

THE UNIT PLAN OF TEACHING

by

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INTRODUCTION

It is generally agreed that the elementary schools of today face a great challenge. The school must play an ever increasing role in preparing its students for the challenge and change of the aero-space age.

The schools and the teachers must use their ingenuity, training and experience to provide the primary purposes of the public school which is to meet the needs and objectives of the pupils of our society.

The best procedure for an elementary teacher to follow in her classroom is of concern to the trained teacher with teaching experience as well as the trained teacher without teaching experience.

The philosophy of the unit method of teaching employs the fact that the schools are concerned with meeting the needs and objectives of the pupils and of society. The emotional, intellectual, physical and social aspects of behavior are inseparable and operate as a unit.

Therefore, school work becomes more interesting when the daily classroom lessons are such that they provide for problem solving, individual differences, a variety of experiences, pupil participation, the development of scientific procedures, the experience of success, and an increasing degree of obtained knowledge on the part of the pupils.

The unit method of teaching does provide for the above mentioned processes.

PURPOSE OF THE STUDY

It is the purpose of this study to provide a workable and acceptable resource unit that is designed for use in an intermediate classroom. This

unit has been so designed that teachers may use it in the classroom to test the effectiveness of unit teaching.

Along with the unit, a guide has been developed that will assist the classroom teacher in developing other resource units for use in her own teaching situations.

REVIEW OF LITERATURE

Much has been written in regard to the use of the unit plan of teaching in the elementary school. The unit plan of teaching has had its greatest impetus during the past 25 years in the field of education and came about because many educators became concerned about teaching effectiveness in the schools, until today the unit method is one of the principal types of teaching in present-day elementary schools.

The acceptance of the unit concept in teaching has come about as a form of protest against treating each subject and each day's lesson as a separate unrelated and isolated segment of learning. To change this type of unrelated teaching the elementary school teacher became aware of the possibilities of the unified, integrated and continuous experiences made possible in her classroom through use of the unit plan of teaching which enabled her to bring content and method together, thus making her a more effective teacher.

Ways of Relating Content and Method

Teaching may well be thought of as the directing and guidance of the daily learning activities in and out of the classroom. Also the teacher in her everyday activities must be aware of her responsibility to help each student to set up useful and attainable goals and to assist them in achieving

these goals by the guidance of appropriate learning activities.

Method, in its broad sense, may be considered synonymous with teaching, but in its narrower sense it is more concerned with the way content materials, goals and the student are brought together. Here we are to be concerned with one method, that of using the unit as the basis of the teaching plan. Dr. Otto, in differentiating between teaching and method, had this to say:

Teaching, in a broad sense is the guidance of learning activities. Teaching involves helping students to select and engage in worthwhile learning activities, assisting and directing them in choosing worthwhile goals, choosing and engaging in profitable learning activities, and utilizing content and materials most useful in achieving the desired learning outcomes. Method, in a broad sense is almost synonymous with teaching, but method in a narrower sense is more particularized; the term is more commonly used to refer to the ways utilized in bringing about a fruitful relationship between learners, content, materials, and the goals sought in a particular curriculum area. Thus we speak of methods of teaching reading, or methods of teaching spelling or arithmetic. Method embodies a variety of learning activities. Reading content in books, bulletins, magazines, newspapers, and from maps, charts, graphs and globes is one type of learning activity. Holding a discussion, going on an excursion, listening to a recording, viewing pictures and viewing and discussing slides or films are learning activities. The list could be indefinite. In each instance, teacher and pupil will select the combination of learning activities best suited to their immediate purpose.¹

The above discussion prepares us for a consideration of the three ways in which content and method are brought together. The first and oldest of these is the assign-study-recite-test plan. In this method the teacher could count the number of pages in a given text book, divide this figure by the number of days in the school year, make up tests to be given on certain specified dates. These could come every 3 weeks and at the end of each 50 pages covered or at the conclusion of each chapter. The result would be that

¹ Henry Otto, Social Education in Elementary Schools, p. 249-250.

a great majority of the year's planning was done. This method is a simple one for organizing work. The teacher knows, even before school starts, what is going to take place each day and when such an event will happen. This might be all right if all children were identical, but this is not going to be true. Children will arrive in the classroom with varied skills, varied feelings of confidence, ability, interests, likes, dislikes and often varying degrees of emotional disturbances.

Under the pattern of assign-study-recite-test procedures the basal text may be accepted as the course of study, and the goals the teacher sets up will be to have the children learn what is in the textbook.

Dr. Henry Otto states that the kind of content which the book contains, the way in which content is organized, and the author's suggestions regarding the ways in which teacher and pupil shall engage the content, determine content, method and desired outcomes.²

With this classroom technique, learning activities are few in number and are used over and over so that there is little variety in the learning situation. In this type of situation the textbook is studied a few pages at a time and generally as they come in the text. This probably leads to learning and/or acquiring information in isolated segments. Since this type of learning activity is not apt to include those impressions which assist in developing insight, feeling, and a realistic viewpoint, the knowledge which is acquired will have little meaning and tends to be forgotten quickly.³

The above criticisms of the assign-study-recite-test method of teaching do not imply that we should "throw away" the text book. One would find it

² Ibid., p. 251.

³ Ibid., p. 251.

impossible to fabricate a meaningful program which did not draw heavily upon subject matter. The fault, therefore, does not lie, necessarily, with the text books, but with the limited number of learning activities involved. Also, this method fails to take account of present-day knowledge of children's development, children's interests, and the psychology of learning which the unit method does recognize.

During the early decades of the twentieth century, educators became quite disturbed by the way traditional text book and course of study procedures did not take into account the many individual differences in children and by the fragmented learning that was taking place. One educator asked, "Is not this great fragmentation of experiences in school very unlikelike? Would the child not secure a better integrated understanding of his world if he saw that reading, speaking, and writing are tools he can use in solving social and scientific problems in his life and that they are not merely unrelated school subjects?"⁴

As a more adequate understanding of child growth and development was attained, concern over the classroom situation brought about or led to the development of a new approach to organizing classroom work called the unit method of learning.

