DOCUMENT RESUME

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ABSTRACT

The goals of this project were to create a learning environment where the individual talents of each student and staff member could be optimally utilized. Seven specific objectives were a) more flexible space utilization, b) an increase in staff experimentation with different teaching techniques, c) increased process orientation of instructional staff, d) long-term gains in student satisfaction with the learning environment, e) development of problem-solving skills in both teachers and students, f) an increase in both the variety and frequency of learning materials used by students, and g) an increase in student satisfaction with and participation in the curriculum. Comparisons were made between the experimental and the control school using 13 different instruments administered throughout the 3-year project to determine if continual emphasis on creativity did improve the learning atmosphere and encourage the development of teacher and student creativity. Strict analysis and interpretation of the results are hampered by a) the fact that the control school staff incorporated many of the innovative techniques of the experimental school either because of the felt competition between the two or because they were valuable and produced results and b) the fact that the really valuable things produced by the experimental school were either not quantifiable or unrelated to the original measurable objectives of the project. (Fifty-two tables of data resulting from measurements of each of the seven objectives are included in the report.) (HMD)

Staff Development in Creativity
Title III (E.S.E.A.)
Oregon Consolidated Schools
200 N. Main Street
Oregon, Wisconsin

SEP 25 1973

PI-AD-39
(3-68)

WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION
CENTER FOR RESEARCH AND PROGRAM DEVELOPMENT
126 Langdon Street
Madison, Wisconsin 53702

PROJECT DATA FORM
TITLE III, E.S.E.A.

FOR STATE DEPARTMENT USE ONLY	CO.	DIST.	SCH.	PROJ. NO.	EXP. CODE	AMOUNT APPROVED

SECTION A -- GENERAL INFORMATION

1. Project Title

Staff Development Project in Creativity

2. Brief Summary of Purpose of Project

Our proposal has as its focal point, staff development and has as its major thrust the gaining of background in the development of an awareness of creativity and gaining the release of this potential creativity in children.

3. Type of Submission (check one)

- [ ] Initial Application - Planning
- [ ] Initial Application - Operational
- [ ] Continuation Grant
- [ ] End of Budget Period Report
- [X] End of Project Period Report

4. Type of Project (Initial application or resubmission only)

- [ ] Planning

OR

- [X] Operational (check one below)
  - [X] Innovative
  - [ ] Exemplary
  - [ ] Adaptive

5. Applicant Agency	Address	
Oregon Consolidated Schools	200 N. Main St., Oregon, Wisconsin	
6. Name of Project Director	Address	Telephone No. 835-3161
Edward Guziewski	300 Solen Dr., Oregon	Area Code 608
7. Superintendent or CESA Coordinator (Please type)	Address	Telephone No. 835-3161
Phillip Helgesen	200 N. Main St., Oregon	Area Code 608

8. I hereby certify that the information contained in this application is, to the best of my knowledge, correct and the local education agency named above has authorized me, as its representative, to file this application.

Roland J. Cross
Signature of Person Authorized to Receive Grant

9-24-73
Date Submitted

SECTION D -- PERSONNEL FOR ADMINISTRATION AND IMPLEMENTATION OF PROJECT

PERSONNEL PAID BY TITLE III FUNDS

TYPE OF PAID PERSONNEL	REGULAR STAFF ASSIGNED TO PROJECT			NEW STAFF HIRED FOR PROJECT		
	Full-Time	Part-Time	Full-Time Equivalent	Full-Time	Part-Time	Full-Time Equivalen
	1	2	3	4	5	6
A. Administration/ Supervision		3/4	3/4		1/4	1/4
B. Teacher:						
(1) Pre-Kindergarten						
(2) Kindergarten						
(3) Grades 1-6		21	21			
(4) Grades 7-12						
(5) Other		5	2		5	3
C. Subject Matter Specialists (artist, scientist, musician, etc.)						
D. Technicians (audio-visual computer specialists)						
E. Pupil Personnel Workers (counselors, social workers, psychologists)						
F. Medical and Psychiatric Personnel						
G. Researchers and Evaluators						
H. Planners and Developers						
I. Disseminators (writers, public relations personnel, editors)						

SECTION E -- PERSONS SERVED BY APPROVED INITIAL OR CONTINUATION PROPOSALS, ESTIMATED COST, AND TOTAL NUMBER OF PERSONS SERVED (PUPILS MAY BE COUNTED MORE THAN ONCE)

MAJOR PROGRAM OR SERVICES	Grades							Adult	Other	Number of Non-Public Pupils	Estimated Cost (Amount may overlap)
	Pre-K	K	1	2	3	4-6	7-12				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
A. School Administration, Development, Evaluation, and Research Survey											
B. Teacher In-service Training						21					2,600
C. Major Subject Emphasis											
Arts (music, theater, etc)						632					14,000
Foreign Language						632					
Mathematics						632					
Science						632					
Social Stds/Humanities						632					
Vocational/Inds Arts											
Other (specify) Lang. Arts						632					
D. Instructional Media/Tech											
Library Fac/Media Cen						632					
Computers											
Education TV/Radio						632					
Other (specify)											
E. Instructional Methodology											
Specify Workshops											600
F. Special Education, Remediation, and Pupil Personnel Programs											
Handicapped											
Remedial Reading											
Medical/Dental/Health											
Social/Psychological											
Educational Guidance											
G. Programs											
Follow through of Pre-K Program											
Dropout											
Equal Educ Opportunity											
Pre-Kindergarten											

Introduction

What IS creativity? A good engineer begins by challenging assumptions. He refuses to believe that something is impossible merely because it has never been done or because people say there is no way to do it or because it would upset established ways. The good engineer, in the field of education as elsewhere, starts with a goal to be achieved, not with the dead weight of precedent or unexamined beliefs. Like the runner who finally broke the four mile, he knows that the limits of possibility are stretched not solely by pushing from within, but by setting an outside goal and doing what is necessary to reach it.

Creativity, like most other personal characteristics, is a very individualized thing. Every child is creative in his own way, whether he writes plays, designs birdhouses or jewelry, or discovers a new way to do a social studies project. A highly creative person is someone capable, if his abilities are developed, of making a new and valuable contribution in any field be it music, science, philosophy, journalism, education, law, international relations or cabinet making. The goals of this project have been centered around the development of situations which result in the development of more creative students as a direct outcome of creative approaches used by teachers.

Broadly speaking our goals have been two in number.

1. To involve the teaching staff in the creation of a learning atmosphere whereby the individual talents and abilities of each student and staff member could be optimally utilized.

2. To develop with the teaching staff an interest in students that goes beyond the traditional academic oriented school structure. This to include changes in the physical, social, emotional and creative school world of each child.

A definitive definition of creativity is difficult - perhaps impossible since it is many things. We like to think of creativity as encompassing the ability to contribute original ideas, different points of view and new ways of looking at problems. Further, it is "adventurous thinking" and generating the desire to get away from the main track, breaking out of the mold, being open to experience and permitting one thing to lead to another.

If a child's mind were a blank piece of paper and education consisted only of writing facts on that paper, very little would ever Really be learned. It is children and teacher's imagination, curiousity and individual perspective that makes them explore, maniuplate, experiment and question. We think that's what creativity IS!

Community Data

The Oregon Consolidated Schools is a rapidly growing school district located approximately nine miles from, but contiguous to, the much larger urban area of Madison, Wisconsin. The school community contains two villages, considerable suburban development territory and a fast dwindling rural farming area. The present population of the school district is approximately 10,250 and this represents a greater than fifty per cent population increase in the past decade. There are currently 2,600 students enrolled in the district's K-12 educational facilities.

Diversity best describes the occupations and educational backgrounds of the families living in the school district. White collar, blue collar, high salaried, and low salaried, college graduates and those with much less education are all representative of the general population of the area. There is no significant ethnic or religious group but rather it is a "melting pot" and is truly multi-ethnic in character.

The past two decades have seen the development of a constantly growing physical school plant. Starting with an existing building which was constructed in 1922, major additions and remodeling were accomplished in 1951, 1955, and in 1958. This building is now housing 650 K-3 elementary students. Another elementary school, K-6, was constructed in 1952 with additions in 1959 and 1964 - this building now makes provisions for 225 students. A "middle school" to house students in grades four, five, and six was designed in 1970 and now has approximately 560 students. The junior high school was constructed in 1962 and presently contains 425 youngsters while the senior high, constructed in 1966 and 1970 has a student population of approximately 850 students.

Community interest in a good school system is evident when one considers that of the many bond issues needed to finance the building projects mentioned in the preceding paragraph, at no time did voters fail to authorize the necessary funds to permit the construction. Advisory committees and informational meetings have always been considered an important part of any educational venture or change and have been widely used, particularly preceding a building program. This community interest and the use of advisory committees and informational meetings led to reports by and to 52 separate municipal and civic groups by the Board of Education and staff members. These civic and municipal groups included the Rotary Club, P.T.A., Jaycees, Jaycettes, Chamber of Commerce, heads of municipal and town governments, Women's Club, and others. We generally found these groups of people intensely interested in the type of building proposed and the concept of creativity as the major need was at this time linked with the development of a suitable middle school plant.

More specifically, the project activities have been centered in the Oregon Middle School which is an "open concept" multi-unit module of approximately 560 youngsters. Four teams involving certified staff, interns, student teachers and instructional aids make up the instructional component. Working as a part of this team structure are supportive staff such as the art, music and phy. ed. specialists. Students attending this building come from the Village of Oregon and the surrounding urban and farm areas.

The Brooklyn Elementary (Control School) is a neighborhood, K-6 attendance unit of approximately 200 students. Attendance areas are somewhat flexible but generally these students come from the Village of Brooklyn and the surrounding rural (farm) community.

Historically, this same approximate area was at one time a K-12 district with a high school population of under 75 students. During the summer of 1962, with pressure being applied at the state level, the area overwhelmingly voted to become a part of the Oregon Consolidated Schools. Though no committment was made then or since, it was generally understood that the established K-6 unit would continue to operate as a part of the district's overall facilities.

Community wise, Brooklyn represents a very close-knit group in spite of the fact that the non-farm element is highly dependent, economically, on the surrounding area. Approximately 60% of the students are rural and they represent a high percentage of the "true" rural population remaining in our school district. They are proud of "their school" and demand a quality staff and resulting education. All students attend the Oregon Junior and Senior High Schools.

Presently the Brooklyn Elementary is staffed by seven full-time teachers, an intern and a certified elementary principal that teaches physical education one-half time in addition to his administrative duties. Two organized teams are evident--one primary and the other intermediate. Flexible grouping is employed, with little or no regard for grade level, in certain curricular areas. Anticipated enrollment for 1972-'73 is 210 students with an overflow kindergarten section from the Oregon attendance area included in that number.

The Brooklyn staff is aware of the creativity project and that they are a control factor. Attempts to avoid "contamination" have been fairly successful but evidence indicates a greater awareness on their part as the project progresses.

Experimental Variables

Independent Variables

1. School (Control and Experimental)
2. Units (4, within Experimental School)
3. Grades (3, within the Control School: one 4th, one 5th, and one 6th)
4. Sex (Male and Female)
5. Pre/Post measures
6. Age
7. Year (1970-71 vs. 1971-72 vs. 1972-73)

Dependent Variables:

1. Space Sample photographs (Obj. #1)
2. Seating Charts (Obj. #1)
3. "Multiple Choice Approach to Creative Teaching" (Obj. 2)
4. Teacher Reaction Form
5. Minnesota Teacher Attitude Inventory (Obj. #3)
6. Student Attitude Questionnaire (Obj. #4 and #7)
7. Attendance Record (Obj. #4)
8. Favorite Subject/Place tally (Obj. #4)
9. List of Electives (Interest Groups) (Obj. #4)
10. Student Reaction Form (Obj. #4)
11. Verbal Fluency Tests (Obj. #5)
    (a) Idea Fluency
    (b) Associational Fluency
    (c) Word Fluency
12. Let's Imagine (Obj. #5)
13. Build-It Box (Obj. #6)
14. Tally of Learning Materials Used (Obj. #6)

OUTLINE OF PROCEDURES

Objective	Measures	Group Measured	Year	Frequency	Analysis
1	Variety in Grouping	Exp./Contr.	1,2,3	Every other week	Display
	Furniture/ partition	Exp./Contr.	1,2,3	Every other week	Display
2	Teacher Reaction Form	Exp.	1,2,3	Bi-weekly	Display
3	Minnesota Teacher Attitude Inventory	Exp. Exp./Contr.	1,2 3	Annually	t-test
4	Attendance Record	Exp./Contr.	1,2,3	Quarterly	Display
	Favorite Subject/ Place Tally	Exp. Exp./Contr.	1,2 3	Periodic	Display
	Electives (Interest Groups)	Exp.	1,2,3	Annually	Display
5	Verbal Fluency	Exp./Contr.	1 2 3	Pre/Post Pre/Post Pre/Post	t-test Repeated Measures
	Let's Imagine	Exp./Contr.	1 2 3	Pre/Post Pre/Post Pre/Post	t-tests Repeated Measures
6	Build-It Box	Exp.	2,3	Periodic	t-test
	Learning Materials Tally	Exp.	2,3	Every 6 weeks	Display
7	Student Attitude	Exp./Contr.	1 2 3	Pre/Post Pre/Post Pre/Post	t-test Repeated Measures

To utilize space in a more flexible manner, as shown by the greater variation in (1) grouping patterns and (2) in the physical arrangements of furniture/partitions over regular (monthly) intervals of time.

