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MULTIPLE CLASSES--LEARNING IN SMALL GROUPS.

BY- HODGDON, EVELYN AND OTHERS

CATSKILL AREA PROJECT IN SMALL SCHOOL DESIGN

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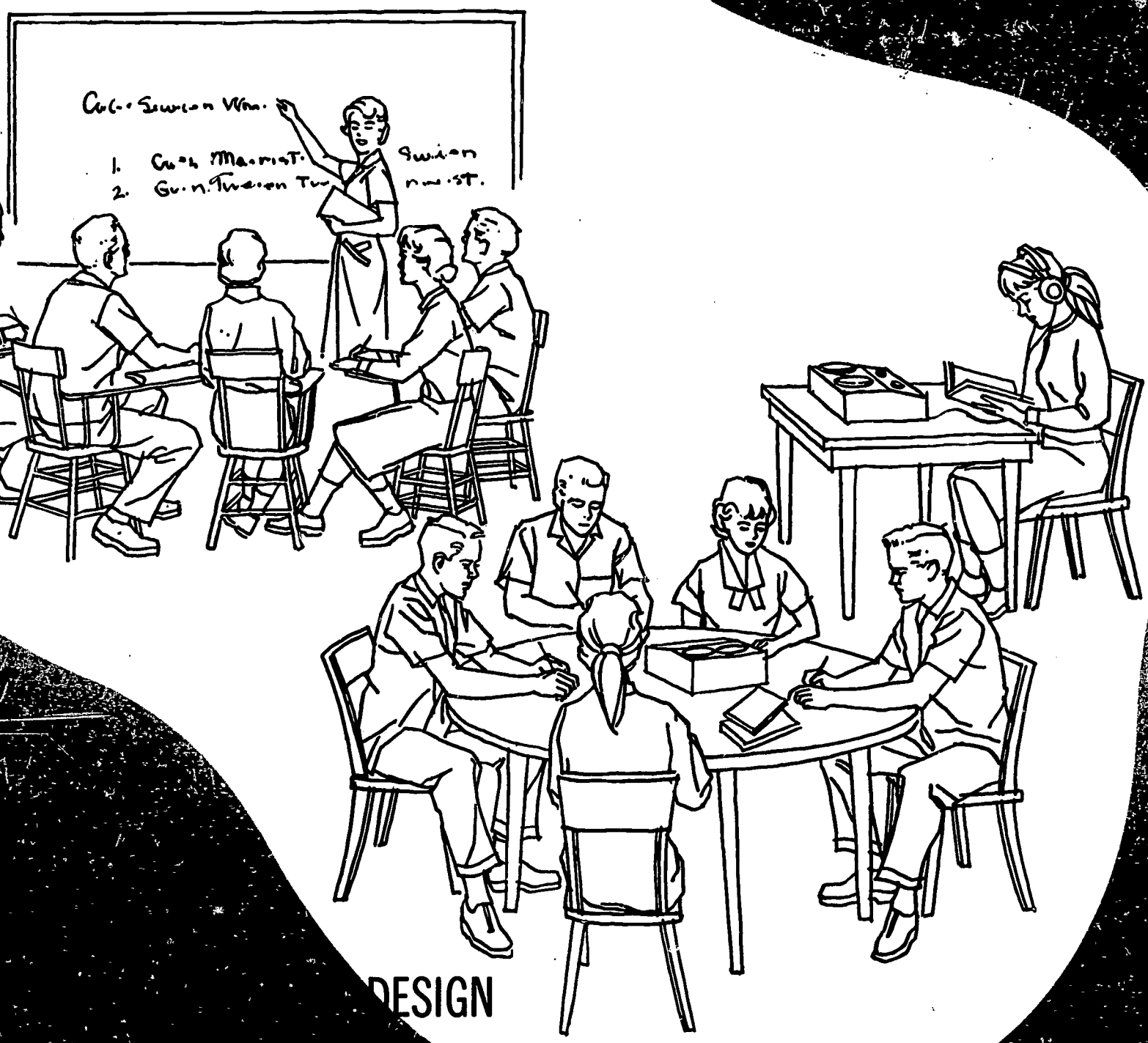
DESCRIPTORS- *INTERDISCIPLINARY APPROACH, INDIVIDUAL DIFFERENCES, INTEGRATED ACTIVITIES, CLASSROOM ARRANGEMENT, *SMALL GROUP INSTRUCTION, *SCHEDULE MODULES, INDIVIDUAL INSTRUCTION, LEARNING THEORIES, ELECTRONIC EQUIPMENT, *INSTRUCTIONAL MATERIALS, EQUIPMENT UTILIZATION, *SMALL SCHOOLS, STUDY SKILLS, IMPROVEMENT PROGRAMS, GROUPING (INSTRUCTIONAL PURPOSES), TEACHERS, PLANNING, TEACHER AIDES, STUDENTS, CONFERENCES, MULTIPURPOSE CLASSROOMS, CATSKILL AREA PROJECT IN SAMALL SCHOOL DESIGN, ONEONTA

MULTIPLE CLASSES ARE DEFINED AS THOSE IN WHICH THE TEACHER GUIDES THE LEARNING ENDEAVORS OF TWO OR MORE GROUPS OF PUPILS IN TWO OR MORE COURSES IN ONE ROOM AND IN THE SAME PERIOD OF THE DAILY SCHEDULE. SOME EXAMPLES ARE DESCRIBED, AND THE ABILITY OF MULTIPLE CLASSES TO MEET CERTAIN NEEDS, SPECIFIC PROCEDURES FOR STARTING MULTIPLE CLASSES, USE OF LEARNING MATERIALS AND EQUIPMENT, AND EFFICIENT USE OF SPACE IN MULTIPLE CLASSES ARE DISCUSSED IN DETAIL. A DISCUSSION OF SMALL GROUP LEARNING IS INCLUDED. THIS DOCUMENT IS ALSO AVAILABLE FROM THE CATSKILL AREA PROJECT IN SMALL SCHOOL DESIGN, STATE UNIVERSITY COLLEGE OF EDUCATION, ONEONTA, NEW YORK, FOR $0.50. (FS)

G IN SMALL GROUPS



DESIGN

THE CATSKILL AREA PROJECT in Small School Design (CAP) is a cooperative venture involving 25 rural school districts in Chenango, Delaware, and Otsego Counties of New York, the State University College of Education in Oneonta, New York, and the Ford Foundation. CAP's purpose is to search for and try out ways to improve the variety and quality of learning opportunities available to children and youth in all schools.

CAP's activities began in 1957 among 22 participating schools and with a two-year grant of $120,000. A second grant, in 1959, continued the program through 1959-60 among 27 participating schools. Continued activity through 1960-61 with 25 participating schools was assured by a third grant of $135,000 by the Foundation.

All schools participating in CAP's program are K-12 schools; and all but one are centralized (consolidated). Neither CAP's cluster of participating schools, nor any other cluster of small schools in the United States may be said to be "typical" of small schools everywhere; so information concerning the enrollment and the number of teachers in each participating school is given inside the back cover of this brochure to give readers more insight into these Catskill dairy region schools.

CAP is a coordinated organization governed by an executive committee composed chiefly of administrators from member schools. CAP was created and is continued through the cooperation of those autonomous local districts. There is, of course, a consistent, theoretical framework to which experimental efforts are related, but each participating school decides for itself the nature and extent of its efforts within this broad framework. Three other brochures present aspects of CAP's program.

CAP's "explorers" believe they are participating in highly promising developments that should lead to the improvement of learning in small schools; but they realize there are other avenues leading toward the same goal in small communities and rural areas. There is, for example, need for continued progress in school district reorganization and for improved state plans of public school finance. Moreover, CAP's experimental program should not be considered as an attempt to supplant need for such improvement measures. Most high schools in America are small. Despite the desirability of continued district reorganization, there will continue to be many appropriately small schools in relatively remote areas. Such schools have an obligation to provide high-quality education compatible with the needs of their pupils and the communities they serve. To this end CAP's experimental program is directed.

CAP's program has been conceived and developed through the cooperative efforts of Professor Frank W. Cyr of Teachers College, Columbia University, the teachers, principals and district superintendents of the participating schools and The State University College of Education which provides valuable facility and personnel resources for CAP. Inquiries may be directed to: Catskill Area Project, State University College of Education, Oneonta, New York.

Three other brochures have been printed:

Catskill Area Project in Small School Design

School Aides at Work

Sharing Educational Services

Copies of this brochure, like those of the above titles, are priced as follows: single *copies 50 cents.*

In quantity on the same *order to the* same address: *5 to 10 copies, 45 cents a copy; 11 to 25 copies, 40 cents a copy; 26 to 50 copies, 35 cents a copy; 51 or more copies, 25 cents a copy.*

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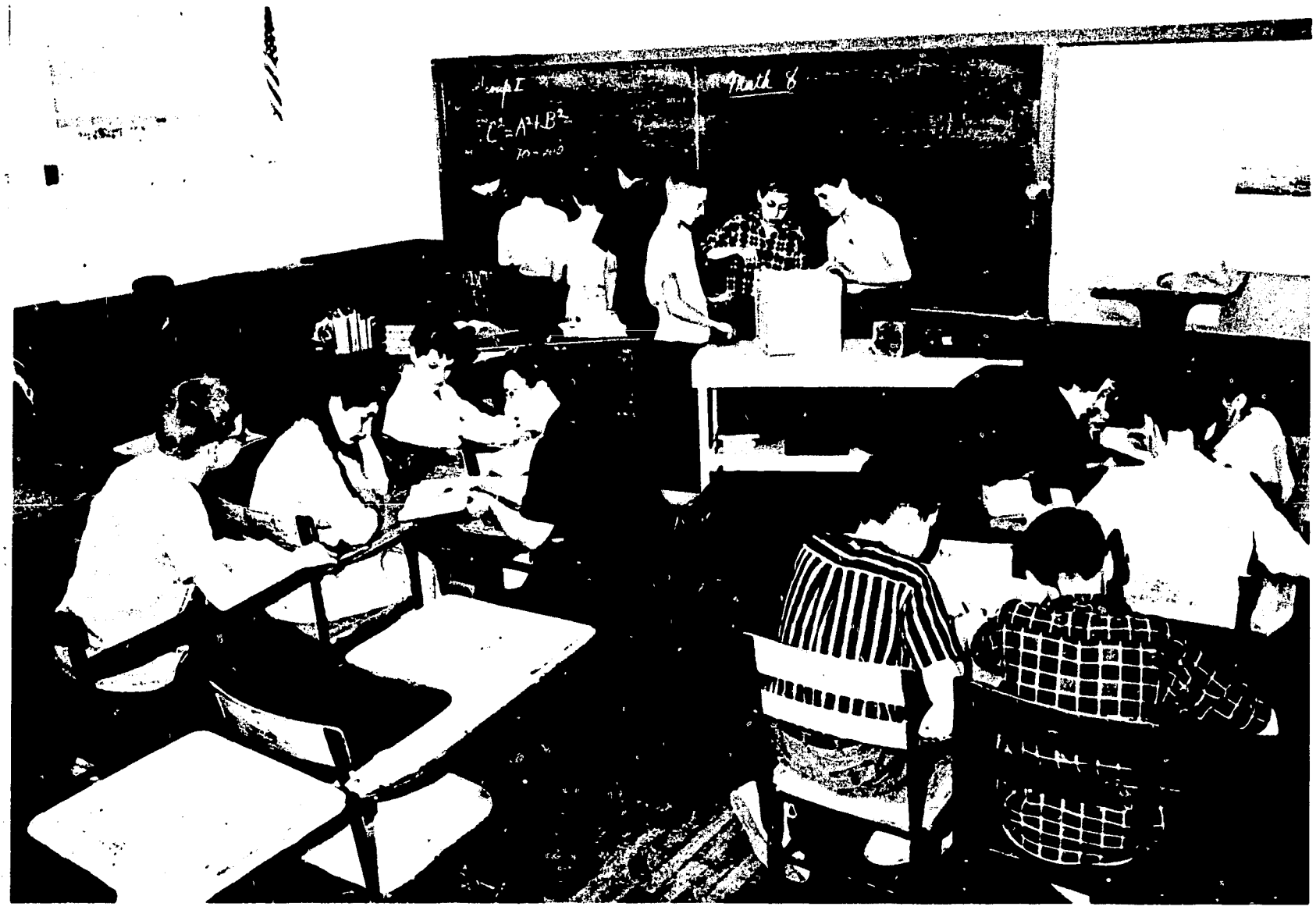
COVER: A conception of the Multiple Class as developed in the Catskill Project is symbolized by Artist Brey. It expresses some of the informality, flexibility and multiple activity when pupils, individually or in small groups, pursue learning on their own initiative in different subjects in the same room at the same time with the same teacher. Brey shows a Multiple Class in French I, Latin I and German I.

The back cover shows school activities especially technological communication which are closely related to Multiple Classes. It also shows the automobile-train analogy, used in developing the concept of small school design described in previous brochures.

Acknowledgements: This booklet is based primarily upon the work of the multiple class study group and its staff representative, Evelyn Hodgdon. The booklet reflects project theory and application originally developed by Frank W. Cyr and it was organized and edited by Hall Bartlett, Noble Gividen and James Sampson. The photographs reproduced in this booklet were taken expressly for it by Fynmore Studios, Boonville, New York, except for those on page 13, on page 17 (right), and on page 18 (left). The automobile-train analogy and preliminary sketches for front and back cover were drawn by Elmer Loemker, now deceased. Drawings and cover design are by Charles Brey.



Pupils at the board and those in right foreground are studying elementary algebra. Boys at the table and the pupils with the teacher are in two levels of arithmetic. Note how students help each other.

WHAT ARE MULTIPLE CLASSES?

Teachers of multiple classes wrote the reports seen on pages 2 thru 9. Commentary following each report was written by CAP Staff observers.