Even with all the literature dealing with units there seems to be some confusion on the part of teachers and administrators about the content of a unit, and its value as a teaching method.

Many of the new text books are organized into units instead of chapters. Some fusion of content may have been attempted, but it is still essentially

⁴ R. Murray Thomas, Ways of Teaching in Elementary Schools, p. 152.

the same organization as when these sections of the book were called chapters.

Also some teachers have been calling, incorrectly, a block of content, or a topic to be studied, a unit. Lavonne, Hanna, Potter, and Hagaman point out that if the purpose is merely the acquisition of information and if it does not modify behavior or result in an adaptation of personality then the study has not been a unit of work.⁵

This brings up the question, "what is a unit of work, what are some of the characteristics of a unit of work and the unit method of teaching?"

Hanna, Potter and Hagaman have explained some of the characteristics of the unit and what can be properly called a unit providing it meets certain qualifications. By definition a unit must possess cohesiveness, unity or wholeness. Another characteristic distinguishing the unit from the assign-study-recite-test method is that it is complete in itself and is not dependent on other units for its structure. The unifying factor in any unit is the basic problem or goal around which the unit is organized. Every activity, whether carried on by a group or by an individual is an integral part of the whole and contributes to the "ongoingness" of the unit--the achievement of the goal.⁶ Thus the unit method of teaching should include only those activities and subject matter which help the students attain their goals.

In their book, Klausmeir, Dresden, Davis and Wittich offer other essential characteristics of the unit plan. These are: A unit is always planned for a longer period than a day, and it may extend for several weeks. Generally, due to their short attention span, units in the lower grades will

⁵ Hanna, Potter, Hagaman, Unit Plan of Teaching, p. 101-2.

⁶ Ibid., p. 101-2.

be short--one or two weeks; as the students get older their attention span increases and the length of the unit can therefore become longer.⁷

There have been numerous classifications made of various types of units. The three major classifications of units are: (a) subject matter units; (b) center of interest units; and (c) experience units.⁸

Subject matter units are those that are organized around usual text book chapters or topics, around major themes and around aspects of the environment such as climate or air and water.

Center of interest units are based on interests of pupils, on their felt needs, or on a combination of these.

Experience units draw upon and involve subject matter from several subject fields and involve considerable activity on the part of the pupils.⁹ Experience units then consist of incidents or experiences the pupils have had, witnessed, desire, or that has previously been determined they should have.

Principles of Learning

When considering the unit method of teaching, the elementary school teacher must take into account principles of teaching that have some definite implications for unit teaching. Hanna, Potter and Hagaman have listed ten of these principles that are essential to learning and establish a basis for the use of the unit method in today's elementary school:

⁷ Klausmeir, Dresden, Davis, Wittich, Teaching in the Elementary School, p. 133.

⁸ Bulletin, Board of Education of the City of New York, p. 6.

⁹ Ibid., p. 6.

1. Opportunities must be provided for children to participate, experience, read and do. Learning results only from experiences.

2. Problem solving when the problems are real and meaningful to the learner provides the most effective learning situation.

3. Repetition or drill is needed when a response needs to be "fixed" or made precise and efficient.

4. The objectives of the unit and of specific activities must be defined in terms of the individual behavior expected, and these must be formulated and accepted by the learner as his goals if learning is to be effective.

5. Teachers should be aware of and concerned about the concomitant learnings which are taking place. These are often more important and more lasting than the facts or skills which the child is expected to learn.

6. Instruction must be related to the actual life experiences of the child and must capitalize upon them, not ignore and run counter to them.

7. Learning experiences in the unit must be provided at the time when the child is ready for them in terms of his mental, physical, and social maturity. The instructional program must be based upon an understanding of each child's abilities, interests, maturation, and background.

8. Fragmented learning is ineffective and isolated facts are soon forgotten. Children should be helped to reach generalizations and to apply these to new situations.

9. Learning experiences organized into units are effective when the learner sees the relationship of one experience to the larger whole.

10. Since each child learns in his own way and at his own level, a variety of activities and instructional materials must be provided in each unit to meet these individual differences.¹⁰

When the elementary teacher takes the above principles of learning into consideration, plus the knowledge of what a unit is, then he becomes concerned about the method by which he can plan and develop a unit of work to use in her own teaching.

¹⁰ Hanna, Potter, Hagaman, loc. cit., p. 53, 54.

Planning the Unit

There is no one set way of planning a unit of work. There are many things, though, that the teacher must keep in mind when planning and developing a unit of work.

The first thing the teacher should be concerned about is the selection of an appropriate unit of work. To select the appropriate unit Mehl, Mills and Douglas suggest that the most significant factors are the characteristics of children, particularly their abilities, educational status, interests, and social maturities. When selecting a unit the teacher must consider these things: (1) its contribution to important educational outcomes (these outcomes should be expressed in terms of basic understandings, attitudes, appreciations and skills), (2) its appeal to the interests of the children, and (3) the possibilities of developing desirable concomitant learnings.¹¹

Schorling and Wingo suggest that when selecting a specific unit of work to develop with the children, there are five criteria that the teacher should be concerned with in guiding his selection.

In order to deal with the problem of selecting specific units of work to develop with children on any level of the elementary school, the following five criteria are suggested guides to follow:

1. Does the proposed unit of work grow out of and coincide with the interests of the group? This indicates, not concession to pupil interest, but enlistment of it.

¹¹ Mehl, Mills, Douglas, Teaching in the Elementary School, p. 227, 228.

2. Does the proposed unit of work make provision for continuity of experience? In assessing the possibilities of a proposed unit of work the teacher may well consider whether his group has sufficient background of experience to carry on the proposed unit in a fruitful way.

3. Are there sufficient resources available for developing the unit? You must consider if there are other things besides printed material.

