| Interval | Total Group 1966 Number | Total Group 1969 Number |
|---|---|---|
| 13-15 | 0 | 2 |
| 16-18 | 1 | 2 |
| 19-21 | 2 | 5 |
| 22-24 | 6 | 6 |
| 25-27 | 3 | 3 |
| 28-30 | 9 | 9 |
| 31-33 | 9 | 10 |
| 34-36 | 4 | 7 |
| 37-39 | 5 | 4 |
| 40-42 | 0 | 3 |
| 43-46 | 1 | 1 |
| | N = 52 | N = 40 |
| | M = 29.4 | M = 29.9(approx.) |

FIGURE 1: Comparison of Responses to "How I Teach" Scale of Total Group in 1966 with Total Group in 1969



| Interval | "Re-Test" Group Number | "New-Test" Group Number |
|---|---|---|
| 13-15 | 1 | 1 |
| 16-18 | 1 | 1 |
| 19-21 | 1 | 4 |
| 22-24 | 3 | 3 |
| 25-27 | 0 | 3 |
| 28-30 | 5 | 4 |
| 31-33 | 5 | 5 |
| 34-36 | 3 | 4 |
| 37-39 | 1 | 3 |
| 40-42 | 1 | 2 |
| 43-46 | 0 | 1 |
| | N = 21 | N = 31 |
| | M = 29.1 | M = 29.6 |

FIGURE 2: Comparison of Responses to "How I Teach" Scale in 1969 of "Re-Test Group" with "New-Test" Group

| Interval | "Re-Test" Group Number | "New-Test" Group Number |
|---|---|---|
| 13-15 | 1 | 1 |
| 16-18 | 1 | 1 |
| 19-21 | 1 | 4 |
| 22-24 | 3 | 3 |
| 25-27 | 0 | 3 |
| 28-30 | 5 | 4 |
| 31-33 | 5 | 5 |
| 34-36 | 3 | 4 |
| 37-39 | 1 | 3 |
| 40-42 | 1 | 2 |
| 43-46 | 0 | 1 |
| | N = 21 | N = 31 |
| | M = 29.1 | M = 29.6 |

FIGURE 2: Comparison of Responses to "How I Teach" Scale in 1969 of "Re-Test Group" with "New-Test" Group

| Interval | Total Group 1966 Number | Total Group 1969 Number |
|---|---|---|
| 1-4 | 1 | 0 |
| 5-9 | 0 | 0 |
| 10-14 | 2 | 1 |
| 15-19 | 0 | 3 |
| 20-24 | 2 | 7 |
| 25-29 | 6 | 23 |
| 30-34 | 16 | 17 |
| 35-39 | 14 | 1 |
| 40+ | 1 | 0 |
| | Total N = 42 | Total N = 52 |
| | Mean = approx. 32.6 | Mean = 27.2 |

FIGURE 3: Responses to Bedford Adaptation of California Q-Sort by Total Group in 1966 and Total Group in 1969

| "Re-Test" Group | "New-Test" Group |
|---|---|
| Range: 17-34 | Range: 14-36 |
| M = 27.8 | M = 26.8 |
| N = 21 | N = 31 |

FIGURE 4: Comparison of Scores Made on Bedford Adaptation of California Q-Sort by "Re-Test" and "New-Test" Groups of Middle School Teachers in May, 1969

| STEP | Grade 6 Fall, 1965 | Grade 8 Fall, 1967 |
|---|---|---|
| Math | 78 (63)* | 91 (68) |
| Science | 88 (64) | 67 (56) |
| Social Studies | 80 (64) | 79 (67) |
| Reading | 83 (68) | 96 (65) |
| Listening | - (71) | - (62) |
| Writing | 86 (66) | 93 (69) |
| | N = 290 | N = 275 |

FIGURE 5: Comparison of Scores Made on Sequential Tests of Educational Progress by Pupils in Grade 6, 1965 and Pupils in Grade 8, 1967

*Scores in parentheses are "population mean" percentiles. Scores without parentheses are "school mean" percentiles.

| STEP | Grade 6<br>Fall, 1966 | Grade 8<br>Fall, 1968 |
|---|---|---|
| Math | 76<br>(56)* | 94<br>(74) |
| Science | 88<br>(64) | 88<br>(69) |
| Social Studies | 67<br>(60) | 88<br>(76) |
| Reading | 81<br>(66) | 97<br>(70) |
| Listening | -<br>(71) | -<br>(68) |
| Writing | 72<br>(58) | 93<br>(69) |
| | N = 286 | N = 280 |

FIGURE 6: Comparison of Scores Made on Sequential Tests of Educational Progress by Pupils in Grade 6, 1966 and Pupils in Grade 8, 1968

*Scores in parentheses are "population mean" percentiles. Scores without parentheses are "school mean" percentiles.

## D. PROBLEMS

The problems encountered in the execution of this project have been of two kinds: operational problems which have arisen during the course of the in-service training program and the opening and conduct of the school; and research problems which have arisen as the Bedford staff attempted to collect and analyze data within the research design. Although these problems overlap considerably, they are usefully considered as separate.

### Operational Problems

1. The narrative history recounted above has presented a running list of operational problems as they occurred from time to time in the course of the project. The reader is referred to this narrative for the chronological sense of the way in which the problems developed. This list summarizes the major difficulties.

2. Delays in the construction of the buildings and in the installation of the dial-select equipment have beset the project from the beginning. They occasioned a one year's delay in the opening of the school and rendered it impossible to test the major thesis of this project, mainly, that preparation for and use of a dial-select system could significantly alter teacher's role behavior.

3. Once installed, the dial-select system, especially in its early months, was subject to a frustrating series of equipment breakdowns and technical snafus. These difficulties not only interrupted the on-going use of the system, but tended to create among teachers a climate unfavorable to further dial-select use. (It is not possible on the basis of the Bedford experience alone to determine the degree to which such equipment failures are inevitable in newly designed systems of this kind.)

4. Throughout the project there has been a series of changes in key personnel. Dr. Charles Richter, the Superintendent of Schools who initiated the project, accepted another position in July 1964. Miss Patricia Ryan, who was to have been the project's Graphics Consultant, accepted a university assignment in the fall of 1965. Mr. George Bondra, Bedford's first Director of Research and the listed "Initiator" of the project, was reassigned within the school system by Dr. Richter's successor and eventually resigned in the spring of 1966. Mr. Allen Adair, who had received special training for his position as the Head of Educational Communications in charge of the dial-select system, died suddenly of a heart attack in early 1966. Dr. Duane Ahlf, Dr. Richter's successor as Superintendent of Schools, who occupied that position at the time that this contract was negotiated in the spring of 1965, was relieved of his position by the Bedford Board of Education in June 1966 for an alleged "failure to use leadership." Mr. Robert Taylor, Mr. Adair's successor, experienced difficulty in his assignment and left the school system in the fall of 1968. Dr. Neil Atkins, the original Principal of the

Middle School, accepted another position in the winter of 1968. These changes in key staff positions have given rise to delays, discontinuities, and occasional confusion in the execution of the project. (Again, it is difficult to know how many of these personnel changes were caused or hastened by the project itself.)

5. From March, 1966 to March, 1967 the U. S. Office of Education made no payment to the Bedford Board of Education of approximately $80,000 due the Bedford board for work already accomplished under the contract. This lack of payment posed financial difficulties for the Bedford board and made them reluctant to incur additional expenses for the remaining stages of the project - those having chiefly to do with evaluation and reporting. (The money was subsequently received but the reconstruction of research data proved a difficult task.)

6. The efforts of the Bedford staff to change teacher role from disseminating information to guiding independent pupil learning were, of course, hindered by the habits, traditions, and accoutrements of the past - teacher-centered and content-centered lessons, common textbooks for a class of 25 or 30 students, uniform standards for pupil achievement, etc. Early in the project it became clear to Bedford teachers and supervisors that satisfactory progress toward the project goals could not be made until each of these practices was identified and alternate ways explored.

7. In their attempts to use the dial-select system well, teachers were handicapped by the relative lack of available "software". Many of the films, filmstrips, videotapes, and audiotapes, which were commercially available were not seen to be of immediate value to Bedford's educational program. Consequently, a great deal of time and energy had to be devoted to the screening, previewing, selecting, and/or developing of non-print instructional material. (It also proved all but impossible to accumulate the needed material in advance of the project. By and large, teachers could not be led to be enthusiastic about assembling materials for the dial-select system until the dial-select system was an operating reality.)

8. This need to devote considerable time to the accumulation of non-print material presented problems of staff deployment and budgeting. For the most part, teachers found it impossible to carry on this activity in any sustained way during the course of the regular school week. Therefore, Bedford found it necessary to provide time and money for teachers to find and/or develop dial-select related materials during school vacations and the summer months.

9. As the project continued, the Bedford supervisory staff experienced the need continually to explain and defend the project to members of the staff, the community, the Board of Education, and even the school system administration. Despite their early attention to the communication problem and the presence of a highly competent public rela-

tions secretary, the supervisors often felt that they were devoting time to defending the project when they should have been working on it.

10. Finally, as no doubt is often true in projects of this kind, throughout the entire period the goals and execution of the project were always more salient for the supervisors than for the staff in general. This gap between the perceptions of the rank and file teachers and the supervisory group was narrow during the exciting days of the July 1966 workshop, but gradually widened as the intensity of project activity diminished.

Research Problems

1. As is apparent, these operatingproblems also posed difficulties for the overall research effort. For example, the year's delay in the installation of the dial-select system made it impossible, as noted above, to test the central thesis of this project. Again, the relatively long period during which Bedford experienced financial jeopardy by virtue of not having collected monies due under the contract occasioned the postponement of needed research activity.

2. The changes in key personnel noted above, taken together the difficulty in retaining the consistent services of a research consultant (see Narrative History above), resulted in less attention to the research effort than may have been desirable. Specifically, the project has suffered from the lack of data collection and on-going analysis which a continually present research assistant or observer-evaluator might have provided.

3. As noted above under "Method", the open-ended nature of the project itself constitutes a research difficulty. Because both ends and means are considered open rather than assumed a priori, it is difficult to isolate and control the variables which influence the perceived results. In such a situation it is not possible to advance causal hypothesis but simply to recount as systematically as possible the efforts which led to the existence of the school-as-administrative-center.

4. Again, in a situation involving the education of real children in a public school system, it was not possible to establish for research purposes "control" groups of pupils or teachers who would experience only selected phases of the project. Presumably, the Bedford Board of Education decided to build and operate the Fox Lane Middle School in a particular fashion because it was to the advantage of all pupils for them to do so. To have deprived some pupils of these presumed benefits was politically and educationally unthinkable.

5. Finally, a related difficulty is that, given the unique nature of the

dial-select system and the relatively new modes of operation of the school, no fixed standards of prior performance exists against which progress in Bedford can be measured. The program in Bedford attempted to break new ground. This report attempts to describe that program and the steps which led to it. Evaluative comparisons await the development and analysis of similar programs elsewhere.

## CONCLUSIONS AND RECOMMENDATIONS

1. Given adequate administrative, supervisory and financial support, it is possible to plan, open and conduct a school dedicated to the personal, social, and academic needs of early adolescent children. That is to say, it is possible to order all of the elements of a school program - buildings, equipment, school organization, grouping, scheduling, curriculum, and materials and techniques of instruction - so as to facilitate the continuous educational progress of individual learners who become increasingly independent in their intellectual and personal activity. In such a school, pupils thrive in an institutional climate which is personally and socially more nourishing than that of the traditional junior high school while maintaining or improving their "academic" achievement.

2. Given the present state of the Bedford project, it is not yet possible to describe with precision the emerging role of the teacher in an "open" institution of this kind. For one thing, many differing patterns of teaching (as well as learning) are emerging; for another, these patterns indicate directions of change rather than the final product of change; and in any case, the descriptive data are not yet complete. It is possible to conclude that the behavior of many teachers who have participated in the project differs significantly from conventional teacher behavior in the past. The analysis of videotaped instruction made by Professor Arno Bellack and his research team at Teachers College, Columbia University, confirms this change and points the way toward the future description of a variety of enacted teacher roles. Broadly speaking, the changes which have been described to date suggest a role in which the teacher is more the manager of instructional resources and experience, bringing individual or small groups of pupils into potential, fruitful, conjunction with the materials and experience of learning, than the dispenser of information, disciplinarian, and unilateral arbiter of the past.

3. Neither is it possible yet to describe precisely the degree to which these new role directions are being enacted at the Fox Lane Middle School. As noted above, rough estimates suggest that about one-fourth of the staff have achieved significant movement in this regard, about one-fourth of the staff have hardened their resistance to such change, and about one-half have made tentative or token alterations in their teaching behavior. On the whole, however, there is no question that a significant degree of change has occurred. Notice of such change has been given by, among others, the Kettering Foundation whose demonstration schools program has selected the Middle School as being among the 36 most "thoughtfully innovative" schools in the nation.

4. Although there is an absence of "hard" research data to support the point, the judgment of Bedford supervisors is that such changes in teacher behavior as have occurred have resulted less from attempts

to change the attitudes of individual teachers than from the more comprehensive effort to change the institutional environment in which teachers work. That is to say, all of the in-service efforts undertaken in behalf of individual teachers - reading, visitations, lectures by visiting experts, attendance at formal teacher-training courses, etc. - may have been useful in preparing the way for behavioral change but produce little in the way of changed behavior. Significant and continuing changes in teacher behavior did not occur until the Middle School faculty was placed in an institutional environment in which the physical, organizational, and interpersonal conditions required a different mode of operation. (For example, few secondary teachers who were exhorted to group within a class did so until they were assigned multi-age groups of pupils and not allowed to use more than six or eight textbooks of any one kind.) In fact, still maintaining a broad perspective the Bedford experience suggests that it is not possible to change teacher role without changing the nature of the school as a social institution.

5. In keeping with this conclusion, it is evident that the presence of new technological hardware, with or without the accompanying software, does not alone constitute sufficient impetus for a major change in teachers' role behavior. In Bedford, at least, the mere fact of the presence of a dial-select system has not produced a significant change in teacher behavior. Such changes as have occurred have been occasioned by the collective involvement of teachers who were pursuing new educational goals in a new teaching environment; by the broad commitment of the school board and administration to thoroughgoing change in the whole institutional environment, including buildings and equipment, school organization, the materials and techniques of instruction, the expectations of teachers, parents and pupils, and the evaluation and reporting of pupil progress; and by close, effective, and sustained supervisory help and support over a period of years.

6. The Bedford experience suggests that a project of this kind cannot be undertaken by a single school operating apart from the total school system, nor can it be effectively accomplished by a single school and a district administration working together unless a genuine commitment of time, energy, and understanding can be made. In order to succeed, an institutional change of this magnitude can be accomplished only with the close and continuing understanding, support, and attention of the top leadership of a school system. From this point of view, progress made toward the goals of a project of this kind will be as much a function of the total health of a school system as of the efforts of individual practitioners within the target school.

7. In order fully to understand the aims, accomplishments, and difficulties of the Bedford project the reader is advised not to depend exclusively on this report, but, if possible, to schedule an appointment to visit the Fox Lane Middle School in Bedford, New York, or to correspond with the Superintendent of Schools, Bedford Public Schools, P. O. Box 180, Mount Kisco, New York 10549.

APPENDIX A

# APPLICATION TO THE COMMISSIONER OF EDUCATION FOR STATE AID FOR THE USE OF EDUCATIONAL TELEVISION IN THE SCHOOLS SUBMITTED UNDER THE PROVISIONS OF SECTION 213, SUBDIVISION 4 OF THE STATE EDUCATION LAW 1964-65

**Title:** Bedford Public Schools' Dial Selection System

**School District:** Central School District #2, Towns of Bedford, New Castle, North Castle and Pound Ridge

**Popular Name:** Bedford Public Schools

**Director of the Uses of Educational Television in the Schools:**

To be appointed
(Name)

Director of Instruction
(Title)

**Funds appropriated by Board of Education for this project 1964-65:** $79,344.00

**Approved by:** _____ **Date:** _____
(Superintendent)

# BEDFORD PUBLIC SCHOOLS DIAL SELECTION SYSTEM

## I Statement

a. The Purpose in Essence: The Bedford Public Schools are constructing a Middle School dedicated to the strategies of independent study, team teaching, and an ungraded curriculum, and to the education goals which these strategies can attain. We plan to use television to help bring these strategies into operation, and to aid in their continued effective use.

b. Background: The Middle School will accommodate pupils in grades 6, 7, and 8. Most of the 900 pupils will complete the course of study in the regular three years; because of the emphasis on independent study and an ungraded vertically organized curriculum, some may complete the work in two years, while some may require four. A great deal of the non-television work and planning has already been done. The physical design of the Middle School buildings provides flexible space for both television equipment and independent study. Formal consultation with leading television and electronic authorities has prepared the district leadership for intelligent action. Administrative arrangements of school space and time have already brought the three strategies of independent study, team teaching, and ungradedness into play in many areas; future arrangements for their complete employment are on the drawing boards. A broad pattern of curriculum redefinition and improvement undertaken throughout the past three years has created a program ready and a staff eager for fruition; a detailed, well-financed program of staff in-service education designed expressly for these Middle School objectives, the use of television included, has recently been undertaken.

c. The Value to the District: From the district's point of view, television is an invaluable tool for expediting the fullest operation of the three teaching strategies and for insuring their continued use not only in the Middle School but in the district at large. We plan to use television in two main ways:

1. In a manner which has by now become more or less conventional, filmed, taped, or live televised lessons will constitute an integral part of the regular instructional sequence for all pupils in certain (if not all) courses throughout the range of the Middle School curriculum. Thus, for example, students in certain English courses will eventually receive one key lesson each week from a master teacher on the television screen. We expect such an arrangement will have all the repercussions on differentiating teacher roles, developing teacher talent, and improving curriculum that have occurred in well-run projects elsewhere.

2. In a manner unique to this proposal, we will use the television screen as an individual, independent study resource comparable to the personal art gallery or the

book itself. Hitherto, television has been seen as an efficient means of mass dissemination; it can reach more students at once about the same thing than the human frame unaided. As has been noted, we hope to take advantage of this legitimate function. But increasingly we find that most students do not need the same thing at the same time. They need what they need when they need it. Accordingly, we plan to install a dial selection system which enables the individual student to dial in on as many as 58 programs during the first year; we plan to guide the student toward making the right choice of program for his individual needs at the right time. Thus, one pupil may need to review the science lecture with which he had some difficulty last week; another may wish to watch a film on geography of the Hudson Valley in conjunction with his American History course; a third may need the extra help of the programmed, televised vocabulary series. We expect that this system will not only produce more and better learning, but will help develop selective viewers and more capably self-educating individuals.

d. The Value to Other Districts: From the point of view of other districts, this project should demonstrate the feasibility of and the techniques for using television to help develop independent study and an ungraded curriculum within a planned developmental program. There is no longer any more reason why television programs need to be fed to homogeneous masses than do books. We hope to demonstrate techniques for individualizing the picture tube.