Sixteen boys and girls—all eighth graders—were learning mathematics. There were two groups. Six pupils in one group were studying algebra and ten other pupils were studying arithmetic. This was a multiple class—one of several trials being made by some teachers in schools participating in CAP.

Almost at once the members of the algebra group organized and were busy with assignment sheets, workbooks and texts. They conferred with each other and were briefly guided by the teacher until they understood the problem. Then they worked intently as individuals. Finally each person checked his results with the rest of the group.

The ten members of the arithmetic group checked the answers of their homework problems with pupil leadership. They discussed their errors with the teacher and with each other. Meanwhile, the teacher worked at the chalkboard with one lad who needed much help in developing both understanding and process. Other individuals initiated getting help from the teacher until she had helped seven individuals separately, each with his own need.

By definition a multiple class is one in which the teacher guides the learning endeavors of two or more groups of pupils in two or more courses in one room and in the same period of the daily schedule.

The multiple class described promotes a high degree of small group and individual instruction. Many individuals were getting the help each needed and no one was listening to an explanation he did not need and for which he had no motivation. The six people in algebra were making progress instead of marking time by remaining in the whole group and working in arithmetic.

Despite the handicap of a small basement room, a wise teacher had established an excellent learning situation. Cooperative effort as well as independence were fostered as students helped each other. Because each student seemed to be working at his own developmental

level he was challenged, and his interest and effort were high.

In a classroom of half-size there were fourteen pupils studying French. The five in French II gathered around the tape recorder and listened to a teacher-made tape which explained a reading lesson from the text and described certain grammatical aspects of the assignment. They played the tape again, stopping it now and then to discuss points which they needed to clear up before they could do their written exercise.

Of the nine pupils in French I, three were listening to a commercial French recording which accompanies their text. They were using earphones. The content was a review lesson. The other six pupils were listening to a teacher-made tape, filling "blanks" orally and immediately listening to the correct response which they compared with their own. These six pupils were located at listening stations built on a movable table.

The teacher moved from group to group, making a correction, answering a question, asking a question. Toward the end of the period she worked with the whole group in French I with a new tape basic to the next lesson.

A high point in this French class was the use of audio equipment. Three groups of pupils were able to work at their level of need and at the same time hear and speak French. Pupils in one group got an immediate check on their responses and thus did not practice the wrong things. Because the guidance of the teacher could be given indirectly by using such equipment, she was free to listen and to help individuals as need for help was indicated.

The girls in Homemaking I were thinking toward Christmas. They consulted many "home type" magazines for ideas. In discussion of their ideas, they decided to make candles, candies, cookies and fruit cake. They also decided to give these food items as gifts to the school staff. After the planning was completed, the seventeen girls, motivated by their decisions, went to work in small interest groups. The seven candlemakers worked as a group but on individual projects. They showed much originality in making shapes and decorations. They used the candles as decorations for their homemaking department and later took them home. This project led to making inexpensive Christmas decorations for their homes. The girls working with food organized in pairs. They packed their products in attractive packages that brought pleasure to the giver and the receiver.

These homemaking girls will have much need for ability to plan in homes of their own. Their planning motivated their efforts. Their success with the results added much to the pleasure of learning.

The teacher was free to help pupils in both groups as they needed it because both groups were using written directions. The pupils who worked faster had opportunity to work with other groups.

It was an ordinary classroom except that there were several pieces of technological equipment and the pupils were scattered about the room in three groups. Six seniors in group I were at the typewriters. They were practicing a warm-up drill to be followed by job assignments which were written on the chalkboard.

This teacher is able to teach the three groups described above because of the multi use of audio equipment.

Shown here are the candle-makers working in groups. They are part of the multiple class described above.

In these two pictures one sees the total group described and a close-up of the four students at the listening stations.

One senior and three juniors in group II were putting a Dictabelt on the machine preparatory to taking dictation. They went to their listening stations, put on their earphones and took the day's dictation from the teacher-prepared Dictabelt. As each completed his shorthand, he moved to a typewriter to transcribe it.

Two seniors in group III were reading aloud the shorthand outline the teacher was writing on the blackboard.

Betty was a member of this class. She was a senior. She had taken an academic course for three years. Now she wanted to become a medical secretary. She came to the business education instructor with this question: "What business courses can I now take to help me when I enter a commercial course in a technical school?" A study of schedules showed that she could join the multiple class in period six. She found another interested pupil and they made the third group.

The multiple class organization made it possible for Betty to pursue the vocational courses she wanted.

In this business education class the atmosphere was realistic. Students were becoming acquainted with business machines and techniques. Needs of pupils were being met by the multiple class type of organization. The teacher was free to help individual children. She had to make considerable preparation for this class.

In the central school shop shown opposite are several work spaces such as *woodworking, textiles, ceramics,* and *welding*. None of these areas is large enough to provide experience for a whole class at the same time so a multiple activity program is carried on.

The teacher demonstrated several processes to the whole group, which then organized in interest groups for work in these centers. The teacher found that flip charts, with photographs to show the entire process which had been demonstrated, acted as reminders to guide the students through the steps in the various projects. The teacher moved from group to group to help and guide.

The teacher was free to help individuals and groups. He was also free to provide close supervision in the use of dangerous machinery. The flip chart became the reinforcement to the demonstration.

Six seniors with diverse interests and talents were members of a multiple class in English. Three were considered as students in journalism and three were in business English. At various times the class worked as one group, two or three groups, and often six individuals were busy carrying out separate, but cooperatively planned, assignments. One day might have found a senior dashing down the hall to get the latest scores from coach. Other students might have been typing at top speed to meet deadlines of six weekly papers anxious to get creative and newsworthy material from energetic and talented youth.

Sometimes the group was in circle formation discussing their latest joint efforts. An observer could hardly have recognized that the three who contributed bits upon the theory of journalism were in a different course than the three students concerned with copy format. That is, unless he waited until the secretarial group began review of the everlasting variations of irregular verbs; and about the same time he could have seen a press official from a nearby town enter and join three eager critics who were going to analyze newspaper clippings especially gathered for this occasion.

A skilled teacher knows that subject matter is rarely discrete in experience. So she encourages activities similar to those above, she helps students integrate and generalize information and insights obtained in reading and discussing course materials.

While the teacher worked "live" with two students in trigonometry, six intermediate algebra students were receiving instructions from the same teacher via a tape recorder. Four other students were helping each other with advanced algebra problems found in the text and explained in more detail by typewritten teacher-prepared guides. This group also got some taped instructions from the tape recorder.

The teacher found time to visit each group to clarify problems and check on individual progress. If students needed help when the teacher was not immediately available—and when the help of other students was not enough to clear a roadblock—they made pencil notes so that the teacher's time could be used efficiently when he became available. Two members of the advanced algebra group also took trigonometry by working on an individual basis and having periodic conferences with the teacher.

The organization demonstrated by teacher and students was excellent. Surprising to some observers was the fact that the audible discussion of one group, or the tape-recorded voice of the teacher, seemed not to disturb others.

Parents are interested in their children's performance in a given subject-matter area. At a meeting in the early part of the school year, however, only one of fifteen parents of children in a multiple class expressed concern for her child's ability to succeed in a multiple class. This parent expressed doubt that her daughter was mature enough to cope with independent work, self-discipline and self-direction. Most of the discussion and the questions raised in the meeting

This boy uses flip charts to review the steps he will follow in a ceramics project in a multiple class in industrial arts.

This picture represents the English XII class, described on page 4, working in two groups. The grouping changed frequently to meet the needs of the members of the class.

The left-hand photo illustrates the class as first described in the report on page 4. In the right-hand picture the teacher is now "live" with the six pupils in intermediate algebra who stopped the tape recorder to ask a question.

developed a great parent interest in: opportunity for improvement in work and study habits, promotion of individual initiative and responsibility, and better preparation for post-high school work.

Parents are concerned about the very points that multiple class organization should enhance—effective study habits and skills, individual responsibility for learning, and more initiative in the process of one's own education.

Tom was a reluctant learner in the elementary algebra group of the multiple class. He had poorly developed study and work habits. His probable academic success was doubtful in both traditional and multiple classes.

The lad gravitated to a group where individual development was similar to his own and he did not experience much success. He was directed to a group that could help him and from it he learned to work with less adult direction. By working in a multiple class where there was cooperative small group activity, Tom received the stimulation he needed for personal and academic growth.

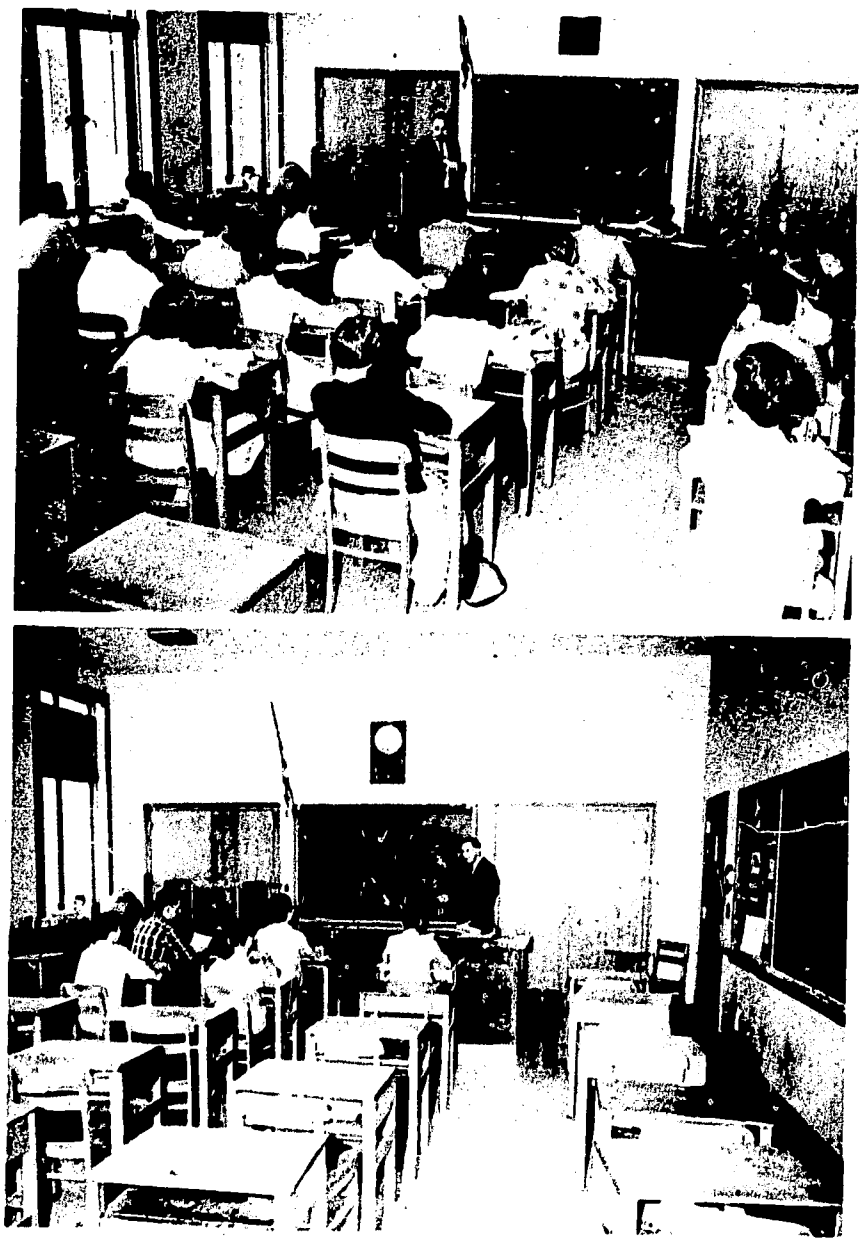
Pupils can learn from each other and sometimes more effectively than from the teacher. Learning in small groups which are part of multiple class organization helped Tom derive confidence from successful learning endeavor.

Three transfer students who had not had world history were assigned to the same period and teacher as the class in world geography; and a multiple class was created. Each group had guide sheets, sometimes by the unit, sometimes by the week. Ordinarily one group worked independently while the teacher worked with the other. The three world history people usually worked as a group when the teacher was not working directly with them.

An example of one day: four world geography students who had difficulty with map drill were using numbered maps of the Middle East, while the teacher worked with a larger group of world geography people who were good at map work and were going on to something else. The world history students were viewing a filmstrip for which the teacher had prepared a guide sheet which called attention to the most important facts. They also used the questions on the filmstrip.

Multiple classes are a part of the organization of this school. This teacher accepted this assignment and made it possible for three transfer pupils to continue their program of high school studies without undue interruption.