4. Will there be opportunity for pupil planning and evaluation? A fruitful educational experience may be defined as one in which an individual works out a proposed course of action, puts his plan into action and observes critically the outcomes of his actions. Thus a unit of work takes into consideration the planning of the pupils.

5. Will there be opportunity for functional development of such skills as reading, arithmetic, writing and listening.¹²

After a title or an area has been selected by the teacher, which may be in conjunction with the pupils, the teacher can then concern herself with the actual writing of the unit, gathering of materials, audio-visual aids and equipment necessary for the satisfactory completion of the unit.

Michaelis presents a number of things that are of help to the teacher in formulating the unit.

One of the great values of the unit method is that it includes a wide variety of profitable activities that are related so that they may be knit together into the total experience. The elementary teacher must consider carefully how he will guide the children through these activities in their probable sequence. The teacher must also sense the many different possibilities of the unit, and to do this the teacher must enrich her background in the subject matter of the unit. The teacher must consider possible field trips, programs and community resources that are available for use in the

¹² G. Max Wingo, and Raleigh Schorling, Elementary School Student Teaching, p. 174-178.

area that will or might be useful for the successful completion of the unit of work.¹³

Before the actual writing and final planning for the unit the teacher will need to read as widely as possible on the subject. During this reading the teacher must read books written for adults and for children. These books may include novels, encyclopedias, text books, poems, historical fiction, other units on the subject, and even fanciful tales if they apply.

When the teacher reads books for children she should make pertinent notes about the content, pages, and the degree of reading difficulty. These notes may then be organized into a bibliography which would include the title of the book or article, pages or chapters, reading difficulty, and the specific topic or sub-topic discussed therein.

The teacher, during the planning of the unit, needs to be concerned with collecting or listing audio-visual material to be used during the unit. Pictures and diagrams can be gathered from whatever source the teacher can utilize--magazines, newspapers, bulletins, and books. Real objects, such as weather instruments, balloons, articles of wear, utensils, and other pertinent objects, may be gathered from any place they can be found.¹⁴ There may be traveling exhibits sponsored by civic organizations or the children themselves, that will have articles of value. These real objects placed in the room before the initiation of a unit often stimulate curiosity and keen interest in the unit area.

¹³ John U. Michaelis, and Paul Grim, The Student Teacher in the Elementary School, p. 116.

¹⁴ Loc. cit.

The unit may contain industrial arts processes that are not ordinary classroom procedures. If this is so, then the teacher should see if he can locate the equipment needed; if detailed instructions are needed for the making of some project, the classroom teacher should see to it that they are available.

Nearly every community has resource persons who have first-hand experience in the unit area being studied. The teacher should make it a point to talk with these people and, if possible, see if they are willing to come to the classroom and share some of their first-hand experiences with the class.

After the initial planning has been completed, the teacher is then ready for the development of the written plan of the unit.

Macomber believes that the teacher faces five major problems when planning a unit. These are:

1. To which of the desired outcomes of education will this unit make real contributions without the unit's being forced out of its natural paths of development?
2. What are the possible pupil activities leading to desired modifications of pupil conduct which may be stimulated?
3. What materials including reading and visual materials, are essential for carrying out the activities of the unit?
4. How will the unit probably develop in the classroom?
5. How may pupil progress be evaluated?¹⁵

In order for the teacher to plan units that possess characteristics which will overcome the above problems, she should follow, or use as a guide,

¹⁵ Freeman G. Macomber, Guiding Child Development in the Elementary School, p. 97.

certain procedures that will enable her to plan a suitable unit. In writing and planning the unit the teacher must keep in mind that the unit is to be a general guide that contains items that may be drawn upon so that the pupils will derive a more profitable experience. The teacher must be aware that the unit does not take the place of daily planning, but serves as a warehouse of materials, activities and ideas that are to be drawn upon to fit the needs of this particular group of students.

Martha Farnum in writing about the San Diego, California, plan for writing units suggests the following plan to be used as a guide in writing a unit to be used in the classroom. These are:

1. Write an introductory statement.

Introductory statements provide in one or two paragraphs an overrun of teaching emphasis and reasons for pupils to undertake the part unit.

2. State objectives.

General objectives are a statement of teaching progress. They should provide an overrun of the desired unit understandings or generalizations and should be limited to a small enough number for the teacher to hold them in mind constantly as the unit experiences are being developed. They serve as criteria for the teacher in selecting significant problems, experiences, and activities. They assist the teacher to grade papers in the power to interpret, infer and to generalize. They contribute to the emphasis in the institution on thinking about and through facts rather than remembering and quoting them. Objectives are the starting point for theory of problems, content, and experiences.

Specific objectives are a statement of more detailed teaching purposes. Such as skill in reading and interpreting a weather map is too general. (a) List facts and understandings. Specific objectives focus on important relationship, emphasize pertinent facts and stress appreciations and attitudes and illustrate essential skills. (b) List attitudes and appreciations. (c) List skills.

3. State major problems.

4. Prepare a suggested approach to the unit.

Explore possibilities of the unit, evaluate what they already know, raise questions pupils should accept responsibility for finding answers.

5. List suggested activities and experiences for major problems. Provide a master list from which certain activities and experiences for this certain class may be selected.

6. List culminating activities.

Those which cause pupils to review, sift information, re-evaluate and summarize experience of the unit. Good to include continuing activities such as time line, notebooks, etc.

7. List pupil bibliography and audio-visual aids.

8. List teacher bibliography.

9. Include materials in an appendix. Organize in the appendix any pertinent data which may have been discovered in the process of preparing the unit plan such as (a) lists of specialized vocabulary for the unit; (b) include information which is difficult to write; and (c) include charts, graphs, etc.¹⁶

In writing a unit the teacher, even if she follows some prescribed outline, must not feel that this is "it."