## 2. Procedure

a. The Plan: Since the Middle School will still be in construction, the academic year 1964-65 will be devoted primarily to preparatory activities. Provisions for the DSS are incorporated in the design of the buildings; therefore the audio-video system can be installed according to existing construction plans. The target date for completing the physical facilities is September, 1965.

For some time the district has been engaged in a program for developing and implementing its educational process goals. It has thus made provision for the regular processes of orderly change: identifying a need for change, establishing the appropriate helping relationships, and identifying and clarifying alternate goals. We are now at the stage of transforming these goals into actual operation. For example, with respect to personnel, seven "Committees of 8," each from a major discipline, have been meeting during the current year with the charge of describing teacher strategies necessary for developing the self-educating, independent learner. A "Technical Committee of 8" has also been functioning to plan and prepare the necessary audio-video requirements for the Middle

School. Therefore, in planning for the implementation of the DSS, we shall expand, and intensify, but essentially continue the various means and organizations that have already been set in motion.

Phase I, Summer 1964:

In order to continue this planning and to secure added staff involvement, the following groups will be organized and delegated specific responsibilities:

1. Technical, Screening and Selection Committee: This group will be composed of teachers from each curricular discipline who also have shown some interest and competence in the audio-video area. They will be charged with the following responsibilities:
    a. to become fully aware of the technical operations and uses of the DSS and accessory systems
    b. to visit other similar installations
    c. to locate or become aware of all possible sources of films, video tapes, etc. for use in the DSS
    d. to then screen and refer relevant materials from these sources
    e. to disseminate and facilitate use of available materials
    f. to learn to use video-tape and camera as possible production units
    g. to act as technical liaison for all teachers, but particularly the in-service groups dealing with the DSS
    h. others to be determined

    This would be a Standing Committee, with changing membership. A group like this would need to function continuously.

2. Production Team: This group will be composed of a Head of Communications, a Technician, and an Artist. Some of the primary responsibilities delegated to this team will be the following:
    a. to work closely with the Director of Instruction and the various curricular teams
    b. to work with teachers in producing appropriate television segments for the different disciplines
    c. to develop the use of DSS as a discovery device (We believe that television should not be perceived as merely a source of information, but the content and presentation should serve as a catalyst for continued learning by stimulating curiosity and inquiry.)
    d. to produce "key lessons" for team teaching
    e. to televise segments from the Harvard-Lexington Summer School to be used by our in-service groups
    f. other duties to be assigned

Since personnel with the required sophistication and competence are not presently available with the district, we will have to recruit these people from outside the system. To begin production operations the Head of Communications will be employed this summer; the technician and artist, however, will not be employed until 1965-66.

3. Harvard-Lexington Summer School: We are a member of The Twenty-nine Cooperating Communities Plan and have the opportunity to send teachers to the Harvard Lexington Summer School. Plans have been approved to permit us to send 10 teachers to the 1964 summer session. The program offers intensive training, under the Harvard faculty, in team teaching and developing teacher strategies for creating the self-educating, independent learner.

In addition, as noted above, we have approval from Dr. Robert Anderson, Harvard University, to send our production team to televise appropriate sequences which will then be used in our own in-service teacher program. At this stage of our development, the use of television to disseminate these vital experiences to our staff should also provide experience for our Technical, Screening and Selection Committee who, with the use of our present camera and video-tape recorder, will serve as the production team.

4. Public Information Committee: This group will be composed of representatives selected from the various working committees. It will serve the following purposes:
   a. to present systematically the program to the public and to staff, students, parents, Board of Education and other interested groups
   b. to ascertain by questionnaire or other techniques the public's state of knowledge and to use this information in planning new releases and presentations
   c. to deal with visitors and correspondents as the program becomes widely known
   d. other purposes to be added

The proposed staff organization for this tooling-up first phase is as follows: The Director of Instruction, as the Director of the Project, will work with the Heads of Department and coordinate the development of curriculum and staff. An Advisory Committee, including the Superintendent, Principal of the Middle School, Dr. Neil Atkins, Lee Campion, Ray Graff, and others will serve in an advisory capacity.

## Phase II, Academic Year 1964-65:

While the first phase will be concerned with identifying problems and planning programs, Phase II will be concerned with transforming these plans into actual classroom operation. The

working groups that began functioning in the summer will essentially continue their same operations during the year. Thus, the Production Team will produce segments in collaboration with curricular groups which will be shown on existing -- although limited -- television facilities. Production and use of "key lessons" will be expanded. Segments will be produced for use in the in-service teacher program -- released time will hopefully be made available through Federal funds.

The Technical, Screening and Selection group, with additional time made available, will continue to add to our repertoire of appropriate segments. This group will be most active in building a library of necessary films and tapes for the simulated summer school and the first Middle School year.

The use of consultants, visitations, evaluation measures, and public relations activities will be continued.

Phase III, Simulated Middle School, Summer 1965:

This phase will permit the Middle School staff an opportunity to apply all their substantive efforts in a simulated summer school. Staff, curriculum, new teaching strategies, the process goal of developing the independent learner, and the DSS will combine in operation. Critical appraisal of these operations with consequent modifications should prove of ultimate value to the students, who will have been spared many of the conseqüences of costly trial-and-error learning in the regular school year.

Phase IV, Academic Year 1965-66:

All of the means to help us achieve our goals of a nongraded curriculum, team teaching and independent study will be attempted in the regular routine of the Middle School. While some generalization and stabilization of the change processes will take place in this phase, many changes and modifications will still be required. The effects of some of the new teacher strategies and of the use of the DSS with students will be closely appraised. Any necessary revisions and changes will be made.

Phase V, Academic Year 1966-67:

Greater refinement and stabilization of operations are anticipated in this phase; the Project should then offer substantial indications of a successful living demonstration. Plans for dissemination will include expanding the DSS to the Fox Lane School, the senior high school approximately two thousand feet away. The basic conduit to the Fox Lane School will have been laid at the time of the Middle School construction. (The two schools will share

cafeteria, transportation, and other administrative services. All wiring, ten group viewing areas, and fifteen individual student carrels will be installed. Arrangements for observation of the Middle School operation by professional groups will be made.

Phase VI, Academic Year 1967-68:

At this stage, the DSS will also be expanded by connecting the four elementary schools. The deeper involvement and training of personnel in these schools and the production of appropriate segments will be undertaken. The expansion of the DSS to the Fox Lane School will continue with the addition of ten more group viewing areas and fifteen individual student carrels. Evaluation and dissemination activities will continue.

Phase VII, Academic Year 1968-69:

The Middle School should demonstrate the feasibility of the DSS as an integral part of our educational program. Final Project evaluations will be completed. Provisions for continued professional observation and further dissemination of research data will be carried out.

The expansion of the DSS to the Fox Lane School will be completed bringing the total number of student carrels and group viewing areas to forty and twenty-five, respectively. Completing the expansion of the DSS to the four elementary schools will bring closure to the subsidized phase of the Project.

## Framework for Evaluation

The conceptual model we are using involves input, educative processes, and educational goals. This is essentially a general systems model; that is, we can focus on systems of various sizes. We may, for example, focus on a single individual, group, or total school. While this is a goal model, we shall be equally concerned with evaluation of the educative process as well as the educational product. Considerable attention, therefore, will be given to evaluating the means, or processes, employed in relationship to outcomes.

## Observations

While great reliance will be placed on participant observations, in the process of evaluation we shall attempt to keep separate two phases: First, we shallattempt to describe the action program and its outcomes in objective terms, and second, we shall express value judgments as to whether a given trend or event is desirable or undesirable with respect to our intended purpose(s).

## Logic of Methodology

In essence, the logic of our methodology is that ends are the consequences of the means we use. The ends we actually obtain from a given set of means may differ from the original purposes. We shall keep altering and redesigning means for more closely approximating the goals we seek. This is action research in which an end or value is being sought through a preconceived set of means.

## Experimental Design

By the very nature of our project, it is impossible to control single variables or to vary them by given degrees. Our design cannot be viewed as one that will be concerned with the manipulation of specific independent and dependent variables. We are, therefore, avoiding the pretense of effecting experimental controls. Some statistical hypotheses will be used, but the major evaluation of relative success will not rest upon an attempt to appraise isolated factors.

As this project develops, there will be continuous changes of one sort or another. These changes will develop from the circular, causal, and feedback processes involved, new insights, and a desire to make changes which look hopeful. Consequently, it is necessary that we describe the processes and stages through which our project will pass. We will give a descriptive history of what happens, what is attempted, what appears to succeed, what appears to fail and how the outcomes vary for better or worse as the project proceeds. A great element of human judgment will be involved in evaluating the entire project.

## Evaluation

The plan of evaluation appraises outcomes in a variety of ways:

1. Descriptive history of the phases of the change processes

2. Operational definitions, conceived at the different stages of the project, of the processes of developing the self-educating individual and the teacher strategies necessary to accomplish these with special reference to the DSS

3. In evaluating teacher and student behaviors two basic methods will be used: (1) case studies and (2) before-and-after comparisons. The following questions will constitute the basis for these investigations:
    a. Are attitudes towards school favorably affected by this program?
        (1) Likert type and semantic differential scales will be constructed to determine students' and teachers' attitudes at the different phases of the Project.

(2) Parental a ttitudes will be evaluated by questionnaires sent to the home. A pre-project opinion survey will be made. Open-ended interviews with small cross sectional samples of parents will be conducted.

(3) Correlation studies between student attitudes and indices of dependent-independent measures will be made.

(a) We hypothesize that high curious students will show more favorable attitudes toward the new teaching strategies than the low curious student.

(b) We hypothesize that students manifesting marked independence will show positive attitudes toward the new teacher strategies.

(c) We hypothesize that the more democratically oriented teacher will show more favorable attitudes; conversely, the more authoritarian teacher will show negative attitudes.

4. Do teachers demonstrate changes in their roles and their teaching strategies?

a. A Q-sort technique will be used to appraise each teacher's perceptions of subjective changes regarding her teaching strategies.

5. Do pupils make greater gains in subject matter achievement?

a. Small experimental studies using teacher and standardized tests will be conducted t o appraise effects of the DSS.

b. Achievement effects on students in our Project Able Program will be ascertained. The DSS may be particularly congenial to their styles of learning.

6. Do pupils make greater gains in certain aspects of maturity?

a. Student measures of degrees of independence over a period of time will be made.

b. The participant observations of teachers regarding the student's self-educating competencies will be made.

7. Case studies of students and teachers manifesting different styles of coping with the new learning and teaching strategies will be developed. Statistical analyses of these multiple case studies will be attempted.

8. Objective data on the following will be gathered:
   a. Number and titles of produced segments
   b. Numbers viewed and produced in the different disciplines
   c. Time cost data

3. Personnel

Advisory Committee:

Charles O. Richter, Superintendent
Lee Campion, State Education Department
Ray Graff, State Education Department
Neil Atkins, Principal, Middle School and The Fox Lane School
Raymond Belanger, Principal, Bedford Elementary School
Thomas Sobol, Head of English Department
Randolph Brown, Head of Science Department
Sheldon Wiltse, Teacher, Industrial Arts
George Bondra, Research Assistant
Director of Instruction--to be appointed

Director of the Uses of Television:

Director of Instruction (to be appointed)

Production Team:

Head of Communication, Technician, Artist, and Paraprofessional. These four positions are to be created.

Evaluator: George Bondra

George Bondra, Research Assistant, Bedford Public Schools, Project design and evaluation. B. A., 1950, Clark University, with major in psychology; 97 graduate semester hours presently completed in doctoral School Psychology Program, Columbia University. Two years of intensive work in group dynamics and social change at Columbia; experience as group therapist, and a three year didactic personal psychoanalysis. Licensed New York State School Psychologist; Associate Member of American Psychological Association; Member, Society for General Systems Research; local Director of State supported Project Able Program; responsible for research design and evaluation of District's team teaching, nongraded, independent study program. Coordinator of a number of local experimental and action research projects.

Recorder: Thomas Sobol

Thomas Sobol, Head of English Department, Bedford Public Schools. A. B. Harvard College, 1953; A. M. in Teaching, Harvard Graduate School of Education, 1954. Teacher of English, Newton High School,

Newton, Mass., 1957-1961; Teacher in Charge of Department of English, Newton South High School, Newton, Mass., 1960-61; Head, Department of English, Bedford Public Schools, Bedford, N. Y., 1961-present. Consultant, Council for a Television Course in the Humanities, 1958-59; co-author of Teachers' manuals and Summary Report for same; Master Teacher, Harvard-Newton Summer School, summers, 1960-1964; author of several small articles in various obscure professional magazines; editor of various school and district publications; U. S. Army Counterintelligence Corps, 1954-1957; organist and choir director, various churches, fifteen years.

Additional Staff:

Raymond Belanger, Principal of Bedford Elementary School, 1948 - present; Head of Technical Committee; has introduced use of tape recorders, overhead projection, motion pictures, programmed instruction, and preparation of audio-video materials in school program; has taken numerous courses in theory and techniques of audio-visual media and programmed instruction.

Allen Adair, Teacher of English, The Fox Lane School. To study during 1964-65 Educational Television at the University of Wisconsin. B. S. 1949 Pennsylvania State University; 31 graduate credits from Columbia and Syracuse, Major certification in English and Speech. Warren High School, Warren, Penna., 2 years teaching English and Drama; Bedford Public Schools, 8 years teaching English Speech and Drama; Acting head of the Fox Lane English Department 1959-61; Chaired evaluation of English Department during Middle Atlantic States Certification session, 1960; Speech program in high school. Warren Little Theatre, Vice President; Westchester Playhouse, Summer of 1958; Menteer Playhouse, Penna., Summer of 1960; Director of all drama, speech activities at Fox Lane; Drama Series in Warren, Penna.; Monthly radio half-hour program entitled "Focus: Fox Lane:" Member Thea Alpha Phi, National Dramatic Honorary Society.

Robert Queen, Teacher of Art, The Fox Lane School. To study at Columbia University during 1964-65. B. F. A. and M. S. Syracuse University; Heidelberg University, Heidelberg, Germany; Biarritz American University, Biarritz, France; Pratt Institute, Brooklyn, New York; Columbia University--Doctoral Program. Art Teacher/Supervisor Grades 1-12 Mount Kisco School, 1951-52; Art Teacher Grades 7-12 Mount Kisco High School, 1952-57; Art Teacher Grades 7-12 The Fox Lane School 1957-present. Yearbook Advisor, graphics, layout, 3 years; Stage Set design, 8 years; Stage lighting, 6 years; Camp Counselor, 5 years; Program Director, 7 years; Waconda Indian Dance Company, Inc., founder and director, 13 years.
Recent Courses: Columbia University, Motion Picture Production, Programmed Instruction, Art Education Seminar.

Donna Keith Barrand, Audio-Visual Director, Bedford Elementary School. A. B., Lake Erie College, 1947; M. S. in Physical Education, Smith College, 1949; 24 graduate hours in fields of physical education and guidance counselling. Teacher of physical education and audio-visual director, Bedford Elementary School, 1956-present. Four years of theatrical water-show directing; two years amateur theater work, with emphasis on light and sound effects.

Sheldon Wiltse, Teacher of Industrial Arts, The Fox Lane School. B. S. in Industrial Arts Teaching, Oswego State Teachers College, 1954; M. A. in Guidance Counselling, Teachers College, Columbia; 15 additional hours of graduate credit, Teachers College. Teacher of Industrial Arts, Purdys Central High School, Purdys, New York, 1957-58; teacher of unified arts, The Fox Lane School 1958-present. U. S. Army (personnel work), 1954-56; prepared 8-mm. cartridge films on technical shop processes, Teachers College, Columbia, 1963-64.

## 4. Facilities

The Bedford Public Schools are presently composed of four (K-6) elementary schools and a junior-senior high school. On February 20, 1964, the district approved a bond issue of $4,050,000. for the construction of a new Middle School organized on a grade 6-8 basis, if the traditional grade designations are used. For a more complete description of philosophy and physical facilities see the attached Middle School booklet.

An integral part of the Middle School facilities is the proposed audio-video Dial Selection System. The functional specifications of this system are the following:

1. Students at 40 carrels will be able to dial-select any audio or audio-video program from the Media Center by simply operating an ordinary telephone dial. All selection and distribution will be automatic. A number will be assigned to each program in the library. Each student position will be equipped with an earphone-microphone combination and an 8" video monitor with associated controls. The microphone will be connected to permit the student to practice speech and language lessons by hearing his own amplified responses in this headset. It may also be used to intercommunicate with the attendant in the central library distribution center to request selections not set up in the Media Center.

2. In addition, teachers or students, in 40 group viewing areas may similarly dial-select audio and audio-video programs for group viewing or listening. These positions will be equipped with an appropriate speaker for the size of the room and a mount for the video monitor. Twenty-five 23" video monitors, which may be plugged into any of seventy-five video mounts in the 40 areas, will be

furnished. Each of the 40 classroom spaces will be equipped with a wall mounted control plate consisting of a handset, a dial and appropriate controls.

3. The Media Center will be equipped with 48 audio program sources from twelve 4-track automatic tape recorders. These machines will start when the first person dials into any program on the machine, automatically rewind and replay as long as anyone is listening and stop at the beginning of the program when no one is listening.

   There will be provided ten audio-video sources consisting of one Ampex helical video tape recorder-playback, two all chann. VHF video tuners to receive off-air signals, six film chains for motion pictures, slides and strip films and one multiplexed chain with combination slide, strip and strip film projectors. In addition our existing video camera may be used as one of the video sources.

   The Media Center will also include automatic switching for selecting and distributing up to 120 different audio programs and 10 video programs to the eighty selection positions described above. In addition a short wave receiver will be provided as a 49th audio source.

4. As part of the system, a tape preparation unit will be included to prepare master audio programs and automatically dub these programs onto 4 track tape.

   The Media Center will be equipped with an intercom panel as one of the forty group viewing stations. This permits any student or teacher to automatically dial-call the attendant and permits the attendant to check the system by simply dialing any program.

This system developed by Continuous Progress Education, Inc., of Wilton, Connecticut, appears to represent the application of proven technology in a manner which should significantly advance the statedgoals of the Middle School.

Our present television facilities consist primarily of commercial receiving television sets in the various schools. Our television production equipment amounts to the "equivalent" of a one-camera production studio. This equipment will be supplemented by an Ampex 660 video tape recorder and $3000. worth of video tape to be purchased during the summer of 1964. Additional production facilities are available to us at the Highlands School in White Plains, New York, and at Brooklyn College.

## 5. Other Commitments

A statement of intent summarizing our proposed program has been submitted to the Federal Government under Title VII B. While we are seeking State aid for equipment and development of technical personnel, the essential purpose for the Federal assistance will be for the re-education of non-technical personnel, i.e., the teaching staff. The primary objective will be to develop concomitantly with the technical personnel the changes in teacher strategies that will be required in using the Dial Selection System as a means for implementing our process goal of developing the self-educating, independent learner. Through a process of in-service training using invited consultants, released time, and direct involvement of teachers, we hope to develop operational definitions of the processes necessary for developing the self-educating individual and, also, bring about the necessary changes in teacher roles and strategies to assure the appropriate use of the Dial Selection System.