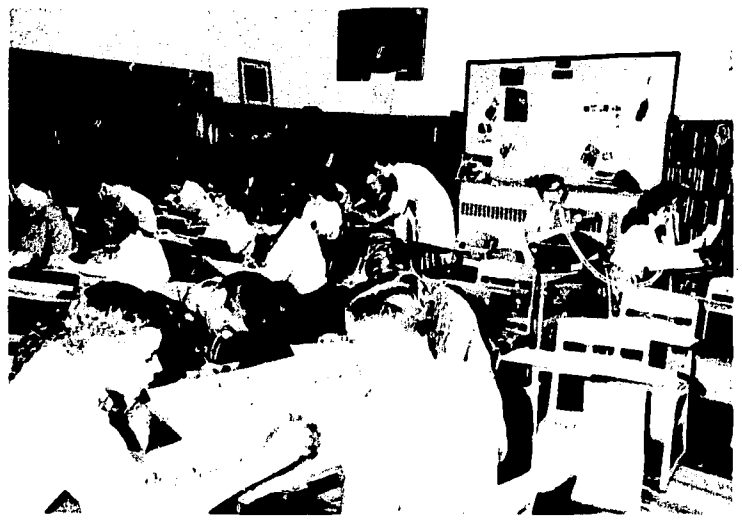
Last year two students managed to get credit for both bookkeeping and business arithmetic as a result of a multiple class. After starting successfully in bookkeeping, they divided their time between the two courses according to



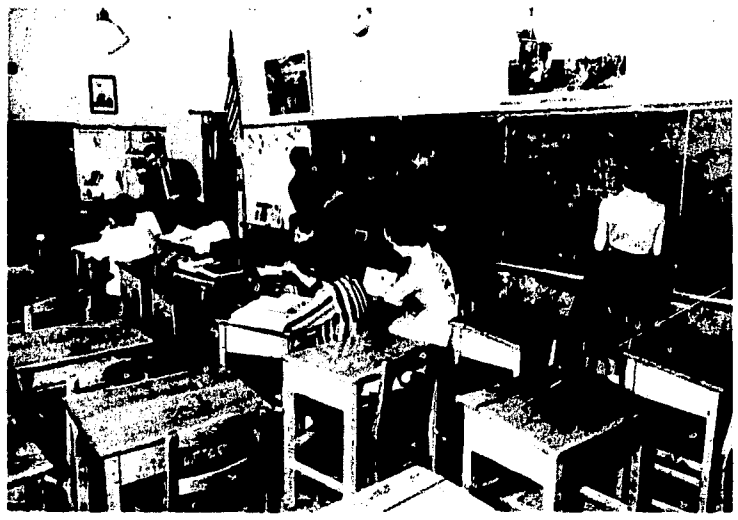
Prior to the adoption of the multiple class, separate classes would have looked like the two pictures above—the top one for algebra, the second one for general mathematics. Actually, however, no general math class existed before the multiple class shown below was created.

Not only is general math being offered, but the algebra class has lost the rigidity it once had. Now grouping within the algebra allows students to proceed at different levels of achievement. The general math quintet shown in the rear of the room is portrayed in a close-up in the lower picture. The teacher is coming through on tape—and they're working.

Map readers in foreground, other geography students in background and three world history students viewing a filmstrip.



The two students discussed in the teacher's report of the bookeeping-business arithmetic multiple class are among those shown here.



Four different art courses and two levels of mechanical drawing proceed simultaneously in this multiple class.

their individual needs. Both passed the Regents* examinations in business arithmetic. One of them started a correspondence course in elementary algebra so that she might enroll in geometry the following year. Previously a business major, she had indicated an interest in becoming a business education teacher and she was encouraged to take some academic courses.

Individual needs are being met. One student worked at her ability level and saved time. The other student enriched her pre-college business education by taking extra courses in order that she could change her plans and become a candidate for a teachers college.

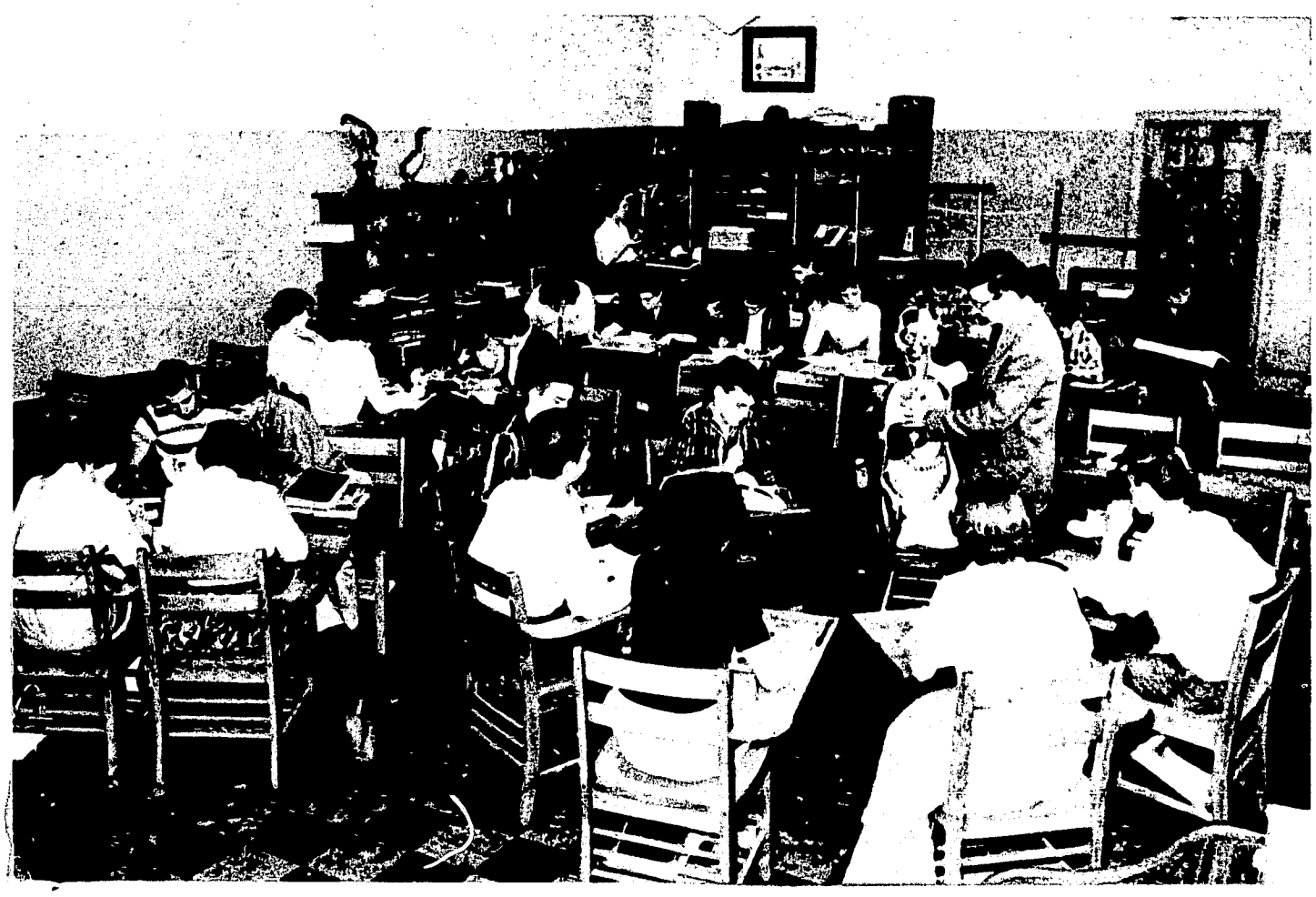
The art teacher pointed out the lack of contrast in the crayon drawing for one student, helped another mix paint, suggested a revision in plans for an ink drawing and examined a preliminary effort in three-dimensional wood construction. He then concentrated on the respective mechanical drawing plates.

In a single class period this teacher worked with a group of eleven students engaged in the use of various art media including crayon, ink, paint, and wood modeling plus two levels of advanced mechanical drawing.

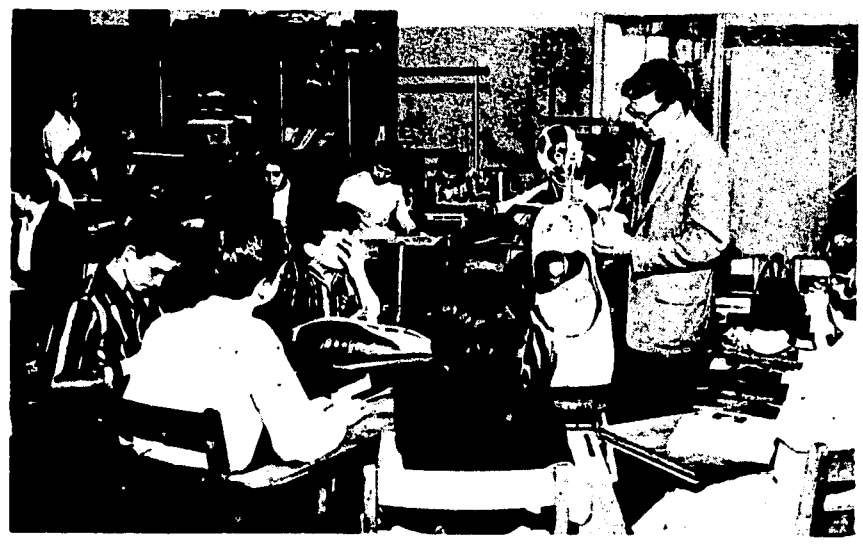
This multiplicity of activity in CAP schools is more common in art classes than in other areas. When student creativity and project-type activities are at a premium, multiple class organization is a "natural."

** Regents is a term used in New York State to indicate State-wide examinations and State-wide courses required for a Regents diploma.*

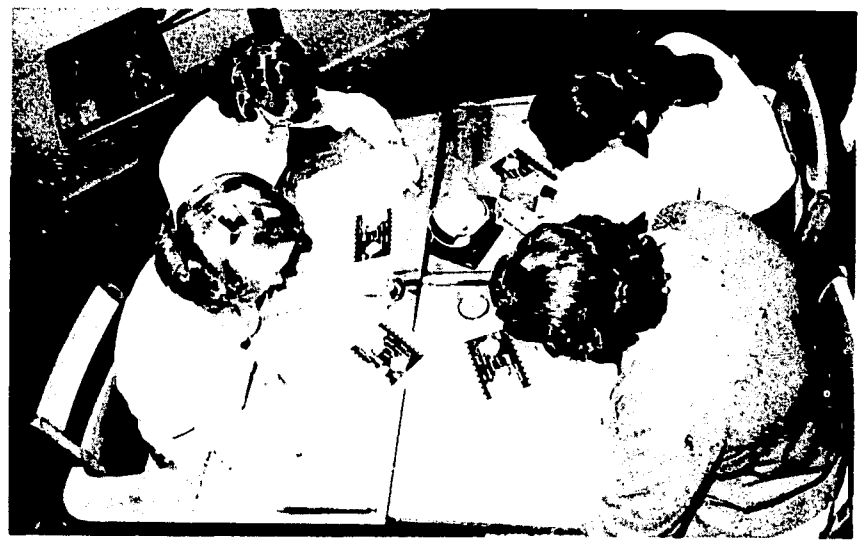
Four of the groups which can be identified in this science class are shown on the following page.



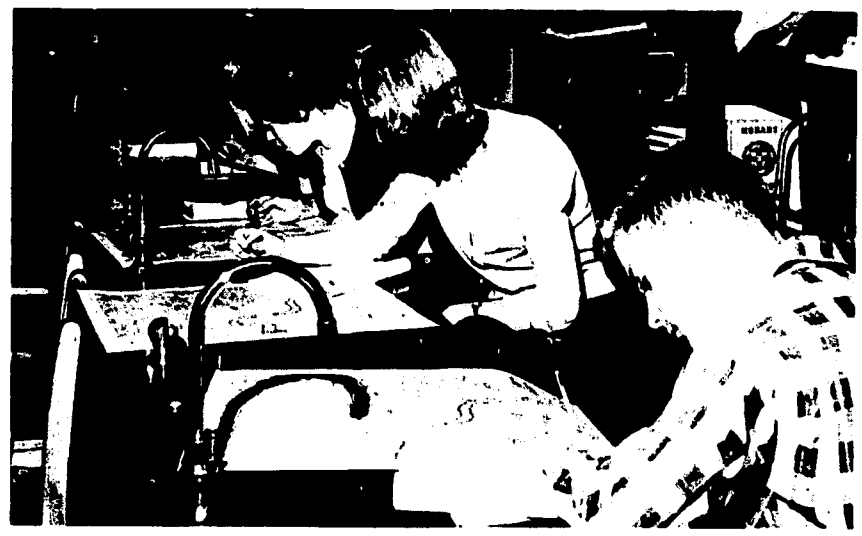
On some days this science class comes together for demonstrations and experiments in common units, although the assignments are geared to the varying levels of achievement. Study guides developed by the teacher allow students to probe in depth when the basic projects are finished.



The teacher used a human torso model to explain a portion of a general science unit to six students in the front of the room.



Two other groups of four students each in general science were examining models as they used written guides for self-directed study.



In the rear of the room nine earth science students were busy with maps.

Three girls were taping an earth science report which other students and the teacher could play when opportunity was available.

Thus one teacher handled three basic groups of ninth grade students—the first in earth science and the other two at different levels of general science—in the same room at the same time.

Multiple class teachers say they are more aware of the need for attention to the learning problems of individuals and small groups.

MULTIPLE CLASSES MEET A VARIETY OF NEEDS

On the foregoing pages you have seen teachers' accounts of multiple classes. Those reports were supposed to give you some ideas about what multiple classes are and what needs they meet. You now know that in multiple classes at least two courses, or two distinct phases of the same course, are being pursued simultaneously by different pupils in the same room under the guidance of one teacher.

You also know something about the needs being met by multiple classes.

Multiple classes most often appear in the small-enrollment electives. They increase the range of offerings available to you in small schools.

Multiple classes provide for flexible groupings with such items as multiple plans for Regents and non-Regents pupils, especially those in the required sequences of social studies and English. This adaptation meets pupils' needs in small schools more effectively.

Multiple classes in related subject-matter areas enhance the articulation of those areas into more meaningful understandings and applications.

Multiple classes recognize that learning is a highly personal process unique to every individual. Responsibility for learning rests with the learner, so he needs good study and work habits, group "know-how," self-discipline and self-evaluation. Good multiple class organization and operation enhances the development of these characteristics.

Multiple classes help overcome the schedule conflicts which often plague small schools. If Latin III conflicts with chemistry for one or two students, they may be scheduled with Latin I or II or another foreign language class. Also, multiple classes can provide for transfer students who need unscheduled courses — courses planned or started in other schools.

Multiple classes work best when students have opportunity and know how to help each other. Some students who have difficulty in discussion with teachers are at ease with other students. They make group contributions, derive valuable learnings from class associates, develop constructive leadership, ability to work with others and respect for cooperative enterprise.

As you see, multiple classes are different from those traditional classes in which all pupils study the same subject at apparently similar rates under the direction of one teacher during the same class period. But teachers can carry multiple class and other grouping and individualization techniques into typical classroom situations and change them for the better. Several teachers in both CAP and the Rocky Mountain Area Project (RMAP) have applied small group learning settings to full-size classes. One teacher used the project approach to group more than thirty world history students, another grouped accelerate possibilities in American History. One mathematics teacher grouped twenty-five elementary algebra students and then added eight students in general mathematics.