Ruth Langer pointed out that one of the best tests to find a weakness in the unit is to try it in actual teaching. As time goes on, necessity for revisions will be apparent. Only through constant trial and revision can a unit be of real service in helping the teacher with her teaching.¹⁷

It might be well for the teacher to try her hand at planning a unit in more than one manner. The above are only suggestions, not hard and set rules. "There is no one 'best' way of planning a unit of work" is the way Macomber stated it.¹⁸

¹⁶ Martha Farnum, "How to Prepare for a Social Studies Unit," California Journal of Secondary Education, January 1949, p. 30-32.

¹⁷ Ruth Langer, "Teacher Reviews Her Problems in Constructing Resource Units," Education, 73:131-34, October 1952.

¹⁸ Macomber, op. cit., p. 97.

How a Unit is Taught

Hanna, Potter and Hagaman believe that unit teaching is probably the most difficult task which the elementary school teacher performs, but they also point out that it is probably the most rewarding. The reasons stated for making the unit plan difficult to teach are these: it requires of the teacher initiative, imagination, resourcefulness, organizational ability, patience, an understanding of children and how they learn, a sound basic philosophy, and insight into contemporary social problems, and a depth and breadth of knowledge in many subject fields, as well as skills in arts and crafts.¹⁹

A unit carried on with a class may provide only part of the experience or instruction that children need. The bulletin on unit curriculum development by the New York School system pointed out that in addition to their regular activity during the unit, a lesson or series of lessons apart from the unit may be necessary to develop needed skills and background.²⁰

Hanna, Potter and Hagaman pointed out that the theory of learning accepted today is:

Learning is a complicated process in which the child responds physically, intellectually and emotionally as a total organism to a whole situation. The learner must experience if he is to learn; he must interact with his environment; he cannot remain passive. In other words, learning depends upon his doing something although his doing need not always be overt. So may be implicit and occur without overt behavior. Experience simply means that the learner is interacting with his environment. The change which takes place in the individual as a result of the experience is "learning." To be effective the school must organize situations which utilize what research has found to be characteristic of the learning process.²¹

¹⁹ Hanna, Potter, Hagaman, op. cit., p. 99.

²⁰ "The Unit in Curriculum Development and Instruction," Bureau of Curriculum Research, New York, N. Y., p. 12.

²¹ Hanna, Potter and Hagaman, op. cit., p. 48-49.

When using the unit method of teaching, the teacher should be aware of the above theory of learning. Keeping this theory of learning in mind, the elementary school teacher should be concerned with the actual teaching during the unit.

Ragan suggests some steps in unit development that the elementary teacher may use as a guide. These steps should not be considered as separate and distinct. For instance, evaluation is not something which is undertaken after all the other steps have been completed, but it is something which goes on continuously throughout the time spent on the unit.

The first step can be called orientation or approach. It is only common sense to see that a large measure of the success of the unit will depend on the ability of the teacher (1) to create an interest in the unit, (2) to help the pupils see the significance of the unit, (3) to relate the unit to past experiences of the pupils, (4) to utilize the resources of the local community in orientating the children to the problem and (5) to provide a classroom environment which stimulates interest in the unit.²²

During the orientation period the elementary teacher should be alert to discover the interest of the pupils, to look for leads to activities, and to develop enthusiasm for the unit. The enlisting of enthusiastic participation by the students is of crucial importance according to Ragan.²³

During this orientation period, through skillful planning of class discussion, thoughtful application of group work, and other classroom procedures it is possible for the teacher to help the pupils see a relationship

22 Willin Ragan, Modern Elementary Curriculum, p. 188.

23 Ibid., p. 188.

between themselves and the unit.

Preston calls attention to the importance of the orientation period:

The question is sometimes raised as to why the orientation period could not be reduced to one discussion or one film or one reading without impairing the unit. While such an abbreviation procedure may have an appearance of efficiency, it is based on faulty psychology and runs counter to practical knowledge of the manner in which the child operates. It is during this lingering period of initial exposure that the essential reorganization of past experience takes place. Until children lock horns with the subject matter, until they succeed in relating it to what they already know, until they locate problems and their settings, they are not in a position either to formulate intelligent questions or to assimilate information.²⁴

There are many and varied sources from which the approach to a unit may be developed. Some of the common sources are: (1) discussions in the classroom or elsewhere, (2) materials brought from the homes of the pupils, (3) exhibits and displays, (4) important events reported in the paper, (5) motion pictures, (6) a vacation trip taken by the teacher or a pupil, (7) an excursion, (8) a book, magazines or poem, (9) an educational poem, and (10) an experience from a previous unit.²⁵

One of the features of the unit method of teaching is that it makes use of teacher-pupil planning. The pupils, under the guidance of the teacher, should have an important share in planning the activities. Ragan lists six things the pupils may help to plan: (1) objectives of the unit, (2) what activities are necessary, (3) what committees will be needed, (4) what responsibilities each committee will have, (5) what activities each pupil should undertake, and (6) how the unit is to be evaluated.²⁶

²⁴ Ralph C. Preston, Teaching Social Studies in the Elementary School, p. 79-80.

²⁵ Ragan, op. cit., p. 189.

²⁶ Ibid., p. 190.

In the classroom, during this pupil-teacher planning, one pupil, designated by the teacher, has the responsibility of getting the suggested activities, procedures, and objectives written on the blackboard. In this type of procedure it is often necessary for the teacher to help re-word certain sentences and maybe to suggest certain procedures, activities, and ideas, that have been left out and to help organize the suggested problems in a logical sequence.

Following the planning session or sessions there is what Ragan calls the working period. The activities carried on here must be lifelike, adjusted to the maturity level of the pupils, varied and socially significant.²⁷

Burton lists these characteristic differences between these activities and those of the traditional recitation period:

First, the sepulchral, morgue-like quiet, which parents and traditional teachers mistake for "order" and "discipline," is gone. In its place there is considerable movement and the subdued hum of activities in progress. There develops the discipline of self-central, which is far better than the discipline of imposed authority. Second, the limited, formal activities of the recitation have been replaced by a large number of varied activities. Third, the modern learning experiences are not chopped into short, disjunctive fragments determined by the length of the class period. The elementary school provides continuous periods of activity up to half a day.²⁸

During this working period the students carry on various plans formulated during the planning period. The students may work individually at gathering information from source books, writing papers, making booklets and other related items, or they may work in groups or committees gathering information, using an industrial arts process to make some "real" object or paint a mural

²⁷ Loc. cit.