The underlying assumption of this objecti.. is that the traditional concept of "classroom" is too rigi.. Utilization of space and grouping should be based on the form and subject matter of the learning material presented, the learning styles of students, teaching styles, etc. If the learning environment is made more flexible, the response to that environment should, in turn, become more diverse and flexible.

Evaluation Measures

1. Photographs of students in various classes and activities
2. Seating charts showing location of furniture and partitions

Procedure

Photographs were taken every other week, usually on Monday in the Experimental School and on Tuesday in the Control School. One picture was taken in each unit and one in each grade of the Control School. Experimental School pictures are taken when most of the classes are in the unit area. If a particularly interesting activity occurred, it was usually photographed. Otherwise a large area of the unit, showing as much activity within the unit as possible, was taken. Times of rigid activities, such as standardized testing, were avoided. It takes approximately 20 minutes to complete photographing. After photographs are developed, each is labelled by date, unit and school.

Seating Charts are drawn the same day the photographs are taken. One drawing is made in each unit of the Experimental School and one in each of the grades of the control School. Each drawing depicts, by symbols, all furniture and moveable equipment in the unit at that time. (See Appendix for sample photographs, seating charts, and list of symbols used.) This task usually takes 5-10 minutes per unit or room. Charts are then filed by date, unit and school.

Scoring and Analyses

Photographs. Project personnel have delineated 6 categories of grouping patterns: A - Single Individual, B - Small Group (2 - 15), C - Class Size (15-30), D - Unit Size, E - More Than One Unit, and F - Combined Group. All activity shown in photographs is classified according to type of group. Variation in grouping patterns over time, and differences between Experimental and Control School, are noted.

Seating Charts. Changes in furniture arrangement, equipment use or partitions is recorded by month and by school. The mean number of changes for these groups is noted.

Results

From Tables 1,2 and 3 it can readily be seen that more variety in grouping patterns did occur in the Experimental School. During 1970-'71, the Control Group utilized only two of the six possible group-types, while the Experimental Group utilized all six. In 1971-'72, though the Control Group has begun to experiment with other grouping patterns, the class size group is still by far the most prevalent, comprising over 60% of all activity. In 1972-'73, the results of 1971-'72 are

repeated with an interesting exception. The Control Group most consistently elected "Class Size" as their grouping pattern in both 1971-'72 and 1972-'73. In the Experimental Group, however, the relative importance of "Small Group" and "Class Size" groupings is underplayed and the dominant theme appears to be greater reliance upon "Combination Groups." What this would indicate is that the teachers in the Experimental Group have moved, since the inception of the project, from a wide variety of types of grouping patterns in their units to grouping patterns which are more diversified. During the earliest phases, observations indicated that if students were working individually, the entire unit worked individually. Likewise, the unit might be broken down into several "Small Groups." The evolution which seems to be indicated in this teacher behavior is that the teachers in the Experimental Group distribute their students into a variety of grouping patterns (Combination Groups), e.g., some student will be observed to be working individually, while others will be observed to be working in class size or relatively large groups simultaneously. Teachers seem more able to handle such a diversity of groups and this quite likely indicates a greater flexibility in their approach to instruction. The inconvenience of handling such a variety of groups of different sizes is apparently not too much of a problem for them. One may conclude, then, that teacher flexibility has increased--at least on this measure.

In the area of arrangements of furniture/partitions, the Control School was at a disadvantage; since they are in a "traditional", rather than "open concept" school building, walls cannot be moved and partitions do not exist. A study

of furniture arrangements, however, shows us that, once again, the Experimental School appears to be using space more flexibly (See Table 4 and 5). For each half-year time interval, (1970-'71 and 1971-'72) the Experimental School has varied the placement of its furniture over three times more than the Control School. The potential for change and flexibility in the physical aspect of the learning situation thus appears to be greater in the Experimental School.

In 1972-'73, the data reported on these measures is similar to that of the first two years of the project. The teachers in the Experimental Group alter the physical environment of the units more than do the teachers in the Control Group, and they do so at a consistently higher level. This is most true of Furniture Arrangements. Partition Arrangements seemed to be a "kick" on the part of the Experimental teachers during the first year-and-a-half, but little activity is to be observed along these lines since then. People and their furniture seem to move as desired or needed in the Experimental units, but the desire or need to move furniture in the Control classes is much lower.

Discussion

In the area of space sampling via photographs, there was a major problem with data collecting during the first year of the project (1970-'71). No funds had been set aside for a camera and film and the Project Aide responsible for taking the pictures sometimes had difficulty getting a camera belonging to the school; she used her own camera much of the time, but then had to be reimbursed for film and processing. In addition, the Principal of the Control School, in an effort to be helpful and also to ensure his school of unbaised representation, offered to take space sample photographs starting in February, 1971,

and turn them into us at the end of the school year. Only he forgot. Consequently, we have photographs from January-June, 1971 for the Experimental School, but only from the month of January, 1971, for the Control School. This oversight affects the variety in grouping patterns, but not the changes in furniture arrangements, as this data was taken from the seating charts, which were done by our Project Aide, beginning in September, 1970. In both 1971-'72 and 1972-'73, project funds had furnished a camera and the Project Aide took all the photographs in both schools.

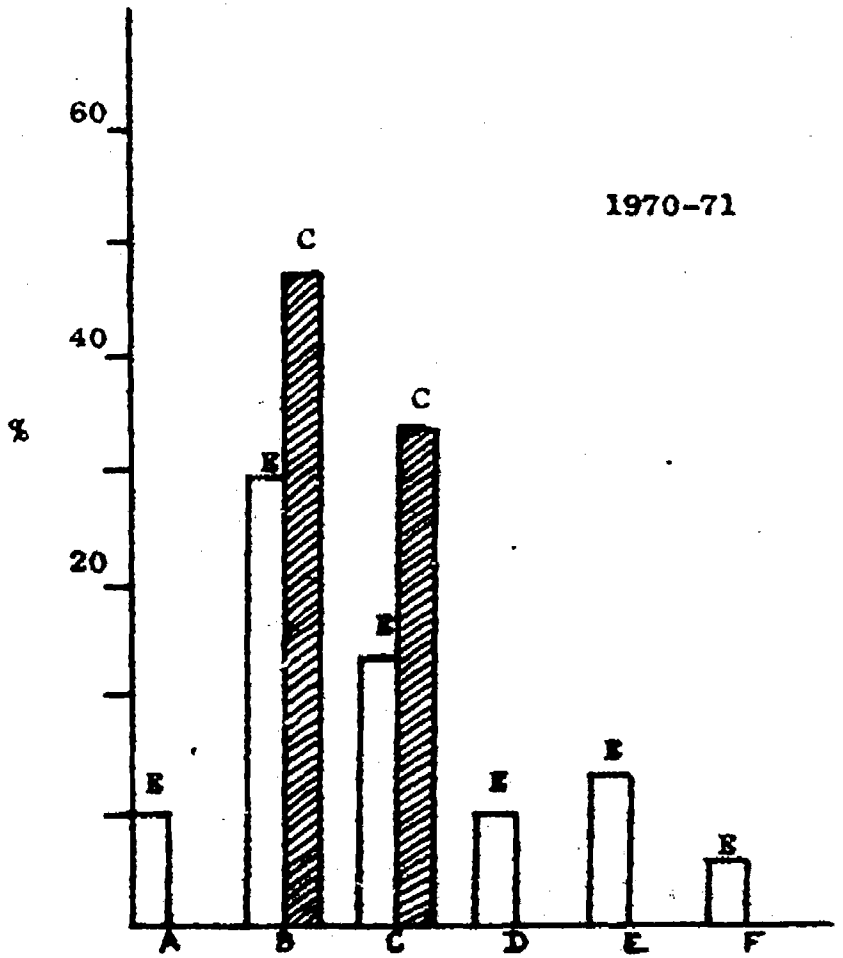
Table 1.

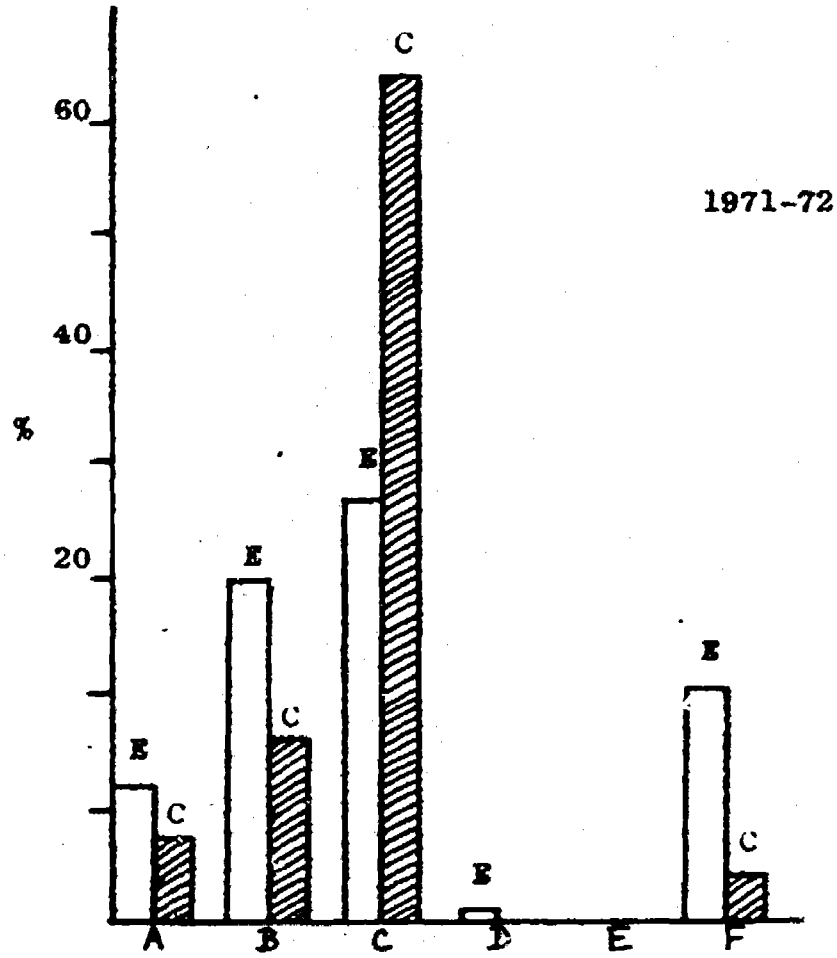
Variety in Unit/Class Grouping Patterns: 1970-73

Year and Groups	Unit or Class	Percentage of Observed Class Organizations[1] A	B	C	D	E	F
1970-71							
Experimental	4	10	39	23	10	13	6
Control	1	0	57	43	0	0	0
1971-72							
Experimental	4	12	30	37	1	0	20
Control	1	8	16	73	0	0	4
1972-73							
Experimental	4	5	22	33	0	0	41
Control	1	6	10	74	0	0	13

[1] A = Individual
B = Small Groups (2-15)
C = Class Size (15-30)
D = Unit Size
E = More than One Unit
F = Combination Groups

