at the outset of the program. As many contingencies as can be imagined should be provided for prior to commencing the program. This would indicate that considerable time in which to do the bulk of the planning, and an honorable school board should be willing to renumerate the teachers who spend part of their summers in this planning.

Selecting the Team

One of the first steps in the planning would be the structuring of the team. To many this is the sine qua non of a successful team. Weiss and Morris describe the personalities which, in their opinion, do not fit well into a teaching team. Foremost among these is the inflexible, dogmatic authoritarian. Also included is the obsequious individual whose fear of antagonizing his superiors renders him timorous, and the suspicious, untrusting type who feels he is being taken advantage of. However, if the suspicion of this last individual happen to be justified, it suggests that there is a slacker about, who is another type not fit for a teaching team.
Although most writers on team teaching agree that there are individuals not suited to it, these writers do not seem to agree on what individuals are unsuited. King, for instance, found that the strong-willed, "individualist" teacher got along satisfactorily in a team situation. It would be interesting to know how much difference there is between King's "individualist" and Weiss' and Morris' "authoritarian."

Unfortunately, none of the writers suggests a means by which the unfit can be detected, or a means by which, once detected, the unfit can gracefully be eliminated from participation in the program. It does seem that personality inventories could be used to solve the first of these problems.

Grouping and Scheduling

Undoubtedly the most difficult stage in the planning is that in which the pupils are grouped and the activities are scheduled. Computer machines are already fairly common for working out schedules in conventional high schools. An idea of how much more complicated scheduling is in a team teaching school is shown by the Wayland, Massachusetts High School's request for a special computer from the Massachusetts Institute of Technology. The complicated scheduling in team teaching


is due to the fact that students not only move among groups during the day but among groups of widely varying sizes. The wide variation in group sizes necessitates instructional areas of widely varying sizes. Thus, in addition to scheduling activities, the school must also locate the areas in which the activities can take place.

**Further Planning**

Additional items which must be planned are the roles of the team leader and senior teacher. Then rules of procedure in dealing with the students must be agreed on. Hemeyer and McGrew:

> Express concern that without such rules students will be apt to play one teacher against another.  

Plans must also be made for collecting and recording evaluative data, both on the students and on the program as a whole. In this matter Trump urges:

> That a further step be taken with the publication of the date concerning the program. He says that the school owes this to the educational community.

The curriculum, too, must be examined to determine what can best be taught by whom and under what grouping conditions. The decisions involved here, as elsewhere, take time and thought. A report card system must be worked out to determine

---


not only the areas in which the pupil will be marked, but also the bases on which he will be marked as well as the person responsible for the marking. A check must be run on the audio-visual equipment which can be made available. It would also be wise to begin a file on available community consultant.

After all the initial planning has been completed, more planning of a less nettlesome nature will constantly be going on throughout the duration of the school year. The bulk of this continuing planning will be, of course, lesson planning. Lesson planning is vital in team teaching since the students will be subjected to formal lectures less than half of the school day, and in numbers far exceeding those of conventional classes. The teacher will not be able to bludgeon attention from the students; he will have to earn it. Team teaching, properly organized, allows the teacher the planning time necessary to earn the students' attention. This planning time is shown in the following breakdown of the teacher's work week (Figures 6 and 7).

Enlisting Community Support

To get the support of the community it is necessary to involve the community. One way to do this is by requesting the services of community specialists. In this matter, an optimistic note is forthcoming from Claremont, California: "Talents represented in the community have been found to be more varied, useful to the school, and freely given than even
the most optimistic planners of team teaching programs anticipated."

Another means of enlisting community support is simply through the hiring of lay people as general aides. A team teaching program done in conjunction with the local colleges broadens community participation still further.

Sometimes one segment of the community gets so involved that it assumes responsibility for recruiting the rest of the community. This happened in Wayland, Massachusetts, where the League of Woman Voters arranged meetings in their homes at which team teaching could be explained. The League also championed the budget increase necessary to launch a team teaching program.¹

But the real responsibility for public relations rests with the school superintendent. The superintendent in Norridge, Illinois, spent considerable time fulfilling this responsibility.