²⁸ William H. Burton, The Guidance of Learning Activities, p. 287-98.

or a variety of activities. While doing these individual or group projects, the students are always under the guidance of the teacher.

The question might be raised by a teacher, inexperienced in unit work, about the matter of maintaining order. Certainly a small amount of noise is to be expected because of the activity that is occurring, but this is not to say that bedlam is to prevail. The teacher must see that the learning activities are organized and that the children are working on meaningful activities. This point was illustrated by Burton when he pointed out that "a teacher with an organized and organizing mind, with knowledge of the psychology of learning, with knowledge of the principles of leadership, possessed of some executive ability, is necessary to the orderly management of the working period."²⁹

Following the working period are the culminating activities. The culminating activity or activities may take many forms. Some of these might be in the form of an exhibit, play, an assembly program, program for the parents, a play or an exhibit in a local science fair or an exhibit of the principle learned during the unit in a local business window.

As pointed out in the bulletin by the Board of Education of New York, culminating activities are not necessarily extensive or dramatic. They may range from very simple ones, such as committee reports, to elaborate projects that may include other classes, the school or even the whole community.³⁰

Evaluation activities are often thought of, incorrectly, as the finale. It is one of the important phases of the unit method of teaching, but not

²⁹ Ibid., p. 292.

³⁰ Bulletin, Board of Education, New York, op. cit., p. 18.

necessarily the final one. Ragan lists three principles of evaluation that apply to unit teaching as well as to other places of the instructional program: evaluation should be comprehensive; evaluation must be continuous; evaluation must be cooperative.³¹

For the class to evaluate comprehensively Mehl, Mills and Douglas suggest that data may be obtained by means of tests, interviews, record of accomplishments of individual children, and of the groups and observations.³²

For continuous evaluation the teacher must be aware of the value of keeping accurate and total records of books read and trips. The individual pupils may keep diaries and logs of their accomplishments.³³

The third principle of evaluation is that it must be cooperative. This means that the student should and must be involved in this process. Macomber stated:

...children should be continuously evaluating their own experiences since evaluation is an integral part of the learning process and learning is effective only to the extent that the child evaluates his activities and consciously tries to improve his learning experiences in the light of his evaluations.³⁴

Advantages

The advantages of the unit method of teaching over other types of methods of teaching are numerous. The current connotation of "unit method" implies teacher-pupil learning situations organized as an enterprise or a

31 Ragan, op. cit., p. 191-192.

32 Mehl, Mills, Douglas, op. cit., p. 229-230.

33 Board of Education, op. cit., p. 18.

34 Macomber, op. cit., p. 111.

learning venture that has unity.³⁵

In the unit method the unit cuts across subject lines, therefore making subject matter more meaningful and the interrelationships between the various subjects more readily apparent.

Wingo and Schorling listed four distinct advantages of the unit method of teaching which, perhaps, help to make the unit method of teaching a popular method today. These four advantages are:

1. It is easier to provide for (a) individual differences, (b) directed study, (c) socialization, and (d) practical applications of learning.
2. It is possible to arrange a sensible balance between individual or independent work and cooperative or group activities.
3. It enables the teacher to see the relation of a particular subject-matter area (e.g., social studies) to the fundamental purposes of education and moreover encourages the teacher to weigh values carefully when listing the special objectives.
4. It permits the teacher to plan activities that change the classroom from an isolated social situation into a laboratory for sustained study and work. It encourages the teacher to base selection and organization of material on human needs and the persistent problems of life.³⁶

Hanna, Potter and Hagaman summed up the unit method of teaching:

No other method of organizing teaching-learning situation has proved so effective in meeting the needs of children or has provided so many opportunities for children to grow in the desired understandings, values, and skills needed by democratic citizens.³⁷

METHOD AND PROCEDURES

The beginning of the study was the defining of the problem. What information relating to the unit method was wanted? Where was the information to

35 R. M. Thomas, Ways of Teaching in Elementary Schools, p. 125.

36 Wingo and Schorling, op. cit., p. 185.

37 Hanna, Potter and Hagaman, op. cit., p. 124.

be obtained? What type of unit was desired? The above questions were answered by use of conferences with my instructor.

It was decided that this would be, primarily, a study of literature dealing with various units of work with primary importance attached to the resource unit and its development. The literature was to be found in various college libraries, with the N. E. A. research Department and from the Department of Health, Education, and Welfare, Washington, D. C.

A resource unit was prepared by the writer and then applied in actual classroom use. This resource unit furthermore was to be one that would be applicable to the intermediate grades. After examining 4th, 5th, and 6th grade science books, it was decided that a resource unit on weather would be of interest to students in these classes. This unit was then developed and used as a teaching course in the elementary classroom.

A UNIT ON WEATHER

I. Introduction

Weather and climate, everyday companions to all of us, are factors affecting our lives almost daily. It is one of the basic factors of our environment and man, like all living things, reacts to his environment. An adequate understanding of several basic principles and essential concepts of natural weather outdoors and "artificial" weather indoors will help the student better meet with and respond favorably to his environment. Children should learn to respect authoritative information and to reject superstition about weather. For through science and the study of various elements that go to make up our great world, our most important purpose might be to help children gain the ideals, understandings, and skills essential to becoming good substantial and

participating citizens of their community and nation.