VARIETY IN GROUPING PATTERNS



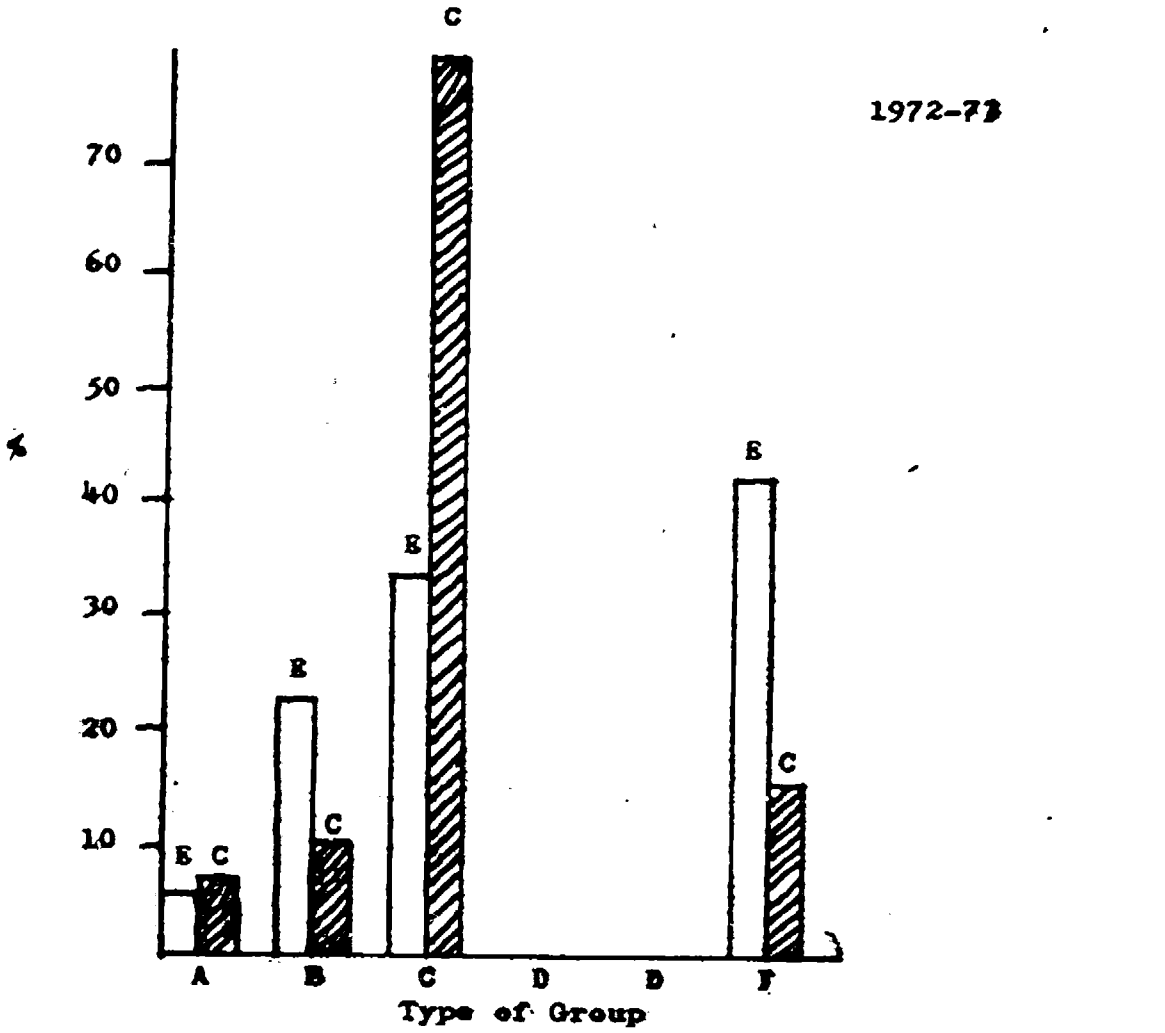


A — Single Individual
B — Small Group (2-15)
C — Class-Size (15-30)
D — Unit-Size
E — More Than One Unit
F — Combination of Groups

Table 2

Table 3.

VARIETY IN GROUPING PATTERNS



A - Single Individual
B - Small Group (2-15)
C - Class-Size (15-30)
D - Unit-Size
E - More Than One Unit
F - Combination of Groups

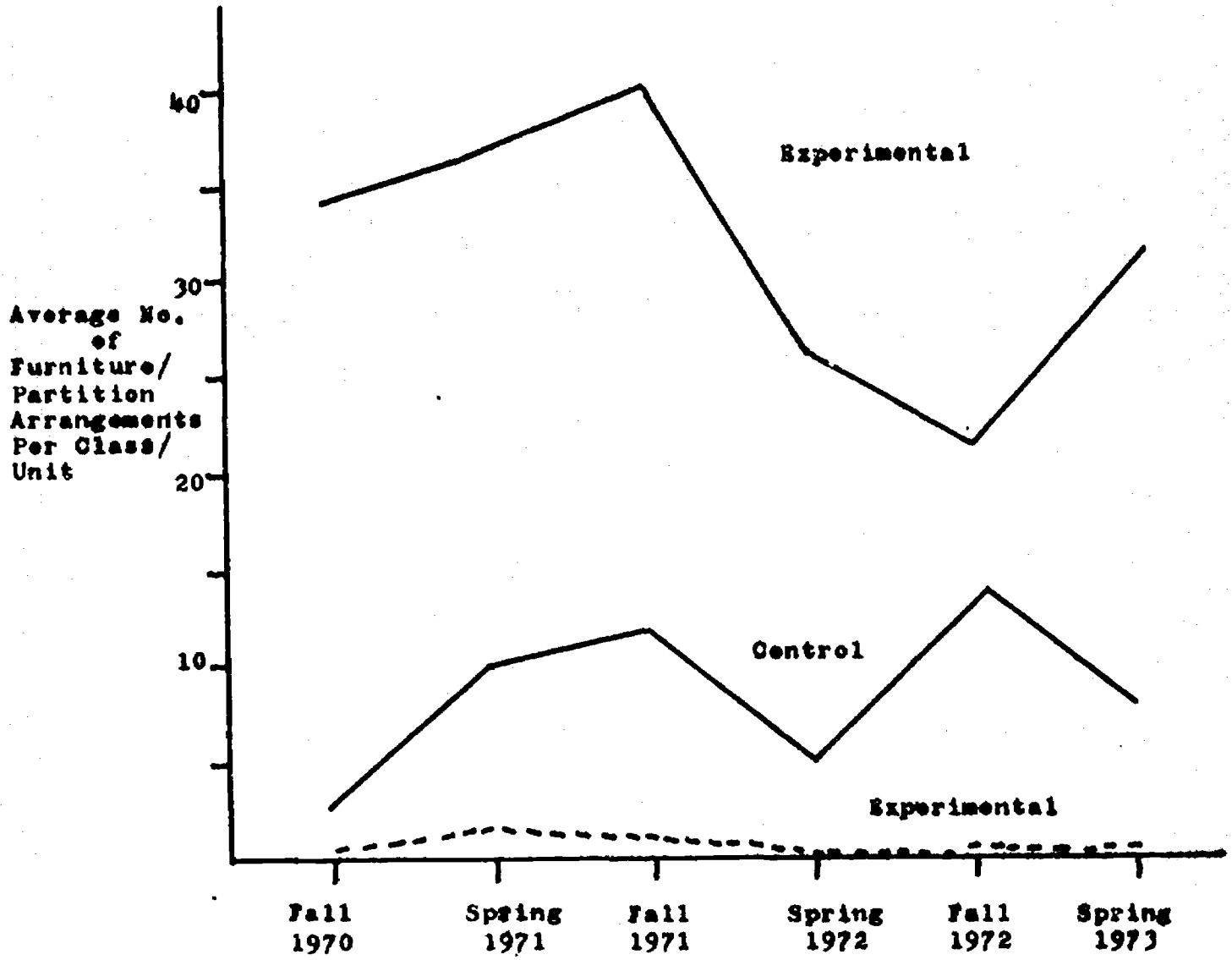
Table 4. Variety in Furniture/Partition Arrangements: 1970-73

Arrangements and Groups	Units and Classes	Fall 1970	Spring 1971	Fall 1971	Spring 1972	Fall 1972	Spring 1973
Furniture Arrangements							
Experimental	4	34.25	36.75	40.00	26.75	23.75	32.75
Control	1	3.00	10.00	12.00	5.00	17.00	8.00
Partition Arrangements							
Experimental	4	.25	1.50	1.25	0.00	.50	.50
Control[1]	--	----	----	----	----	----	----

[1]Partition arrangement data were not collected on the Control as partitions did not exist.

Table 5.

FURNITURE/PARTITION ARRANGEMENTS



- Furniture

- Partitions*

* Control School does not have partitions

OBJECTIVE 2

To increase staff experimentation with and selection of teaching techniques, as measured by a critical incidents approach.

Evaluation Measures

1. Multiple Choice Approach to Creative Teaching - a questionnaire asking teachers to evaluate the frequency of their own use of creative teaching approaches.
2. Teacher Reaction Form - a two-part form asking teachers to (1) rate "how well my day went" (1-9 scale) and (2) to identify and communicate one positive and/or negative "critical incident" occuring in any of their classes. A critical incident is defined as any incident a staff member personally feels was important or unusual in her teaching; it may include an idea, a teaching technique, a new learning material, or an insight.
3. Staff Newsletter

Procedure

Multiple Choice Approach to Creative Teaching was given to all staff members during the fall of the first year of the project (1970-'71) to try to identify what staff members considered hindrances to creative teaching (See Appendix for entire questionnaire).

Teacher Reaction Form was placed in each certified teacher's and Intern's mailbox on Tuesday and Thursday throughout the school year. Each staff member rates his day from 1(Bad) to 9 (Excellent), and perhaps writes what he feels is a critical incident. The forms are then returned to a special basket in the office at the end of the day.

In 1970-72, the Teacher Reaction Form was a single measure. In 1972-73, on request of the teachers involved, it was divided into two separate forms: (A) the Day-Rating Form and (B) the Critical Incident Form. Procedure for soliciting Day-Rating responses was identical to that of 1970-71 and 1971-72. Procedure for Critical Incident Forms was altered slightly: instead of handing one of these forms to each teacher twice weekly, teachers asked that a small box of blank forms simply be placed in each unit and teachers could fill one out and turn it in as these incidents occurred, rather than following a rigid schedule. Staff members were also told that they would be expected to turn in on an average one "incident" per week (half the original number) over the course of the school year.

Staff Newsletter is organized, typed and disseminated by Consultant and Project Aide. Material is solicited from staff and administration, and anything handed in is published. Usually the newsletter serves a dissemination purpose, in that most of the articles concern new teaching techniques, information on new materials, or the results of various aspects of the Creativity Project. (See Appendix for Sample Newsletter)

Scoring and Analysis

Multiple Choice Approach to Creative Teaching. Questionnaires were collected and responses tallied by frequency and filed.

Teacher Reaction Form. Analysis of Day-Ratings of staff members in 1972-73 was identical to 1970-71 and 1971-72. Analysis of Critical Incidents for 1972-73, however, was impossible due to the paucity of forms turned in (showing that teachers, if allowed to choose their schedule of response which is convenient to them, find it convenient not to respond.).

Project Aide tallied day-rating part of the Teacher Reaction Form. Each month line graphs were made of (1) the average day-rating for all teachers turning in a form that day; (2) the average day-rating for all special (music, art, etc.,) teachers for that day; and (3) the average day-rating for each unit. Results of unit day-rating were reported to unit leaders; graphs with day-ratings for all staff members were published in the staff newsletter or put on the bulletin board in the Teachers' Lounge.

The critical incident section of the Teacher Reaction Form was handled by Project Consultant. Incidents (positive and negative) were divided into four catagories; (1) Social (emphasis on group interaction or the interaction of teacher with one student); (2) Technical (emphasis on teaching techniques and approaches); (3) External Influences (e.g., equipment breakdown, special lectures, test schedules); and (4) Personal (dealing with staff insights or ideas or comments on what occured in their classes). Each critical incident was classified according to one of the four categories, and a record was kept of the pattern of category frequencies from month to month. Incidents from the "Technical" category were reported in the Staff Newsletter, so that all staff members might share an effective idea of teaching technique.

Results

Multiple Choice Approach To Creative Teaching. As can be seen in Table 6, most staff members reported trying creative approaches in their classrooms every day, or at least fairly often (Item one) and, when a more imaginative approach was tried, the majority of staff felt it was well worth the effort

(Item Three). On Item Two, half of the teachers felt that the biggest barrier to being creative was lack of time; all felt sufficient resources for creative teaching were present, and all reported to feel creativity was important.

Teacher Reaction Form. Day-rating graphs for each unit sometimes told much about the interrelationships in the unit. An example of such a relationship between staff members may be seen in Table 7. A day-by-day examination of the day-ratings during Spring, 1971, seems to indicate little variability throughout the month. As a result, data on one day each month were selected and the mean ratings and standard deviations of these ratings are reported in Tables 8 and 9. The pattern indicated is one of high consistency. No contrast of any pairs of means within the group is significantly different.

As far as the Critical Incidents were concerned, positive and negative incidents were each categorized into five types. In Table 10, percents of responses within each category are reported for each of the Spring and Fall semesters in which these data were collected. A modest increase in positive statements occurs during the Fall of 1971, and is maintained. The total numbers of reported incidents are consistent from semester to semester, when one adjusts for responses only being collected during four months of the Spring 1972 semester. Only in the Technical and the External categories do we observe much deviation in distribution of proportions of responses. Notably these are non-student and non-staff affecting categories.