A Typical Teacher's Schedule in One Public High School

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</tbody>
</table>

- Large group (2 groups - 110 each)\(^1\)
- Small group (7 groups - 15 students each)
- Lunch-planning conferences and other professional activities

Fig. 6.

<table>
<thead>
<tr>
<th>Period</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Large group instruction</td>
<td>Preparation of material, professional study, student evaluation, etc.</td>
<td>Medium group</td>
<td>Large group</td>
<td>Medium group</td>
</tr>
<tr>
<td>2</td>
<td>Seminar</td>
<td>Large group</td>
<td>Large group</td>
<td>Free time for Preparation of materials</td>
<td>Medium group</td>
</tr>
<tr>
<td>3</td>
<td>Free period for preparation of materials</td>
<td>Seminar</td>
<td>Medium group</td>
<td>Lunch</td>
<td>Lunch</td>
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<td>4</td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch</td>
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<tr>
<td>5</td>
<td>Medium group</td>
<td>Large group</td>
<td>Tutorial, direction of advanced projects, available for Individual instruction for consultation by students</td>
<td>Seminar</td>
<td>Seminar</td>
</tr>
<tr>
<td>6</td>
<td>Individual tutorial</td>
<td>Medium group</td>
<td>Individual instruction for Team conference</td>
<td>Team conference</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Team conference</td>
<td>Individual tutorial</td>
<td>Individual instruction for Team conference</td>
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Fig. 7.

He met individually with each of the students who was scheduled for participation in the upcoming team teaching program, and then met individually with the parents of each of the students.\(^1\) In Wayland, Massachusetts, the superintendent saw to it that the team teaching curriculum was devised by a committee of both teachers and citizens.\(^2\)

Trump himself suggests:

A coordinating organization be created to oversee the team teaching program. This organization would include teachers, students, parents, non-parent citizens, board of education members, and administrators.\(^3\)

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V. OPTIMUM FACILITIES

Schools have already been constructed, and others are now being constructed, specifically for team teaching. The design of these schools are not all the same, but they do have many things in common. They all include large lecture halls, small discussion rooms and individual study areas. The acoustics of the large lecture halls have been planned with care. (In many of the old, conventional buildings, the cafeteria is used as a lecture hall; but Seaberg for one finds the noise of the kitchen difficult to outshout.)

The most favored seating arrangement for the lecture hall is the amphitheatre style (tiered seats to the front of the speaker and to his left and right). Even in the conventional Gates, New York, Junior High School the band room was used for the large lecture rather than the auditorium because the former had tiered seats.

Closed circuit TV is a prominent feature of the large lecture halls in the new schools. The lecture halls in many of the schools contain movable partitions for quick conversion into small discussion rooms.

The most interesting feature of the new schools is the


2. Minutes of the second evaluation session of the team teaching group, Gates-Chili Junior High School, November 1966.
study areas. How elaborate these are can be seen by a look at the Ridgewood High School in Norridge, Illinois. In this school there are ten study areas! These include foreign language, home economics, and reading laboratories; science and humanities resource centers; art and typing rooms; a music area; math study groups; and a library. The study areas for the various subjects are located adjacent to the faculty offices for those subjects.¹

Probably the most unique incorporation of team teaching requirements in school architecture is to be found at the Wayland High School. This school is actually a "concentrated campus"—six buildings in close proximity, one each for arts, sciences, languages, social studies, physical education, and administration. Each of the subject area buildings has its own reference and resource rooms. The architect argues in defense of this style by pointing out that much expensively enclosed hallway space is eliminated.²

Another interesting architectural style, somewhat similar to the "concentrated campus," is the "perception core," shown in Figure 8.

Trump's idea of just what the team teaching school should include is shown in Figure 9.

Perception Core School

Fig. 8.