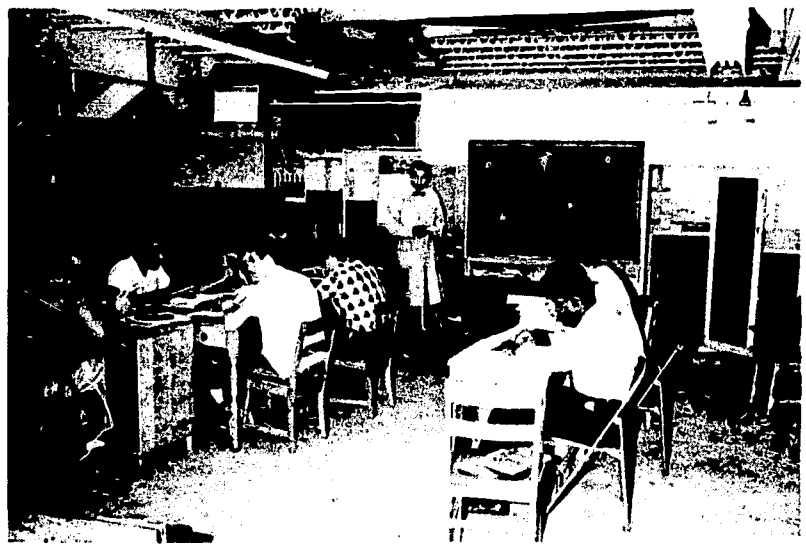
After observing and participating in multiple class activity for three years, many CAP teachers and administrators believe that multiple classes:

- **Require teachers to plan carefully. Time for planning can be provided in the summer and by giving the teacher extra planning time during the school day.**
- **Encourage more individualization of instruction for all pupils.**
- **Allow students to proceed more nearly at their own rates. Able students cover more ground in less time.**
- **Stimulate students' interest in learning — especially when students can help one another.**
- **Encourage the use of human aides and technological equipment which can relieve the teacher of clerical duties, custodial chores, fund handling, lunch room supervision, dispensing of routine information, and drill activities and thus extend the reach of the teacher's professional attention to the refinement of individual learning problems and the development of wholesome student attitudes.**
- **Encourage the use of flexible room arrangements, including the use of portable equipment. CAP teachers are anxious to experiment, also, in facilities with movable partitions.**
- **Become even more effective if class periods are long enough to provide for supervised study.**

CAP workers have been busy encouraging the spread of multiple class activity to the point where it can be more systematically and objectively evaluated, and this point has nearly been reached. To date, however, appraisals have been on the basis of increased course offerings, increased grouping activity, and the prevalent good feeling among both students and staff members. CAP teachers have "come down from their ride on cloud nine" in the first year or two of CAP history. They have met together approximately forty times to discuss practices, compare the "new and the old," re-examine theories of learning, and project possibilities for improved learning settings and teaching practices. They believe that any reasonable evaluation will find multiple class as good or better than other classes.

How can you try these things? For ideas on getting started and ideas on other aspects of multiple class operation, turn to the pages which follow . . .

Four "Regents" students were organized into a separate group in the typical second-semester activity of this senior English class. These students investigated more advanced material as they looked ahead to college entrance.



This teacher (a retired rear-admiral) believes in fitting the program to the student. Here two groups of boys take offerings they wanted in slide rule and in math review because the teacher was willing to teach a multiple class.

STARTING A MULTIPLE CLASS

Are you interested in trying multiple classes in your school? If you, as a teacher or an administrator, are oriented mainly to lectures and question-and-answer discussions directed to the class as a total group, it may be difficult for you to get used to the informality, the subdued "hum" and the apparent disorder of a multiple class, and you will need to prepare yourself for the change. (If you know at the outset that a multiple class setting will be irritating or frustrating, better postpone your start.) If you think you would like the new setting, these ideas may give you a better chance for a successful start.

Start with a feeling of adventure. Visualize the multiple class you plan to inaugurate. Re-examine learning theory and think through your roles in the new situation. You know that no learning situation is perfect, that the educational process is a dynamic one which discourages comfort in stereotype relationships and pattern teaching. So—

Agree to experiment. Set up a couple of hypotheses about the individualization of instruction and about increased opportunities for youth. Develop an attitude which allows for some mistakes, some days when things don't go so well. Be sustained in your efforts by the logic of your approach and worthiness of your goals. Plan your endeavors so that you can get evidence to test hypotheses and assess progress toward your goals.

Get others to try, also. In your school and in neighboring schools there are probably teachers who want to try multiple classes. Get involved in an in-service education program, if possible. Principals and teachers should have opportunity to study multiple classes and the use of unique learning materials.

Start in terms of students' learning needs. What courses do some students want which the usual schedule does not provide? Are these transfer students or students who have developed new interests and changed post-high school plans? Do you have classes now in which grouping practices, written and taped guides, and a wide variety of other materials could help students get involved in learning endeavors more appropriate to individual needs?

Start where the risk is low. If you're like most educators, you're not going to abandon proven practices on a wholesale basis no matter how adventuresome you may be, because the welfare of children and youth is at stake. So take precautions to be as successful as possible.

Start grouping in one of your present classes. If you're already doing it . . .

Start with only two courses in a multiple class.

Start with just one multiple class per day.

Start in your favorite content area.

Start with low-enrollment groups which will help you organize and operate the class effectively.

Plan ahead. What are State course requirements? Have course outlines well in mind and expressed in notes and other planning helps. BUT—marshal your resources in temperament, skill, knowledge and learning materials in order to modify outlines and other pre-planning which need to be adapted to unique situations.

Gather materials. What is commercially available in tapes, records, films and filmstrips? What written and audio-visual materials should you and the students develop? If all this sounds too frightening at first, find which correspondence course would be best for one of the groups. Many such courses are excellent and they can help you develop understanding and appreciation of materials geared to student self-direction. But remember that a wide variety of good learning materials is important if the advantages you expect from independent and small group work are to be exploited.

Develop skill in the use of technological equipment. You don't have to be an engineer to operate tape recorders, use patchcords and earphones, operate projectors and other devices. Learning to operate them is relatively simple. Get a thorough demonstration from a good operator, repeat the procedure under his supervision, practice a few times and that's all there is to it if you use the equipment often. You have an added advantage if educational TV or radio programs contribute to your efforts. More difficult than operating the devices is developing good materials. If you ask questions on tape, what length pause should follow so students may respond? (The pauses should probably be twice as long as the estimates you will make for your first tape.) If you use an educational juke-box, as two CAP schools do, what type of audio materials is most appropriate for it?

Use a school aide (if one is available). Although multiple classes do not depend upon the availability of a school aide, CAP schools have found that aides can be helpful in relieving teachers of many non-professional duties. You can have more planning time if you do not have to supervise study halls and lunch rooms. You can also plan better if you have help for typing, filing, duplicating materials, recording grades, locating prepared materials and equipment, and for many of the other chores associated with the typical small-school teaching situation.

Discuss the class with parents. You may want to discuss with parents the values and purposes of the multiple class. Why not invite them to school or send them written materials? Their interest and understanding will help you succeed.

These principals and teachers listen to a newly-taped math lesson and learn how it is to be used in a multiple class.

Orient students. If your students have not been in a multiple class before, it is especially important that you help them adjust to it. You and they will need patience during the initial planning and organization phases. Here is a condensed version of what one teacher wrote to students to help them understand the multiple class.

"So You're In a Multiple Class"

Some of you are in this room this period to study bookkeeping and others of you are here for business arithmetic. Two different classes going on in the same room? At the same time? Some of you may even want to take both courses this year. What's going on here?

This is what is referred to as a "multiple class." Something like this is being done here and in other schools in this area as part of an experiment to improve small high schools. We are trying to find ways in which we can effectively offer a wide variety of courses so that you can get those you want and need. Most of you know that we offered no bookkeeping last year and ordinarily we would not offer business arithmetic this year. So—if this experiment works successfully, both of the courses may be available in every future year. And this would give students like yourselves a better selection of subjects.

You can readily imagine that your role in this period of the schedule may be quite different from that in most of your other classes. How will you get along in this setup? What must you do to succeed?

In multiple classes *students keep busy.* Have you ever been in a class where the teacher was re-teaching or reviewing some material that you have already learned well? If so, you were probably bored and perhaps wasted time. Have you ever had a class where the teacher started a new topic before you really understood the previous one? Were you too embarrassed to ask for further explanation? Here you will be encouraged to pace yourself, to go ahead on your own.

I shall divide my time between the classes and spend as much time as possible with small groups and individuals. I shall try to be available when you need my help, but if I am busy elsewhere, please make a note of your question, continue working and I shall be along soon. This multiple class is designed to keep you busy learning business arithmetic or bookkeeping!

In multiple classes individual and group responsibility are developed. You can learn much from your class associates and they can learn from you. Your attitude must, then, involve consideration of others and a willingness to share your ideas in group discussions. Here you share responsibility with the teacher and with other students. If you have relied too much on the teacher in the past, remember that I will not always be immediately available. You will have to think for yourself, be critical of your own work and initiate ways of doing things. I will endeavor to guide you as you try to get used to self-directed learning. The more mature behavior required of you should assist you to get more and better education, and it should enhance your adjustment to college or other adult life.

I feel strongly that the advantages of this multiple class can be significant. A boy or girl who develops the ability to work well in this situation will be able to get a lot more out of his education than under the old one group, one assignment type of instruction.

For greatest success in multiple classes you should:

Learn how to concentrate on the job to be done. (See "Tips on How to Study" in our library for help on this and some of the following points.)

Learn how to get the best use of the textbook, guidebooks, tapes and records that will be made available to you. Have the materials at hand.

Improve your reading skill.

Give and receive assistance from other members of your group.

Assist the teacher and other students in lesson planning and scheduling.

Help maintain satisfactory working conditions in the class.

Make efficient use of your time.

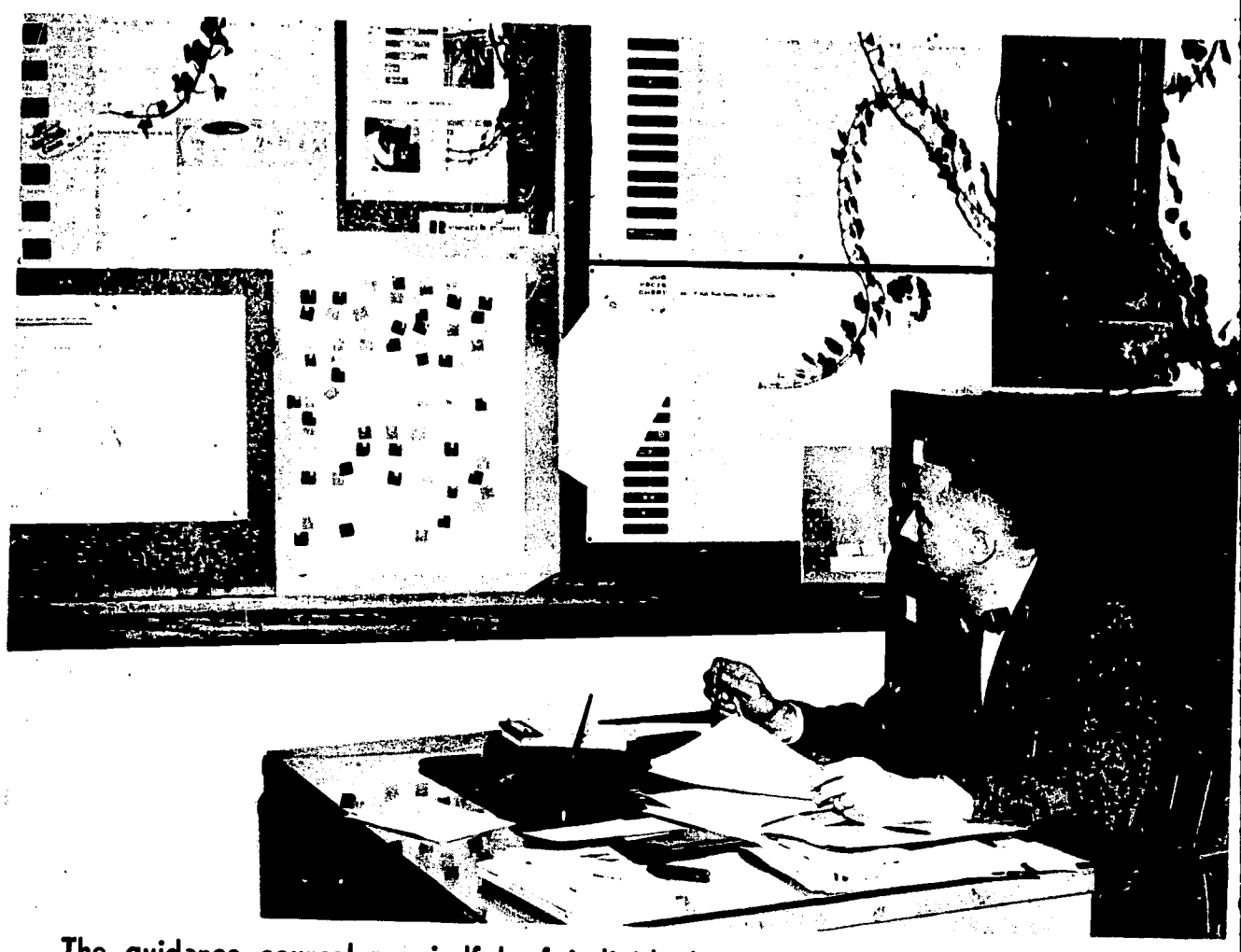
Be sure you understand each phase of your lesson before going on to the next.