During the current year no other financial support is being sought.

# ESTIMATED COSTS OF EDUCATIONAL TELEVISION IN THE SCHOOL PROJECT 1964-65 SCHOOL YEAR

District: Central School District #2, Towns of Bedford, New Castle, North Castle and Pound Ridge

District No.: 2 Towns of: Bedford, New Castle, North Castle and Pound Ridge

Supervisory District No.: I County of: Westchester

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## A. ANTICIPATED OPERATIONAL EXPENDITURES

1.0 Personnel Services

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $34,740. | $39,670. | $40,566. | $36,084. | $37,034. |

2.0 Other Personnel Costs

2.1 District contribution to retirement systems for covered salaries

2.11 Teachers' Retirement System - Rate 17.1% estimated

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ | $ 2,040. | $ 2,350. | $ 2,440. | $ 2,520. |

2.12 State Employees' Retirement System

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ | $ 1,378. | $ 2,127. | $ 2,191. | $ 2,257. |

2.13 Social Security

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ 254. | $ 855. | $ 945. | $ 953. | $ 960. |

2.2 Reimbursement expenses for travel by professional personnel directly related to the project

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ 2,300. | $ 1,000. | $ 500. | $ 500. | $ 500. |

2.3 Tuition for personnel training related to the project

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $20,050. | $ 6,000. | $ 6,000. | $ 6,000. | $ 6,000. |

3.0 Instructional materials and maintenance and equipment supplies

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ 5,600. | $ 9,000. | $ 5,000. | $ 5,000. | $ 5,000. |

4.0 Contract services for maintenance, project evaluation and technical consultants

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ 2,000. | $ 2,000. | $ 8,200. | $ 7,700. | $ 7,700. |

5.0 Project evaluation by district's personnel

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ 400. | $ 1,000. | $ 500. | $ 500. | $ 1,000. |

Total estimated operational costs

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $65,344. | $62,943. | $66,188. | $61,368. | $62,971. |

B. ANTICIPATED EQUIPMENT ACQUISITION AND INSTALLATION EXPENDITURES

6.0 Equipment

6.1 Receivers and stands

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ | $24,250. | $ 8,000. | $ 8,000. | $ 6,000. |

6.3 Film chains

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ | $19,500. | $10,500. | $ 7,500. | $ 7,500. |

6.4 Video recording equipment

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $14,000. | $ | $14,500. | $14,500. | $14,500. |

6.5 Studio facilities

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ | $ 5,000. | $ 5,000. | $ 5,000. | $ 5,000. |

6.6 Electrical wiring

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ | $ | $25,000. | $ | $ |

6.8 Audio Equipment

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ | $ 2,000. | $ 3,000. | $ 3,000. | $ 3,000. |

6.9 Air conditioning and ventilation equipment

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ | $10,500. | $ | $ | $ |

6.10 Inter-school transmission facilities

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ | $52,800. | $18,000. | $18,000. | $14,000. |

6.12 Internal cable or master antenna installation

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ | $ 5,200. | $ 1,000. | $ 1,000. | $ 1,000. |

6.13 Other equipment

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ | $21,300. | $10,000. | $10,000. | $ 8,000. |

6.14 Any special installation costs for equipment or facilities

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $ | $43,538. | $ | $ | $ |

Total equipment acquisition and installation

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $14,000. | $184,088. | $95,000. | $67,000. | $59,000. |

Total estimated cost (Operational and Equipment)

| 1964-65 | 1965-66 | 1966-67 | 1967-68 | 1968-69 |
|---|---|---|---|---|
| $79,344. | $247,031. | $161,188. | $128,368. | $121,971. |

## C. ITEMIZATION OF ANTICIPATED EXPENDITURES FOR THE 1964-65 SCHOOL YEAR

### 1.0 Personnel Services

1.2 Non-professional and technical personnel to be assigned to the TV staff for the project

| Employee | Title | Rate of Pay | Length of Employment on Project | Total Expenditure |
|---|---|---|---|---|
| | Head of Communications | | | $12,000.00 |

1.3 Extra compensation to be paid to regular professional, non-professional and technical personnel for additional services or responsibility connected with the project.

| Employee | Description of Project Assignment | Rate of Pay | Length of Employment on Project | Total Expenditure |
|---|---|---|---|---|
| Teaching Staff (12) | Technical, Selection & Screening Committee | $46.00 | 30 days (20 in summer, 10 during year) | $16,560.00 |
| G. Bondra | Research Assistant | $52.00 per day | 60 days | $ 3,180.00 |
| B. Kosakowski | Secretary | $15.00 per day | 40 days | $ 600.00 |
| Staff - from each Working Committee (5) | Public Relations Committee | $48.00 per day | 10 days | $ 2,400.00 |

### 2.0 Other Personnel Cost

2.2 Professional Travel

Special trips, conferences

| Name of Traveler | Destination | Purpose | Total Expenditure |
|---|---|---|---|
| 2 Technical, Screening & Selection Staff | Laboratory School, Brigham Young University, Utah Basset School, California | Installation of similar systems | $ 800.00 |

2.2 Continued:

| Name of Traveler | Destination | Purpose | Total Expenditure |
|---|---|---|---|
| 2 Technical, Screening & Selection Staff | Nova High School, Fort Lauderdale, Florida Florida Atlantic, Boca Ratan, Florida | | $ 450.00 |
| 2 Technical, Screening & Selection Staff | Grand Valley State College, Michigan Riverview Gardens, St. Louis, Mo. | | $ 400.00 |
| 5 Technical Screening & Selection Staff | Albany, New York | Screening of Tapes in State Education Department Library (3 days) | $ 300.00 |
| 3 Production Team | Boston, Mass | Televise Harvard-Lexington Summer School, Team Teaching & Independent Study | 350.00 |

2.3 Tuition for personnel training related to the project

| Employee | Institution | Unit Cost | Total Expenditure |
|---|---|---|---|
| 10 Staff | Harvard-Lexington Summer School | $950.00 | $ 9,500.00 |
| Allen Adair | University Wisconsin | | $ 4,550.00 |
| Robert Queen | Columbia University | | $ 5,200.00 |
| Workshops and Graduate Course | Columbia University & New York University | | $ 800.00 |

3.0 Instructional materials and maintenance and equipment supplies

3.2 Maintenance and equipment supplies

| Item | Quantity | Unit Cost | Total Expenditure |
|---|---|---|---|
| Video Tape MMM 2" wide 7 | | $70.00 per hour | $ 3,000.00 |
| Repair on presently owned camera | | | $ 2,600.00 |

4.0 Contract services

| Contracting concern, agency, institution or individual | Services to be Provided | Total Expenditure |
|---|---|---|
| Harry Passow | Consultant | $ 2,000.00 |
| Francis Cornell | Statistical Consultant | |
| Herbert Thelen | Consultant | |
| Glen Heathers | Consultant | |
| Herman Taub | Consultant | |
| Robert Anderson | Consultant | |

5.2 Reproduction of district-made evaluative instruments

| Description of test or Service of Reproduction Materials | Number of Testees | Quantity | Unit Cost | Total Expenditure |
|---|---|---|---|---|
| Parent Survey | 2000 Parents | Stamps<br>Paper<br>Envelopes<br>Stencils | $10.<br>8.<br>45.<br>4. | $ 67.00 |
| Self-Description Form CX | 800 Students | Paper<br>Stencils | $32.<br>2.50 | $ 34.50 |
| E/F Scale | 200 Teachers | Paper<br>Stencils | | $ 10.00 |
| Curiosity Scales | 800 Students | | | $ 40.00 |
| Student Questionnaire (Passow's - H. Thelen) | 800 Students | | | $ 40.00 |
| Independence-Dependence Measures | 800 Students | | | $ 80.00 |
| Teacher Questionnaire | 200 Teachers | | | $ 10.00 |

5.3 Instrument Scoring

| Survey and Test Scoring | Quantity | Unit Cost | Total Expenditure |
|---|---|---|---|
| Scoring of all instruments | | $1.50 per hour (10 days) | $ 120.00 |

## 6.0 Equipment

The following figures are based on cost estimates from Continuous Progress Education, Inc., Wilton, Connecticut

### 6.1 Receivers and Stands

| Item | Quantity | Unit Cost | Total Expenditure |
|---|---|---|---|
| Video Monitors for carrels | 40 | $175.00 | $ 7,000.00 |
| Video Mounts with speakers in classroom | 75 | $130.00 | $ 9,750.00 |
| Video Monitors | 25 | $300.00 | $ 7,500.00 |

### 6.3 Film Chains

| Item | Quantity | Unit Cost | Total Expenditure |
|---|---|---|---|
| Single Projector Chains | 6 | | $12,500.00 |
| Multiplexed Chain | 1 | | |
| Film Cameras | 7 | $1000.00 | $ 7,000.00 |
| Studio Camera | 1 | Presently owned | |

### 6.4 Video Recording

| Item | Quantity | Unit Cost | Total Expenditure |
|---|---|---|---|
| Ampex 660 improved for remote replay | 1 | | $14,500.00 |

6.9 (appears on page 22)

### 6.8 Audio

| Item | Quantity | Unit Cost | Total Expenditure |
|---|---|---|---|
| Headset Microphones | 40 | $50.00 | $ 2,000.00 |

### 6.10 School Transmission

| Item | Quantity | Unit Cost | Total Expenditure |
|---|---|---|---|
| Audio Video Switching Remote Individual Student Stations | 40 | $660.00 | $26,400.00 |
| Classrooms | 40 | $660.00 | $26,400.00 |

6.12 Internal Cable

| Item | Quantity | Unit Cost | Total Expenditure |
|---|---|---|---|
| Wiring | | | $ 5,200.00 |

6.13 Other Equipment

| Item | Quantity | Unit Cost | Total Expenditure |
|---|---|---|---|
| Video Tuners | 2 | $300.00 | $ 600.00 |
| Carrels (See Middle School Booklet for Educational Purposes) | 40 | $250.00 | $10,000.00 |
| Individual student dial control plates and amplifiers | 40 | $ 75.00 | $ 3,000.00 |
| Classroom control plates with intercom handsets | 40 | $125.00 | $ 5,000.00 |
| Intercom system for remote stations (90 positions) | 1 | | $ 2,700.00 |

6.14 Any special installation costs for equipment or facilities

| Item | Quantity | Unit Cost | Total Expenditure |
|---|---|---|---|
| Conduit | | | $43,538.00 |

*6.9 Air conditioning and ventilation equipment

| Item | Quantity | Unit Cost | Total Expenditure |
|---|---|---|---|
| Air conditioning and ventilation | | | $10,500. |

# THE USE OF EDUCATIONAL TELEVISION IN THE SCHOOLS
# 1964-65

1. District: Bedford Public Schools

2. Director of the Use of Television: Director of Instruction

   Address: Division of Instruction and Special Services, Court Road, Bedford Village, New York. BE 4-7852.

3. Research Consultant: George Bondra, Research Assistant

   Address: Division of Instruction and Special Services, Court Road, Bedford Village, New York. BE 4-7852.

4. Title: Bedford Public Schools' Dial Selection System

5. Summary: The Bedford Schools plan to use a dial selector audio-visual system to help develop self educating individuals. In an educational context characterized by independent study, team teaching, and an ungraded curriculum, students will be able to dial and receive a potentially unlimited number of video and audio sources. The curriculum materials, at these sources, will be designed for both group and individual work. The twin goals of the project are to develop the techniques, materials, and attitudes necessary to accomplish this change in educational practice, and to demonstrate the feasibility of such a change

6. Timetable:

   1964-65: Selection and training of technical personnel and teaching staff; limited production of television programs.

   1965-66: Installation of Dial Selection System equipment; introduction of DSS programming into regular curriculum.

   1966-67: Improvement of production and selection repertoire; systematic evaluation of effect of DSS on teachers and students.

   1967-68: Continued expansion of DSS to High School; evaluation and further development of operations.

   1968-69: Extension of DSS throughout district; final evaluation of processes and results; dissemination of information and demonstration to observers.

7. Budget: 1964-65 $79,344.00

Appendix B

November 8, 1965

## Dial-Select Media Evaluation Committee

### Functions

1. Previews films, filmstrips, videotapes, audiotapes, and other relevant media.

2. Evaluates material for the purpose of reporting to other Teachers.

### Responsibilities

1. Each committee member previews a minimum of forty media hours.

2. In addition, committee members aid in selection of media to be previewed, write their evaluations, and report periodically to teacher groups.

3. The majority of previewing time will be after school hours. While members are somewhat free to arrange their own schedules, the availability of material to be previewed sometimes dictates crash periods of previewing.

4. Members attend a handful of introductory and evaluative media evaluation committee meetings.

### Qualifications

1. Teachers appointed to this committee should have a genuine interest in the use of instructional media.

2. Teachers should have a good command of departmental objectives and enjoy a productive working relationship with their colleagues.

### Compensation

For their work on this committee teachers will be paid the sum of $150. Payment will be made in June.

TS:g

Appendix C

October 21, 1965

To Department Heads

From Tom Sobol

Re Meeting of Middle School staff

Date Saturday, November 20, 1965

Place The Fox Lane School

TENTATIVE AGENDA FOR FIRST MEETING

| | |
|---|---|
| 9:00 - 9:30 | Coffee |
| 9:30 - 9:50 | Dr. Atkins<br>greetings<br>history of the school<br>why a middle school?<br>assumptions about nature of middle school pupils<br>general style and pattern of the school |
| 9:50 - 10:10 | Mr. Telfer<br>building design and progress<br>house organization<br>general pattern of grouping and organization |
| 10:10 - 10:30 | Mr. Sobol<br>the dial-select system<br>in-service program: curriculum outlines, February workshop, substitute teachers, teacher exchange |
| 10:30 - 11:45 | Teachers meet in small, mixed groups to discuss question<br>"As we begin our planning to bring together pupils from grades 6, 7, and 8 for the first time, what characteristics of pupils in this age span should we account for?"<br>Recorders will be appointed. |
| 11:45 - 12:15 | Reports from groups; question period. |
| 12:15 - 1:15 | Lunch - (brief evaluative questionnaire) |

TS:g

Appendix D

November 23, 1965

Memo to Middle School Staff

from Neil Atkins, Tom Sobol, Peter Telfer

re Meeting of Saturday, November 20

Congratulations to one and all for an excellent beginning. It is indeed a pleasure to work with a staff of such high spirit.

This memo makes no attempt to summarize everything that happened Saturday morning. Here instead is a report to you on the results of the reaction ballots and a listing of the most significant problems which emerged from the small-group sessions. As was said on Saturday, many of these problems will shortly become the subject of study by faculty committees; others, of a more routine nature, will be tackled by administration alone, with subsequent reports to you.

TS:g

Report on Reaction Ballot
Meeting of Middle School Staff
November 20, 1965

1. On the whole, I thought today's meeting was very helpful 37

adequate 4

not helpful 0

(Total reporting) 41

2. The speakers were very helpful 40

adequate 1

not helpful 0

(Total reporting) 41

3. The small-group discussions were very helpful 24

adequate 14

not helpful 1

no response 2

(Total reporting) 41

4. As I look forward to the Middle School, the thing that pleases me most

(Typical comments)

the opportunity to work in a setting which appears to be more flexible and more directed toward the individual needs of this very misunderstood and little understood age group

putting together and hopefully using all those new media and techniques we have long talked about

a. the planning and preparation that is being done to help the teacher adjust to a new teaching experience.
b. the challenge that is offered in using new methods and ideas.

the opportunities to experiment with programs that will <u>really</u> meet the students' needs

5. One thing that I worry about is

(Typical comments) early hardships, confusion, and failures will cause discouragement and ultimate return to now obsolete techniques, etc.

having sufficient time for teachers to have their fingers in the "planning pot"

that the faculty members will revert back to their old patterns and techniques and not develop the flexibility needed in such a program. And the children will be lost!

6. My main suggestion to the administration would be

(Typical comments) to keep channels of communication open, draw on the talents of the staff, provide time for planning, be flexible and honest

make sure parents and teachers and students are not lead to expect too much too soon

7. Comments:

(Typical comments) This meeting has certainly cleared up a lot of questions I worried about in regard to the Middle School.

Very fine program this a.m. Time disappeared too rapidly.

I congratulate the venturesome and pioneering spirit that conceived this program. My own great hope is the gradeless school where children proceed at the speed nature gave them, not a predetermined one. The Middle School ultimately offers this hope.

I feel great enthusiasm and believe we will find the pony.

# New Views of Schools

***The New Campus in Britain: Ideas of Consequence for the United States,*** *by Richard Dober,* ***Middle Schools,*** *by Judith Murphy, and* ***Schools Without Walls,*** *by Margaret Farmer and Ruth Weinstock (all published by Educational Facilities Laboratories, 477 Madison Ave., N.Y.C.; no charge; 72 pp., 64 pp., 56 pp., respectively) present architectural innovations in schools at the college, secondary, and elementary levels. The reviewer is a partner of Engelhardt, Engelhardt and Leggett, Educational Consultants.*

By STANTON LEGGETT

HAROLD GORES and his merry band at the Educational Facilities Laboratories have taken on the task of loosening the girdle of American education. Three booklets recently published by EFL illustrate their success in this laudible endeavor and may even cause conservatives to wonder if, with all this attention, the old girl is not becoming a trifle unstayed.

*The New Campus in Britain* brings us lessons at the collegiate level. *The Middle School* deals with change in a school organization that, with inescapable logic, falls between upper and lower schools. *Schools Without Walls* is an exposition, largely at the lower school level, of the impact of openness on what has long been a closed society. All of these have as their purposes the dissemination of knowledge and ideas about school facilites to the end that educational space can support education not constrict it.

In *The New Campus in Britain* Richard Dober, an architect involved in campus planning, has written about significant developments in Great Britain relating specifically to the master plans of some eight universities. The case studies deal with substantial additions to existing facilities and to entirely new universities. A good deal of the presentation is in diagrams, photographs of models, and in plans. The last were, for my eyes, difficult to read and lacking in continuity of labelling—a minor defect but one that subtracts from enjoyment of what otherwise is a most interesting exposition.

Mr. Dober's work deals quite lucidly and succinctly with generalizations about the state of the art of campus planning in Britain as he sees it and then moves on to explore two major views of collegiate plans, the University of York and the University of Essex.

York is organized as a series of colleges to each of which 300 students, about half non-resident, and a share of the faculty are assigned. For the most part both teaching and housing are accommodated in each college.

Essex takes a different tack. Residential towers are located in close proximity to educational space and the compactness of plan intermingles housing, teaching, and recreational space in what is approaching one building for 10,000 students. For example, the first teaching block combines "laser shock rooms with squash courts, lecture halls with faculty offices, and meets the needs of a university in miniature." The teaching block is connected to a larger dining hall with snack bar, club rooms and the like. Both buildings are closely related to residential towers.