II. Scientific Concepts (Objective)

1. What are the essential differences between weather and climate?
2. What are the causes of such weather factors as snow, rain, and wind?
3. What are the various instruments used in connection with the study of weather?
4. Where are the breeding places of daily weather? How does this concern the total climate?
5. Become familiar with various types of storms, their characteristics, etc.
6. Learn to interpret weather information that is readily available to us in newspapers, radio, and TV.
7. Scientists that study weather are true scientists and are called meteorologists.
8. Learn the various effects on weather and climate of the sun, mountains, bodies of water, great bodies of land, ocean currents, air currents, the turning of the earth on its axis, the jet stream and many other tangible items.
9. Learn frequently used meteorological terms such as air mass, cold front, warm front, cyclone, long-range forecasts, etc.
10. What is the cause of various kinds of weather and of storms such as tornadoes, hurricanes, thunderstorms?

III. Materials Needed During the Study

Listed below are a number of general types of equipment and materials.

Many more materials will be listed under the section dealing with activities.

1. Various types of weather instruments of the commercially made type. (In the activities section many of these will be made by the different committees.)
2. Reference books.
3. Government weather maps, pamphlets, charts, weather bulletins and others of this nature that can be secured from the U. S. Weather Bureau and the local weather bureau and from newspapers.

IV. Motivational Activities for this Unit

Following are several ways of motivating children to participate in this unit.

1. A class discussion of the particular type of weather we are having on a particular day. This may be done by observation of various cloud formations in the sky at the time, or by discussion of some particular weather phenomena that may have just happened. If it is at the beginning of a particular season many local happenings would likely stir up interest such as frost on the ground, ice, steam on the windows, dusty playground, fog, rain, etc. would be stimulators to the opening of a discussion on weather and climate.
2. An attractive bulletin board display of articles dealing with weather such as pictures of particular cloud formations, weather maps, weather instruments, etc.
3. Place various weather instruments and reading materials on science on the science table.
4. Have an introductory filmstrip or film on weather or follow a TV show which may have had weather as its central theme.

V. Content Outline

Concepts and facts to be developed (facts and details of the facts that are deemed important):

- A. Scientists and meteorologists who study the weather
 - 1. Importance of their work.
 - 2. How they perform their duties.
 - 3. Where they work and by whom are they employed.
 - 4. Benefits of their work.
- B. Huge air masses make up most of our weather
 - 1. Define air masses.
 - 2. How and where they develop.
 - 3. Their characteristics.
- C. Short term and long range forecasts
 - 1. How they are made.
 - 2. Why these forecasts are made.
 - 3. Benefits of these forecasts.
- D. The Weather Bureau uses a wide variety of instruments in forecasting and recording weather
 - 1. Older types--barometer, hygrometer, wind gauge, wind vane, balloons, past records, rain gauges, anemometer.
 - 2. Newer types--radar, radiosonde, weather satellites.
- E. Storms
 - 1. Hurricane and tropical storms with wind velocities up to 200 miles per hour accompanied by rain and tidal damage.
 - 2. Blizzard.
 - 3. Typhoon--same as hurricane but occurs in Far East.

4. Electrical and thunder.
5. Hail.
6. Tornado--very severe storms, exact cause unknown; have a center of very low pressure; funnel shaped.
7. Thunderstorm--occurs when warm moist air rises. Generally accompanied by rain, electricity and thunder.

F. Interpreting weather information

1. Cold front--an abrupt mass of cold air moving in, generally quite rapidly, causing warm air to rise and causing cloud formation and often precipitation.
2. Warm front--warm air moving generally in an easterly direction causing a gradually warming trend.
3. Isobars.
4. Precipitation--moisture which may be in many forms--rain, snow, sleet, glaze, hail, dew, frost.
5. Cyclones--masses of air moving out from a low pressure center.
6. Anti-cyclone--mass of air moving out from a high pressure center.
7. Air masses--self defining term--these huge air masses form in various regions and move outward causing changes in weather.

G. Effect on the weather of outside factors

1. Sun--Heat
2. Mountain ranges--(1) cause air masses to move parallel to them;
(2) cause air to rise and cool and thus spill out its moisture.
3. Large bodies of water--tend to make climate more temperate.

- H. Ocean currents--those that come from the torrid zone tend to warm the surrounding territory and those from the Arctic area tend to cool the surrounding territory.
- I. Jet streak--generally unknown.
- J. Turning of earth on its axis--tends to affect the direction of movements of air masses due to rotation of the earth.
- K. Great bodies of land--tend to have extremes in temperature
- L. Causes of storms
 - 1. Uneven heating and cooling of the earth.
 - 2. Rapid heating or cooling of the air.
 - 3. Rapid movement of air.
 - 4. Some scientists believe activity on the sun may cause changes in weather.
- M. Common cloud formations
 - 1. Four main types
 - (a) Nimbus--big, thick bank of dark clouds with ragged edges--predicts rain or snow.
 - (b) Cumulus--large, fluffy, cotton-like masses that appear during fair weather.
 - (c) Cirrus--thin, wispy clouds that float across sky at great altitude. These are composed of ice crystals and often travel at great speeds, often 200 miles per hour.
 - (d) Stratus--layers of clouds--layers may be partly broken by wind or gray masses.
 - 2. Clouds follow a definite pattern, usually in the following order: cirrus, stratus, nimbus, and cumulus.

3. There are many other types of cloud formations.
- N. Our blanket of air
1. Troposphere--blanket of air in which we live.
 2. Stratosphere--blanket above the troposphere.
 3. Atmosphere--troposphere and stratosphere.
- O. Weather cycle
1. The process where water evaporates, goes into the atmosphere, forms clouds, condenses and falls as precipitation and eventually evaporates again.
- VI. Activities in Carrying out this Unit
1. Secure various commercially made weather instruments.
 2. Construct various weather instruments.
 3. Make a bulletin board of various cloud formations by use of cotton, construction paper, or pictures from magazines.
 4. Collect pictures dealing with weather.
 5. Make science note books on weather which would include reports, demonstrations, examples of various weather phenomenon, descriptions and definitions.
 6. Make lists of industries and occupations affected by weather and climate.
 7. Make murals or draw pictures of various types of weather, seasons, etc.
 8. Find out how weather affects crops and vegetation.
 9. Write stories describing a December day in South Africa, December day in Kansas, or June day at South Pole, Panama, and North Canada.