In Table 11, we examine the distributions of proportions of positive and of negative reactions falling in each category. Within each month, and across semesters, for both negative and positive incidents, we find a similar consistency. Most

variability across months appears to occur in categories of Social A (Positive) and Personal (Positive).

These data would seem to indicate that the staff was consistently reacting and responding to their teaching activities. Secondly, non-student/staff aspects were those most variably identified by staff. Finally, though percentages of responses within the positive or negative types did not vary a great deal across categories, teachers seemed more variably responsive in offering positive reactions about category Social A and in offering positive personal comments.

Discussion

The Multiple Choice Approach To Creative Teaching was used primarily to get an idea of problems intrinsic to creativity, as teachers perceived it. Responses provided ideas for setting up problem situations for staff during in-services. The critical incidents were used in much the same way; that is, this measure was intended to be a monitoring device for classroom behavior and activities as seen by teachers. Whether information reported is strictly factual is not the point; rather the perception of a staff member, considered individually as well as part of a unit, is central. Secondarily, the critical incidents provide ideas (hundreds of ideas) for handling a wide variety of learning situations and materials. To summarize, then, both the Multiple Choice Approach To Creative Teaching and the Teacher Reaction Form were not intended as tests which would ultimately give us data significant at the .001 level; they were meant to be "fingers-on-the-pulse" of complex activities and personalities existing in school, and, to this end, served its purpose.

Table 6

MULTIPLE CHOICE APPROACH TO CREATIVE TEACHING RESPONSES

(Item One) Generally speaking, I try to use creative approaches

12	-	(a) every day.
4	-	(b) fairly often (2-4 times a week).
3	-	(c) sometimes.
5	-	(d) whenever I have a "wild burst" of creativity.
1	-	(e) rarely.
0	-	(f) only under duress.
5	-	(g) other.

(Item Two) For me, the biggest barricade to being creative and teaching creatively is .

14	-	(a) lack of time.
0	-	(b) lack of resources.
3	-	(c) I'm not really sure what I'm supposed to do to be more creative.
1	-	(d) I have trouble coming up with "creative" ideas.
0	-	(e) I'm not convinced creativity is all that important.
3	-	(f) one or more of the above.
5	-	(g) other.

(Item Three) In a situation where I tried a more "imaginative approach", the results (compared to a more traditional approach) were

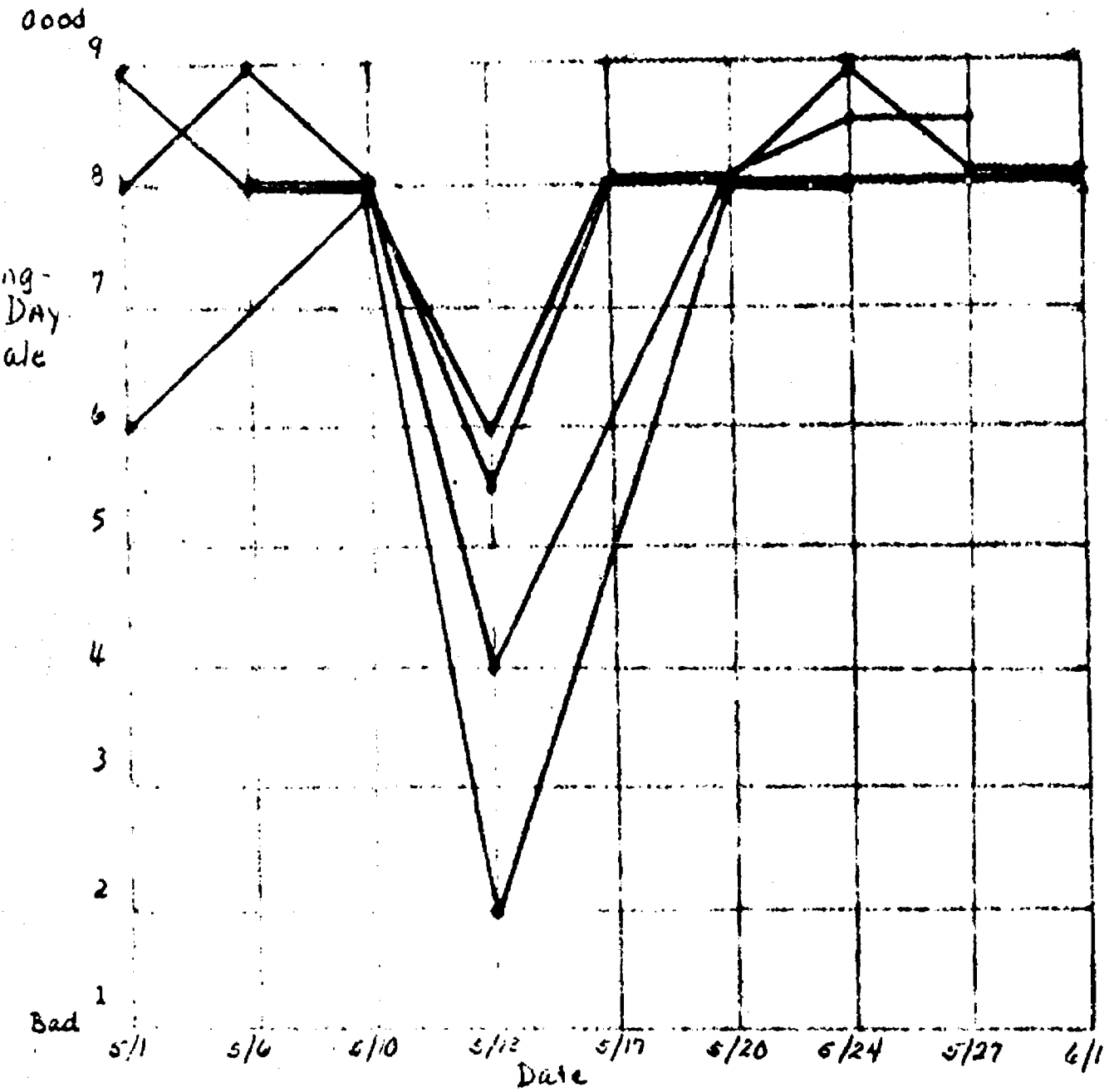
17	-	(a) well worth the effort.
4	-	(b) ambiguous.
0	-	(c) near-anarchy.
1		(d) other.

Table 7

TEACHER REACTION

Unit D

May, 1971



- Teacher A
- Teacher B
- Teacher C
- Teacher D
- Teacher E

Table 8

AVERAGE RATINGS OF SELECTED DAYS BY OREGON TEACHERS DURING EACH MONTH

	Spring 1971 Months					Fall 1971 Months					Spring 1972 Months			
	2	3	4	5	6	9	10	11	12	1	2	3	4	5
Mean	7.00	7.26	7.10	7.40	7.90	7.18	7.38	7.50	7.17	7.83	7.48	7.67	6.75	7.59
Standard Deviation	1.44	1.51	1.44	1.16	1.41	1.78	1.70	1.53	2.04	.72	.95	1.26	2.23	1.31
Number Respondents	23	21	24	21	15	25	21	20	23	18	23	21	20	17

Table 9.

AVERAGE RATINGS OF SELECTED DAYS BY
OREGON TEACHERS DURING EACH MONTH

	Fall 1972 Months						Spring 1973 Months			
	8	9	10	11	12	1	2	3	4	5
Mean	7.50	7.25	7.90	8.06	7.43	7.5	7.84	7.63	8.12	7.22
Standard Deviation	1.53	1.55	1.11	.78	1.25	1.91	1.35	1.32	1.65	1.96
Number Respondents	20	20	21	18	23	20	19	24	17	23

Table 10.

DISTRIBUTION OF CRITICAL INCIDENTS BY CATEGORY

	Percent of Responses in Each Category					Percent Across Categories	Number Responses
	Social* A	Social* B	Technical	External Influence	Personal		
Spring 1971							
Positive	38	10	32	5	21	65	349
Negative	18	11	26	23	21	35	184
Total	28	11	30	11	21	100	533
Fall 1971							
Positive	31	7	38	7	17	72	394
Negative	17	11	6	30	36	28	149
Total	27	8	29	14	22	100	543
Spring 1972							
Positive	33	7	31	6	24	70	349
Negative	23	14	7	28	29	30	151
Total	30	9	23	12	25	100	500

* Social A Category refers to incidents focusing upon the social aspects of experiencing something as a group.
Social B Category refers to incidents focusing upon the social aspects of a relationship of just one or two persons (e.g., a teacher and a student with whom she is trying to establish rapport or communication).

Table 11.

DISTRIBUTION OF POSITIVE AND NEGATIVE INCIDENTS
IN EACH RESPONSE CATEGORY

Categories	Percentages of Responses Within Each Category									
	Positive Months					Negative Months				
	1	2	3	4	5	1	2	3	4	5
Social A-Spring 71	7	9	7	9	1	5	5	2	6	1
Fall 71	4	10	7	4	7	3	7	6	2	3
Spring 72	10	11	6	6	-	7	7	5	5	-
Social B-Spring 71	2	4	1	3	1	2	4	3	3	0
Fall 71	0	3	2	1	1	2	6	2	0	1
Spring 72	1	2	2	2	-	3	7	3	0	-
Techni- Spring 71	9	10	4	7	1	10	4	5	6	1
cal Fall 71	4	11	8	7	8	1	3	3	0	0
Spring 72	11	9	5	6	-	3	2	1	1	-
External-Spring 71	1	1	1	2	0	8	5	3	7	0
Influ- Fall 71	0	4	2	1	0	7	9	3	7	4
ence Spring 72	1	1	1	3	-	10	5	6	7	-
Personal-Spring 71	3	8	6	5	0	3	8	6	4	0
Fall 71	0	5	4	3	5	1	11	7	7	11
Spring 72	7	8	5	4	-	9	8	3	9	-
Total R -Spring 71			349					184		
Total R -Fall 71			394					149		
Total R -Spring 72			349					151		

OBJECTIVE 3

To demonstrate increased process orientation of instructional staff during the year, as measured by attitude shifts on the Minnesota Teacher Attitude Inventory.

Evaluation Measures

Minnesota Teacher Attitude Inventory - a 150-item questionnaire assessing attitudes of teachers toward themselves, students, teaching as a career, and classroom procedures. Validity Coefficient = .93.

Procedure

This test was administered to the Experimental teachers once each year in mid-year in 1970-'71 (when it was initially obtained) and at a pre-school in-service in 1971-'72 and 1972-'73. Administration was done by Project Aide in 1970-'71 and by the Project Director in 1971-'72 and 1972-'73, and according to specific administration directions in the Test Manual. It was also given to teachers in the Control Group during 1972-'73.

Scoring and Analysis

Scoring during both years was done by hand by Project Consultant. Scores of the teachers taking the MTAI in 1970-'71, 1971-'72, and 1972-'73 were contrasted with each other and with the MTAI national norms for an equivalent standardization group.

An additional indirect source of data in this process vs. content objective was assumed to be provided in a subset of items in the Student Attitude Questionnaire (see Objective #7 and Appendix for complete examination). Category III

(Attitudes toward Classes) measured the students' perceptions of freedom or constraint placed upon his learning activities. These data were collected on Experimental and Control students in 1970-'71, 1971-'72 and 1972-'73 and contrasts were made in each year between Experimental and Control on the post-test, as well as between pre- and post-tests for each.

Results

Table 12 reports the results of an investigation of the flexibility factor. During 1970-'71, teachers taking the MTAI tended to be less flexible than the national sample, but by 1971-'72, their attitudes were significantly more flexible toward students than the 1970-'71 group or the national norm group and this trend was continued into 1972-'73. Flexibility in attitudes is clearly a positive gain for teachers in this project. Results from the Control Group teachers was significantly lower than either the national norm group or the Experimental Group, perhaps pointing up the possibility that these (Control) teachers do not think similarly to the norm group or the experimental group with regard to teaching.

The MTAI reports higher scores for persons who view the teacher-student relationship as more student-oriented. The picture which seems to emerge in our data is that teachers working in the experimental project become measurably more student-oriented in their expressed attitudes toward teaching as a result of the project and they maintain this level of student-oriented attitude, at least as far as 1972-'73 is concerned.

In the subset of items in the Student Attitude Questionnaire, no significant differences were found in any set of contrasts.

In fact, changes in average proportions for each group were opposite to that which would be predicted. Therefore, this source of data did not provide support for the objective. (See Table 52 and Appendix for results.)

Discussion

Another asset of this measure not covered in the terms of the objective itself is the stimulus it provided for staff evaluation and discussion of their own attitudes toward various aspects of teaching. At one point, half-way through the second year, two of the units (C and D) requested the Project Consultant to prepare a comparison of their own unit's staff responses on the MTAI with their own unit's student responses on the Student Attitude Questionnaire. Responses of each group as a whole were prepared as requested and, on its own initiative, each unit spent several hours comparing the responses in various areas. Consultant's part in these sessions consisted of explaining how data was analyzed, and not pointing out rightness or wrongness of responses. It was stressed to staff that their own unit or consistency of responses was more important than absolute rightness or wrongness.