Get the teacher to help you clear hurdles. He will need to help you evaluate the quality and quantity of your work. Just remember to use judgment in asking for his time.

Maintain a constant program for organizing and reviewing the subject matter you study.

Treat the equipment with respect. You should become familiar with the projectors and the recorders and use them when you need to, but treat them as your friends and helpers.

Good Luck!



The guidance counselor, mindful of individual needs, is a valuable resource for planners of multiple classes.

A small group in a senior English class studies a special unit in "short story." Correspondence materials are excellent for these fast-moving youth.

French II girls delve into French grammar with me while French I students in background work with tape recordings.

"I AM A MULTIPLE CLASS TEACHER"

Have you ever had a class with only three or four students in the classroom with you? Well—this Mark Hopkins approach isn't all it's cracked up to be, in my opinion. Somehow such a tiny class seems to lack the stimulation—social *and* intellectual—which comes from adding other students to the setting, even though the other students may be studying a different subject.

I started multiple classes because we wanted to expand language offerings and reduce schedule conflicts. This meant we would not have to alternate courses, and it meant that we did not force all students in a given offering—say Latin II—to take the course in the same period of the schedule. But I found that multiple classes seemed to yield many dividends beyond increased offerings and reduced schedule conflicts. I know now that my language classes are better than they were before I started multiple classes. And perhaps more important—I feel that new answers to continued improvement in these classes are just ahead.

I used to have classes with students arrayed in rather formal fashion while I gave them the "gospel" according to my favorite textbook in Latin or French. With the advent of multiple classes, grouping was a necessity. So now I talk less to "the class," and I use tapes or other materials to give students information and other exercises. Increased responsibility has fallen on students to use instructional materials better and I find myself more sensitive to the problems and questions asked by individuals and small groups. Their learning gets more refinement.

It hasn't been easy, of course. I have worked two summers to prepare tapes and written guides. CAP sponsors meetings of a multiple class study group, and I have had invaluable assistance from teachers in all subject-matter areas. These people from various project schools have traded ideas, shared materials and practices in their explorations of how to organize and conduct better multiple classes.

Last year I met with some other language teachers in fifteen Saturday morning sessions taught by personnel from a nearby college with an excellent language program. I visited a large school and observed the latest techniques for language laboratories for large groups. Of course we could not use the same setup in our school, but the principal and the custodian designed and built a smaller and more flexible installation that fits our needs. It is possible for our students to listen to any one of three audio devices which can be piped to stations over a three-channel communication system.

Visitors to my classes are often surprised when questioning students to learn that one section of a multiple class is not disturbed by the activities of another. Although we use earphones for some purposes, there are others where students work as a group with recorded materials which are played over a loud speaker. Even though our room is small, the loud speaker apparently does not bother other groups in the room. I know a couple of business education teachers who have multiple classes involving typing and other business education courses. They tell me that other students are not bothered by the typing noises. When you have a multiple class you realize more than ever before that you can trust teenagers to accept responsibility and "go ahead on their own." They can work well individually, and they can work well in groups. And they keep busy.

How do I keep up with it all? Well, I already mentioned the advance preparation in the summers. Sometimes I develop new guide sheets during the school year, and if the need for new tapes arises I cut them after school or at times during the school day when the students are all busy on their own or if I am lucky enough to get a "free" period. And students cut tapes for me, of course. Their transcriptions allow me to listen carefully to them and record corrections on tape or make notes for individual conferences. When you get used to multiple classes these conferences are no problem, because the majority of students are usually busy with prepared materials. Incidentally, I often have conferences with students before they enroll in foreign languages because they need to know what to expect in a multiple class, and I like to find out their purposes for wanting to study a foreign language.

One year I had a girl in class who studied German via correspondence. She did very well in the course and in a standard examination—and I picked up a little German.

Although the work gets easier as a wealth of learning materials accumulate and you feel at home in the multiple class, I would dislike to try my schedule without the help of our school aide. She and I meet periodically to plan the ways she can help me most: she comes to my room to get material for guide sheets so they can be typed and reproduced, she sets up the recorder for me if I come to school early to make tapes. She also brings the slide and filmstrip projector when we need it. She records grades, acts as liaison sometimes between the librarian and me, and provides help in many other ways. (She assists the librarian and other teachers, also.)

Because of the home demands of my husband and four children, I teach school for just twenty-two periods per week. In four periods a day there may be six to eight different classes scheduled. Without the school aide, this would be more difficult.

Pupils have much identity in small groups such as this one —and small groups are characteristic of multiple classes.

Last year I met with other French teachers who wished to improve their skills and learn about the use of tapes.

Speaking of schedules, the teachers of art and math and I—by using multiple classes—taught fourteen different classes in six assigned teaching periods. All the different classes are not shown in the printed schedule because "art" on the schedule actually includes several different art courses.

Each year my schedule is considerably different. This year I split my thirteen French I students, even though they all could have been scheduled together, because I would rather have the juniors in the third period where there are other juniors and seniors studying French III and Latin II than to have them with the freshmen.

Because multiple classes encourage me to make greater use of more varied materials, the nature of the subject-matter combinations in a multiple class sometimes becomes secondary to maturity levels, individual goals and other personal factors. The content of given courses varies from year to year, anyway, according to the needs of particular students and particular groups of students. Some of my Latin III students have, in the past couple of years, read the letters and essays of Cicero and Latin poetry. The informality and the stimulation of multiple classes seems to encourage better students to browse through the varied materials in the classroom and to move beyond the interest and achievement levels normally expected of that group known as "the class." So the schedule really becomes flexible — both in terms of the subject combinations and in terms of the self-pacing students do in class. I like our schedules very much — but I would also like to try it without any bells and see what would happen if we could vary time as well as achievement according to individual needs. Here is my schedule for '60-61.

***2nd period* (two days per week)**

7th grade French (We're just starting it this year.)

3rd period

French III—two students
Latin II—one student
French I—four juniors

4th period

French I—nine freshmen

5th period

French II—eight students
Latin I—two students
German I—one student via correspondence (This student is of German parentage, quite competent in French, also.)

6th period

Latin II—Six sophomores
French III One student

(This boy has a conflct with bookkeeping in the third period, so we schedule him here. He is also taking French II in the fifth period.)

Spanish I—One student (I'm a little rusty in Spanish, but with proper tapes and other materials, we'll make out all right, I think. We don't need a correspondence course.)

Well—that's about it, I guess. Someone has said that multiple classes are good because we teachers are spending time and effort in planning and in developing materials—and that all teachers should be doing this. Perhaps the same could be said of grouping techniques—we have to use them now because multiple class structure demands them. I only know that somehow multiple classes are helping the students and me to develop more meaningful learning settings than we shared in the more sterile classes of a few years ago when we were lockstepped on "class assignments." And now I use the techniques in all classes—multiple or not.

Why don't you experiment with multiple classes? They are a natural for a small school—and the grouping and the individualization are applicable to regular classroom settings.

This is a CAP monthly meeting of teachers known collectively as the "multiple class study group." Teachers from various subject-matter areas discuss multiple class operation and suggest techniques and materials which may improve the classes.

I have learned to trust teenagers. They can "go ahead on their own."

Period	1	2	3	4	5	6	7
Teacher A	Elem. Algebra 23	Driver Educ. 16	Geometry 13	8th yr. Arithmetic 39	Algebra II 6 Trig. 4 11th yr. Math 7	Math Review (Fri. only) 5	
Teacher B		Latin II 4 Latin III 2	Latin I 11	French I 11 French II 4	German I 1 Latin II 6 French III 1		
Teacher C		Study Hall 39	Elem. Art	Art & Mech. Drawing 11*	Art & Mech. Drawing 12*	Elem. Art	8th yr. Art 39

Note: The encircled numbers represent class enrollments.
*Combined enrollments for art and mechanical drawing.

Student recordings allow me to listen after class, jot notes for correction and judge pronunciations.

I often have conferences with students before they enroll in a multiple class. They need to know what to expect.

The School Aide will help me by checking with the librarian for materials I need.

Recorded materials facilitate the individual's study—and they are adaptable for small group work. While I am "live" with one group, others may hear my recorded voice, or—often better—the recorded voice of native speakers. Students operate the electronic equipment.

SELECTING AND DEVELOPING LEARNING MATERIALS AND EQUIPMENT

Use a variety of materials. Textbooks, workbooks, "canned" tests, teachers' manuals, paperback books for supplemental reading in the classroom, library resources —these are part of the array of materials teachers can use in their multiple classes to provide flexibility and variety of learning situations. Add to these widely used materials carefully selected "free and inexpensive" materials, films, filmstrips and commercial records and tapes—and you will quickly convert the formal "class-oriented" room into a laboratory where small groups of pupils and individuals will proceed under their own power, guided by your resourcefulness and imagination.

Pick units and build learning guides for pupils. You start by deciding what units or topics in your syllabus are to be used for the preparation of student guides. Although students will help you plan many of the activities of your courses, you must have a framework within which they are to work, and you cannot wait until the last minute to obtain and develop a wealth of materials for the study of the various units. After identifying units, it is necessary to decide what knowledge, attitudes and skills you expect the study of each unit or topic to develop in your students. The third step is to classify types of learning activities you will include in the pupils' guide sheets or booklets, guides that will lead pupils—slow ones, average learners, the academically talented—toward acquiring the knowledge, developing the attitudes, and learning the skills. Fourth step is to decide the approximate time most pupils will need to accomplish these goals, bearing in mind, of course, that pupils will progress at different rates.

Select learning materials according to these topics or units. Neither Rome nor a good learners' guide nor a set of guide sheets could be built in a day. Nor can one teacher in one year prepare enough for an entire series of courses. But through careful preliminary planning, sufficient materials can be assembled and reasonably adequate work sheets developed to permit pupils in multiple classes to get started—and the teacher can "keep ahead." In time he will have a backlog of worksheets and related materials. In time the worksheets can be modified and improved, more materials obtained, some materials discarded. In time, therefore, the teacher will have a series of well-planned materials of many kinds—resource "kits" for each major topic or unit.

Start where you are. The basic textbook or textbooks you plan to use in your multiple classes are likely to be organized by units or topics that parallel your syllabus. These textbooks, the teachers' manuals that accompany them, workbooks and other "service items" provide suggested activities. Select those which seem likely to get at what you want for your pupils and cross-reference them in your guide sheets. At the start you may want to survey correspondence materials available, because they are designed for self-direction of students—and in some instances you may continue to use them, because they may be better than many other materials. Consult the lists of readings, films, filmstrips and recordings in the textbooks and teachers' manuals. The librarian will help you with the books, your audio-visual people with the other items. Want more information? Then you might try some of the following sources even though they were not prepared for multiple classes:

Annotated Correspondence Courses, Catskill Area Project, State University College of Education, Oneonta, N. Y. 1960.

Educational Film Guide, H. W. Wilson Company, New York. Annual. Periodic supplements.

Catalogs of various university, college and cooperative film services, the educational and cultural centers maintained in the U.S.A. by foreign countries.

"Directory of Supervised Correspondence Courses for High School Students," (pamphlet) Catskill Area Project, State University College of Education, Oneonta, N. Y. 1959.

Educator's Guide to Free Films, Educator's Progress Service, Randolph, Wisconsin, annually.

Educator's Guide to Free Slide Films (same source). Annual.

Educator's Guide to Free Tapes, Scripts and Transcriptions (same source), 1955.

Free and Inexpensive Learning Materials, George Peabody College for teachers, Nashville, Tenn., annually.

Free and Inexpensive Materials on World Affairs, Public Affairs Press, Washington, D. C.

Purchase Guide for Programs in Science, Mathematics and Modern Foreign Languages, Chief State School Officers and Educational Facilities Laboratories, Inc., 1959. Obtainable from Ginn and Company, New York.

Wilson Company, New York, 1957. Periodic supplements.

Free and Inexpensive Learning Materials. George Peabody College, Nashville, Tennessee. Annual.

Reader's Guide to Periodical Literature, H. W. Wilson Company, New York, monthly supplements.

Sources of Free and Inexpensive Educational Materials, Field Enterprises, Inc., Educational Division, Chicago, 1958.

The Standard Catalog for High School Libraries, H. W. Wilson Company, New York. Annual. Periodic supplements.

Maintain close working relationship with your school or local librarian and with someone knowledgeable with audio-visual aids. They get announcements of new materials you may find useful.

Use modern equipment. Modern kitchens are far better equipped with labor-saving and time-saving devices than are most classrooms. School people have been slow to exploit films, film strips, opaque and overhead projectors, disc and tape recordings, teaching or learning machines, synchronized recordings and slide projections, television, radio and other media for classroom use. For example, tape recorders are just coming into real use in many schools as a means of communication between teacher and pupil. They have a variety of uses:

Teachers from several schools can share the tapes they develop. Several CAP teachers in social studies have made tapes which they expect to exchange with each other. It is possible to develop a central tape library in the county or supervisory district superintendent's office and either borrow the tapes for classroom use or for copying if you want to use them frequently.

Teachers can dictate explanations on tapes that pupils may play when the teacher is "live" with another group. Such tapes may be replayed as many times as needed to acquire understanding.

Teachers can put parts of their guides on tapes.

Teachers can have individuals or groups cut tapes that they may replay when there is appropriate opportunity.

Teachers in business education, foreign languages, and English (especially in spelling) can use tapes to give students drill in dictation, pronunciation, spelling, typing and other skills.

Teachers can use commercially-prepared tape recordings which accompany foreign language and other textbooks.

Tape recorders have a variety of uses. Here a student makes a foreign language transcription so he can hear himself as others would hear him speak French.

Teachers and students can tape special radio and television programs in music, drama, world affairs, etc., for classroom use.

Some teachers in CAP hope to experiment with the synchronization of tapes and slides.

The tape recorder is a practical "stand-in" for the teacher's voice. It makes endless repetition by the teacher unnecessary; it gives the pupil opportunity to hear explanations or pronunciations over and over again "on his own." It frees the teacher from routine or rote instruction, gives him freedom to work with individuals and small groups. Dollars spent on tape recordings and tapes come back at compound interest in time, efficiency and practicality.