Figure 9 from the preceding page.  

VI. WHY TEAM TEACH?

A year ago 25 per cent of all junior and senior high schools in the United States were trying some form of team teaching.¹ This was less than ten years after team teaching was introduced. Certainly team teaching must have several advantages to cause such a remarkable response. Even those who urge caution in accepting this innovation seem to be trying consciously to keep their own enthusiasm in check.

Advantages to the Teacher

What are the advantages? First, those which directly affect the teacher. In a properly functioning program, the teacher teaches only half of the school day. And because he teaches less, he has fewer lesson plans to prepare. Consequently, the teacher has the time to prepare thoroughly. Nor is his planning time devoted by routine clerical chores. Any time not used for planning can be devoted to research and counseling.

The teacher is also spared the tedium of teaching the same lesson five times daily. Those lessons he does teach are most often ones in which he is interested and well versed. That a teacher is not well versed in all the topics within a subject is no reflection on his intellect or integrity.

The increasing scope of each subject makes it quite difficult for a teacher to be expert in all areas.

By working so closely with his colleagues the teacher can discover his own deficiencies and pick up pointers on improving his performance. This is especially true for the beginning teacher, whom team teaching frees from the isolation and loneliness of the conventional classroom.

Team teaching is a definite boon to the teacher-mother who cannot work full-time. The flexibility of team teaching makes it easy to employ a teacher part-time, especially for the presentation of a large group lecture.

After two years in team teaching programs, teachers responding to a questionnaire indicated that, in their opinion, discipline problems had diminished. The teachers concluded:

The cut-up fails to find the expected audience in large-group classes. Instead, due perhaps to high student interest, skillful teaching, or social pressures because students must stay alert in such groups, large classes generally experienced good order.

It is also thought that the alternation of teachers required in team teaching forestalls boredom on the part of the students, which, in turn, forestalls discipline problems.

Finally, team teaching allows the teacher to be promoted without leaving teaching. To quote from Hodgkinson:

According to its advocates, one of the major advantages to the newly developed concept of "team teaching is that it will develop a hierarchy of status within the teaching profession. This will mean that an experienced and competent teacher will not have to leave teaching in order to increase his social and economic status."

Advantages to the Student

For the student team teaching can mean an opportunity to develop leadership through the small group discussion. It also means well-rounded instruction in each subject. As has been pointed out, the trouble with conventional teaching is that:

"Frequently a teacher emphasizes one area to the exclusion of others because of personal comfort in certain areas."  

Not only is the instruction in team teaching well-rounded, it is presented with a greater degree of experience.

The student can assert his individuality by pursuing topics he finds interesting. He is allowed to progress at his own rate, not at a uniform rate laid down for all the students. This may explain why there are already indications that team teaching is particularly beneficial to both advanced and slow pupils.

The student can have greater confidence in the fairness of his report card marks because he is evaluated by more than one teacher in each subject.

Advantages to the Community

Team teaching gives interested citizens some real chances to participate in the daytime operation of the schools. It helps to ensure that their money will go where it can do the most good — into instructional aids rather than expensive buildings. And the per pupil cost is only slightly higher than in conventional schools.

Citizens also have the knowledge that maximum use is being made of school space. They see the enthusiasm with which the children respond to team teaching.

1. Norridge, Illinois, says its per pupil cost is the same as conventional schools. Wayland, Massachusetts, says its costs are only slightly higher than the national average. And Lexington, Massachusetts, says it has had to add 10 to 15 per cent to the budget to upgrade salary schedules — a desirable step even in conventional schools.


When citizens take the time to familiarize themselves with team teaching, they begin to realize the increased educational opportunities the concept embodies. One of Trump's figures gives an idea of these expanded opportunities (Figure 10).
Expanded Educational Opportunities

one teacher per class limits

team teaching expands

Fig. 10.

BIBLIOGRAPHY


Colbert, Charles R. "Perception Core School," The Nation's Schools, LXV (March 1960), pp.79-84.