Two plans with diverse views. York is criticized because it looks backward to Oxford yet seeks to maintain close contact between small numbers of students and a faculty. Essex, Dober says, creates deliberately an urban environment in a park, avoiding the notion of "pavilions in the park," compressing and creating the feel and excitement of the city—a "twenty-four-hour university."

These are nice juxtapositions and I liked particularly Mr. Dober's conclusion: "For the American scene is it York versus Essex? Not necessarily. The conscious formulation of connections between educational philosophy and housing goals is the idea of consequence."

There are several generalizations of real interest to this country. Perhaps the most important is the reiteration of the importance of housing to the student. The double student room, almost universal in the United States, is viewed as "an anachronism, perhaps unduly prolonging the weaning period from home to collegiate life." More spacious individual quarters and frequently individual study rooms for non-resident students are provided. In this country those who live off campus study in automobiles.

The essentially linear shape of the universities shown here illustrates basic differences in approach between the countries. In describing the mathemat ics-geology building at Leeds, it is stated: "The building is fifty feet wide, the maximum area that can be naturally lit by windows on opposite sides of the space with a twelve-foot ceiling height." This view has long since been abandoned in this country for spaces that provide their own environment.

Continuous teaching environment is represented as a major contribution of the plans, expressed most directly in Essex and featuring the intermixing of instructional, communal, and residential space that "preserves communication and contact while allowing external accretion and internal change."

*The New Campus in Britain* does have real significance for America and, although its readership may be relatively narrow, its influence will be wide indeed.

*The Middle School,* by Judith Murphy, defines the middle school as an "alternative to the junior high school" embracing grades 6 (or 5) through 8. Beyond this point the definition falters through sixteen pages of such phrases as "take better account of the needs and abilities of between-age youngsters" or "concentrate on provisions for individual differences." There is a delightfully "fluid" conclusion to the introduction that absolves us from any attempt to define what is going on and leads into an illuminating examination of the efforts of a variety of school systems to build the facilities to house it.

IF I were teaching now, I would like to be on the staff of the Barrington, Ill. Middle School, the Bedford, New York Middle School (if it ever is finished), or the Plainview, New York Junior High School. These facilities reflect the impact of vigorous educational ideas in the creative results secured by the architects.

Barrington has an interesting configuration of teaching spaces, a marvelously large library in a traffic space carefully calculated to defy the packrat proclivities of most librarians, a submerged gymnasium, and a combination of lunch and assembly room that bears the dismal designation, "creative programing."

Bedford makes a strong commitment to individual study and contains, in the plan, an embryonic, random information-retrieval system. There is a welcome fluidity in the shop, homemaking, and arts space, rooms that elsewhere in the booklet appear with monotonous rigidity, I have often thought that the arts areas offered the best of all possible worlds for cooperative faculty effort and open physical planning and yet this area is one in which least has been done.

Here would be a good place to plant some EFL seed money to see what would grow.

Plainview is a junior high school or, perhaps better, a middle school with a ninth grade. The school nicely reflects a combination of teaching materials, faculty spaces, and work areas for students. I hope its central resource area (read "library"), the audiovisual area, and the divisible auditorium will work well. It is a good job of design. The interior courts are wonderful looking spaces.

On the other side of the ledger, one school shows a gymnasium lovingly clustered with classrooms while a library has a solitary position on the second floor. Architecture triumphed over teaching again.

Another school built around a traditional program shows itself geared for disaster in proposals for possible future use. Design for innovation results in the appalling loss of the one science laboratory for 1,200 students, wiped out to make room for lecture space and a Kafka-like corral of carrels and faculty offices. Clearly not too much attention was given to what might be.

On balance *The Middle School* is a highly successful and useful booklet, attractively presented and containing many provocative ideas. A dogmatic assumption threads through the material insisting that team teaching and flexible schedules and carpet and movable walls constitute a kind of infallible and inevitable innovation. I would prefer that these techniques and gadgets be expressed in terms of aids to accomplish some end or aim of education. The changing tricks of the trade are not, in themselves, useful.

*Schools Without Walls* is an enthusiastic case for the use in elementary schools of the "big room." These are open areas without walls and containing three to five classes of children and their teachers working together or separately as the program dictates and finding it possible to survive and flourish in a king-size architectural togetherness. The booklet carefully reviews the "pros" of this approach, shows how the difficulties can be surmounted, and borders on panacea.

There is an unfortunate kind of Alice-in-Wonderland chatter in the booklet that causes it to lose some of its value. The sheep herding characteristics of well publicized innovation can be gleaned throughout. For example, it is stated proudly that currently in new school construction in California 20 per cent of the buildings contain nothing but open teaching space. Yet the booklet states that all teachers should not be involved in open plans and that really sophisticated open plans have an increasing amount of closed or closable space about them. Indeed—"To exclude such 'special areas' imposes a rigidity no less undesirable than the rigidity imposed by rows of equal size classroom boxes."

The really cozy comment relates how children are color coded in one school. "These home groups are designated by the color of their chairs—red for fast-moving children reading on a fifth-grade level, yellow for students reading on a fourth-grade level and so on."

Essentially, in the open plan, floor area is substituted for walls. The rooms work well, according to the report, where the occupancy level is low. Higher density occupation of space results in distraction and interference.

The programs in these elementary schools described are organized generally as departmentalized tracks, with tight scheduling. In addition, any activities such as music, dance, or, in some cases, art demand that all classes do the same thing at the same time. It would appear that in order to get the freedom to regroup children frequently by subject and achievement level some other kinds of freedom may have to be sacrificed or more rooms with walls built.

The booklet describes several programs and buildings in enough detail to give a clear picture of how open plan schools operate. The plans are well illustrated and the photography of children in action is illuminating. Curiously, children, judging by a statistical study of the illustrations, sit on the floor more often than on chairs. The school furniture industry had better watch out.

It would appear that the chief advantage of open planning lies in bringing the teacher into closer working relations with other teachers. As in educational television, the advantage of the change is largely to the professional staff. The system allows for systematic induction of novice teachers for sharing ideas and for common planning by the teachers. The primary advantage for the children is "the freedom to move from group to group more easily."

Appendix F

# PARTICIPANTS

## Advisory Committee

Dr. Lee Campion, Head, Division of
Educational Communications,
N. Y. State Department of Education

Dr. Marcella Lawler, Professor of
Education, Teachers College, Columbia

Dr. Ralph Mosher, Assistant Professor
of Education, Harvard Graduate
School of Education

Dr. Eugene Oxhandler, Assoc. Director
of Instructional Communications,
Syracuse University

Mrs. Mary Lela Sherburne, Television
Teacher and Teacher-Trainer,
Educational Services, Inc.,
Watertown, Mass.

## Staff

Dr. Duane Ahlf, Superintendent

Dr. Neil Atkins, Principal, Fox Lane

Mrs. Olivia Hill, Elementary Corrdinator

Mr. Robert Lancto, Principal, Bedford Hills School

Mr. John McGuinness, Psychologist

Mr. Norman Michaels, Head, Math Dept.

Mr. Tom Sobol, Director of Instruction

Mr. Peter Telfer, Assistant Principal, Middle School

## Guest

Mr. Robert Jarecke
Educational Media Branch
U. S. Office of Education
Washington, D. C.

Mrs. Irma North
Secretary

Advisory Committee
Bedford Dial-Select Project

Meeting of January 11, 1966

PLAN FOR FEBRUARY CONFERENCE, 1966

During this year's February vacation the entire staff of the Middle School, plus department heads and principals, will participate in a four-day workshop devoted to the theme of individual differences in learning. The general purpose of this conference is to raise questions for study and exploration during the second semester and the July workshops. Detailed plans await the conclusion of today's meeting. A tentative outline is as follows:

Monday - Theme: What are individual differences in learning?

1. Teachers view and analyze the behavior of six pupils in a series of video taped lessons or portions of lessons. Working in teams, they try to identify differences among these children (who are in a supposedly "homogeneous" class).

2. The teachers of these six students provide additional background concerning them. Teams draw further inferences.

3. A survey committee reports on specific behavorial characteristics of the present grades 5, 6, and 7.

Tuesday - Theme: What are the stages in the process of learning?

1. A qualified consultant reviews for staff the classic steps in the learning process (or perhaps in a number of learning processes). Teachers are asked to make inferences about what kind of teacher behavior is most appropriate to each stage.

2. The consultant poses an instructional problem which teams must solve through analysis of learning process and judicious selection of teacher behavior.

3. Consultant leads examination of ways in which learning process varies from individual to individual.

Wednesday - Theme: How can we best structure role of learner and of teacher so as to provide for individual differences?

1. Turning this question first to group behavior, teachers view and analyze a number of video taped lessons or por-

tions of lessons. A picked panel of teachers conducts a critique, emphasizing the search for techniques which teacher employed (or failed to employ) for individualizing as well as pupil behavior which indicates whether or not individualizing is taking place. General discussion follows.

2. Teams conduct similar analyses of additional lessons.

3. Subject-matter teams discuss strategies for providing for individual differences toward end of achieving previously defined curricular objectives.

Thursday - Theme: How can we best structure role of learner and of teacher so as to provide for individual differences?

1. Turning this question first to group behavior, teachers view and analyze a number of video taped lessons or portions of lessons. A picked panel of teachers conducts a critique, emphasizing the search for techniques which teacher employed (or failed to employ) for individualizing as well as pupil behavior which indicates whether or not individualizing is taking place. General discussion follows.

2. Teams discuss techniques for subdividing groups, keeping Middle School facilities in mind.

3. Teams outline plans for continued study during the second semester.

General considerations:

1. Throughout the workshop - in the meeting rooms, at coffee, at lunch, during presentations - visual media will flourish and abound.

2. Time will be allotted for administration of the Q-Sort test and for daily reaction ballots. As much as possible, the workshop will be shaped around emerging teacher purposes - though always toward the same end.

3. Selected members of the public, press, and Board of Education will be invited to certain of the sessions. The entire workshop will receive wide coverage on local press and radio.

4. A short bibliography will be sent to teachers in advance of the session. Certain key readings may be required from day to day.

TS:g
1/11/66

Appendix H

Group 1

## Conclusions of Videotape Lessons

1. There was a definite lack of student involvement in these taped classroom lessons. The teacher was dominant while the students were not wholeheartedly participating. There should be much more interplay between student and teacher.

2. Not one student asked one question throughout the entire taping. This again emphasizes a poor give and take learning experience.

3. There was very little mobility as far as the teacher was concerned. Much more physical flexibility within the classroom should be displayed.

4. More interaction within groupings of students might provide better learning situations.

5. The technique of notetaking shown by the students leaves a great deal to be desired.

6. Let's put those nervous little hands that we observed to some useful, practical application.

7. Hurrah for the attitudes displayed by the students!

Appendix I

# FOX LANE MIDDLE SCHOOL
## PUPIL CHARACTERISTICS SURVEY

Student's Name_____

Student No. _____Teacher's Name_____

For each of the following questions circle one or more responses.

A. The child's work is typically

1. prompt
2. late
3. incomplete
4. thorough
5. careless
6. neat
7. sloppy
8. imaginative
9. perfunctory

B. The child has difficulty doing assignments which are

1. short, clear, and routine
2. long-range, with ample teacher direction
3. long-range, with direction left to pupil
4. to be done in writing
5. to be reported orally
6. anything out of the ordinary
7. (rarely does homework of any kind)

C. During in-school working periods, the child typically

1. applies himself consistently and efficiently
2. applies himself consistently but not efficiently
3. works well for short periods only
4. needs to be "made" to stay at the job
5. habitually disturbs his peers

D. Work, for this child, seems to be

1. an unpleasant necessity to be avoided or dispensed with quickly
2. usually dull, only occasionally of interest
3. a way to win his teacher's approval
4. a way to win his parents' approval
5. a way to win his peers' approval
6. important as a means of self-improvement
7. important as a means toward a long-range goal

E. In trying to solve a learning problem, the child has difficulty

1. perceiving the problem
2. developing problem-solving strategies
3. organizing data
4. making generalizations
5. testing generalizations
6. remembering facts
7. remembering ideas
8. working with concrete materials
9. working with abstractions

F. When faced with an "open-ended" situation where there are no "right" answers, the child

1. tends to panic and withdraw
2. becomes irritable and demands "the answers"
3. remains calm but is unable to hypothesize
4. makes wild guesses without knowing how to test them
5. formulates hypotheses and devises means for testing them

G. In a well-defined situation where answers are either right or wrong, the child's thinking is ordinarily

1. logical
2. illogical
3. accurate
4. erratic
5. hampered by anxiety
6. uneven - occasionally accurate and occasionally irrelevant

H. The child reveals the extent of his curiosity by

1. doing only the work assigned
2. asking thoughtful questions
3. pursuing other source materials or experiences
4. relating the work at hand to other experiences
5. following through consistently on matters of individual interest

I. In class, the child relates to his peers with

1. enthusiasm
2. cooperation
3. leadership
4. confidence
5. anxiety - apprehension
6. belligerence
7. laziness
8. withdrawal

J. When not in class, the child

1. exhibits considerable vitality
2. withdraws from association with others
3. assumes leadership role
4. is gregarious and cooperative
5. becomes aggressive
6. does not consider the needs of others
7. engages in personal interests and activities
8. doesn't know what to do

K. When free, the child is most often found

1. with one or two close friends
2. with the same group of friends
3. with a variety of acquaintances
4. with adults rather than peers
5. alone

L. The child's peers regard him with

1. respect
2. liking a desire for association
3. ridicule
4. suspicion
5. toleration
6. admiration
7. indifference

M. In school, the child's attitude toward his parents is one of

1. pride and affection
2. hostility
3. submissiveness - seems strongly directed by parents
4. embarassment
5. alternate pride and rebellion

N. In his relationships with teachers, the child

1. constantly seeks the teacher's companionship and reassurance
2. avoids being alone with a teacher
3. consults teachers only in exceptional situations
4. relates naturally and easily to teachers
5. seeks the attention of special personnel (counselor, librarian, etc.)

O. In his attitudes toward the adult world, the child

1. is strongly motivated by adult approval
2. exhibits a marked antipathy toward adults
3. seeks a behavior pattern that is markedly independent of adult influence
4. is strongly motivated by his peers
5. has a nice balance in his desires for adult and peer approval

P. In general, the child seems to relate best with adults who are

1. male
2. female
3. older
4. younger
5. calm
6. energetic
7. well-organized
8. creative
9. authoritarian
10. libertarian

Q. The child regards himself physically as

1. attractive
2. unattractive
3. well-developed
4. underdeveloped
5. strong, energetic
6. weak
7. apprehensive about future growth and development
8. confident about future growth and development

R. The child believes that his peers see him as

1. well-liked, a potential friend
2. disliked, one to be avoided whenever possible
3. someone not usually noticed
4. opinionated
5. gregarious
6. quarrelsome
7. intelligent
8. attractive
9. reliable
10. artistic

S. The child feels that teachers and other adults see him as

1. polite and well-mannered
2. withdrawn
3. silly
4. humorous
5. bright
6. dull
7. contrary
8. boisterous
9. nervous
10. confident

T. The child perceives his academic potential as

1. superior
2. adequate
3. limited to certain areas
4. restricted because of certain skill deficiencies

Appendix J

Summer Institute
Bedford Middle School Staff

CONFERENCE REACTION BALLOT
Date: _____

Directions: This sheet requests your reactions to what happened during this four-day workshop. Please fill in each blank as directed. Comments may be written on the back.

THINGS PEOPLE DID: Think back over the actions that took place. Fill in the blanks with descriptions of behavior or actions, (regardless of who the person was).

1. The most helpful thing anyone did was _____

2. I was somewhat surprised at _____

3. We really needed someone to _____

4. Of the things people did, I tended to admire _____

5. It really hindered our progress when _____

6. It was disappointing to me that _____

7. I personally felt somewhat uncomfortable when _____

8. It gave me a comfortable feeling that _____

9. I disapproved of _____

THINGS I DID WITHIN SMALL GROUP MEETINGS: Think back over the way you operated in this particular conference. Fill in the blanks with what you did.

10. I felt that I did not do a very good job at _____

11. I felt that I had to control my impulse to _____

12. I had a feeling of accomplishment when I _____

13. I feel I would like to change the way in which I _____

14. Using the 1 through 5 scale below (1 indicates low, 5 indicates high) circle the number rating each day's program in terms of its value to you.

| | | | | | |
|---|---|---|---|---|---|
| Monday | 1 | 2 | 3 | 4 | 5 |
| Tuesday | 1 | 2 | 3 | 4 | 5 |
| Wednesday | 1 | 2 | 3 | 4 | 5 |
| Thursday | 1 | 2 | 3 | 4 | 5 |

15. How interested or personally involved were you in the institute proceedings?

| Antagonistic | Annoyed | Indifferent | Interested | Challenged |
|---|---|---|---|---|

16. To what extent were the things you personally hoped to get from the institute different from the stated purpose?

| Opposed | Different | Unrelated but compatible |
|---|---|---|

| Fairly similar | Identical |
|---|---|

17. Generally speaking, how do you feel the institute as a whole has been?

| Inadequate | Unimpressive | Acceptable | Satisfactory | Very Satisfactory |
|---|---|---|---|---|

Appendix K

The Fox Lane Middle School
Bedford, New York

You do not need to write your name on this paper. The purpose of this survey is to help your teachers plan September's program. Please answer the following questions as best you can.

1. On the whole, I feel that for me this summer program has been

_____valuable _____a little bit valuable _____of no value

2. If another program like this were held next summer, I would

_____like to attend _____maybe like to attend _____not want to attend

3. If a friend asked me whether he should attend this program, I would tell him

_____yes, by all means _____OK, if you're looking for something to do _____no, I don't think you'd like it

4. Working with more than one teacher for each subject was

_____better than one teacher _____about the same as having one teacher _____worse than having one teacher

5. Being in the same group with pupils of other ages and grade levels was

_____better than being with one grade level only _____about the same as being with one grade level only _____worse than being with one grade level only

(Please circle the grade you will be in this September: 6 7 8 )

6. Not getting marks or report cards this summer

_____improved the program for me _____made no difference to me _____hurt the program for me

7. Which three of the following kinds of activity did you like best?

_____lectures by the teacher
_____demonstrations by the teacher
_____demonstrations by other pupils
_____demonstrations done on television
_____discussions by the whole class
_____discussions in small groups
_____project work done with other pupils

_____project work done by you alone
_____free reading
_____movies or slides shown in class
_____individual conferences with the teacher

8. Which three of the following kinds of activity did you like least?

_____lectures by the teacher
_____demonstrations by the teacher
_____demonstrations by other pupils
_____demonstrations done on television
_____discussions by the whole class
_____discussions in small groups
_____project work done with other pupils
_____project work done by you alone
_____free reading
_____movies or slides shown in class
_____individual conferences with the teacher

Please complete the following in whatever way seems best to you.