Table 12.

MINNESOTA TEACHER ATTITUDE INVENTORY: 1970-73

Year and Group	Test Scores N	Mean	Standard Deviation	Comparison t-Values Versus 1971-72	Versus 1972-73	Versus Norm
1970-71						
Experimental	28	52.79	26.95	2.41**	2.49**	1.00
1971-72						
Experimental	30	68.17	20.64		<1.00	1.92*
1972-73						
Experimental	35	68.60	22.59		2.78**	2.11*
Control	4	34.25	24.90			-1.12
National Norm	247	55.10	36.70			

* $p < .05$
** $p < .01$

OBJECTIVE 4

To demonstrate long-term gains in student satisfaction in his learning environment, as measured by attitudes toward teachers, school, and self; long-range attendance records; and the range and variety of chosen electives.

Evaluation Measures

1. Student Attitude Questionnaire - a 36-item questionnaire dealing with students' attitudes toward themselves, school, teachers, and using their imagination.
2. Attendance Record
3. Parent Newsletter - source of information to parents and a means to establish 2-way communication between the school and parents.
4. Favorite Subject/Favorite Place Tally - survey of students to find which are the most- and least-liked subjects and places and why.
5. List of Electives (Interest Groups) available to students.
6. Student Reaction Form - verbal tally of students' perception of "my school day."

Procedure

Student Attitude Questionnaire. (See Obj. #7 for complete Examination.)

Attendance Record. A record of percentage of days present, for both students and staff, were compiled for each academic quarter.

Parent Newsletter. (The Open Door) The newsletter is written by Project Consultant and distributed through students to all parents, teaching staff and administration. Subject

Material is based on responses from a questionnaire sent to parents during first year of the project, asking what issues confused them, interested them, angered them or which they'd like to know more about. Comments and further questions on subsequent articles or about school routine in general are encouraged and answered in the newsletter itself.

Favorite Subject/Place Tally. For both the Favorite Subject and Favorite Place, five boys and five girls are selected from each unit on the basis of who happened to be in the Learning Center when the tally was done (total of 20 students per unit). Each student was interviewed individually about his most favorite, second favorite, and least favorite subject and place, and why. One tally was done in 1970-'71, and two tallies were done in 1971-'72 and 1972-'73. This measure was not done in the Control School, for fear of possible disruption of classes. However, in 1972-'73 arrangements were made to sample this variable in the Control School.

List of Electives. List of electives suggested by students and teachers are gathered and filed according to year and unit. This was done only in the Experimental School, as the Control School did not offer electives at initiation of project.

Student Reaction Form. Ten students from each unit (five boys and five girls) were interviewed verbally as they waited in the lunch line. Each was asked to "rate my day" on a scale form 1-9 (the same scale as the day-rating part of the Teacher Reaction Form).

Scoring and Analysis

Student Attitude Questionnaire. (See Obj. #7)

Attendance Record. After days present were converted to percentiles from both schools, comparisons were made between

Experimental and Control Schools and between staff and students.

Favorite Subject/Place Tally. Responses to all tallies were summarized by Project Consultant. Subjects and places which students had selected as least favorite were noted as possible problem areas. Contrasts between units, as well as by sexes and over time were made.

List of Electives. Comparisons were made of the variety and frequency of interest groups offered in each unit and in the school as a whole.

Student Reaction Form. Day-ratings from all students in each unit were compared to the day-ratings of teachers in their units to see how closely students' perception of daily classroom activities corresponded to the perceptions of teachers.

Results

Student Attitude Questionnaire. (See Obj. #7)

Attendance Record. As shown in Table 12A, student attendance for the Experimental School is at least 10% greater than student attendance for the Control School in all quarters of the first year of the project (1970-'71) and in the first two quarters of the second year, student attendance in the Control School slightly surpasses the student attendance of the Experimental School, but the difference is not significant.

During the 1972-'73 school year, student attendance was analyzed by unit and school. Students in the Control Group were absent on the average of 8.8 days per year, while Experimental students were absent between 5.45 and 7.64 days per year (see Table 13). Except for the comparison between Unit B and the Control, students in the Control Group were absent significantly more days per year than were Experimental

students. With the generally similar character of the Control and Experimental Schools on variables other than project and building, these significant differences support a noticeable effect on student behavior, principally better attendance patterns.

Staff attendance at the Experimental School is slightly higher than staff attendance at the Control School in all but two quarters during the first two years of the project (quarter 3 in 1970-'71 and quarter 2 in 1971-'72). However, the differences are not significant.

Favorite Subject/Place Tally. The results of these tallies were approximately the same for all three years (see Tables 14, 15 and 16). In all three years the Learning Center, the School Gym and Home were identified as major first or second choices by students in the Experimental Group. During the second and third year of the project, the Art Room became a definitely preferred place for Experimental students. Also in 1972-'73, the Control students were asked to identify their favorite place and, like the Experimental students, the School Gym and Home were major choices, and they tended to identify the Art Room and the School Playground as their second major choices. The Learning Center was not considered a favorite place by the Control students. Both Experimental and Control students identified the Music Room as their least favorite place. The continued, though declining, presence of the Learning Center as a favorite place may be more of an indication of particular things going on in the Center, rather than a preference for the place itself.

Physical Education and Art are consistently indicated as favorite subjects by the Experimental Group in all three

project years. During the second and third year we begin to find that Reading, Math and Special Interest Groups (to a lesser degree) also receive high ratings by the Experimental students. During the third year, Control students were asked to identify their favorite subjects. Like the Experimental Group, they identified Physical Education, Art and Special Interest Groups as their major choices for subjects. However, no "traditional" subjects were indicated as having a high interest for them. On the contrary, Math was clearly disliked by the Control students and identified as their least favorite subject. The pattern for the Experimental students is to continue to dislike Skills and Social Studies and Science (during the last year only) and identify more traditional subjects as interesting. A clear preference for favorite place and subject matter is being indicated by the Experimental Group which draws in both interests in academic subjects and "less academic" subjects, while the Control Group indicated a greater interest in the "less academic" subjects. Experimental students, then, are apparently finding some academic (as well as non-academic) subjects more interesting than they did before. A clear effect on the interest of the Experimental Group is reflected in this set of results and may be viewed as a function of this experimental project.

List of Electives. As can be seen from a complete list of electives in Tables 17 and 18, only three of the four units chose to offer any electives. In the units that did offer these "interest groups," all varied their offerings from 1970-'71 to 1971-'72, and two units significantly increased the number of groups offered as well. Means for the total number of interest groups offered each year is shown in Table 19.

Since students request which subjects are offered in the form of interest groups, it must be assumed that the variety and number of offerings do truly represent students' influence and interests in at least this aspect of school curriculum.

During 1972-'73, two of the units did not offer special interest groups, Unit A because it did not choose to and Unit B because not enough parents or teachers could be found who were willing to teach them. Also, during 1972-'73, Unit C and Unit D decided to combine their offerings of these classes, thus cutting down on the total number of groups offered, but increasing the variety of classes available to each child in these two units.

Student Reaction Form. Generally speaking, students' perceptions of their day is correlated to teachers' perceptions (see Tables 20, 21 and 22). Students rating their day lowest are more likely to come from units where staff members also rated their days as least satisfactory; and students rating their day highest are likely to come from units where teachers also rated their day highly.

A unit by unit sampling of day-ratings, however, shows greater variability in the ratings given by students than by teachers; teachers tend to perceive the day more as a group than can be claimed of the students. This pattern seems to be consistent from observation to observation (month to month and year to year).

Discussion

With regard to the Favorite Subject/Place Tally, this measure, like the Multiple Choice Approach To Creative Teaching and the Teacher Reaction Form (Obj. #2), was designed primarily as a monitoring device. If responses were relatively evenly

spread, but varied somewhat over time, it was assumed that randomly spread student preference was the deciding factor. However, if a large number of both sexes and all units consistently chose one subject or area as "least favorite," a problem area existed, and perhaps a closer look was necessary. This, in fact, was what occured in the area of vocal music. Children reported disliking it for a variety of reasons, all of which revolved around the personality of the Vocal Music teacher, a woman who loved music and children, but had spent many years teaching this subject in a very traditional manner. When the results of the tally were shown to her, she was very upset initially, but proceeded to change her entire teaching approach as a direct result of this new knowledge. Given a year or two to dispel the "old image," it would be safe to say the entire area of vocal music would have been vastly expanded as an innovative, imaginative subject area.

Table 12A

COMPARISON OF STUDENT AND STAFF ATTENDANCE (Expressed in % present)

Oregon Middle School (Experimental)

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	
Staff	99.3%	97.4%	97.6%	99.2%	1970-71
Student	97.0%	95.0%	93.0%	95.6%	
Staff	98.2%	97.6%	98.8%	99.3%	1971-72
Student	96.9%	94.1%	93.3%	93.0%	
Staff	96.5%	95.2%	97.0%	98.2%	1972-73
Student	97.7%	95.8%	95.1%	96.3%	

Brooklyn Elementary School (Control)

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	
Staff	96.2%	93.7%	99.9%	98.6%	1970-71
Student	87.0%	84.0%	83.0%	83.9%	
Staff	97.0%	99.9%	97.9%	97.5%	1971-72
Student	82.7%	80.5%	95.6%	95.5%	
Staff	90.7%	92.5%	90.7%	88.8%	1972-73
Student	96.4%	94.0%	93.4%	95.7%	

Experimental Group: N for Staff = 16 N for Student = 516

Control Group: N for Staff = 3 N for Student = 82

Results based on a 47.5 day quarter

Table 13.

COMPARISON OF AVERAGE ABSENCES FOR UNITS AND BROOKLYN: 1972-73

Units and Classes	N	Mean Absences	Standard Deviation	Brooklyn versus Unit
Unit A	69	6.16	5.74	2.47**
Unit B	66	7.64	6.10	1.04
Unit C	56	5.45	4.99	3.04**
Unit D	58	6.16	5.20	2.40**
Brooklyn	81	8.80	7.07	

* $p < .05$
** $p < .01$

Table 14.

FAVORITE SUBJECT/FAVORITE PLACE

Place	First Choice				Second Choice				Least Favorite			
	1971		1972		1971		1972		1971		1972	
	N	%	N	%	N	%	N	%	N	%	N	%
Learning Center	11	24	16	19	10	22	12	15	7	16	1	1
Art Room	-	-	19	23	-	-	23	29	-	-	0	0
Own Unit	3	7	2	2	6	13	5	6	9	20	9	12
Neighborhood	8	17	5	6	3	7	7	9	0	0	5	6
School Gym	8	17	20	24	10	22	21	26	8	18	1	1
Music Room	-	-	1	1	-	-	3	4	-	-	46	59
School Playground	1	2	3	4	8	18	3	4	8	18	10	13
Home	10	22	12	14	8	18	4	5	7	16	3	4
Other	5	11	5	6	0	0	2	3	6	13	3	4
Totals	46		83		45		80		45		78	

Subject	First Choice				Second Choice				Least Favorite			
	1971		1972		1971		1972		1971		1972	
	N	%	N	%	N	%	N	%	N	%	N	%
Reading	4	9	13	16	9	20	11	14	1	2	9	11
Math	1	2	6	7	7	15	7	9	9	20	18	23
Social Studies	1	2	0	0	4	9	3	4	11	24	7	9
Vocal Music	0	0	0	0	1	2	1	1	19	41	22	28
Art	13	28	17	21	9	20	15	19	0	0	1	1
Creative Writing	1	2	1	1	4	9	3	4	2	4	8	10
Band	5	11	5	6	1	2	7	9	0	0	0	0
Skills	-	-	0	0	-	-	2	3	-	-	8	10
Physical Education	19	41	24	30	11	24	18	23	1	2	0	0
Science	-	-	2	2	-	-	0	0	-	-	6	8
Interest Group	2	4	13	16	0	0	11	14	3	7	1	1
Totals	46		81		46		78		46		80	

Dashes (-) indicate items which were not included in the tally at that time.

Table 15.