Proper planning is basic. The keys to successful planning for multiple classes are: (1) Selection of a variety of learning materials; (2) Organization of these materials by means of work sheets or guide-booklets that pupils can easily follow. This is no more than sound planning. The teacher who possesses or can develop the knack for selecting and organizing from the vast amount of available material and learning activities will find many short cuts—such as the tape recorder—to putting meaningful self-teaching materials into the hands of pupils.

Classroom equipment. Wouldn't it be wonderful if you had available, at the press of a button, renowned teachers and other famous personalities in all walks of life who would instantly appear in your classroom and lecture or perform a demonstration for the benefit of one or more students? Think of having Robert Frost to read his poetry about New England, or Carl Sandburg to talk about Lincoln! Or perhaps you would want a movie of Gandhi talking to students in a strife-torn world about winning freedom and peace through non-violence. Churchill could stir your students as no other could concerning the desperate hours of World War II. There are so many things the students would love—Edward Teller and the latest on the nucleus of the atom; Davis and axiomatic alegbra, Albert Schweitzer and his "Reverence for Life," George Washington Carver on the wonders of the peanut, Ernie Pyle on G.I. Joe, Adolph Hitler at a Nazi rally, and, oh—the list is almost endless. Think of it! At the press of a button!

Maybe almost instant accessibility to the image of such persons and to their recorded voice is not such a wild dream after all. A CAP associate more than a year ago drew up educational specifications and some design specifications for an automatic device which would instantly bring video-taped programs to classrooms. This device would bring to you the unimaginable resources possible through converting film-recorded history and live programs to quarter-inch video tape recordings.

In the not-too-distant future such a device will be available to the schools of America. But what to do in the meantime? Well—all the personalities mentioned earlier and countless others are on film. Some CAP schools use films in physics to bring Harvey White to their classrooms almost daily. In the Rocky Mountain Area Project (RMAP), John Baxter teaches chemistry on film. And in your classrooms you have been using films for many specific purposes.

Though you may not now have an automatic device for selecting and playing video-taped programs on a TV screen, you do have many devices which can help you greatly enrich the learning setting. In addition to movies, there are slides and film strips, audio tapes, disc recordings, opaque projection and many other kinds of audio and visual communication available to you through existing technology.

You have already gained some insight into the ways CAP teachers use tape recorders. At the present time a teacher in RMAP has synchronized a tape with a slide projector so that the narration keeps pace with the automatic progression of slides. A CAP teacher is now working on such a program, also. One CAP school has in operation a juke-box which has been converted to educational use in the school library. A press of a button brings records in French, lessons in spelling, a reading of O. Henry's "Green Door" and other teacher-selected or teacher-made records to students listening through earphones. Another school is also installing a juke-box, and a more sophisticated name, the "Autotron," is emerging for this device.

As yet no teaching or learning machines are in actual operation in CAP schools, but they soon will be in evidence. Three teachers have programmed materials adaptable to such machines, and two persons have actually designed and built machines which may soon be operational.

A CAP industrial arts teacher has designed and built flexible two- three- and four-circuit communication systems which are installed in twelve project schools and used primarily, but not exclusively, in foreign language rooms. This same teacher recently received a patent on an ingenious device which improves the effectiveness of language laboratories.

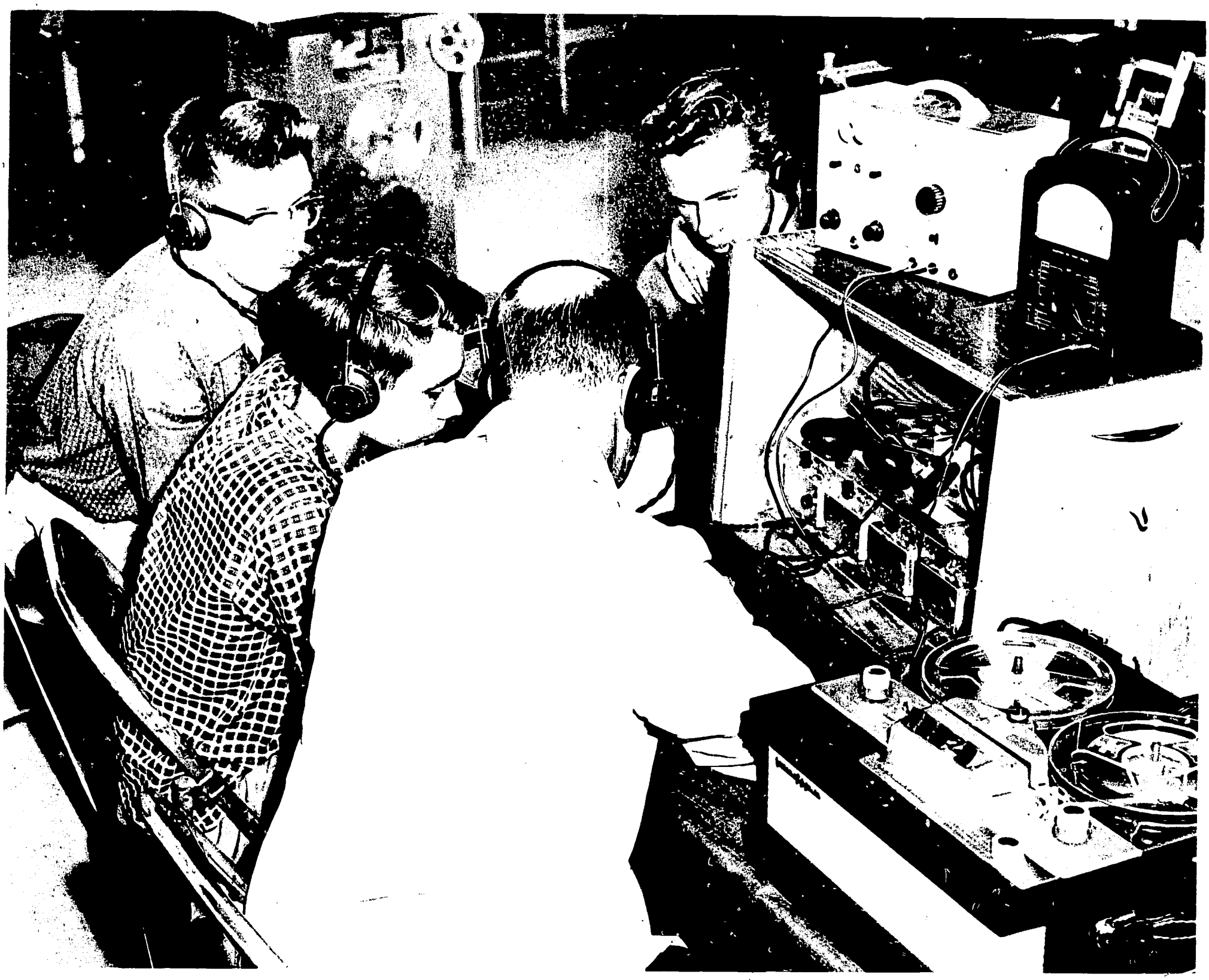
Now don't get the wrong idea about CAP schools. They have not been revolutionized by the use of technology. However, most of them have dusted off tape recorders and other seldom-used devices and are restoring them to more active classroom duty. The important thing is simply this—they are aware of more uses for these devices now and are trying to find *new uses*. They aren't afraid of them. They are not learning to use machines to replace the teacher, but to *extend* him. To open new opportunities of service to students, and to put learners more in control of teacher-programmed materials.

One of these days we shall probably have an automatic video-tape player or a not-as-yet invented more wonderful communications device, in our classrooms, and until then we may have difficulty getting some programmed material precisely when it is needed—"at the moment of optimum learner readiness." But we can develop an acceptance of the value of modern classroom technology, and implement to the fullest the equipment presently available.

So why don't you look anew at possibilities for increased use of classroom equipment? And if you are buying or installing new equipment or revamping existent devices here are some tips:

- Get equipment that is flexible and adaptable to many different classrooms and classroom situations.
- The equipment should be light in weight and easily movable. That which cannot be easily carried should be put on casters.
- Projectors and recorders should be simple to load and easy for you and the students to operate.
- Earphones are very useful in audio devices, but frequently the loud speaker is better — especially for groups of students.
- Buy equipment which can be promptly and efficiently serviced by someone on your staff or by nearby commercial agencies.

This business education teacher has gathered and invented many materials for use in her classes. There are more than 90 teacher-made Dictabelts here for use in shorthand. Her multiple classes are also facilitated by a three-circuit communication system (not shown) through which three "programs" can be simultaneously played.



This teacher of industrial arts multiple classes is the designer of the communications system shown which is in use in several CAP schools. Here his electronics class help him check a three-circuit "suitcase" system which can be easily carried from room to room.

- When possible, arrange for rear-screen projection of movies, slides and film strips. The projection is more effective, and it does not require a darkened room.

- Get equipment which can present locally-developed programs as well as programs available from commercial sources.

Although CAP teachers generally believe that technology is going to have dramatic effect on our schools in the '60's, they also know that no device can be better than the program it presents to the learner. Three CAP schools are now cooperating to provide a college logic course in which high school students use simple mimeographed lessons and a cardboard "mask" to simulate machine presentation of the material. The material and the procedure being used have been quite effective at the college level for learning certain aspects of logic. "Waiting for automation" should be no excuse for a delay in the increased production of good programs which can be manually used in our classrooms today.

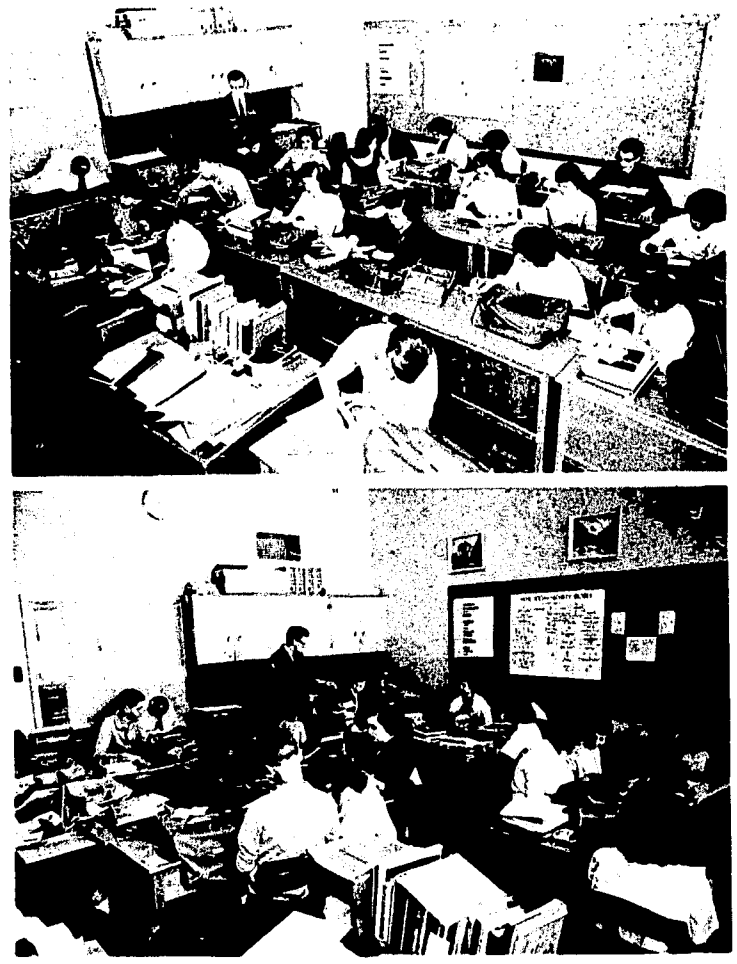
No single device or technology is "the answer" for education. It is far more likely that the effective school should be experimenting with an abundance of materials, and many diverse devices and techniques in the learning setting. It is imperative that the teacher know the materials and the students very well. Only then can he guide effectively by knowing what materials, what devices and what techniques are most appropriate for the specific learning endeavors of specific students.

MULTIPLE-USE SPACE FOR MULTIPLE CLASSES

The arrangement of students, furniture, materials and equipment in MULTIPLE-USE SPACE should symbolize the learning aims and objectives of the multiple class in operation. As the grouping of students changes, as the nature of their activities changes, the physical characteristics of the setting are shifted to accommodate new purposes.