9. The best thing about this program was

10. The worst thing about this program was

11. I think that in September the teacher should

12. What I look forward to most about returning in September is

13. What I look forward to least about returning in September is

Are you a boy or a girl? Please check one

_____boy _____girl

## OBSERVATIONS

1. In the early visits to the classrooms the teams members did not seem to use their combined thinking/knowledge in planning the learning experiences of the students. The team leaders seemed unsure of his/her role on the team. By the end of the week (July 22) there was more extensive collaborative efforts in the team meetings. The fusion of two or more subjects did not seem to add a curriculum planning burden to the team and they began to do more depth planning for the learning needs of the students.

   The elements of group dynamics were evident and members of the teams needed to understand group behavior. Some of the teams had little knowledge about group behavior so could not put into practice the principles and methods. A few team members seemed to have a limited awareness and feeling for the group.

2. Planning activities to meet individual needs posed some problems. Many team members were not sufficiently observant so that they were unable to see the different needs of students. As the teams worked together longer they were able to provide means for pacing the instruction to the individual students needs. Teachers began to make decisions about the length and frequency of some of the learning experiences. Teachers began to work with small groups and individuals during the end of the week. They seemed to be assisting the students not to learn about science but to do the work of science. Each student seemed to be developing the skills for investigation. The thrill and adventure of discovery was evident as one observed the student. While every student did not take a new step into the unknown of knowledge, each student was having pleasure of sharing in what others had learned.

3. Preparation of materials or the selection of materials needed for instruction took so much of the teachers time. This would have been no problem, but part of the afternoon was devoted to the planning for the fall program. As a result of spending so much time with the department heads there was no preparation time for the job at hand. As a result many media were not used.

4. Defining objectives for the individual students was not developed in an orderly manner. There seemed to be a hit-miss method used. Although after calling this to the attention to some of the team leaders improvement was seen.

5. Use of the TV was beginning to emerge as the teams planned better. More and better ideas were beginning to come from different teams. Most members were afraid to become involved or it seemed to this observor to be the case.

6. The ungrading of students was excellent. Some of the teachers did continue to speak of the student by the number of years that he had been in school, but did strive to provide the instruction at the level for which the student was functioning. From this point they seemed to be taking the student forward with his learning. Different teams were at different levels with area of development.

7. There seemed to be some slight problem with secondary trained teachers who had little or no feeling for the student but a drive to be sure that the subject matter was presented. The staff coming from the elementary school did not seem to have this problem. These elementary trained staff demonstrated no weakness in the subject areas and did seem to have more individual interest in the student. The secondary people demonstrated a number of weaknesses as they worked with the students. After one week, some of the secondary teachers did seem to be striving to improve in the ways they worked with individual students, working on the team with the elementary teacher taught them some things about the student that they had not known before.

## RECOMMENDATIONS

1. Introduce Group Dynamics to members of the team: what it is - its main ideas - its language - and its applications. Work conferences throughout the coming year should prove most helpful to the team members.

2. Further study/planning on how to observe, diagnose and prescribe for the learner. This takes time for the team to develop these skills.

3. Plan into future schedules more time for the team members to work together. Meeting with other teams at some time would be of value.

4. Change the role of department heads - to subject specialist assisting with information and materials - they should not be directing learning activities and telling teachers "how to" carry out the art of teaching.

This writer feels that the weakest part of the total program was the role of department heads. They seemed to be extra stage hands who did not contribute to the program, but detracted by giving orders that teachers had to follow. They did not serve as curriculum leaders in any way. Many teachers felt it necessary to do what they were told to do, since they seemed to feel that the department head was the authority figure, they must obey. The principal in the building should have the authority and the department heads only serve as another member contributing to the total team. Many team members seemed to be trying to please "Two Masters". This area should receive prompt and serious attention.

5. Further in-service work with the staff on the ways to use materials and media. Resource people who have been specifically trained to teach by TV or local persons who know techniques that would be helpful to the teachers.

6. Provide an opportunity for the systems supervisory staff and the team leaders to go visit U.C.L.A. training school in Los Angeles (John Goodlad is the director) - the Oakleaf Project in Pittsburg - and other schools working with media and approaches for individualizing instruction.

7. Provide means so that the subject centered teachers could have information about child growth and development. This could be done through University work or the school system providing a number of study sessions.

8. Teams should be composed of members from each of the disciplines math-science-social studies and language arts. The student should be ungraded in each of the houses. Students in each house should come from each of the four elementary schools.

9. Provide para-professionals to work with the teams. Some training programs should be developed so that these persons know their responsibilities as they join the teams. These persons could be trained during the year or in the summer (with the summer school) so that in the fall they are ready to begin work with the team.

10. Continue the summer school program as one of the means of helping teachers to learn to work on teams, and to individualize the instructional program for the learner. Fox Lane Middle School could be used as the training center for the school system, as teams are trained from both the elementary and secondary schools. The combined efforts of teachers from both levels is important.

11. Planning the fall programs should not be done at the same time the teacher is teaching in the summer program. The two conflict with each other and the teacher finds himself not doing his best work at either. The fall planning to be most effective should be done without the pressures of other responsibilities.

Appendix M

TO: Mr. Tom Sobol
Director of Instruction
Bedford Public Schools

FROM: Robert E. Bunnell

DATE: July 28, 1966

RE: Observation at the Fox Lane Middle School as Visiting Supervisor - July 18 - 22, 1966.

INTRODUCTION:

In the period of one week it would be presumptuous of me to offer definite conclusions about the school or the staff. However, it is possible to sense the general atmosphere of the school. I found the learning atmosphere to be very healthy. In the many informal meetings there was open discussion among teachers about ways to better accomplish their goals. After some initial apprehension teachers seemed willing to expose themselves to the critical appraisal of their colleagues. Never did I hear the discussion reduced to only the amount of work involved. Although this was obviously a factor, it was always in the context of how instruction might be improved.

I would be remiss in any discussion of the school not to mention the plant itself. It is magnificent! One feels that he must become a better teacher to be allowed in the building. The easy access to large areas from each classroom is particularly valuable. Teachers made good use of this space. It will take time and planning to better take advantage of the partitions within individual classrooms. I will be most anxious to see the school when all buildings are complete and occupied.

GENERAL COMMENTS:

Although they are obviously related, for the purpose of discussion I would like to separate teaming and non-grading and individualization. First let me comment on individualized instruction.

I was at first disturbed by the essentially traditional approach to teaching. Although there was considerable committee work among students, and teachers were seeking discussion from students, this was largely in a traditional context. For example, the questions asked of students were rhetorical. There seemed too few opportunities for students to seek answers to open ended questions. Children were following the same rules of cautious response, expecting a correct or incorrect, from the teacher. I believe this to be due to a degree of caution on the part of teachers to take a chance. As the week went on the faculty seemed to relax and there appeared to be much more creativety apparent in the teaching.

It seemed to me, also, that in too many instances the use of the city as a vehicle had become lost in an effort to cover content. Again as the week went on teacners seemed to relax and more freedom was allowed for exploration. Teachers were also becoming involved in the problems of individualizing. Discussions were frequently centered around better ways to meet the needs of individuals. I was pleased to note the concern among the teachers as they began to wrestle with the problem.

On the subject of teaming and non-grading, the faculty seems well ready to embark on the project. The discussions were around how to team rather than should we team. There was a very healthy spirit of cooperation among the staff members. It will obviously be very important to properly balance each team in regard to personalities, commitment, experience, etc. There is also a necessity for honesty among all people involved. If a team doesn't work, people must admit it and be willing to change.

I found the coming together of secondary school subject matter oriented teachers and elementary self-contained teachers most interesting. The differences and disagreements are so obvious that they tend to cloud the much larger area of agreement. Although there will always be the need for give and take from both poins of view, the general attitude seemed very positive. I am certain that this marriage will be a successful one because of the highly professional attitude of the faculty.

RECOMMENDATIONS:

It should be noted that it is relatively easy for an outside source to pass out suggestions from the security of distance. I certainly don't expect all that I say to be accepted. Rather I hope I may stimulate some discussion which may begin the chain reaction that may lead to change.

First, considerable support must be given to the faculty to provide some degree of security during what must be a very frustrating period. This means particularly that supervision must be in the most positive sense. Teachers must feel free to fail. In the age old ritual of punishment and reward, it must be made clear that the inventive teacher will be supported.

I would hope that a considerable amount of time might be spent on instructional techniques. There is a need for workshops, and supervisory help dealing specifically with classroom techniques for individualizing instruction. There is a danger that the structure of teaming distracts us from the classroom. I would hope that it might be possible for members of the staff to visit some outstanding schools. For example, using Boston as headquarters it would be possible to visit Newton, Lexington, Lincoln, Wellesly, etc. at relatively little expense. I would also recommend that possibly Mrs. Hill, Mr. Sobol, and a key teacher or two make the trip to California to visit the campus school at UCLA. I realize the expense involved, however, this school under the directorship of Dr. Goodlad is so outstanding as to be worth the trip. I believe the opportunity of visiting the school and talking to Mrs. Hunter, the principal would be a good

investment. There are also films available which can be obtained through the school which would be valuable for viewing by the faculty and parents.

If team leaders are chosen I would hope that they would be given considerable freedom over the scheduling, materials used, etc. They must very much become a team, with a group responsibility for a group of children. It is the exchange of ideas and group planning that gives team teaching its value. There is a danger that department heads, in effect, become quasi-team leaders. This would, I believe, be a mistake. They would serve a more valuable function in providing guidance in how better to provide for individual differences within their particular subject area. Too often, department heads become so enmeshed in curricular problems that instructional technique takes second place. The involvement of department heads in the instruction of their subjects would be good for the whole program. I would again say, however, that responsibility for the program within a team should remain with the team and the administration.

CONCLUSIONS:

My over-all impression is very positive. This is obviously a highly competent, professional faculty. Their attitudes appeared to me to be very healthy. They seem sincerely interested in providing better education for children. All discussions had this as the goal. I would hope that time might be provided during the year for teachers to come to grips with some of the basic problems with which we are all faced. What does individualized education mean? How can we make it work in the classroom? Is continuous progress possible? What compromises must be made to turn theory into practice? How can we involve children in learning? What do we mean by discovery? Can we leave questions unanswered?

We should keep in mind that no one has solved all the problems of education. It is the school system that asks the questions and struggles with solutions that is an exciting place for students and teachers. Since there are not answers to all the questions, frustration and ambiguity are a price that one pays. However, being a pioneer is never easy.

I very much enjoyed my week with you. It was a pleasure working with such a fine staff. I wish you the very best for a successful year.

Appendix N

## LOCAL TV PRODUCTIONS

January - June 1969

| Title | Subject Area | Production Technique |
|---|---|---|
| The Coming of Civilization | Social Studies | 35mm Slides |
| Coopering: Barrelmaking | " | " |
| Tools of Early Man | " | " |
| Primitive Man | " | " |
| Bushmen of the Kalahari | " | " |
| Candlemaking | " | " |
| Handicrafts of Iran | " | Live Studio |
| Classroom Games - Middle East | " | Live Classroom |
| Colonial American Craftsmen | " | 35mm Slides |
| Triumph of Man | " | " |
| Birth of a Kibbutz | " | " |
| Kashgai Tribe of Iran | " | " |
| Sumi-E; Japanese Brush Drawings | Unified Arts | Live Studio |
| Sketching Lines and Circles | " | " |
| Mechanical Drawing Tools & Paper Setting | " | " |
| 6 Basic Exercises in Mechanical Drawing | " | " |
| Drawing of an Oblique Cabinet | " | " |
| Development of an Oblique Drawing | " | " |
| Development of a Cube | " | " |
| Pattern Development | " | " |
| Day in Scotland | Independent Study | " & 35mm Sl. |
| Egyptian Writing | " | 35mm Slides |
| Dances from Africa | " | " |
| Yellow Submarine | " | " |
| Egyptian Pharaohs & Their Tombs | " | " |
| 4 programs on "Current Middle East" | " | Live Studio |
| World War I | " | 35mm Slides |
| Basic Ballet | " | Live Classroom |
| Riots and The Black Community | " | 35mm Slides |
| Undulent Fever | " | Live Studio |
| Schistosomiasis | " | Live Studio |
| Western Nigeria | " | " & 35mm Sl. |
| The Galvanometer | " | Live Studio |
| How Life Begins | " | 35mm Slides |
| Roman Baths | " | " |
| Psychopharmacology | Naroctic Addiction | Live Auditorium |
| Legal Problems Involved in Drug Abuse | " | " |
| The Addictive Personality | " | " |
| Education toward Prevention of Drug Abuse | " | " |
| Fox Lane Middle School | Orientation Prog. | 35mm Slides |
| Elementary Coordinate Geometry | Math - Teacher-in-Service | Live Classroom |

Appendix O

# THE SYSTEM FOR ANALYSIS*

## Overview of the Analysis System

The basic categories of analysis include types of pedagogical moves, categories for the contexts in which the moves are communicated, and categories for analyzing the meaning of the move.

Pedagogical moves. The basic unit of discourse is defined as a pedagogical move. These moves are classified in four major categories according to the pedagogical function they serve in classroom communication: structuring, soliciting, responding, and reacting. These four types of move describe verbal and non-verbal maneuvers of both teachers and students in the classroom and set the framework for the analysis of meanings communicated and the contexts in which the communication takes place. Each move is coded according to its form and, for soliciting and responding moves, the information process activity.

Categories for contexts. The move is a unit of communication for a particular group of people. This group is the context in which the move occurs. This group is analyzed along the following dimensions: (1) the physical location of the group within the classroom, (2) the size of the group, and, when small, the people constituting it, (3) the person within the group who is the emitter of the move, and (4) the person within the group to whom the move is directed. These are coded for each move according to rules in Appendix B.

Categories of meanings. Four functionally different types of meaning are communicated by teachers and pupils in the classroom: (1) substantive with associated (2) substantive-logical meanings and (3) instructional with associated (4) instructional-logical meanings. Within each pedagogical move these four types of meaning are identified when they appear in the communication and are coded according to the rules of analysis described in Appendix B. Each of these types of meaning is coded along one dimension with the exception of instructional meanings. Structuring moves and solicitations with directive meaning are coded according to the activity directed, the agents involved, the time the activity is to begin, the location, and the objects to be used in the activity. The other moves are coded simply according to one dimension of instructional meaning. All moves are coded in terms of reference to the progress or correctness of activities or the results of activities.

## Emitter

The emitter is the person or object that utters the sounds or performs the gestures which convey meaning within the communication group. The

*Insofar as possible, the wording of chapter two of The Language of the Classroom has been retained in defining and describing the common terms.

emitter(s) will be categorized as follows:

01 Teacher
02 Teacher aide
03 Audio-visual device
04 Other. Generally a person from outside the classroom.
05 Uncertain. It is not clear which group member is the emitter.
06 Pupil segment. Fewer than half, but more than one of the pupils in the group are emitters of the move.
07 Pupil quorum. Half or more, and more than one, of those in the communication group are emitters of the move.
08 Teacher and pupil sigment.
09 Teacher and pupil quorum.
10 Peter A.
.
. (The same codes are used as for communication group members)
.
60 Girl uncertain. The emitter is a girl but it is uncertain which one.

Pedagogical Moves

Pedagogical moves, the basic units of classroom communication, describe the interactions of teachers and pupils in the classroom. There are four basic types of move which characterize the interplay of teachers and pupils: structuring and soliciting, which are initiatory moves; and responding and reacting, which are reflexive moves.

1. Structuring. Structuring moves serve the function of setting the context for subsequent behavior by (1) launching or halting-excluding interactions between teacher and pupils, and (2) indicating the nature of the interaction in terms of the dimensions of time, agent, activity, location, objects involved and cognitive process. A structuring move may set the context for the entire classroom game or a part of the game. Structuring moves do not elicit a response, are not in themselves direct responses, and are not called out by anything in the immediate classroom situation except the speakers concept of what should be said or taught.

   Examples:
   T: In a few minutes I'll be coming around to look at your work. If I have any questions, I'll ask you about it.
   T: Before starting today, I'd like to spend a few minutes discussing what has been happening in Vietnam.

2. Soliciting. Moves in this category are intended to elicit (a) an active verbal response on the part of the person addressed; (b) a cognitive response, e.g., encouraging persons addressed to attend to something; or (c) a physical response. Soliciting moves may take all grammatical forms - declarative, interrogative, and imperative - although generally the interrogative form predominates. In coding soliciting moves, the various categories of analysis are coded in terms of the response expected rather than the solicitation itself.

T: Go back and copy this over.
P. Where are the pencils?
P: Can I do the biography on my parents?
T: (motioning for pupil to come to teacher's desk.)

3. Responding. Responding moves bear a reciprocal relationship to soliciting moves and occur only in relation to them. Their pedagogical function is to fulfill the expectation of soliciting moves and is, therefore, reflexive in nature. Since solicitations and responses are defined in relationship to each other, there can be no solicitation that is not intended to elicit a response, and no response that has not been directly elicited by a solicitation.

P: (Goes back to his desk and copies paper.)
T: We don't have any more pencils. They've all been taken.
T: Well, yes, I suppose so.
P: (Responds by coming to teacher's desk.)

4. Reacting. These moves are occasioned by a structuring, soliciting, responding, or a prior reacting move, but are not directly elicited by them. Pedagogically, these moves serve to modify (by clarifying, syntnesizing, or expanding) and/or to rate (positively or negatively) what was said in the move(s) that occasioned them. Reacting moves differ from responding moves; while a responding move is always directly elicited by a solicitation, preceding moves serve only as the occasion for reactions.

Examples:
T: Good; Right; O.K.; That's not quite it; etc. (following P response)
T: That's a good question.
P: I guessed that you hadn't finished it.

5. Reacting - summary. This category is coded for a reacting move that is occasioned by more than one move.
T: You are both saying about the same thing, but using different words.
T: Very good. I think you've brought up all the relevant points.

6. Reacting - lack of response. This category is coded for reactions which are occasioned by the lack of response to a solicitation. If the speaker answers his own question after a pause, or if he refers to the lack of pupil response, the move is coded as a reaction to a lack of response.
T: This is an easy question now. You can't have forgotten all that much.
T: (Solicitation: how many times does 15 go into 94? No pupil response. Reaction: teacher writes the number 6 after pause.)

7. Reacting - physical. The reaction is occasioned by a physical action rather than a verbal action. Also coded when the reaction is to a physical object, such as a pupil's written work.
T: (Comes to pupil's desk, looks at paper) You've done a good job here.

## Communication Group Location

When pupils and teacher communicate with one another, they do so in some place. The communication group location is the physical setting of the communication group for a particular move.

Settings in which the teacher is proximate to the pupils in the communication group, i.e., a non-group member is not between the emitter and target:

00 Uncertain. The location of the group is uncertain because it is out of camera range. (It is not always true that the group location is uncertain when out of camera range.)

01 Classroom. The group members are dispersed throughout the classroom.

02 Teacher's desk. The group members and the teacher are at the teacher's desk.

03 Pupil's desk. The group members and the teacher are at the desk or table of one of the pupils in the group.

04 Media location. The group members and the teacher are at a projector, wall map, globe, blackboard, model, or other piece of apparatus. When the media is at the pupil's desk or the teacher's desk, 04 will be coded preferentially over 02 or 03.