Place	First Choice 1973 N	First Choice 1973 %	Second Choice 1973 N	Second Choice 1973 %	Least Favorite 1973 N	Least Favorite 1973 %
Learning Center	9	11	11	14	3	4
Art Room	12	15	15	19	4	5
Own Unit	5	6	4	5	4	5
Neighborhood	9	11	8	10	11	14
School Gym	18	23	23	29	3	4
Music Room	3	4	1	1	43	54
School Playground	1	1	1	1	7	9
Home	16	20	15	19	4	5
Other	6	8	1	1	0	0
TOTALS	79		79		79	

FAVORITE SUBJECT/PLACE 1973 RESULTS
(Oregon Middle School)

Subject	First Choice 1973 N	First Choice 1973 %	Second Choice 1973 N	Second Choice 1973 %	Least Favorite 1973 N	Least Favorite 1973 %
Reading	11	13	13	16	5	6
Social Studies	3	4	6	7	17	20
Creative Writing	0	0	0	0	5	6
Skills	1	1	0	0	17	20
Phy. ed.	29	35	19	23	1	1
Science	1	1	1	1	14	17
Math	12	14	9	11	11	13
Vocal Music	1	1	1	1	12	14
Band	4	5	4	5	0	0
Art	12	14	22	27	0	0
Special Interest	9	11	8	10	1	1
TOTALS	83		83		83	

Place	First Choice 1973 N	%	Second Choice 1973 N	%	Least Favorite 1973 N	%
Learning Center	3	8	1	3	3	8
Art Room	3	8	7	18	5	13
Own Unit	2	5	5	13	5	13
Neighboorhood	0	0	1	3	3	8
School Gym	9	23	12	31	2	5
Music Room	3	8	1	3	11	28
School Playground	4	10	6	15	9	23
Home	15	38	3	8	0	0
Other	0	0	3	8	1	3
TOTALS	39		39		39	

FAVORITE SUBJECT/PLACE 1973 RESULTS
(Brooklyn)
Table 16.

Subject	First Choice 1973 N	%	Second Choice 1973 N	%	Least Favorite 1973 N	%
Reading	1	3	0	0	3	8
Social Studies	0	0	0	0	5	14
Creative Writing	1	3	1	3	4	11
Skills	0	0	3	9	1	3
Phy. Ed.	15	42	9	26	0	0
Science	1	3	1	3	0	0
Math	2	6	2	6	16	44
Vocal Music	0	0	4	11	2	6
Band	1	3	3	9	2	6
Art	7	19	6	17	2	6
Special Interest	8	22	6	17	1	3
TOTALS	36		35		36	

INTEREST GROUPS

Table 17.

Unit A

1970-71	1971-72
Has not yet begun to have interest groups	

Unit B

1970-71	1971-72
Cooking	Acting
Dramatics	Cooking (A)
Hiking	Cooking (B)
Knitting	Grooming
Models	Knitting
Photography	Models
Records & Dancing	Photography
Sports	Play
	Radio Script
	Sewing
	Singing
	Sports

Unit C

1970-71	1971-72
Cooking I	Belts
Cooking II	Cooking I
Crafts	Cooking II
Dancing	Crafts
Dramatics	Creative Stitchery
Knitting/Needlework	Dramatics
Learning Center	Models
Models	Recorder
Musical Instruments	Rocks & Minerals
Recorder	Sports
Sports	

Unit D

1970-71	1971-72
Art	Arts & Crafts
Cooking	Cooking
Dramatics	Dramatics
Embroidery	Film
Hair Styling	Guitar & Other Instruments
Handicraft Helpers	Hair Styling/Good Grooming
Jewelry Making	Horse Science
Knitting	Jewelry Making
Models	Knitting
Recorder Playing	Models
Sewing	Nursing/First Aid
Wood-Working	Photography
	Quilting
	Sewing
	Sports & Games
	Wood-Working

Table 18.

INTEREST GROUPS OFFERED BY UNIT C AND UNIT D - 1972-73

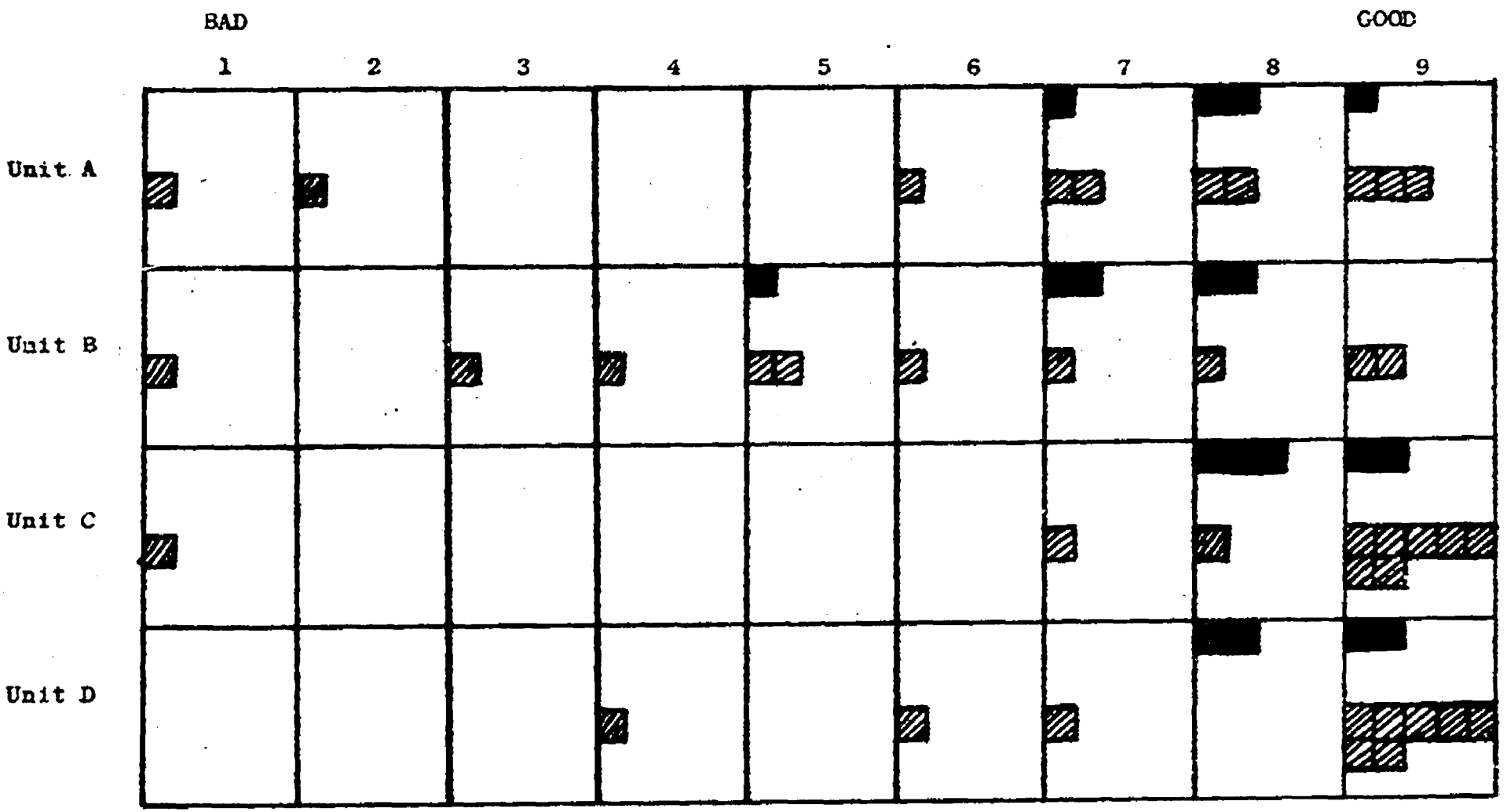
Cooking I
Cooking II
Cooking III
Cooking IV
Dramatics
Cake Decorating
Chess
Hairstyling & Grooming
Making Slides & Movies
Baton
Guitar
Knitting
Embroidery & Creative Stitchery
Nature
Models
Crocheting
Sports & Games
Photography
Crafts
French
Spanish
Pop Rock & Folk Rock
Puppetry

Note: Only Units C and D offered special interest groups in 1972-3 because of not wanting to (Unit A) or not having enough parents who could help teach them (Unit B). Also Units C and D, instead of offering these special classes to students only in their own units as they had in previous years, combined efforts and personnel and offered interest groups to children in both units simultaneously.

Table 19.

Year	N Units	Number of Different Interest Groups	Average/Unit
1970-71	3	31	10.33
1971-72	3	38	12.70
1972-73	2	23	11.50

COMPARISON OF STUDENTS' RATING-OF-THE-DAY WITH THE RATING OF STAFF MEMBERS



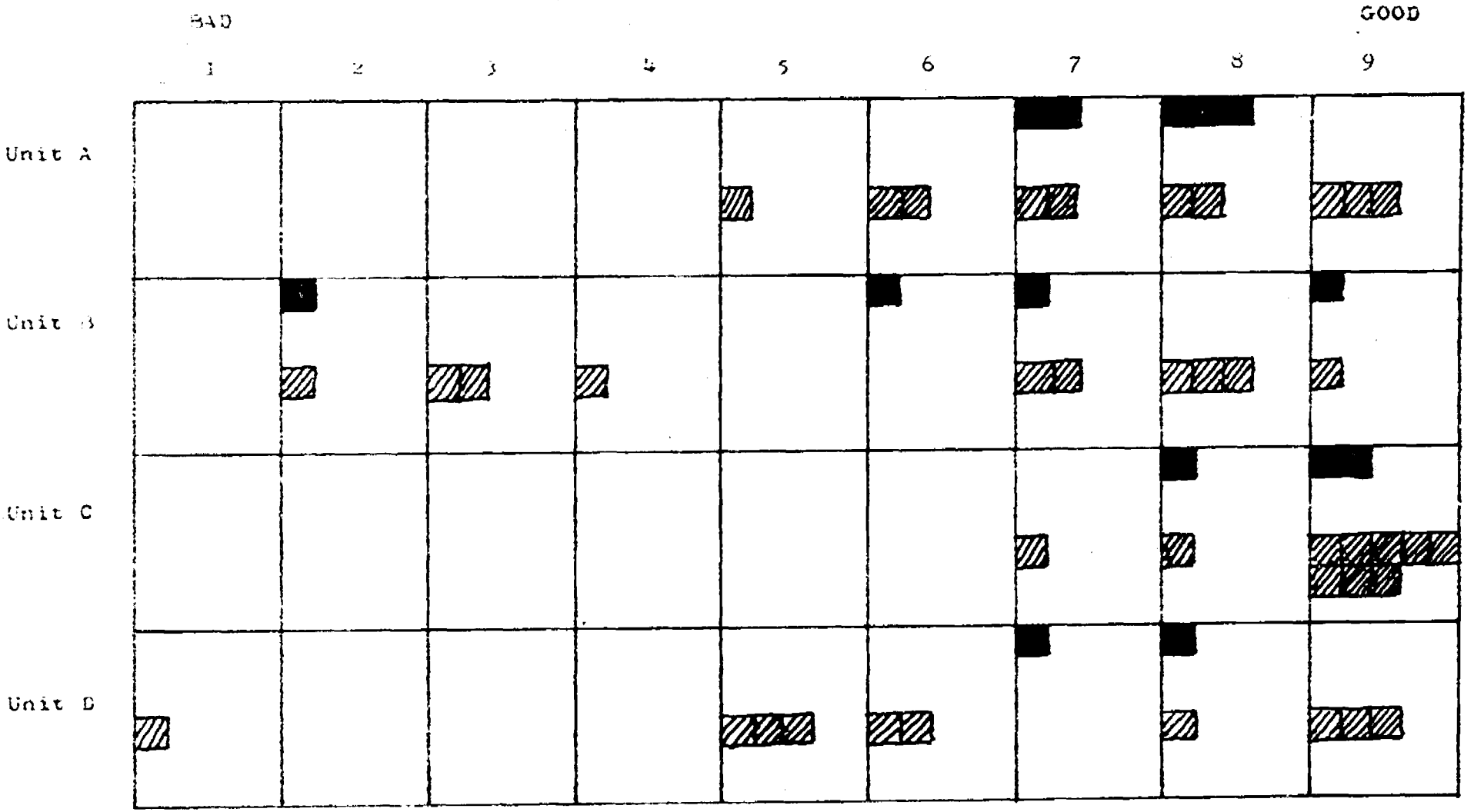
= Staff Member

= Student

Each small colored square represents the response of one student or staff member taken at one sampling (2-10-72).

Table 20.