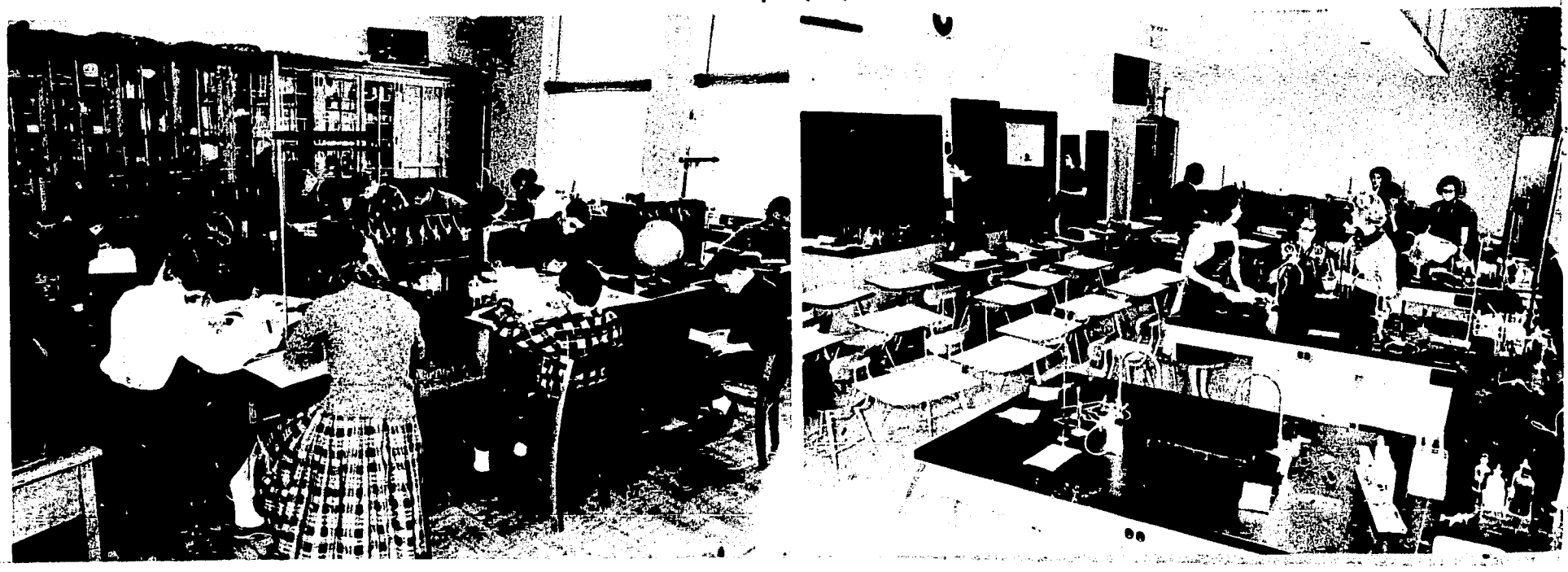
Rural and small communities have traditionally built egg-crate schools, miniature copies of those erected in the suburban areas or the State capital. Architecturally, there should be translated into facilities and equipment those things which are most characteristic of what should be the unique operational features of the MODERN small school where multiple small groups of one to six are more suitable to effective learning than the textbook class of twenty-five to thirty-five pupils.

The facilities should SERVE SMALL GROUPS AND INDIVIDUALS by providing OPEN SPACES which can be used for a VARIETY of activities by SEVERAL SMALL GROUPS and INDIVIDUALS or, if necessary, by one large group when common activity is appropriate. In an atmosphere characterized by INFORMALITY, because everyone in a small school knows everyone else so well, different activities can often be simultaneously pursued by groups deployed throughout the OPEN SPACES. But FOLDING or SLIDING PARTITIONS should be available when learning activities appropriately demand that small groups and individuals have OPPORTUNITY FOR PRIVACY.



In the top picture the teacher has the students arranged in a rigid fashion suitable to "teacher oriented discussion with one group." The other group is doing "seat work." This is a difficult arrangement for a multiple class. In the lower picture the grouping arrangement promotes group identity, pupil leadership and individualization.

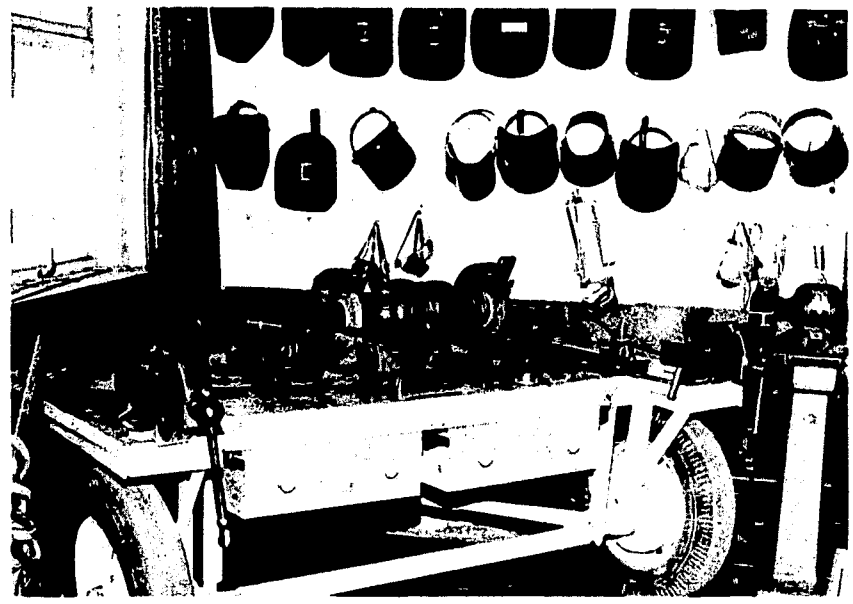
In this science laboratory (left) which may be used for classes other than those which use the lab equipment, students must assume awkward positions in which to read, take notes or enter into discussions. But in this room (right) students can work at lab stations around the room while space is available for the activity of other groups. The open space enables this room to be a multiple purpose room.

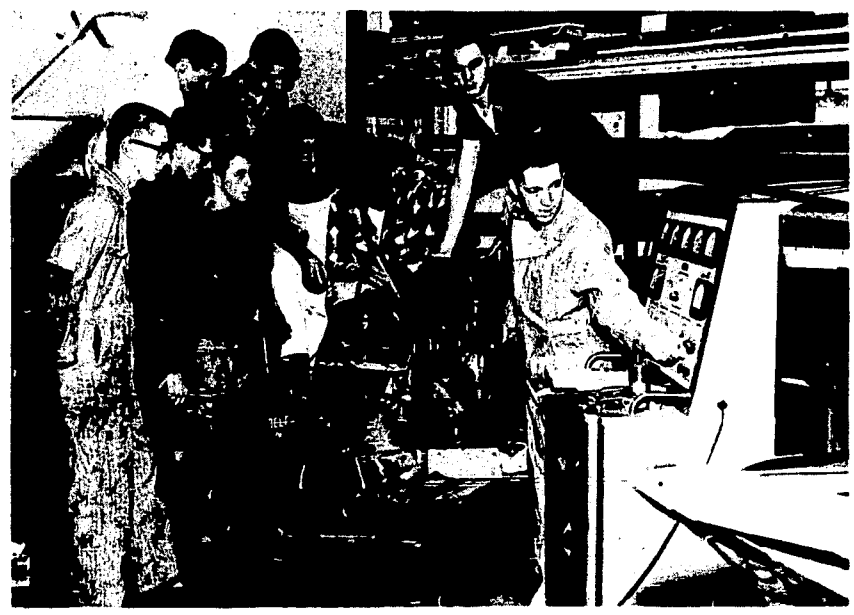


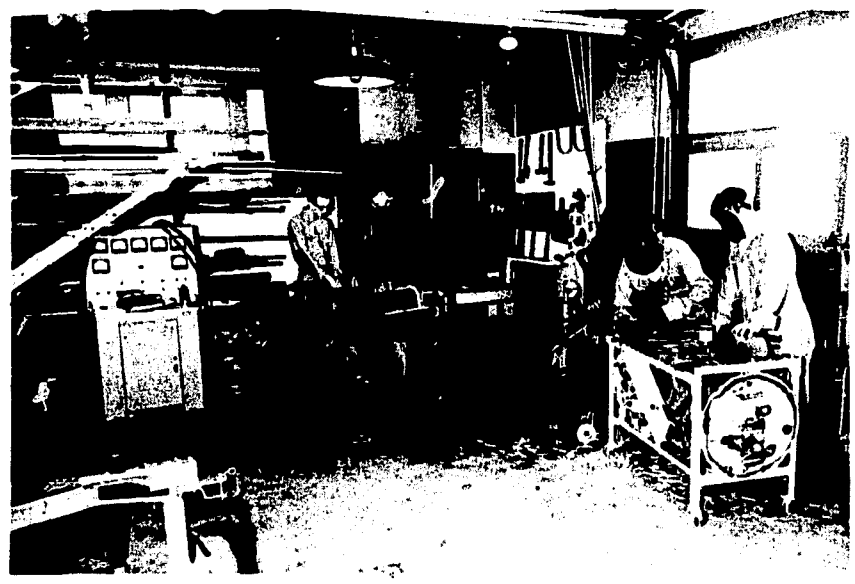
Thus FLEXIBILITY in room design and arrangement in the modern small school is essential. The rooms should feature PERIMETER STATIONS for INDIVIDUAL LEARNING ENDEAVOR. The CENTER SPACES should be left free of immovable fixtures to facilitate independent group endeavor or group sessions with the teacher. EQUIPMENT should be PORTABLE—MOVABLE desks, chairs, bookcases, chalkboards and bulletin boards. Heavy items should be put on castors.

Electrical outlets should be located at frequent intervals along the wall and in the floor. EASY COMMUNICATION with the library and other parts of the school should be available through phone or other intra-communication devices, and the learning setting, itself, should be geographically as close to the library as reasonably possible.

There are no new CAP school buildings. Like most buildings across the country, they are highly compartmentalized and there are no large open spaces, other than libraries, study halls, shops and gymnasium being used for learning endeavors. However, the absence of ideal room dimensions does not prevent the creative and resourceful teacher from moving equipment and materials and deploying students for more effective learning activity. The ROOM ARRANGEMENT and great DIVERSITY IN EQUIPMENT AND MATERIALS should be PHYSICAL REPRESENTATION of the LEARNING ACTIVITY being guided by a versatile teacher in a VERSATILE SETTING.







The arrangement in this shop can be as flexible as the learning situation requires. The portability of the equipment makes re-arrangement possible for meeting various needs at various times.

LEARNING IN SMALL GROUPS... EMPHASIS FOR SMALL SCHOOL IMPROVEMENT

The purpose of this brochure has been to interest small schools across the nation in experimenting with multiple classes. This is not a research report on "proven accomplishments" of the Catskill Area Project, but a message from some of the people most intimately associated with the classes. Some of these people teach the classes and have written accounts of them in the first section of the brochure. Other people teach the classes and share the feeling of the CAP staff that the small group techniques being used in multiple classes have great promise for broadening and improving opportunities in small schools.

The brochure is being misused if it is enlisted in school district reorganization or class-size arguments. Its intent is not to eulogize smallness nor shrink from it, but to realistically acknowledge that it exists and to admit that children and youth in small schools deserve learning opportunities commensurate with those found in other schools.

Anyone seriously seeking to improve education in small schools faces the almost inescapable discovery that the unique organizational feature is the small group. He then realizes that small schools have failed to fully implement the organizational possibilities which have been available to them for years because of small classes (usually, the electives). These classes are exorbitant in cost, yet they have often seemed the only alternative to more meager educational programs, one which denies pupils' appropriate offerings. But no matter how great the effort in some cases, the needs of those in even a small student body are quite diverse and beyond the reasonable opportunity of small schools to provide by traditional means.

Added to the organizational failure of small schools to capitalize the existence of small groups, has been the reluctance of teachers to abandon the lecture, question-and-answer techniques which are related more to large group instruction.

- **Multiple classes, then, are aimed at overcoming the inefficiency and program restrictions of small classes devoted to a single subject. And they are aimed at changing the classroom roles of teachers and students. The following beliefs are associated with those who encourage experimentation with multiple classes:**

The small group—a unique organizational feature of small schools.

- The structure of multiple classes challenges teachers to be more aware of the learning needs of small groups and individuals.

- Acceptance of the structure and its challenge forces teachers and students into new roles. The teacher is less of a director, more of a guide and resource person. Students rely less on the direct assistance of the teacher and more on themselves and on each other.

- Although learning is a highly personal phenomenon with each individual, much of it occurs in groups where there is cross-fertilization of ideas and supplement and refinement to previous learning. The organization of multiple classes recognizes small groups and the chance for interplay among their members.

- Members of a group learn in terms of their involvement, their individual needs, their unique histories, abilities and purposes. Thus learning in a group is more effective when the group helps to set the goals, plan the experiences and measure the results.

- When members of a group have many face-to-face contacts, know each other's backgrounds, strengths and limitations, there is more likely to be mutual acceptance. Children and youth often learn more easily from each other than from adults. Proximity is "built in" to the small school and small community, and it can have advantages for learning in multiple classes when teachers help students override the dangers of conformity by constructive use of each person's uniqueness.

- It is particularly valuable for individuals and groups not in direct contact with the teacher to have materials and resources easily available at the time needed. Although it is obvious that multiple-class teachers should know their students and materials very well, those students to whom the work is important and meaningful will, through self-direction, select and use materials according to individual ability and need.

- Each group and each individual in a multiple class is entitled to a fair share of the teacher's time in direct contact and indirect guidance. There are many acceptable time divisions depending on the needs of the groups. The teacher may plan direct guidance for each group of students daily, on alternate days, or in terms of starting a new process, unit or topic of work. The indirect guidance requires an abundance of materials—both commercial and teacher-made.

- Students best learn the techniques essential to learning in small groups as by-products of working on common problems and moving toward common goals. The dependent-independent relationships within those groups may foster growth in leadership and cooperativeness of individuals, and add to the drive for learning. Members of a group learn at what point it is essential to seek help to achieve their purposes.

- Multiple classes encourage teachers to analyze their work, rethink learning theory and improve the quality of their effect on learners.

- Much attention to the needs of individuals and to the use of small-group techniques as they have been developed are essential parts of multiple class organization. The need for this attention and the techniques used are also the concern of regularly organized classes.

- As teachers grow in understanding and skills related to grouping, group organization will be affected by more than subject-matter offerings and it will change from time to time.

- As teachers gain in skill and in resourcefulness, as they learn to select and use abundant materials and various devices which can extend learning opportunities for students, they face more confidently the challenge of what is unique and priceless in American education — the appropriate learning opportunities for each individual.

- How does the small group function in your school?

"Small school design" can become a reality to the extent that concerted staff action makes it pervasive in your school. Since your faculty group is small and communication therein is easy, you could study the implications of multiple classes for your school.

Students develop independence in learning subject matter through control of materials and equipment.