05 Other location. The group is at a localized setting in the classroom other than 02, 03 or 04.

Student settings when the teacher is physically separated from the pupils in the group, i.e., when non-group pupils are closer to the teacher than any pupil in the communication group:

06 P @ T desk. Group members, but not the teacher are at the teacher's desk.

07 P @ P desk. Group members, but not the teacher, are at the pupil's desk.

08 P @ Media location. Group members, but not the teacher, are at the media location.

09 P @ Other. Group members, but not the teacher, are together at some location other than 06, 07 or 08.

10 P @ uncertain. The group members' location is uncertain, but it is known that the teacher is not with them.

## Substantive Meanings

Substantive meanings are coded for those moves or segments of moves in which one is communicating subject matter, or requesting that another communicate certain subject matter. Communications about the subject matter (whether it is hard or easy, whether one understands it or not, assignments associated with it, etc.) are considered to have instructional meaning since they do not contribute directly to the pupil's knowledge of the subject nor do they call upon the pupil to use or demonstrate the knowledge he has on the subject.

The substantive meaning categories are:

0 No substantive meanings in the move.

0 None. There is no substantive meaning in the move.

8. Structuring - assigned. This category is coded for those pupil structuring moves that occur as the result of an assignment.

Information Process Activity

The information process activity refers to the solicitor's indication of how he expects the person solicited to use the information presented in the soliciting move when responding as directed. This dimension is not coded for structuring or reacting moves.

The information process activity is coded only for solicitations and responses which have logical (as opposed to extra-logical) meanings.

0 Not coded. For structuring and reacting moves, and solicitations and responses with extra-logical meaning.

1 Assigning a truth function. The solicitor directs the person solicited to affirm, to accept, to agree with, to deny, or to disagree with information presented in the soliciting move. The solicitor indicates that a sufficient response to the solicitation is either a "Yes" or a "No" which means "It is the case that . . ." or "It is not the case that . . ."

T: Are you finished with that yet?
T: Do you know how to divide?
P: Do you have an eraser?

2 Selecting. The solicitor directs the person solicited to select one or more alternatives and indicates that a sufficient response is, or represents, the choice of one or more of the alternatives presented. The exclusive disjunction must be stated or clearly implied.

T: Do we do our measuring in meters or feet?
T: Did you want to go to the library tomorrow or Monday?

3 Constructing. The solicitor directs the person solicited to construct a response if he neither presents alternatives for the target to choose among nor directs the agent to assign a truth function for information presented in the soliciting move, but directs the target to extend the information presented in the soliciting move as the basis for a response.

P: Where is the microscope?
T: What else will you look at besides the color?

4 Assigning/Selecting. The solicitor's direction is ambiguous as to whether the target is to assign a truth function to a set of alternatives or is to select one alternative.

T: Are you getting this now or do you need more help?
P: Yes

5 Assigning/Constructing. The solicitor directs the target to assign a truth function to the information presented and/or to construct an additional aspect of the response.

T: You are Dorn, aren't you?

6 Selecting/Constructing. The solicitor directs the target to select one or more alternatives, or to construct an additional alternative not presented in the solicitation.

T: Is your project going to be on tree leaves, flower leaves, or what kind of leaves?

Move Form

Meanings are communicated in the classroom in several different ways. The pedogogical move may have oral or non-oral forms, each of which may be verbal or non-verbal. The move may also be expressed through a combination of these forms.

Oral and verbal.

1 Speaking. The cognitive meanings are fully expressed through teacher or pupil talk.
T: The scratch paper is over there on my desk.

2 Reading. The meaning of the move is communicated through speaking, some of which speaking is reading aloud.
T: I will read from Bill's report to show you how he went about it: "Problem: How can we . . ."

Oral and non-verbal.

3 Sound. Laughter, moaning, or other noise of human or non-human origin which either occasions a reflexive move or is itself a reflexive move.
T: Ohnnnnnn (moan)

Non-oral and verbal.

4 Writing. The cognitive meanings are communicated through the writing of words or other symbols with no accompanying talk.
T: (Writes the number the pupil says, and waits to be told the next step.)

Non-oral and non-verbal.

5 Manipulating. The cognitive meanings are communicated through operations involving an object or objects, such operations showing (1) something about the object itself (how it works, how one uses it, what it can do) or (2) a concept of principle through the juxtaposition of objects or the operation of the object.
T: (silently demonstrates a laboratory procedure.)

6 Gesture. The cognitive meaning is communicated through gesture alone. This includes pointing to indicate location, to exhibit, to denote; directing gestures which control movement, vocal actions, etc.; and gestures such as "I don't know" shrugs.
P: (points to place on map in response to teacher solicitation.)

Combinations

7 Speaking while writing words or other symbols.
T: (works a math problem, or part of the problem, aloud at the board)

8 Speaking and manipulating materials.
T: (talks as he performs a demonstration.)

9 Speaking and gesturing. Coded only when meanings in addition to those verbalized are present in the gesture.
T: It is over there (points).

Target

The target consists of those to whom a move is directed, those who are expected to attend to the move. Target will be coded in terms of the number of people addressed and, when that number is four or fewer, the people will be identified.

Number of Targets

00 There are no targets. The move is directed to no one.
01 There is one target
02 There are two targets.
03 There are three targets.
04 There are four targets.
05 The number of targets is uncertain, often because out of camera range.
06 Pupil segment. Fewer than half (but more than four) of those in the communication group are targets.
07 Pupil quorum. Half or more (and more than four) of those in the communication group are targets.
08 Teacher and pupil segment. The move is directed to the teacher and a segment of the communication group.
09 Teacher and pupil quorum. The move is directed to the teacher and a quorum of the pupils in the communication group.

Identification of targets (when four or fewer)
Targets are identified by the same code as is used in identifying the communication group members and the emitter. That is:

00 No targets or more than four targets.
01 Teacher
02 Teacher aide
03
04 Other target, usually someone from outside the classroom.
05 Target uncertain.
10 Peter A.
.
.
.
60 Girl, uncertain. The target is a girl, but her identity is uncertain.

Communication Group

The communication group is that group of pupils with whom the teacher is intentionally in communication for a particular move. Two aspects of the

communication group are coded (1) the size of the group, coded in terms of the number of pupils, and (2) the membership of the group when there are four or fewer pupils.

Communication Group Size
Segment: the number of the pupils in the communication group is less than half of all those in the classroom at the time of the move.

00 There are no pupils in the communication group. T talks to self or non-pupil.
01 There is one pupil in the group and this is a segment of the class
02 There are 2 pupils in the group "
03 There are 3 pupils in the group "
04 There are 4 pupils in the group "
05 There are 5-10 pupils in the group "
06 There are 11-16 pupils in the goup "

Quorum: The number of pupils in the communication group is half or more of all those in the classroom at the time of the move.

11 There is 1 pupil in the group and this is a quorum of the class
12 There are 2 pupils in the group "
13 There are 3 pupils in the group "
14 There are 4 pupils in the group "
15 There are 5-10 pupils in the group "
16 There are 11-16 pupils in the group "
17 There are 17+ pupils in the group "
20 Uncertain. Those whom the teacher is communicating with cannot be determined, often because they are out of camera range.

Communication Group Members (when there are four or fewer pupils in the group)

00 There are no pupils in the communication group, more than four, or the group size is uncertain.
05 It is uncertain who the pupil is, although the group size is known.

| | | | |
|---|---|---|---|
| 10 | Barton | 40 | Bonnie |
| 11 | Chuck | 41 | Caren |
| 12 | Eric | 42 | Carol |
| 13 | Fred | 43 | Cindy |
| 14 | Jim G | 44 | Debbie D |
| 15 | Jim R | 45 | Debbie M |
| 16 | Jim Z | 46 | Debbie S |
| 17 | Joe | 47 | Ellen |
| 18 | John C | 48 | Gail |
| 19 | Mark | 49 | Janice B |
| 20 | Nathan | 50 | Janice M |
| 21 | Peter | 51 | Janice S |
| 22 | Phil | 52 | Kathy |
| 23 | Richard | 53 | Linda B. |
| 24 | Robt. So. | 54 | Linda R. |
| 25 | Robt. St. | 55 | Lorna |
| 26 | Steve B. | 56 | Margaret |
| 27 | Steve G. | 57 | Maureen |
| 28 | Tom H. | 58 | Patty |
| 29 | Tom K. | 59 | Polly |
| 30 | Boy, uncertain which one. | 60 | Girl, uncertain which one. |

1 Relevant to the unit. The subject matter being communicated is relevant to the unit, or to the work being required in the unit. Thus, in a unit on ancient Rome, a discussion of Pinochio is relevant to the unit when it is being compared to a Roman myth.
T: Define myth.
P: A myth is something like a fairytale.

2 Relevant to the subject area. The subject matter being communicated is relevant to the course in general, although not to the particular unit being covered. During the unit on Roman history, a discussion of U.S. current events is relevant to the area of social studies, but not to the particular unit on Roman history.
T: Which primaries are being held today?
P: Indiana and Nebraska.

3 Not relevant to the subject area. The subject matter being communicated is not relevant to the course in which it is being communicated. A discussion of the nature of solder and its uses, prompted by a pupil having it in his mouth, is considered to be not relevant to social studies.
T: It's made of lead and tin, and lead is very poisonous.

Substantive-Logical Meanings

Substantive-logical meanings refer to the cognitive processes involved in dealing with the subject matter under study.

1 Defining. To define is to (1) give the set of properties that an object (abstract or concrete) must have for the term to be applicable and/or (2) refer to the objects (abstract or concrete) to which the term is applicable.
T: What kind of pulley is this?
P: A movable pulley.
T: What is a myth?
P: A myth is something like a fairytale.

2 Interpreting. To interpret a statement is to give its verbal equivalent, usually for the purpose of rendering its meaning clear. Interpreting bears the same relationship to statements that defining does to terms.
T: Reword the law of levers so that it applies to pulleys.
T: What is another way to say 10 divided by 2?
P: 10 times ½.

3 Fact-stating. To state a fact is to describe, to report, or to give an account of an object, event, action, or state of affairs; such report, description, or accounting being empirically verifiable at least in theory. Fact-stating is also giving information which is verified analytically, but which may have its truth illustrated empirically, as with arithmetic "facts."
T: What does poison ivy look like?
P: It has three shiny green leaves.
T: What is 1/3 of 60?
P: 20.

4 Explaining. To explain is to relate an object, event, action, or state of affairs to some other object, event, action, or state of affairs; or to show the relation between an event or state of affairs and a principle or generalization; or to state the relationships between principles or generalizations. The relationship may be causal, mechanical, sequential, procedural, teleological, or normative. The relationships must be either (1) empirically verifiable, at least in principle, or (2) analytically verified but capable of being illustrated empirically.
P: How do you do this problem?
T: In what way is the pulley similar to the lever?

5 Opining. To opine is to make statements in which the speaker gives his own valuation regarding (1) what should or ought to be done, or (2) fairness, worth, importance, or quality of an action, event, person, idea, plan, or policy.
P: I don't think it's right to name months after emperors.
P: Italy has an interesting shape.

6 Justifying. To justify is to give reasons for holding an opinion regarding (a) what should or ought to be done, or (b) fairness, worth, importance, or quality of an action, event, policy, idea, plan or thing. Justifying statements are intended as support or criticism of opinions that either have been explicit in a previous statement or are implied within the context of the interaction. Justifying statements are frequently preceded by an opining statement, although this is not a necessary condition for coding justifying.
T: Why do you think they shouldn't have done that?
P: It's interesting because it is in the shape of a boot.

## Instructional Meanings

Teacher-pupil communication which focuses upon classroom management, assignments, and the work which follows them, classroom personnel and procedures, classroom activities or the materials of instruction, is coded as having instructional meaning. The content of a move with instructional meaning is coded in one of the following categories (for moves with non-directive meaning):

10 Statement. Reference to any utterance or physical gesture, particularly the meaning, validity, truth or propriety of the utterance or gesture. The utterance may consist of a sound, word, or several paragraphs. The physical gesture may be any that stands in place of an utterance.
T: That's right. (reacting to a substantive response)
T: O.K. (reacting to a non-verbal pupil response)
P: O.K. (responding to a teacher directive)

20 Logical process. Discussion of the way language is used or of a logical process. Includes references to definitions, explanations, reasoning, arguments, and the like.
T: You are contradicting yourself.
T: What do I mean when I say to define something?

30 Assignment. Reference to pupil work which is to be done, in progress, or completed. Includes talk about an assignment, about an answer to a problem or question, about a report or other product of pupil assignment oriented activity.
T: Which kind of assignments do you prefer?
P: Is this the right answer?
T: What are you planning to do after this?
P: I thought I'd do a report on Cincinnatus.

31 Assignment-progress. Reference to the progress of a pupil's work in the past, present, or future. Includes references to how much has been accomplished, the rate at which work is done, the schedule for completing future work, the amount of time availalbe for an exercise or project.
T: Is this the first project you've done?
P: I've just finished my last filmstrip.
T: How are you doing, Joann?
T: Where are you now, Jody?

32 Evaluation. Reference to grades, test or quiz scores, test or quiz.
T: Are you almost finished with that quiz?
P: Did you make up the test for us?
T: You got a 90 on that, very good.

33 Substantive information. Communication <u>about</u> a substantive meaning, not of a substantive meaning.

40 Printed instructional materials. Reference to books, magazines, newspapers, and anything within them, as well as reference to teacher prepared materials for individual use.
Examples:
P: Mr. M., I don't have a book. Do you have an extra one?
P: Where is the answer book?
T: What are you doing with that Roman information?

41 Audio-visual materials. References to slides, films, filmstrips, videotapes, radio and television programs, as well as to the apparatus used with these. Not coded when the principle meaning is the work the pupil does with these.
Examples:
P: Where is the film strip projector?
T: Will it bother anyone if we have the television on this period?
T: Do you want to work with the filmstrips today?

42 Classroom apparatus. References to wall maps, globes, models, chalk board, demonstration apparatus and laboratory apparatus.
Examples:
T: Which map are you looking for?
P: Are there any extra pulleys?
P: Where are the microscopes?

43 Instructionally related materials. Reference to supplies such as pencil, paper, compass, protractor, eraser, ditto masters, as well as reference to management materials such as sign-up sheets and passes.
Examples:
T: There is scratch paper up here.
P: Do you have an eraser?
T: Where is your pass?
P: (Hands teacher pass.)

44 Instructionally unrelated materials. References to food, toys, equipment used for the research project, doors, windows.
Examples:
T: Where did you get the solder?

50 Procedure. Discussion of a course of action or set of activities. Include references to the way the class is conducted and to the regulations governing class members.
Examples:
T: You came in noisily and have taken a long time to settle down. What do you think about this?
T: Who was the next one to see me after Bill?

51 Substantive procedures. Reference to a sequence of steps for cognitive tasks, as steps in problem solving, or psychomotor tasks, as how to use a piece of apparatus. Also, reference to a particular step in a project or experiement.
Examples:
P: We don't know how to focus this.
T: Now, what is your next step going to be?
T: Do you think this is a handy technique to know?

52 Time. Reference is primarily to the time of day, the day of the month.
Examples:
T: What is the date today?
P: The 22nd.
P: How much time do we have left?

60 Person. Discussion of teacher's or pupil's person, physiognomy, dress, expression, or appearance. Used also when a personal experience is the topic under discussion.
Examples:
T: What kind of a pin is that?
T: Have you got spring fever?
P: I go to the movies every week.

71 Action-vocal. Reference to action involving the emission of speech or sound. Used for the physical qualities of the action or the act of saying something. This includes references to the pace, volume, pitch, and diction of vocal action.
Examples:
T: What did I just get done saying?
T: You've already said that.

72 Action-physical. Reference to action where physical movements are primary. Includes walking, passing papers, seeing, and hearing.
Examples:
T: Have you checked your locker?
T: How many are going outside today?
T: I've been trying to get back to you and just haven't made it.

73 Action-cognitive. Reference to action where a cognitive process is principally involved. This includes thinking, imagining, knowing, supposing, understanding or not understanding, listening, and believing. It includes references to cognitive state or cognitions, as well as to reading.
Examples:
P: I don't know.
T: Do you know how to divide?
T: You seem to have forgotten everything.
P: I remember now.

74 Action-emotional. Reference to action where feelings or emotions are principally involved. Includes feeling bad, good, sorry, thankful, grateful, relieved or upset.
Examples:
T: What are you worried about?
T: I'm sorry I took so long.
T: Thank you, Barton.

75 Action-general. Reference to performance, action or event where the nature of the performance (whether vocal, non-vocal, cognitive or emotional) cannot be determined or when more than one of the categories 71-74 are involved.
Examples:
T: What have you been doing?

80 Language mechanics. Discussion of language usage, pronunciation, or grammar.
Examples:
P: How do you say that?
T: Well, how do you say "A - p?"

## Instructional-logical and Extra-logical Meanings

Instructional-logical meanings include those logical processes listed under substantitive-logical meanings, as well as the specific type of evaluative process involved in giving positive or negative ratings. Instructional moves with extra-logical meanings are those moves for which it makes little sense to talk of verification. The move could not be verified by analytic, empirical, or evaluative criteria. Rather than making assertions or denials, these moves make prescriptions or prohibitions, or request that prescriptions or prohibitions be made.

### Logical Meanings

01 Defining. To define is to (1) give the set of properties that an object (abstract or concrete) must have for the term to be applicable

and/or (2) refer to the objects (abstract or concrete) to which the term is applicable.
(This category is rarely if ever used. It is included here to maintain parallelism with the substantive-logical categories.)

02 Interpreting. To interpret a statement is to give its verbal equivalent, usually for the purpose of rendering its meaning clear. Interpreting bears the same relationship to statements that defining does to words.
T: What do you mean by that? ("That" - previous P statement)

03 Fact-stating. To state a fact is to describe, to report, or to give an account of an object, event, action, or state of affairs. This report, description, or accounting is empirically, verifiable at least is theory.
T: Do you know how to multiply?
P: Yes.
P: Where is the book?

04 Explaining. To explain is to relate an object, event, action or state of affairs to some other object, event, action, or state of affairs; or to show the relation between an event or state of affairs and a principle or generalization; or to state the relationships between principles or generalizations.
T: Why haven't you finished this yet?
P: Because I lost my book.

05 Opining. To opine is to make statements in which the speaker gives his own valuation regarding (1) what should or ought to be done, or (2) fairness, worth, importance or quality of an action, event, person, idea, plan, or thing.
T: Is this the best way to make your measurement?
P: I think so.

06 Justifying. To justify is to give reasons for holding an opinion regarding (1) what should or ought to be done, or (2) fairness, worth, importance, or quality of an action, event, policy, idea, plan, or thing.
T: Why do you think that is the best way?