10. Divide the world into its various zones and describe the changes in weather and how it affects the occupations, buildings, etc. of the inhabitants.
11. Visit a weather station.
12. Keep science table with collections of data and instruments.
13. Construct various weather instruments such as thermometer, hygrometer, barometer, etc. Keep record of their indications and their attempt to forecast weather. Directions for their construction can be found in many science books.
14. Make list of weather superstitions and check on whether they come true.
15. Reports both oral and written on weather, weather bureaus and other matter dealing with weather.
16. Construct models of various cloud formations and also of various storms such as electrical or tornadoes from clay and paper and papier-mache.
17. Use appropriate films and filmstrips (these are listed in Section IX, Visual Aids).
18. At the beginning of the unit it may be an interesting idea to write down all we know about weather. Some of what we know will be true and some false.

VII. Evaluation

1. Testing--this could be a self-testing device, open book, or short quizzes of closed book type.
2. The students could prepare weather forecasts from available data and present these in oral or written form.

3. At end of unit students may be given a comprehensive test.
4. Check completeness of their science book if applicable.
5. Exhibits of weather instruments made by the class.
6. Individual and group reports.
7. A record kept by the class secretary for the next year's class to use.
8. Group discussion of what we have learned.
9. Follow-up testing of group after a period of time has passed.
10. An entry in a Science Fair.
11. Display of the items gathered during this unit in the school hall or display case. Also a local downtown business man may donate his display window for an exhibit.

VIII. Audio-Visual Aids - Filmstrips

1. Encyclopedia Britannica Filmstrips

"Old Mother Sun" (Color) - Deals with the sun bringing light, heat, and power.

"What is Weather?" - Reviews various types of weather. Tells how we can get weather reports.

2. Kansas University Film Catalogue

The following list of motion pictures are available through the Bureau of Visual Instruction, University of Kansas, Lawrence, Kansas.

Atmosphere and its Circulation

How Weather is Forecast

Meteorology - Disturbances

Thunder and Lightning

Thunderstorms

Tornado

Weather

Weather - Clouds

Weather - Floods

Weather Theory - Primary Circulation

Winds and Their Causes

3. "The Unchained Goddess," - Film obtainable from any local office of the Bell Telephone Company. This film is 56 minutes long. It is extremely good and provides a fine culminating activity for a unit on weather.

IX. Children's Bibliography

Fenton, Carrol L. Our Changing Weather, Doubleday & Co., Inc., New York, 1954.

Leeds, Willard L. Weather and You, American Ed. Publications, 1250 Fairwood Avenue, Columbus 16, Ohio, 1958.

Schneider, Herman. Everyday Weather and How it Works, McGraw-Hill Book Co. Inc., New York, 1951.

Tonnehill, Ivan R. All About the Weather, E. M. Hill Co., Eau Claire, Wisconsin.

Zim, Herbert S. Lightning and Thunder, William Morrow and Co., 1952.

Encyclopedias:

Compton's Pictured Encyclopedia, F. E. Compton and Co., p. 8679-8684.

X. Teacher's Bibliography

Blough, Glenn and Albert J. Hugett. Elementary Science and How to Teach It, The Dryden Press, New York, 1951.

Tonnehill, Ivan Ray, All About the Weather, E. M. Hale and Co.,
Eau Claire, Wisconsin, 1953.

Any current encyclopedia.

HOW THE UNIT ON WEATHER WAS TAUGHT

The method of teaching phase of the unit used with a 6th grade class at State Street School in Topeka, Kansas was as follows:

The film, "The Unchained Goddess", a 56-minute film on weather, was shown to the group. This was the first step in the orientation or approach to the unit. Following the film a discussion was held about the film and its varied presentation of weather. After this class discussion local weather was discussed. At this time it was decided to commence a study about weather and climate. No further study was done on the first day. This orientation period took approximately two hours.

The following day the study of the unit on weather was initiated. At the start of the period a secretary for the class was chosen. This secretary recorded on the chalkboard concepts that the class had gained through previous learning activity. Many of these concepts that were brought forth were not scientific truths but rather were laced with imagination, folklore and superstition. During this discussion period the boys and girls also added to the list of concepts various aspects of the weather that they should know and things that they would like to know.

Various methods of study and approaches to this study were discussed by the students and their teacher. It was brought out that our science text, encyclopedias, dictionaries, magazines and newspapers were all available and would have information desired.

These objectives, methods of study and previously acquired knowledge were recorded on the chalkboard and later copied down in a notebook for future reference.

The next step was to set up committees and choose a chairman and secretary for each committee. These committees, with the help of the classroom teacher, decided upon a particular area of study and the approach that they would use in their study.

It was decided that each committee was to keep a daily record of its activities and report to the class at the completion of each section of study. For example, one group undertook the study of air pressure and the construction of a barometer. After they had completed this phase of their study they presented their findings to the class and gave a demonstration of the barometer and its particular use in weather forecasting.

Each individual pupil kept a log of his individual contribution to the committee.

The culminating activities were as follows: the class set up a display of the various homemade weather instruments that it had constructed and invited the other 5th and 6th grades in to inspect them and have their use explained to them. Each committee completed its weather notebooks which were shared by other members of the group.

The film, "The Unchained Goddess", was shown again and this time considerable time was spent in discussing the various sections of the film. The final culminating activity was the entry, by the class, of the various homemade instruments, charts and booklets in the Topeka Science Fair. The entry was judged a first place winner and was given a blue ribbon.

Evaluation was accomplished by the following: (1) observation by the classroom teacher, (2) committee and individual reports, both oral and written, (3) paper and pencil tests, and (4) the judging in the science fair.