ROSTER OF CAP MULTIPLE CLASSES

		1960-61 enrollment	1959-60 enrollment
Abraham Kellogg (Treadwell)	8th arith. (7), algebra (5)	12	World hist. (3), World geog. (20) 23
	*English III, IV	39	8th arith. (10), algebra (6) 16
	*American history I, II	39	
Andes	Int. alg., Math II	8	Int. Alg. (14), Math 12 (3) 7
	Math 12 (4), Int. Alg. (2)	6	Int. alg. (8), Math 11 (5) 13
			*Elem. Alg. 11
Andrew S. Draper	Typing I (7), Personal Typing (3)	10	Typing (3), Vocational Bus. (4) 7
	Int. to Bus. (6), Typing I (1)	7	Personal Typing (6), Shorthand I (2)
	*Business Law	13	Shorthand II and Trans. (3) 11
	*American history	28	Shorthand II & Trans. (1), Bus.
	Mech. Draw. I (12), Mech. Draw III (5), Mechanics I (1)	18	Arthmetic (14) 15
	7th Metal Shop (9), 7th Shop (7), Metal Shop (2)	18	
Charlotte Valley (Davenport)	Mech. Draw. (8), H. S. Art (6)	14	General Math (6), Elem. Alg. (15) 21
	French II (3), French III (5)	8	
Delaware Academy (Delhi)	Basic Art I (5), Basic Art II (1) Ceramics (1)	7	8th Art (18), 9th senior Dress Design (1) 19
	Basic Art I (15), Basic Art II (2), Ceramics (1), Paint & Drawing (2)	20	Ceramics II (1), Water Color (1) 2
Downsville	Bookeeping (8), Bus. Arith. (7)	15	Int. to Bus. (10), Bus. Law (12) 22
	Shorthand I (8), Shorthand II (5)	13	12th yr. Vocational (7), Shorthand (7) 14
	*World History	16	Bus. Arith. (9), Bookeeping (5) 14
	Latin II & III**	6	Latin I (5), Latin II (1) 6
			Basic Art (9), Painting & Drawing (1) 10
Edmeston	Advanced Art (6), General Crafts (9)	15	Basic Art (9), Advanced Art (1) 10
			Crafts (4), Advanced Art (1), Basic Art (5) 10
			Math 11, Math 12A 20
Fleischmanns	Typing I (5), Bookeeping I (2)	7	Regular Typing (8), Typing II (1),
	Typing I (8), Typing II (1) Bus. Law (1)	10	Beginning Personal Typing (1), Trans. (1), Report Typing (1) 12
	Bkpg. I (2), Bkpg. II (4)	6	Int. to Bus. (4), Shorthand II (1) 5
	Elem. Alg. (14), Int. Alg. (1)	15	
Franklin	French I (4), French III (2), Latin II (1)	7	French II (2), Latin II (4) 6
	French II (8), Latin I (2), German I (1-Correspondence)	11	French I (9), French III (5) 14
	Latin II (6), French III (1), Spanish I (1)	8	Latin II (6), Latin III (1), French I (2), Conversational French (2) 11
	Basic Art (2), Ceramics (6), Painting (1), Mech. drwg. (2)	11	Bus. English (11), reg. English (16) 27
	Basic Art (10), Ceramics (7), Mech. drawing (6)	23	Int. Alg. (5), 11th yr. math (2) 7
			Various art courses, mech draw. 11
			Various art courses, mech. draw. 18

* *Y type.*
** *Correspondence course.*

	1960-61	enrollment	1959-60	enrollment
Gilbertsville			Agriculture II (1), Shop (3)	4
Grand Gorge	Typing I (9), Salemanship (7)	16	Bus. Arith. (7), Bookkeeping (6)	13
			Mech. Draw. (6), Slide Rule (3)	9
			*English 12	13
Hancock			English 11—English 12	30
Laurens	Typing (5), Vocational Business (10)	15	Typing I (6), 12th yr. Vocational (7)	13
			French II (6), French III (2)	8
			Homemaking IV (2) Homemaking III (4)	6
Margaretville	*American History	25	Elem. Alg. (17), General Math. (5)	22
	*English III	28		
	*French I	20		
Milford	Basic Art (3), Painting (1)	4	Basic Art (3), Adv. Painting (1)	4
	Mech. Draw. (1), Painting (1)	2	Painting (2), Basic Art (3), Mech. Drawing (4)	9
	Basic Art (1), Mech. Draw. (1), Adv. Painting (1)	3	Painting (1), Mech. Draw. (3)	4
			French II (1), French III (2)	3
			*6th Arith. (10), 7th Arith. (18)	28
			*7th Cit. Ed. (10), 7th Cit. Ed. (18)	28
Morris	Art I (2), Art II (2), Art III (3)	7	Art I (9), Art II (4), Art III (1)	14
	Art I (1), Art IV (2), Art II (3)	6	Art III (1), Art IV (2)	3
	Mech. Draw. I (5), Mech Draw. II (2)	7	Mech. Draw. I (6), Mech. Draw. II (2), Non credit drafting (1)	9
	*World History	19		
	Spanish I (1), Spanish II (9)	10		
New Berlin	Wood Shop (7), Mech Draw. (1)	8	Basic Art (5), Advanced Art (3), Design (1)	9
	Mech. Draw I (7), Mech Draw. II (2)	9	Mech. Draw. I (2), Mech. Draw II (3)	5
	*General Shop	40	Senior High English	
	Latin I (25), Spanish II (14)	39		
	Eng. 12 (Drama) (15), Public Speaking (7)	22		
	*English 10	25		
	*English 10	25		
	Basic Art (12), Contemporary Painting (7)	19		
	Eng. 8 (22), Dramatics (10)	32		
Richfield Springs	Art (4), Mech. Draw. (2)	6	Advanced Art (8), Mech. Draw. (1)	9
Roxbury	Typing (8), 12th yr. Voc. Bus. (8)	16	Spanish I (1), Spanish II (2)	3
	Spanish I (2), Spanish II (1)	3	Mech. Draw. (6), Slide Rule (5)	11
	Mech. Draw. (6), Slide Rule (3)	9	12th yr. Business	6
South Kortright	Basic Art (5), Painting (2), Mech. Drawing (8)	15	Art, Mech. Drawing	6
Springfield	General Math-Grades 11-12	19	French II (11), French III (1)	12
	*World History	19	Trig. (5), Int. Algebra (7)	12
Worcester	Mech. Draw. I (8), Mech. Draw II (2)	10		
	Basic Art, General	13		

*Y type.

STUDY GROUP MEMBERS

C. William Bailey, Mildred Bailey, Richard Bates, Frances Beardslee, Georgina Bouchoux, James Brayden, James Brophy, Miriam Brown, Stanley Burton*, Robert Cortright, Harold Colf, Peter Colletta, Florence Coons, James Couden, William J. Cronin, Catherine Crosby, Warren D'Aprix, Fannie Delameter*, Andrew Dresser, Jean Dreyfus, Alonzo Dumont, Benjamin Eagan, Leola Fassett, Jane Fitch*, Thomas Flannery, Katherine Flint, Lee Francisco, Lillian Fucci, Howard Gibbs, Archibald Glendening, Donald Gould, Anne Hall, Regis Hammond*, David A. Hardy, Eleanor Harris, Arthur Hartman, Malcolm Hartwell, Margaret Hazlett, Marion Hoagland, Arleen Hood, Louise Hunt, Evelyn Huntington, Hazel Johnson, William Judd, Shirley Kellerhouse, Virginia Lape, Margaret Law*, Helen Lester, Carl W. Lind, Martin Maloney, Thomas Matalavage*, Thora McCleary, Helen McDivitt, Sara Miller, Dan Morse, Richard Nealon, Katherine Nielson, Robert Nonemacher, C. Leland Parks*, Peter Parnell, Robert P. Penrose, Mary Pilgrim, Robert Platt (Deceased), John Powers*, Philip Putnam, George Redden, Lillian Reed, David Rice, Charles Rider, Betty Royce, Ellen Russ, Irving Salisbury, Ada Salton, Earl Schreiber, Mary Scott*, James F. Sears, Lois Shaw, Dennis Shea, Geraldine Simmons*, Ruth Simonson*, Agnes Simpson, Louise Smaila, John Staruck, Margaret Stevenson, Bernice Taylor, Faith Tryon, Ruth Turner, Ralph Vahue*, Sophie Van Lake, Betty Van Tyle, Frederick West, Donald Weyl, Thelma Wheeler, Lewis White, Leonard Whitelonis, Margaret Williams

* Teachers who contributed written accounts to the brochure.

ENROLLMENT

School	K-6	7-12	9-12	Total
Abraham Kellogg	112	107	73	219
Andes	190	160	97	350
Andrew Draper	244	181	124	425
Charlotte Valley	280	215	133	495
Cherry Valley	269	239	143	508
Delaware Academy	570	435	213	1005
Downsville	263	211	118	474
Edmeston	340	314	196	654
Fleischmanns	157	80	45	237
Franklin	245	220	138	465
Gilbertsville	207	143	86	350
Grand Gorge	183	117	80	300
Hancock	574	496	314	1070
Laurens	255	210	139	465
Margaretville	350	250	144	600
Milford	271	200	118	471
Morris	337	225	136	562
New Berlin	511	324	186	835
Otego	359	286	177	645
Richfield Springs	650	450	264	1100
Roxbury	264	169	90	433
South Kortright	354	244	144	598
Springfield	181	131	77	312
Unadilla	484	341	189	825
Worcester	284	221	126	505
Median	**271**	**220**	**133**	**495**

NUMBER OF TEACHERS

Principal	Local	Shared
Paul Walo	12	4
Lloyd Johns	22	1
Vincent Ciliberti	25	6
Donald Haight	26	3
Deane Sinclair	26	7
Ralph DeGelleke	47	2
Ed Tillapaugh	29	.....
Leslie Graves	32	7
Walter Sekowski	15	1
Cecil Fowlston	24	4
Addison Smith	17	5
John Sliter	17	5
Edward Onody	50	1
Heamen Stevens	24	2
Elton Shaver	35	1
Stan Church	27	2
Warren Ryther	29	1
Hicks Dow	41	5
Harold Skinner	34	3
Benjamin Cizek	49	9
Rod Dorrance	22	4
Edward Burke	31	6
Earle Smith	15	4
Gilson Slater	41	1
Arthur Doig	24	5
	26	**4**

COOPERATING AGENCIES

Ford Foundation

Clarence H. Faust, Vice President

State University College of Education
at Oneonta, New York
Royal F. Netzer, President

The Research Foundation
State University of New York
Mort Grant, Executive Secretary

SUPERVISORY DISTRICTS

Number	County	District Superintendents
3	Delaware	Melvin C. Carpenter, South Kortright
1	Delaware	Amenzo N. Merrill, Treadwell
1	Otsego	Nathan C. Southworth, Richfield Springs
2	Otsego	Harold C. Tyson, Unadilla
3	Otsego	John E. Wilcox, Worcester (deceased)
2	Delaware	H. Eugene Wieand, Walton
Sole	Chenango	Ernest G. Youmans, Sherburne

EXECUTIVE COMMITTEE

*Allan P. Bradley, Executive Assistant to New York State Commissioner of Education
*Edward A. Burke, Supervising Principal, South Kortright
*Melvin C. Carpenter, District Superintendent, South Kortright
*Stanley R. Church, Supervising Principal, Milford, Vice-Chairman
*Frank W. Cyr, Professor of Education, Teachers College, Columbia University, Executive Secretary
*Noble J. Gividen, Coordinator (Until November, 1960)
*Leslie Graves, Supervising Principal, Edmeston
*Royal F. Netzer, President, State University College of Education at Oneonta
Lyle E. Roberts, Recorder
*James J. Sampson, Coordinator (Formerly Liaison Officer)
*Elton F. S. Shaver, Supervising Principal, Margaretville
*Edwin R. Tillapaugh, Supervising Principal, Downsville, Chairman

* Voting Members

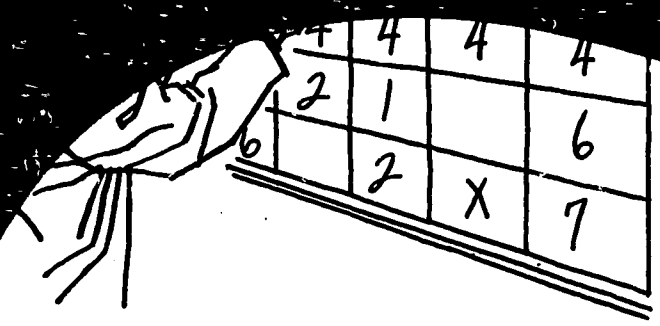
STAFF

†Ernest Auerbacher, Associate, Supervised Correspondence Study
†Richard Clark, Associate, School Aides
*Frank W. Cyr, Executive Secretary
†John Downes, Able & Ambitious Mathematics
†William B. Fink, Able & Ambitious Social Studies
Noble J. Gividen, Coordinator (Until Nov. '60)
†Laurence Goodrich, Able & Ambitious Humanities
Jewell Gresham, Associate, Multiple Classes
*Evelyn R. Hodgdon, Associate, Multiple Classes
†Phil Lange, Director, 1960 Summer Workshop
†Julia M. Morey, Associate, Teacher Education
†Stanley G. Morgan, Fiscal Officer
†Robert Porter, Associate, Able & Ambitious
*Lyle E. Roberts, Ass't Coordinator
†Carroll Rusch, Associate, Mathematics
†Reuben Rusch, Associate, Research
James J. Sampson, Coordinator (Formerly Liaison Officer)
†Harold E. Simmons, Accounts Secretary
*Willard Tremlett, Associate, Dissemination (deceased)
Marcia Tripodi, Office Secretary
†Emery Will, Able & Ambitious Science
*Charles Wright, Associate, Communications
†Robert Van Sword, Associate, Russian
†William E. Vieweg, Jr., Associate, Research
†Frank R. Yulo, Associate, Spacial Design

The group of above-listed schools get 81% of their financial support from the State of New York. The range in percentage is from 38 to 92, with only one school falling below 76%.

In 1959-60, the average expenditure per child (K-12) in the schools was $652.00.

* Half-time
† Part-time



FLEXIBLE SCHEDULING

SUPERVISED
CORRESPONDENCE STU

TECHNOLOGICAL
COMMUNICATION