Ratings. Ratings can convey critical and/or evaluative meanings. A critical rating is a judgment of truth or falsity based on rational criteria. An evaluative rating gives the rater's partiality, thus it is a more subjective response. Ratings may be positive or negative. They often occur in reaction to a statement.

10 Positive. Positive ratings range from ratings which are distinctly affirmative to those which implicitly affirm by repeting that which is rated.
T: Yes; right; very good.
T: Um hmmm; oh, alright; O.K.
T: (repetition of pupil response)

11 Negative. Negative ratings range from those which express reservation, usually through a qualification, to those which are distinctly negative.
T: That's partly it; That's one way of looking at it; Yes, but....
T: No; You're wrong; The answer is not 41.

12 Positive or negative. Solicitations in which a request is made for either a positive or negative rating.
P: Is this one right?
P: How do you like the way I've drawn this?

Extra-logical Meanings

There are three main categories under extra-logical process. The first includes those moves in which the emitter commands, orders, exhorts, suggests that, requests, advises, or instructs the agent to perform some physical or cognitive act. The second category includes those utterances which request permission or a directive. The move which is expected to follow this move is a solicitation in which a particular activity is prescribed, permitted or prohibited. The third category of move is reflexive rather than initiatory. It is coded for that behavior which carries out, or indicates intention to carry out (or not to carry out) a directive.

I. Giving a directive.
20 Prescribing a performance. The agent is directed to carry out the activity. The performance is not optional.
21 Permitting a performance. The agent is allowed to carry out the activity. The performance is optional.
22 Prohibiting a performance. The agent is directed to cease or not to embark upon a particular activity.
23 Prescribing a repetition. The agent is directed to repeat.

II. Requesting a directive.
24 Asking to be directed. The emitter of this move is trying to find out what he is or is not to do. He expects to be given a directive. His solicitation may be general, involve several alternatives, or only one.
25 Seeking permission. The emitter of this move is asking that he be allowed to perform some particular activity.

III. Responding to a directive.
30 Compliance. The person to whom a directive is addressed either begins to carry out the directive or indicates that he intends to carry it out.
31 Alternative. The person to whom a directive is addressed indicates that he will carry out some activity in place of the one prescribed, or that he will carry out the prescribed activity at other than the prescribed time.
32 Non-compliance. The person to whom the directive is directed fails to comply with it when compliance is expected immediately, or he indicates he will not perform a future prescribed activity and no alternative is given.

All moves which are coded as requesting or giving a directive will also be coded in the instructional meaning categories of agent, activity, and time.

Examples:

24 What should I do next, Mr. Y.?
20 Start working on your second project.
22 O.K., I've had enough of all this talking.
22 Get your feet off the wall, Frank.
25 May I get a drink?
21 Yes.
24 Are we supposed to do #4?
20 You must do #1 and then either #2 or #4.

Instructional Meaning - Directive

The classroom (or school related) game is composed of sub-games or activities. An activity is performed by some agent(s). Often particular objects are needed for the "playing of the game," or are actually produced through the activity.

Communications which direct particular agents to perform, not to perform, or to cease performing particular activites are solicitations with directive meaning. Communications in which an agent (usually the pupil) seeks directions as to what he should do, or seeks permission for what he wants to do are solicitations with directive meaning. Communications in which future activities are announced, but which do not in themselves direct agents to perform those activities, are structuring moves with directive meaning.

All moves with directive meaning are coded in the three Instructional Meaning - Directive dimensions: Agent, Activity, and Object. Moves with directive meaning are not coded in the single Instructional Meaning dimension.

Agent

The agent is the person(s) who is performing or will perform a classroom related activity. All persons engaged in the activity are coded as agents. Five categories and combinations of these categories are used in coding the agent:

E Emitter. The performer of the activity is the same as the emitter of the move.
T Target. The performer(s) of the activity is the same as the person(s) to whom the move is directed.
TS Target Subset. The performers of the activity include some, but not all of those to whom the move is directed.
P Pupil. The performer of the activity is, or includes, a pupil in the class but not an emitter or target.
OA Other agent. The performer of the move is, or includes, a person other than the emitter, target, or pupils in the class.

These five may be combined in 32 different ways. Eight of these involve both target and target subset. If a case should arise such that in the same move an activity is structured for the entire target and another is

structured for the target subset, the coding will be in terms of the target. If both OA and P are agents in the same move, only P will be coded. The categories for coding Agent are:

| | | | Also coded under number to the left: |
|---|---|---|---|
| 0 | None | None | |
| 1 | T | Target | (T-TS) |
| 2 | E | Emitter | |
| 3 | E-T | Emitter & Target | (T-TS-E) |
| 4 | T-P | Target & Pupil | (T-TS-P; T-OA-P; T-TS-OA-P) |
| 5 | E-P | Emitter & Pupil | (E-OA-P) |
| 6 | E-T-P | Emitter, Target, & Pupil | (E-TS-T-P; E-T-OA-P; E-T-TS-OA-P) |
| 7 | TS | Target subset | |
| 8 | OA | Other agent | |
| 9 | E-TS | Emitter & Target subset | |
| 10 | E-OA | Emitter & Other agent | |
| 11 | T-OA | Target & Other agent | (T-TS-OA) |
| 12 | T-E-OA | Target, Emitter & Other agent | (T-TS-E-OA) |
| 13 | TS-OA | Target subset & Other agent | |
| 14 | E-TS-OA | Emitter, Target subset & Other agent | |
| 15 | P | Pupil | (P-OA) |
| 16 | TS-P | Target subset & Pupil | (TS-OA-P) |
| 17 | E-TS-P | Emitter, Target subset & Pupil | (E-TS-P-OA) |

Examples:

1. Target
   Frank, get your feet off the wall.
   Today you will be working in the lab.
2. Emitter
   What should I do now?
   May I get a drink?
   I'll pass out the papers in a few minutes.
3. Emitter and Target
   First we'll spend a few minutes discussing the primaries.
   Let's take a look at this map.
4. Target and Pupil
   Go over and work on that with Fred.
5. Emitter and Pupil
   May we go outside to work today?
   What should we do after this?
6. Emitter, Target and Pupil
   I'd like to talk about this with both you and your partner.
   (i.e., partner not present)
7. Target subset
   Some of you should be starting your final draft next week.
8. Other agent
   For the next fewweeks they will be video-taping our classes.
9. Emitter and Target subset
   I will be working with those of you who stay inside today.
10. Emitter and other agent
    Mr. W. and I have been working on new class lists. We'll tell you your new sections tomorrow.

11. Target and other agent
    Why don't you work on that with Mr. M. in math class?
12. Target, Emitter, and Other agent
    Both Mrs. M. and I will be available to help you with any problems.
13. Target subset and other agent
    Mrs. M. will be outside to help those who are going out.
14. Emitter, Target subset, and Other agent.
    Mrs. M. and I will help those of you who stay inside.
15. Pupil
    May John go outside?
16. Target subset and Pupil
    I want two from this group to go over and work with Tom and Jim.
17. Emitter, Target subset, and Pupil
    Two of you come with me to work with John at the projector.

Activity

Moves with directive meaning always refer to some activity which is to be (or not to be) performed by some agent. The activity is coded according to its type: vocal, physical, cognitive, emotional, or some general combination of these.

1 Action - vocal. The activity involves the emission of speech or sound, or the cessation of such emission. Included are references to pace, pitch, volume, or diction. Reading aloud is included here.
Examples:
T: Yes? (An indication that P is permitted to speak)
T: Pardon? (A directive to repeat the communication)
T: Would you read the problem for me?

2 Action - physical. The activity involves physical movements, primarily. Typical physical activities are: passing out papers, looking for and finding objects, going from one place to another; hearing, seeing, and waiting.
Examples:
T: Watch that cord there. I don't want to get hung here. If you people go and trip over that I'll get hung for sure.
T: Frank, please don't sit on top of the desk.
P: May I go to my locker?
T: Wait a couple of minutes, will you?

3 Action - cognitive. The activity primarily involves a cognitive activity such as thinking, believing, understanding ("seeing" "getting"), attending, paying attention to, being aware of, listening or imagining. Reading silently and reading when it is unclear whether it is to be aloud or silent will be coded here.
Examples:
T: No wait a minute, look.
T: All of you might stop and give me your attention here for just a moment.
T: Now keep this in mind.
T: Think about that one for a while.

4 Action - emotional. Reference to action where feelings or emotions are principally involved. Includes feeling upset, bad, good, sorry, thankful, grateful, or relieved.
Examples:
T: You'll have to trust yourself a little better.
T: Stop feeling sorry for yourself.

5 Action - general. Reference to an activity where it is uncertain what action is involved, as well as reference to activities where several types of action are involved and no one type of action dominates in terms of the meaning communicated. Activities which involve writing will be coded here.
Examples:
T: Stop that!
T: Will you hurry up and finish that test.
P: Do I have to do all that?
T: Get to work Bill.
T: Everyone is to do #1 and then either #2 or #3.
T: Copy that over now.
P: I'm ready to take the test now.

Objects

The classroom game is composed of many sub-games or activities. These activities often involve some physical or non-physical object. Physical objects may be used in carrying out an activity or produced through an activity. Non-physical objects often serve as the focus of activities such as thinking. The OBJECT category is used for moves with directive meaning to code (a) that toward which an activity is principally directed, or (b) that which it principally involves.

10 Statement. The object of the activity is the utterance or gesture of a teacher or pupil, previously emitted to communicate some meaning.
T: Will you say that again?
P: What?

20 Logical process. The activity to be carried out focuses on the way language is used, or on a logical process.
T: Tell your partner what a definition is.

30 Assignment. The activity involves pupil work which has been completed, is in progress, or is to be done. The emphasis is on the pupil's product rather than the materials used in the production. Includes the making and clarifying of assignments.
T: Will you pass out the folders, please.
T: You must do Roman Information #1 or #2.
T: Do these problems here.

31 Assignment-progress. The activity involves the pupil's work with some reference being made to its progress. Includes references to the rate at which work is being done or is to be done, to the schedule for completing work, to the amount of work that is to be completed, and so forth.

T: All homework is due at the end of the period.
P: When are the reports due?
T: Hurry up with that work.
T: You're going to really have to start producing.

32 Evaluation. The activity involves tests, quizzes, test scores or grades.
T: I'm going to give you a test today.
P: I'm ready to take the test now.
T: We'll be going over the answers to the test.

33 Substantive information. The focus of the activity is a substantive meaning: a topic, a fact, a result, etc.
T: Why don't you study a bit more on that topic.
P: Don't tell him the name (of an emperor).
T: I'd like to spend some time talking about the primaries.

40 Printed instructional materials: references to books, magazines, newspapers and anything within them, as well as references to teacher prepared materials for individual use.
Examples:
T: Pass one (an experiment sheet) to each person.
T: Start reading right here (points to place in book).
T: Leave these books here. I don't want you to take them home yet.

41 Audio-visual materials: reference to slides, films, filmstrips, video tapes, radio and television programs, as well as to the apparatus used with these.
Examples:
P: May we use the projector today?
T: We will be seeing a movie today on marshes.

42 Classroom apparatus: reference to wall maps, gloves, models, chalk board, demonstration apparatus, and laboratory apparatus.
Examples:
T: Let's take a look and see what this map says.
T: Now why don't you look on the globe.
T: One person should hold the base of the ring stand so it doesn't fall over.

43 Instructionally related materials: references to supplies such as pencils, paper, compass, protractor, eraser, ditto masters, and references to management materials such as sign-up sheets and passes.
Examples:
T: The library sign-up sheet is up here. Sign up now for tomorrow.
T: Whoever took my stapler, please return it.

44 Instructionally unrelated materials: references to candy, toys, equipment used for the research project, doors, window.
Examples:
T: Polly, will you please close the door.
T: Take that out of your mouth.

T: The clicker. Give me the clicker.
T: Don't pay any attention to the cameras. You've all been on television before.

50 Procedure. The focus of the activity is a course of actions or a set of activities. Include reference to the way the class is conducted and to regulations governing class members.
T: You should be making plans as to when you will do the filmstrips, when you will be going to the library, and when you will be doing the other things in this unit.

51 Substantive and psychomotor procedures. The activity to be carried out focuses on a sequence of steps for cognitive tasks (as steps in problem solving), or for psychomotor tasks (as the procedure in using a piece of apparatus). Also, reference to a particular step in a problem, project, or experiment, or to how one goes about a particular assignment.
T: You should consider some other approaches.
T: Make temporary knots so you can get them undone again.

52 Time. The principal object of the activity is time.
P: Will you tell me when it's 10:15?

60 Person. The activity is directed toward a person, or it involves a person, part of his body, his dress, expression or appearance.
T: Wear walking shows tomorrow because we're going into the field.
T: Stop bothering the boys.
T: Get your feet off the wall.

71 Vocal Action. The activity to be carried out is directed toward a vocal activity.
T: Be thinking about what you would like to ask Mr. B.

72 Physical Action. The activity to be carried out is directed toward actions where physical movements are primary.
T: You ought to consider going to the library today.
T: Those interested in going, please raise your hands.

73 Cognitive action. The activity to be carried out focuses upon an action where a cognitive process is primarily involved.
T: Tell me what you are thinking about.

74 Emotional Action. The activity to be carried out is directed toward actions where feelings or emotions are primarily involved.

75 General Action. The activity to be carried out involves actions other than vocal, physical, cognitive, or emotional alone, or it involves uncertain actions.

80 Language Mechanics. The activity to be carried out focuses upon

language usage, pronunciation, or grammar.
P: Spell it for me.

00 No objects involved.

05 Object uncertain.

Coding Instructions

1. General Coding Instructions
   1.1 Coding is from the viewpoint of the observer, with pedagogical meaning inferred from the emitter's behavior.
   1.2 Grammatical form may give a clue, but is not decisive in coding. For example, soliciting may be found in declarative, interrogative or imperative form. Likewise, responding may be in the form of a question - frequently indicating tentativeness on the part of the speaker.
   1.3 All missed statements and all noncodable statements (e.g., er, ah, mmm, well...., etc.) are coded in the move (not codable) and move context categories alone. Partially missed statements are fully coded only if there is enough information to code the pedagogical move, the substantive and substantive-logical meaning and/or the instructional and instructional-logical meaning. Those moves immediately following a move that is not codable are coded as usual, if the context is clear and unambiguous. If alternative codes are clearly possible, code the move as not codable for these moves too.
   1.4 A line of discourse is a segment of typescript 27 spaces long. This is two-and-a-quarter inches of elite type.
   1.5 All complete utterances of less than one line are counted as one line.
   1.6 Moves which are non-verbal are counted as having zero (0) lines.
   1.7 In longer utterances, the final line segment is counted as one line if it exceeds half the line (14 spaces or more). If it does not, it is discounted.
   1.8 In utterances that comprise more than one pedagogical move, partial line segments (underlined below) are combined in determining the line count.

| | |
|---|---|
| T: That's very good. What else might make that set-up more difficult? | Reacting: 1 line<br>Soliciting: 2 lines |

   1.9 In utterances that contain more than one pedagogical move, each pedagogical move is counted as at least one line.

| | |
|---|---|
| T: O.K. Do you think you can remember how to do that now? | Reacting: 1 line<br>Soliciting: 2 lines |

2. Pedagogical Moves
   2.1 The postscript -M is added to the coding of a pedagogical move when the speaker resumes the same move after it has been interrupted or mediated by one or more intervening pedagogical moves. If the interlarded move is ambiguous, code it according to 1.3.

| | |
|---|---|
| P: If I do it this way. . . | Soliciting |
| T: um hmm | Reacting |
| P: ...will it come out the same? | Soliciting-M |

2.2 A soliciting move begins with the first manifestly eductive statement and ends with:
a) The end of the utterance.
b) The beginning of a structuring, responding, or reacting move.

2.3 Solicitations that request permission to speak have instructional meaning and directive meaning. They are coded in the extra-logical category of requesting permission. The agent is the emitter, the activity is vocal action.
P: Mr. M.? SOL/request permission/ emitter / vocal / none /
T: Yes? SOL/permit performance/ target / vocal / none /
P: (Hand raised) SOL/request permission/ emitter / vocal / none /
T: Ellen? SOL/permit performance/ target / vocal / none /

2.4 Solicitations which give permission to speak have instructional meaning and directive meaning. They are coded in the extra-logical category of permitting a performance The agent is the target, the activity is vocal action (see examples for 2.3).

2.5 Tentative, optional, and required assignements as well as clarification of an assignment are coded as soliciting moves with directive meaning.
P: What should I do not?
SOL/request directive/ emitter / action general / none /
T: Do pages 30 and 31.
SOL/prescribe perform/ target / general / none /

2.6 When checking statements (e.g., "Follow me?" "Get it?") occur within a structuring or reacting move, soliciting is not coded unless there is a pause or verbal cue indicating a response is expected. Such statements when they occur within a larger move do not appear as part of the code for the larger move. When the checking statements expect a response, they will be coded as having instructional, non-directive, meaning.
T: O.K.? SOL/.../Cognition/fact-stating/

2.7 Implicit in any solicitation is the concept of knowing or not knowing, doing or not doing. Therefore code "responding" for any one of the range of possible responses (including invalid ones), and also for any reply referring to knowing or not knowing, agreeing to do or refusing to do. The physical response to a directive will be coded as a responding move according to the rules on the following page. However, in the case of the response of speaking to the directive to speak, the meaning of the utterance will be coded and not the fact that the respondent is complying to the directive to speak.

2.8 Occasionally a teacher or student responds to a soliciting move with a question. Coding in these instances is in terms of context and intent. For example, students frequently respond with a question to indicate the tentativeness of their responses. These are coded as responding moves. If, however, the "responding" question is a genuine solicitation (i.e., it expects a response), it is coded as a soliciting move.

2.9 A solicitation which calls for a fact is coded as fact-stating, but if the response gives both a fact and an explanation, the logical meaning of the response is coded as explaining.

2.10 A solicitation which calls for an opinion is coded as opining, but if the response gives both an opinion and a justification, the logical meaning of the response is coded as justifying.

## CODING RESPONSES TO A DIRECTIVE

1. Directive

yes — 2. Indicate intention to comply — no

yes — 3. Activity performed - no intervening moves — no

4. Activity performed later — yes / don't know

5. Performance occasions T move — yes / no

Code: (for 2.)
Response/assign/.../
statement/.../compliance
or non-compliance/
Response/construct/.../
statement/.../alternative

Code: (when 2. occurs)
Response/assign-construct/
statement/compliance/
There is no separate coding of 4.

Code: (when 2.occurs)
Response/assign/.../statement/.../
compliance, noncompliance/
or.../construct/...alternative
(and just prior to 5, code:):
Response-Mx/construct/.../state-
ment/.../compliance/

Code (when 3 occurs):
Response/assign-construct/.../state-
ment.../compliance/

3. Activity performed - no intervening moves — yes / no

4. Activity performed later — yes / don't know

5. Performance occasions T move — yes / no

There is no response to code

If the performance begins after interaction with T, code it as the last move in the interaction.
Response (-Mx)/construct/
.../statement/...compliance
x indicates the number of moves from the directive to this last move.