SUMMARY AND CONCLUSIONS

The resource unit has been a valuable addition to the elementary classroom teachers' teaching potential. By use of the resource unit the classroom teacher may provide a series of unified, integrated, purposeful and related experiences that provide normal and natural learning experiences contributing to the sound development of the individual in a recognized area of learning rather than treating each subject as separate, unrelated segments in the learning process.

Not only does the resource unit provide an effective teaching method but it provides a stimulus to the classroom teacher in his daily teaching. In other words, to use the resource unit as a background or guide to his daily teaching, the teacher, as well as the students, must become involved.

The resource unit will not, nor is it intended to, solve all or even most of the problems of the elementary school teacher in providing for his daily classroom presentations. The classroom teacher must, even if using the unit plan of teaching, plan for each day an inspiring program to further stimulate the pupils.

The resource unit does provide the elementary teacher with an effective means for the weaving together of a wide variety of related and profitable activities into a total experience for the benefit of the elementary classroom teacher and students.

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LITERATURE CITED

- Burton, William H. The Guidance of Learning Activities, Appleton Century Crofts, New York, N. Y. 1944.
- Farnum, Martha. How to Prepare for a Social Studies Unit, California Journal of Secondary Education, January 1949, p. 30-32.
- Hanna, Lavone A., Gladys L. Potter, and Neva Hagaman. Unit Teaching in the Elementary School, New York: Rinehard & Co., 1955.
- Kyte, George C. The Elementary School Teacher Outlook, The Dryden Press, New York, 1957.
- Klausmeier, Herbert J., Katharine Dresden, Helen C. Davis, and Walter Wittich. Teaching in the Elementary School, Harper & Brother, New York, 1956.
- Macomber, Freeman G. Guiding Child Development in the Elementary School, American Book Co., New York, 1943.
- Mehl, Marie, Hubert H. Mills, and Harl R. Douglas. Teaching in the Elementary School, The Ronald Press Co., New York, 1950.
- Michaels, John U. Social Studies for Children in a Democracy, Prentice-Hall, Englewood Cliffs, N. J., 1956.
- Otto, Henry, Social Education in Elementary School, Rinehart & Co., New York, 1956.
- Preston, Ralph C. Teaching Social Studies in the Elementary School, 1950.
- Ragan, William, Modern Elementary Curriculum, The Dryden Press, Inc., New York, 1955.
- Thomas, R. Murray, Ways of Teaching in Elementary Schools, Longmanns, Green & Co., 1955.
- Wesley, Edgar B. and Mary A. Adams. Teaching Social Studies in Elementary Schools, D. C. Heath & Co., Boston, 1952.
- Wingo, G. Max, Raleigh Schorling. Elementary School Student Teaching, McGraw-Hill Co., New York, 1950.

Professional Journals

- Draper, Edgar M. and Gordon Gardner. "How to Construct a Resource Unit," Clearing House, Jan. 1952, 26:267-70.
- Farnum, Martha T. "How to Prepare for a Social Studies Unit," California Journal of Secondary Education, January 1949, 24:29-33.
- Langer, Ruth. "Teacher Reviews Her Problems in Constructing Resource Units," Education 73:131-134. October 1952.
- Spellman, C. L. "How to Prepare a Unit," Grade Teacher, September 1953, 71:62, 130.

Bulletin

- Board of Education of the City of New York. "The Unit in Curriculum Development and Instruction," Bureau of Curriculum Research, 130 West 55th Street, New York, New York.

THE UNIT PLAN OF TEACHING

by

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AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

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The unit plan of teaching has had its greatest impetus during the past 25 years in the elementary school. This development has been made possible because many teachers, administrators and college personnel were concerned about the treatment of the daily school work in separate and isolated segments of learning.

The philosophy underlying the unit method of teaching is one that enables the classroom teacher to employ all her training in meeting many of the needs and objectives of the pupils and of society. The unit method brings to bear the emotional, intellectual, physical and social aspects of each individual and enables the classroom teacher to direct and guide the student in his daily activities.

Daily teaching for the classroom teacher might well be thought of as the daily guidance of the learning activities. This paper is concerned with a method of teaching. Method in a broad sense can be considered almost synonymous with teaching but in this paper it is taken in the narrow sense--a manner in which students, content, materials and the goals in a particular curriculum area are brought together in a well organized and meaningful manner.

The three major classifications of units are (a) subject matter units; (b) center of interest units; and (c) experience units.

Subject matter units are those organized around usual text book chapters or topics, around major themes and around aspects of the environment such as climate, air and water.

Center of interest units are based on interest of pupils, on their felt needs, and on a combination of these.

Experience units draw upon individual subject matter from several subject fields and involve considerable activity on the part of the pupil.

When the classroom teacher is organizing a unit of work she needs to consider (1) its contribution to important educational outcomes, (2) its appeal to the interests of children, and (3) the possibilities of developing concomitant learning.

The teacher in planning a unit must consider the following: the unit includes a wide variety of learning experience; how she will guide the pupil through these learning activities; she must sense the different possibilities of the units and to do this the teacher must enrich her background in the subject matter of the unit; the teacher needs to be aware of the various materials on hand such as films, film strips, TV programs, local field trips, resource books, exhibits and other applicable objects, data, and materials.

This teacher needs to be aware of the fact that the unit does not take the place of the daily planning but that its purpose is to serve as a warehouse of ideas, activities and materials that are to be drawn upon and used as needed so that the daily activities can be carried on to meet the eventual objectives of the class.

The steps in the teaching of a unit are: orientation of the pupils, the learning and working period and the culminating activities.

The advantage of unit teaching are numerous. Some of them are: (a) the unit may well cut across subject lines, making subject matter more meaningful and in a subtle way show the inter-relationships between the various subjects; it provides for (a) individual differences, (b) directed study, (c) socialization and (d) practical application of learning. Through this it is possible

to arrange a balance between individual work and group activity.

As a conclusion to this study, this writer developed a unit dealing with weather. It is applicable for use in the upper primary grades.