COMPARISON OF STUDENTS' RATING-OF-THE-DAY WITH THE RATING OF STAFF MEMBERS



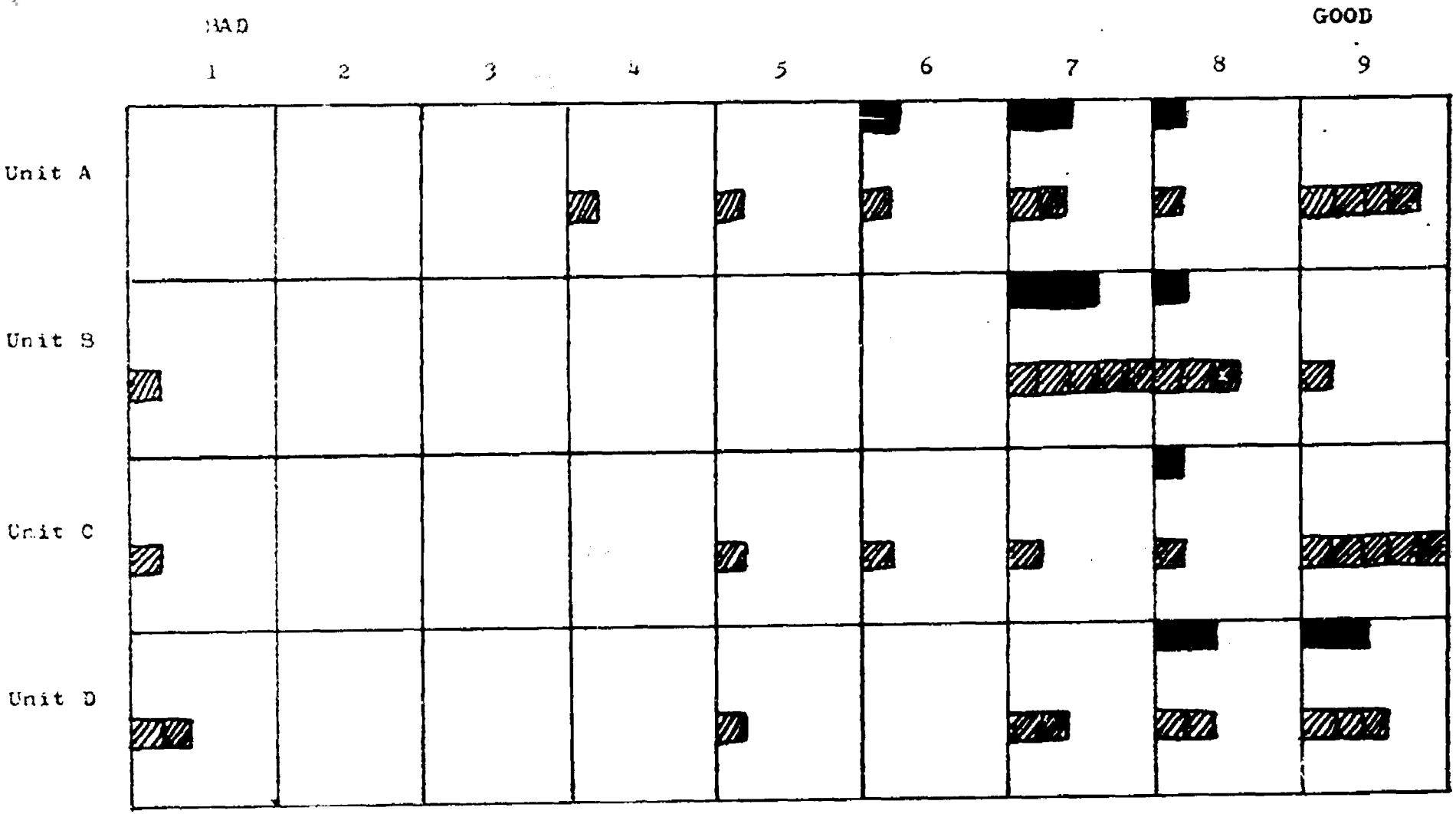
■ = Staff Member

▨ = Student

Each small colored square represents the response of one student or staff member taken at one sampling (12-14-72).

Table 21.

COMPARISON OF STUDENTS' RATING-OF-THE-DAY WITH THE RATING OF STAFF MEMBERS



Each colored square represents the response of one student or staff member taken at one sampling (5-22-73).

Table 22.

OBJECTIVE 5

To set up problem situations, both for staff and students, which will facilitate development of a wide variety of solutions.

Evaluation Measures

1. Verbal Fluency tests - patterned after the Guilford test battery (well-known measures of creative responses), except that instructional format was brought to a grade level more consonant with the population tested.
   (a) Idea Fluency - Versions A and B, tests child's fluency of responses to category of words.
   (b) Associational Fluency - Versions A and B, tests extent of child's verbal associations to a key word.
   (c) Word Fluency - Versions A and B, tests child's ability to identify words defined in a particular way, e.g., beginning with the letter "t".
2. Let's Imagine - Versions A and B, a test of our own design, requiring children to respond to an open-ended pictorial stimulus.

Procedure

Both the Verbal Fluency Tests and Let's Imagine are administered to both Experimental and Control Schools in a pre-post design, using one form for the pre-test and the other for the post-test. In 1970-71, tests were given to randomly selected subjects in both schools; that is, students were randomly selected for the Verbal Fluency tests, again for Let's Imagine, again for the Student Attitude Questionnaire, etc. This proved chaotic. In 1971-'72, tests were given to half of the students at each grade level in the Control School (M-W in the 4th grade, A-J in

the 5th grade, and randomly selected in the 6th grade) and all students in two randomly selected homerooms in each unit of the Experimental School. In 1972-'73, subjects for this measure in the Experimental School were selected in the same manner as in 1971-'72. In the Control School, however, all students at each grade level (forth, fifth and sixth) were given these tests in order to provide a larger sample for comparison.

Students were read instructions for each test. Questions, if any were answered. Testing was timed by a stop watch and took about 30 minutes for the 3 Verbal Fluency tests and 20 minutes for Let's Imagine. All testing was administered by the same Project Aide.

Scoring and Analysis

Idea Fluency and Associational Fluency are scored by tallying up the number of "acceptable" responses. Since it was often difficult to judge whether or not a response was acceptable, three Project Aides and Project Consultant compiled a list of unacceptable responses (see Appendix) and scoring was thus kept consistent. Misspelled words were counted if they were recognizable. Responses to Word Fluency tests were just counted and recorded on each student's Score Card.

Let's Imagine is scored by adding up the number of ideas the student has written down which were not explicitly depicted in the picture stimulus. If a student only writes about exactly what he sees in the picture, his score is 0. Grammatical errors, literary style, misspellings are not counted; only ideas count toward total score. Scores for this measure are also recorded on the Student Score Card.

In 1970-'71, comparisons were made of means and variace between groups and between sexes. Age appeared to be a determining factor but futher analyses was not begun at this point.

In both 1971-'72 and 1972-'73, scores on these measures were analyzed using a repeated measures analysis of variance. In the 1971-'72 analysis, the design was a 3 x 2 x 2 factorial design, while in the 1972-'73 analysis the design was a 5 x 2 x 2 factorial design. The changes in design was made due to age differences again apparent between the five classes/units in the treatment and control groups. It was thought that some understanding of the age factor might be derived by allowing age levels to play their part in the analysis. The first factor, Classes, in the 1971-'72 analysis had three levels; two age levels (10.67 and 9.40 years) in the Experimental Group and one age level (10.01 years) in the Control Group. In 1972-'73, this factor had five levels, four in the Experimental Group and one in the Control. Unit A's mean age was 10.9, Unit B was 10.8, Unit C and D was 9.4 and Brooklyn was 10.1. Essentially, there is up to a year-and-a-half difference in ages between the levels in this factor. The second factor was sex and the third factor was the repeated measure (pre/post testing) in both analyses.

The employment of this analytic procedure is determined by the need to find out whether scores on both pre- and post-tests are dependent upon the "class" the student is in and/or the sex which is associated with the student. Another way of phrasing this is, "Can one account for differences in scores on the pre- and post-tests by focusing on the interaction of the treatment effects?" One therefore concentrates on the interactions of the repeated measures factor and Class, and the repeated measures factor and Sex. All of the Verbal Fluency measures, Let's Imagine, and the Student Attitude Questionnaire (Obj. 4 and 7) were analyzed in this manner.

Results

In 1970-'71, analyses remained at a very informal level. Means and standard deviations were compared on the Verbal Fluency measures and differences noted between the Experimental and Control Schools. Some differences between the schools did occur, but none appeared significant. There were greater differences between younger and older children (older children score higher) and between boys and girls (girls score higher), but since futher analyses were not done at this stage, it was impossible to tell whether higher scores were attributable solely to age and sex, or if some other experimental condition interfered (See Tables 23, 24, 25, and 26 to see differences in age and sex and schools, and Tables 27, 28, 29, and 30 for comparison of group means.).

During 1971-'72, initial results indicated age level again played a greater role than earlier anticipated. Scores were regrouped and analyzed to control for age. Significant differences were found on the repeated measures factor for Let's Imagine and Word Fluency. (See Tables 35 and 36.) This means that scores on the pre-test were different from scores on the post-test. However, as there were no interactions of this factor with either class or sex, these differences are clearly independent of either class or sex. This then means that differences found in scores from pre- and post-test are common to students in the Experimental and Control Schools and to both sexes. The same pattern of score changes occur in both sexes and in all three classes.

Results on the Associational Fluency and Idea Fluency are the only variables which revealed significant differences between pre- and post-test and significant interactions between pre-/post-test and classes. This indicates that there were differences found between scores on the pre- and post-tests and that these

differences were different for the three classes (AB,CD, Brooklyn). Tables 31 and 33 report the results of these analyses of variance. Tables 32 and 34 summarize the subsequent analyses of the pre-/post test x class interaction. Figures 1 and 2 depict the pre/post changes for each class.

In the analysis of mean gain scores on Associational Fluency, we find that Class CD was unchanged from pre- to post-test. Classes AB and Brooklyn (the Control) both made significant changes. Class AB started out higher than Brooklyn and maintained the lead, but the gain (see Table 32, Part B) for Brooklyn was greater than that for AB. In Table 34, Part B, we find that all three classes made significant gains from pre- to post-test. AB leads both CD and Brooklyn to begin with, but on the post-test, AB and Brooklyn were equivalent in their performances. Gains in Idea Fluency were more favorable to Brooklyn than to either AB or (especially) CD. In both the analyses, Idea Fluency and Associational Fluency, the age factor (i.e., classes combined) along with the pre/post test factor most adequately accounts for variance attributable to the three factors. This means that changes in performances from pre- to post-test are dependent upon the class (or age category) of students and that sex differences are common to all classes and testings.

In the 1972-'73 analysis, significant effects on the pre-post factor were again found on the Word Fluency measure, but a significant interaction between the pre/post factor and the class factor was also found. Generally, this finding would indicate that pre/post changes were different for different classes. In Table 37 and 38 it may be seen that Units C and D scored much lower than did Units A and B and Brooklyn. At first glance, it would appear that the age breakout parallels the gains. However,

this is not consistently the case. Though A and B are similar in age, B initially has an advantage over A on this measure, but the advantage goes to A on the post-test. Likewise, C and D are similar in age and C has a slight advantage initially, but D ends up with a higher mean score. All classes make significant gains between pre- and post-testing, but most of the gain is to be seen among that of Units A and D. Only on the post-test score do we tend to find the age-related situation occurring: A and B score the highest (age 10.9), Brooklyn next highest (10.1) and C and D lowest (9.4). Ultimate benefit on student Word Fluency (as opposed to raw score gains) is partially accrued to the age variable. Relative gain, however, is fairly independent of age and more related to unit or class.

As in 1971-'72, the 1972-'73 analysis for Associational Fluency demonstrates significant differences on the pre/post factor and in an interaction of the pre/post factor with classes. (See Table 39 and 40.) Changes in scores between pre-test and post-test were significant for Units A and B and D, but not so for Unit C and Brooklyn. These two units remained unchanged from pre- to post-testing. The changes reported, however, are negative. Scores on the pre-test were significantly higher than they were on the post-test. Pre-test scores, in fact, tended to be higher than post-test scores for the same units during the preceding year.