Code 4 as occuring immediately prior to move 5.
Response-Mx/construct/.../
statement/.../compliance/
x indicates the number of moves back to the directive 1.

Code 3. immediately after 1.
Response/construct/.../statement/
.../compliance.

2.11 Responses are normally coded as having been elicited by the immediately preceding pedagogical move. When the solicitation which elicits the response occurs earlier in the interaction, the postscript -M (i.e., SOL-M), along with a numeral indicating the position of the soliciting move, is added. The number is determined by counting back to the last explicit expression of the solicitation.

P: What do I do now? /SOL/.../rqst directv/emitter/action general/
T: Did you finish #3? /SOL/.../progress pupil work/fact-stating/
P: No. /RES/.../progress pupil work/fact-stating/
T: Then finish that. /SOL-M3/.../prescribe perf/target/action general/

2.12 A speaker cannot respond to his own solicitation. (1) If the speaker answers his own question immediately after asking it, the question is taken to be rhetorical and a stylistic device rather than a true SOL. (2) If a speaker answers his own question after an intervening incorrect answer, the correct answer to the solicitation is coded as a reaction to the incorrect answer, since the purpose of the question was not to elicit a response from the questioner. (3) If a speaker answers his own question after a pause, the answer is coded as a reaction, indicating that the speaker is primarily reacting to the absence of an expected response. Such a reaction is coded as reacting-silence. (4) If the speaker, through his own action immediately following the solicitation, acquires the information requested in the solicitation, the solicitation will not be considered to be a true solicitation. The composite activity of the soliciting and acquiring of information will be considered as a structuring move.

2.13 When a reaction is occasioned by a physical action rather than a verbal action, the move is coded as reacting-physical.

2.14 A reaction begins at the beginning of an utterance or following a non-verbal response or the absence of an expected move. A reaction is still in progress when the speaker:

a) Evaluates or otherwise discusses a previous move.
b) Rephrases a previous move or makes reference to it.
c) Expands a previous move by stating its implications, interpreting it, or drawing conclusions from the same point or sub-point.

A reacting move ends when any of the following occurs:

a) The utterance ends.
b) A solicitation begins.
c) The speaker indicates the end of the reaction by some verbal convention, such as, "All right, now let's turn to...."
d) A distinct (not parenthetic) shift occurs to another substantive area not heretofore mentioned or not under immediate discussion.
e) A distinct (not parenthetic) shift occurs from any substantive category to an instructional category not heretofore mentioned or under immediate discussion.

2.15 When a reaction to a verbal move is followed by a summary reaction, both reactions are coded separately even when they occur within the same utterance.

2.16 A brief or passing reference to what has gone before does not constitute a summary reaction. Reacting-summary is coded for a genuine summary or review and/or for a reaction to more than one move.

2.17 Reacting-summary frequently occurs when a teacher concludes a unit of discussion and moves to something new. In these instances it is necessary for the coder to determine when the summary ends and the focusing on new material begins (structuring) and to code appropriately.

2.18 A reaction to a solicitation occurs only when the reaction is about the solicitation (i.e., "That's a good question.") and not a response to the solicitation.

2.19 Solicitations are coded according to the way in which they indicate that information is to be used in making a response. Responses are coded according to the way they use the information contained in the solicitation. This coding is under the dimension of Information Process Activity. The coding of Information Process Activity for moves with directive meaning is indicated on the chart.

3. Move Form

3.1 Non-verbal and/or non-oral behavior is coded as a move only when it serves a function in classroom communication. Writing, gesturing, or manipulating materials is coded only when it structures, solicits, serves as a response, or a reaction.

3.2 When a move is communicated through speaking accompanied by gesturing and/or manipulating materials, it is coded as follows:

a) Speaking: the non-verbal aspects of the communication add nothing to the cognitive meaning conveyed by the verbal communication.

b) Speaking and gesturing: cognitive meanings, in addition to those conveyed by the words, are communicated through bodily movements, usually pointing.

c) Speaking and manipulating materials: cognitive meanings, in addition to those conveyed by words, are communicated through operations involving objects, apparatus, etc.

3.3 Gesturing is coded for all instances where non-redundant cognitive meanings are communicated (1) through movements of the body alone; (2) by handling an object in such a way as to draw attention to it but with no attempt to illustrate the operation of the object, the interaction of its parts, its interaction with other objects, and so forth.

3.4 Manipulating materials is coded for all instances where non-redundant cognitive meanings are communicated through operations involving an object or objects, such operations showing (1) something about the object itself - how it operates, what one can do with it; or (2) a concept or principle through the juxtaposition of objects or the operation of the object.

3.5 Only cognitive meanings expressed through a gesture are coded. No attempt is made to code emotional meanings communicated through a gesture.

3.6 Sometimes there are moves which indicate there has been a preceding non-oral communication. An example of this is when there is a reaction with no oral occasioning move. In such

cases, if the non-oral communication occurred in the immediate past (no intervening moves), at the same location and in the same communication group, it will be coded as a move - whose form is the gesture.

T: (looks toward P's work at P's desk) T/STR/Gesture/...

T: You're coming along fine. T/Reacting-physical/Speaking/...

3.7 When a pupil goes to the teacher, hands a paper to the teacher, and waits (and when these actions are not in response to a teacher directive), the pupil will be considered to be soliciting the teacher to perform an activity. The prescribed activity is signing a paper if the paper is a library pass, reading the paper if it is the pupil's work. The teacher's non-oral response of reading or writing is seen as a responding move complying with the pupil's directive. The form of both the pupil's solicitation and the teacher's response is gesturing.

3.8 Pupil hand raising will be coded as a move whose form is the gesture when (1) the hand raising occasions a teacher move, or (2) the hand raising serves as a response. When hand raising is not a response, it will be coded as a soliciting move through which the pupil requests permission to speak. The teacher move occasioned by the hand raising ("Yes?", "Mary?", nodding the head or pointing to the pupil, etc.) is also a solicitation permitting the pupil performance.

3.9 There are several ways other than hand raising that a pupil indicates to the teacher that he wishes to speak to him. These ways include: going to the teacher and standing beside him, expectantly; gazing at the teacher with a puzzled or troubled expression; shaking one's head "no" and so forth. These gestures will not be coded as moves.

3.10 Even when the pupil is out of camera range, there are cues which indicate whether the pupil has initiated the interchange by raising his hand or whether the teacher initiates the interchange by calling on a pupil who has not volunteered. Cues indicating that the pupil has raised his hand include: the interaction is embedded in a series of interactions where the other pupils have raised their hands; the teacher uses the same soliciting form used for others who have had their hands raised; the pupil readily speaks with little initial stumbling; the pupil's move is an initiatory move (this is usually a sufficient although not a necessary cue); the teacher gives signs of "noticing" the pupil. When such cues are present, the pupil will be coded as having made the initiatory move of raising his hand.

4. Communication Group

4.1 The communication group consists of those pupils with whom the teacher is intentionally communicating. The communication group size is coded according to the number of pupils involved in it. When this number is four or less, the pupils in the group are identified.

4.2 When two or more pupils are working together, they will (both) all be considered part of the communication group when speaking with the teacher provided that (1) they are all together in the same physical location, and (2) working on the same problems, project, or exercises. Cues indicating that pupils are working together include: (1) explicit and implicit statements to that effect; (2) pupils gathered in a setting apart from other pupils, often around an instructional device such as a map, filmstrip projector, or blackboard; (3) sharing of materials and assisting of one another; and (4) (both) all talking to the teacher at the same meeting.

4.3 When one member of a group working together is singled out by the teacher for discipline or some other reason, all group members will be considered as in the communication group. Only the one singled out is the target.

4.4 When a pupil is not in the group communicating with the teacher but is in a position of overhearing the communication, he is <u>not</u> coded as part of the communication group.

4.5 If a communication group is interrupted by another pupil, and if following the interruption the teacher returns to the original communication group members, then the original group members are coded as part of the communication group for those moves involving the interrupting pupil. If following the interruption the teacher does not return to the original group, then they will not be coded as part of the communication group for those moves involving the interrupting pupil.

4.6 If an interchange with an individual pupil is embedded in communication directed to a group of five or more pupils, the communication group for the interchange with the one pupil will generally be coded as the group of five or more. However, if during the interchange with the individual the rest of the group is engaged in some other activity, then the communication group will be coded as just involving the one pupil.

4.7 When the teacher is talking to himself, the teacher aide, or someone from outside the room, and the communication is not meant for the pupils in the class, the communication group size is coded as zero (0). This indicates that there are no pupils from the class involved in the communication group.

4.8 If it is impossible to determine how many in the communication group are emitters because not all are within camera range, code the emitter as the pupil segment if fewer than half of those within range are emitters and code pupil quorum if half or more are.

4.10 If it is impossible to discern how many are emitters because the signs of emitting are not clear (as in some oral moves) code the emitter as a pupil segment.

4.11 A cluster of pupil responses, all elicited by the same solicitation, will be considered as one group response (with pupil segment or pupil quorum as emitter) when the various emitters are not asked individually for their responses.

4.12 When a series of idential, rote, activities is solicited by the teacher with various pupils as targets (as when the teacher

is returning papers by calling the pupil's name, the pupil coming forward for his paper), the series of SOLs will be coded as one SOL and the series of responses as one RES with a group emitter (segment or quorum).

4.13 The target consists of those pupils within the communication group and/or the teacher to whom the move is directed. The target is coded as to its size and, when it is comprised of four or fewer persons, the identity of the targets.

4.14 When the teacher is the emitter, all pupils in the communication group are coded as targets, except in the following cases:

a) The teacher gives a directive to a group member where it couldn't involve other members either because one pupil is specified by name, or there is only one pupil involved in the activity the teacher is trying to control. The target here consists of the one pupil.

b) The teacher specified who is to talk by name, pronoun, or so phrasing a SOL that only one particular person could appropriately respond. Target is the one P.

c) The teacher rates a statement or action which is clearly a pupil's own rather than a group product which he is reporting. The target is the one pupil.

d) When a communication group is augmented by a new pupil breaking in with a new topic, he will be considered to be the target of the teacher utterances dealing with this topic. However, if the other pupils take up the topic too, they too will be considered targets of the teacher's moves.

4.15 When a pupil is the emitter, his target will be coded as the teacher except in the following cases:

a) Another pupil is named or otherwise clearly indicated as the one who is to respond. The target is the indicated P.

b) The initiatory move to which a pupil responds or reacts was uttered by another pupil. Code the teacher and the initiating pupil as targets.

c) If a pupil's communication elicits laughter or some other group reaction, it will be assumed that the target is the entire communication group excepting the emitter.

5. Communication Group Location

5.1 The location coded is the location of the communication group at the beginning of the move, whether or not that location shifts during the move.

5.2 When a communication group is established and the teacher's attention is drawn to a pupil outside the group and physically separated from it, the location of that pupil will be coded as long as he is the target of the teacher's moves, or the emitter of a move.

5.3 Regardless of how close the pupil's desk is to that of the teacher, as long as the pupil remains at his desk and the teacher remains at his, the teacher and pupil will be considered to be separated and the location coded as P @ P's desk (07).

5.4 Media location (04, 08) is coded preferentially to T desk or P desk (02, 03, 06, 07). Thus if the pupil is using a film strip projector or other piece of apparatus at his desk or the teacher's, the location will be coded as a media location.

5.5 Often media such as blackboards or maps are close to the teacher's desk. If the location is being coded as "teacher's desk", begin coding "media location" when the use of the media begins, whether or not the pupil moves from the teacher's desk. Resume coding teacher's desk only if the use of the media ceases and there is a shift of topic, or if the pupil and teacher move elsewhere.

6. Substantive Meanings

6.1 Substantive meaning is coded for those moves which communicate subject matter, whether that subject matter is appropriate to the lesson being studied or not. There are the following cases, however, where meanings relevant to the subject are communicated but the move is coded as having instructional meaning:

a) An interpretation is requested and given for a statement made by someone in the classroom.

b) An evaluation of a pupil's work or answer is requested or given.

c) There is a communication <u>about</u> subject matter (e.g., whether one has studied it, knows it, would like to study it) but not of the subject matter.

6.2 The substantive context of moves with instructional meaning only will <u>not</u> be coded. No substantive categories will be coded for moves with instructional meaning alone.

6.3 If a move has both substantive and instructional meanings, it will be fully coded in both instructional and substantive categories.

7. Substantive-Logical Meanings

7.1 Only when defining is the main focus is a move coded as defining. When the definition is within the immediate context of other substantive-logical meanings, defining is not coded.

7.2 Responses giving facts within the context of an explanatory move or in a sequence of explanatory moves are coded explaining (4), except when the solicitation which elicits the fact-stating clearly calls for a fact, not an explanation. In the latter case, both the solicitation and the response are coded fact-stating (3).

7.3 "Reverse" definitions, which give the definition and call for the term, are coded as defining moves.

7.4 When more than one substantive-logical process occurs within a single pedagogical move, code according to the following order of priority:

Justifying
Explaining
Opining
Fact-stating
Interpreting
Defining

7.5 An incorrect statement intended as the description of a state of affairs, such as, "The Nile originates in Egypt." would be coded as fact-stating even though it is empirically incorrect.

8. Instructional Meanings

8.1 Moves with non-directive instructional meanings.

8.11 Occasionally, reference is made to more than one of the instructional meaning categories within the same move. In coding, identify the primary instructional function of the move or its principal focus, and code appropriately.

8.12 Use the following order of precedence when more than one of the instructional categories are involved and the main intent of the discourse cannot be readily determined:

Statement
Logical Process
Assignment
Assignment-progress
Evaluation
Substantive Information
Printed instructional materials
Audio-visual materials
Classroom apparatus
Instructionally related materials-supplies
Non-instructional materials
Procedure
Substantive/psychomotor procedure
Time
Person
Vocal action
Physical action
Cognitive action - cognition
Emotional action
General action
Language mechanics

8.13 An instructional meaning category is coded without an instructional logical category only when substantive information is asked for or given with reference to instructional materials such as books, films, maps and graphs. The instructional meaning category is coded only when the reference is explicit.

T: How does the book say to do the problem?

8.14 Cognitive action/Fact-stating is coded when the cognitive process is the main intent of the move.

T: Remember that?
T: Do you know how to.....?
P: I've forgotten.

8.15 Cognitive action/Fact-stating is <u>not</u> coded when the reference to a cognitive process is incidental. Often this type of reference to thinking or believing is made in order to modify the strength of the claim one is making.

P: I think the answer is 32.

8.16 Both Cognitive action/Fact-stating and the substantive/substantive-logical meanings are coded when the move gives them approximately equally prominence.
P: I don't know for sure, but I think that would be 52.8.

8.2 Moves with directive instructional meanings.

8.21 All moves which (1) prescribe, permit, or prohibit a performance, or (2) request a prescription, prohibition, or permission have directive meaning. They are not coded in the instructional meaning category. Instead, the instructional meaning that they do have is coded in the three categories: Agent, Activity, and Objects. All Structuring moves which announce an activity to be performed also have directive instructional meanings. They too are coded in the Agent, Activity, and Objects categories rather than the Instructional Meanings category.

8.22 Sometimes the expressed agent is clearly not the person who is going to carry out the activity. In such cases, code the person who is actually going to perform the activity as the agent.
P: Can you do a major report on old tombs or something like that?
Here, the pupil is asking whether she, not the teacher, can do a report on tombs. She is the agent, not the teacher.

8.23 Code vocal, physical, cognitive, or emotional action when any of these clearly predominates in the activity to be performed. When the activity to be performed consists of more than one of these types of activity, and no activity clearly predominates, code general action.

8.25 When more than one object is referred to in a move, identify the object which is primarily involved in the activity and code appropriately. If it cannot be determined which is primarily involved, then code according to the order of precedence set forth in 8.12.

8.24 When in one move more than one activity is indicated for the agent to perform, code only the principal activity involved. For example:
T: Go back and think about that for a while. Action-cognitive
T: Go back and discuss this with your partner.Action-vocal
In the above examples the directive to return to the desk is considered less important than what the pupil is to do at the desk. When it is not possible to determine which is the principal activity, and the activities are of varying types, code action-general.

8.3 Instructional meanings.

8.31 When coding Instructional Meaning for non-directive moves or Object for moves with directive instructional meaning, and there is more than one coding option, one of which would give congruence with previously coded moves, code the category which gives congruence.

9. Instructional-Logical Meanings

9.1 Logical meanings

9.11 Interpreting (02) is coded as instructional-logical meaning for clarifying solicitations and responses in which the speaker asks for or gives the referent or antecedent in a previous move.

P: That won't work.
T: What won't work? /SOL/.../Statement/.../Interpreting
P: Fred's pulley set-up. /RES/.../Statement/.../Interpreting
P: We went there yesterday.
T: To the library? /SOL/.../Statement/.../Interpreting
P: Yes. /RES/.../Statement/.../Interpreting

If the emitter requests or gives a clarifying response involving the definition of terms, code defining.

9.12 Code interpreting (02) as the instructional-logical meaning when interpretations of graphs, maps, charts, or reading matter are involved.

T: What do the different colors on the map stand for? /SOL/.../Apparatus/.../Interpreting
P: Different heights. /RES/.../Apparatus/.../Interpreting

9.13 When a statement with substantive meaning is qualified, this is considered a negative rating of that statement. The qualification often contains more substantive information, however at least one line of the move must be coded with instructional meaning (/Statement/.../Negative/). If there is but one line in the move, then no substantive meaning is coded.

T: O.K. but they could be reversed. /REA/.../Statement/.../Negative
(no substantive meaning coded since the REA is only one line)

9.2 Extra-Logical Meanings

9.21 All moves which indicate to the target what he is to do, what he may do, or what he may not do are directives. When they do not convey subject matter, they are coded along the instructional dimensions of Agent, Activity, and Object and in the Instructional-Logical categories 20-23.

9.22 All moves in which the emitter seeks to learn what he is to do or seeks permission to do what he wants to do have directive meaning. When they do not request that subject matter be conveyed, they are coded along the instructional dimensions of Agent, Activity, and Object and in the Instructional Logical categories 24, 25.

9.23 When a pupil asks about an assignment, he often is trying to find out what precisely he has to do and/or on what schedule he must do it. In such solicitations he is in fact requesting a directive. The Instructional-Logical dimension is coded (24), asking to be directed. When the teacher's next move repeats, clarifies, or interprets the assignment it is with the expectation that the pupil will then respond with the appropriate assignment

fulfilling activities. Thus the teacher's move is a solicitation with extra-logical meaning. It is generally coded as prescribing a performance (20).

P: Do I do both of these?
/SOL/.../Emitter/General/Assignment/24

T: Yes. /SOL/.../Agent /General/Assignment/20

9.24 The response to a directive may be of two types: it may consist of whatever activities are necessary to fulfill the directive, or it may consist of a move indicating the intention to fulfill the directive (or not to fulfill it). The coding of these responses is given under "Coding Responses to a Directive."