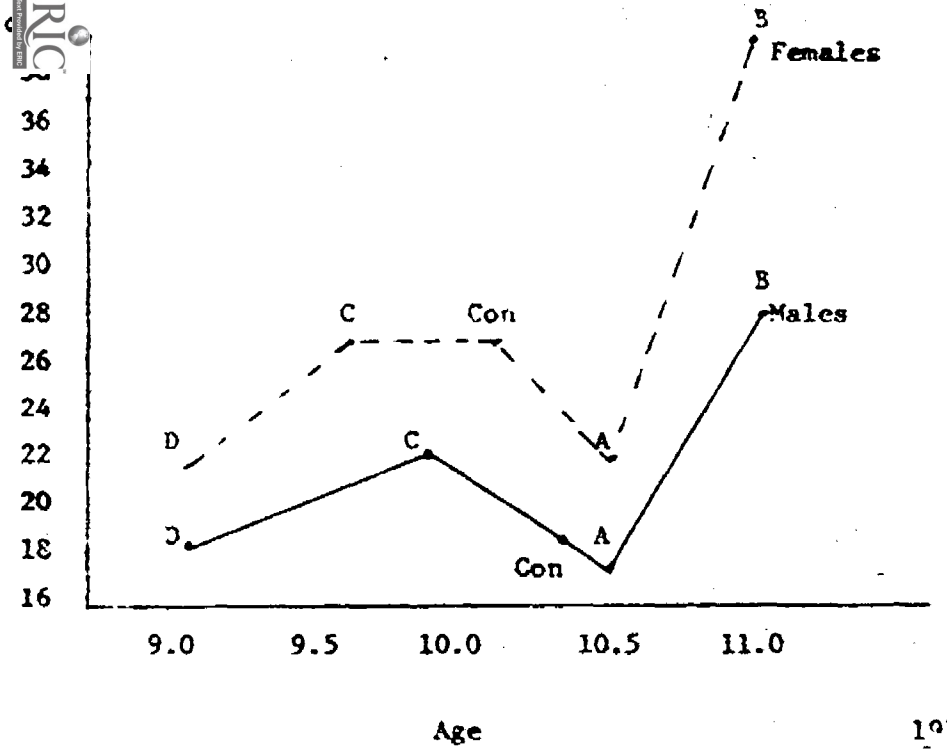
On the Idea Fluency measure, no significant changes in scores between the pre- and post-testing were found, nor was there a significant interaction between the pre-post factor and the class factor in the 1972-'73 analyses. However, there was a significant interaction found between the pre/post (see Table 41) factor and the sex factor. Female students had an advantage over male students on the pre-test, and this advantage carried through to the post-test

(though to a lesser degree). The project, in effect had a significant effect on the idea fluency of students during the 1971-'72 school year, but did not reveal the same effect during the 1972-'73 school year.

Though the 1971-'72 analysis of the Let's Imagine measure found significant changes between pre-and post-tests which were common to both the Experimental Group and the Control Group, the 1972-'73 analysis revealed no such differences nor interactions. What ever changes occurred in either group could not be considered distinctive of either the Experimental or Control Groups. (See Table [illegible].)

Discussion

Not written into the "Evaluation Measures" section of this objective is the manner in which the second part of the objective is fulfilled, i.e., set up problem situations for staff. Problem areas, usually brought to our attention via the critical incidents section of the Teacher Reaction Form or through informal conversation, are identified and staff in-services are set up specifically to deal with such problems. If the problem is motivation, outside speakers or special films are brought in; if the problem deals with students, staff members, parents or materials, similar (or identical) situations are set up and worked out via brainstorming as a group, small group discussion, creative dramatization by staff members, etc. In this manner, all staff have the opportunity to develop alternatives which are immediately available to the individual staff member. This aspect of Objective 5 was not recorded, as it's hardly quantifiable. Examples of situations used for brainstorming, small group discussions, and dramatization may be found in the Appendix.



1970 - 71

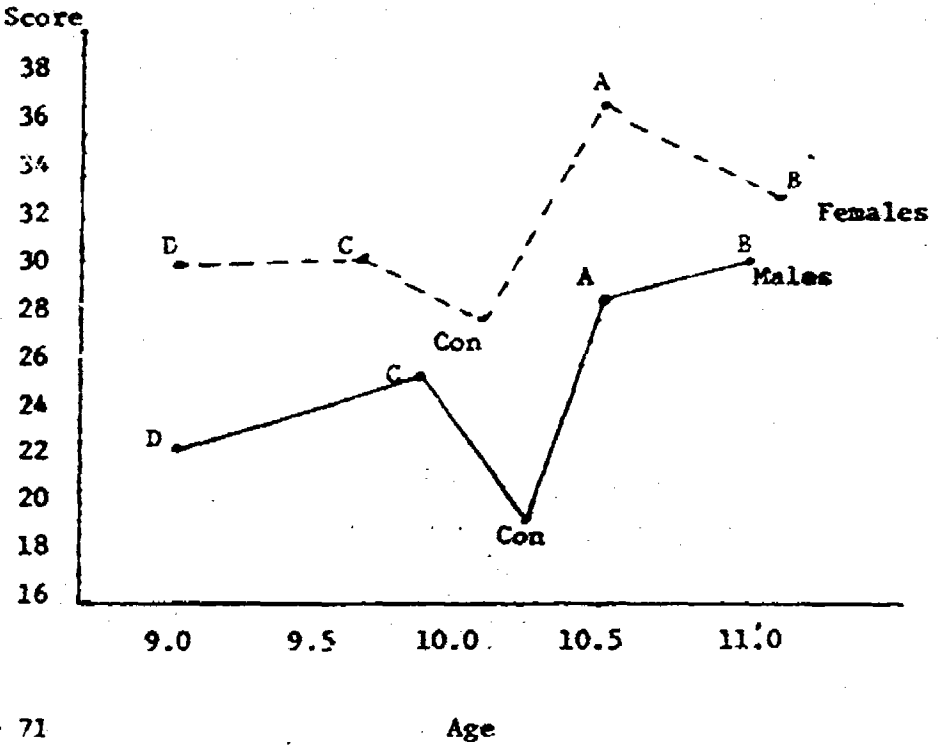
WORD FLUENCY - Pre

Conclusions:

1. There is a slight (but not significant) tendency for high scores to be a function of age.

2. Females outscore males at all age levels on this measure.

3. Performance of Control School is approximately equal to that of the Middle School.



WORD FLUENCY - Post

Conclusions:

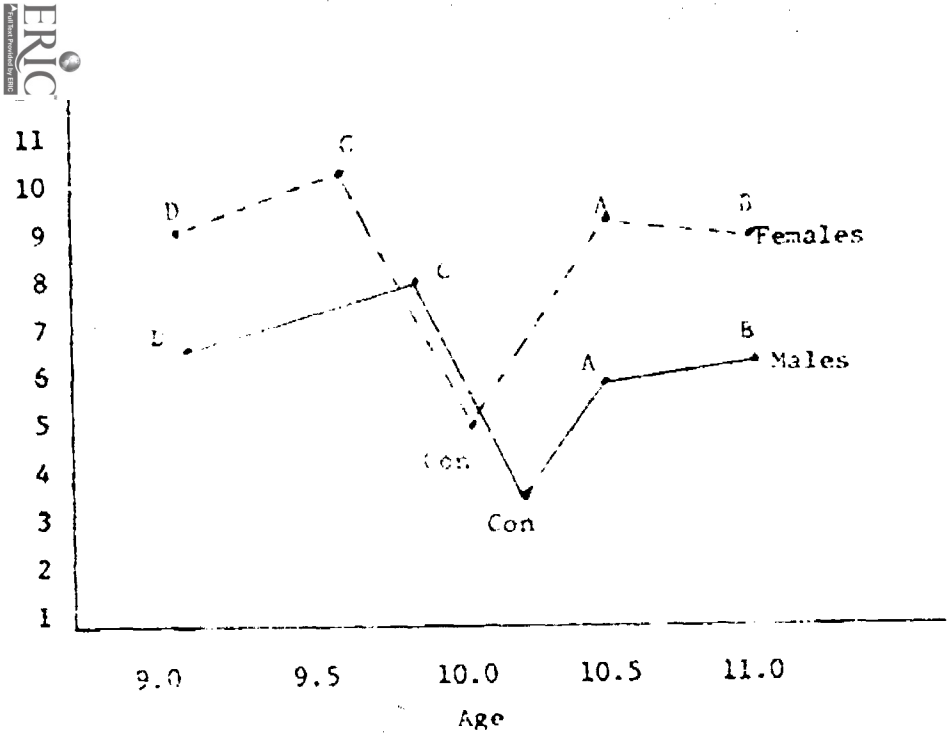
1. There is still a slight tendency for high scores to be a function of age; this tendency is stronger than on the Pre-test, but it is still not significant.

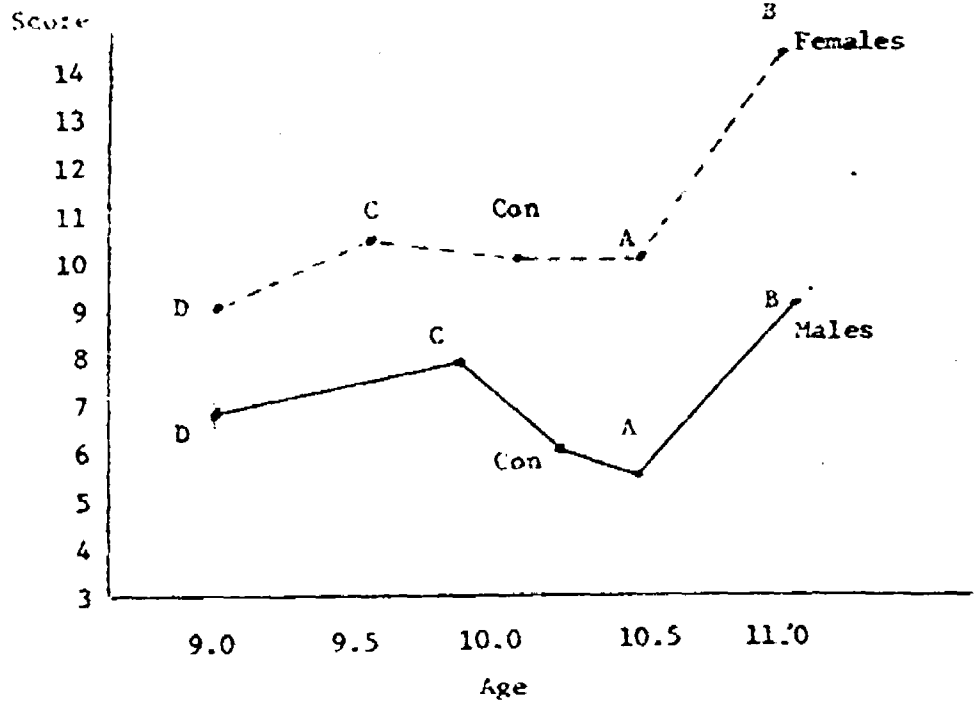
2. Females scored higher than males at all age levels.

3. Performance of Middle School much stronger than on Pre-test; all units scored higher than Control School.

4. Post-test scores better than Pre-test, with Unit A (males & females) making greatest gains.

Table 23.





1970 - 71

Table 24.

ASSOCIATIONAL FLUENCY - Pre

Conclusions:

1. No strong evidence of a relationship between age and high scores on this measure.

2. Perhaps because of the verbal approach of this test, females consistently outscore males at all age levels.

3. Both males and females in Control School scored lower than males and females in any of the Middle School units.

ASSOCIATIONAL FLUENCY - Post

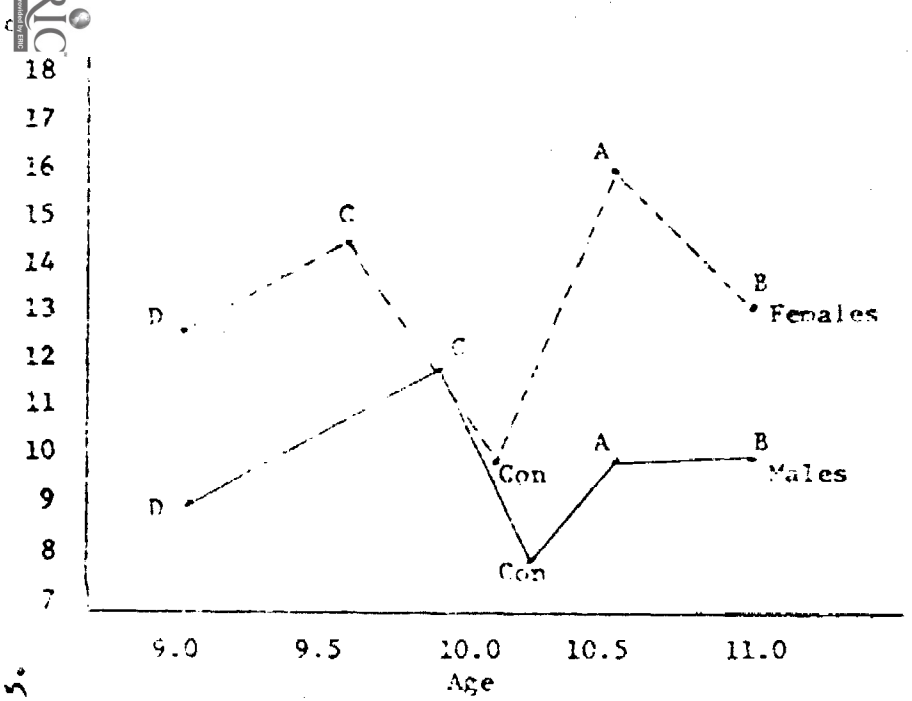
Conclusions:

1. There is a slight tendency for the oldest students to score high, but this tendency does not occur in other (younger) units nor in the Control School.

2. Sex differences remain stable, with females scoring considerably higher than males at all age levels.

3. Generally, Middle School outscored Control School, but not by the margin evident in Pre-test. Control Females made greatest gain.

Table 25.



1970 - 71

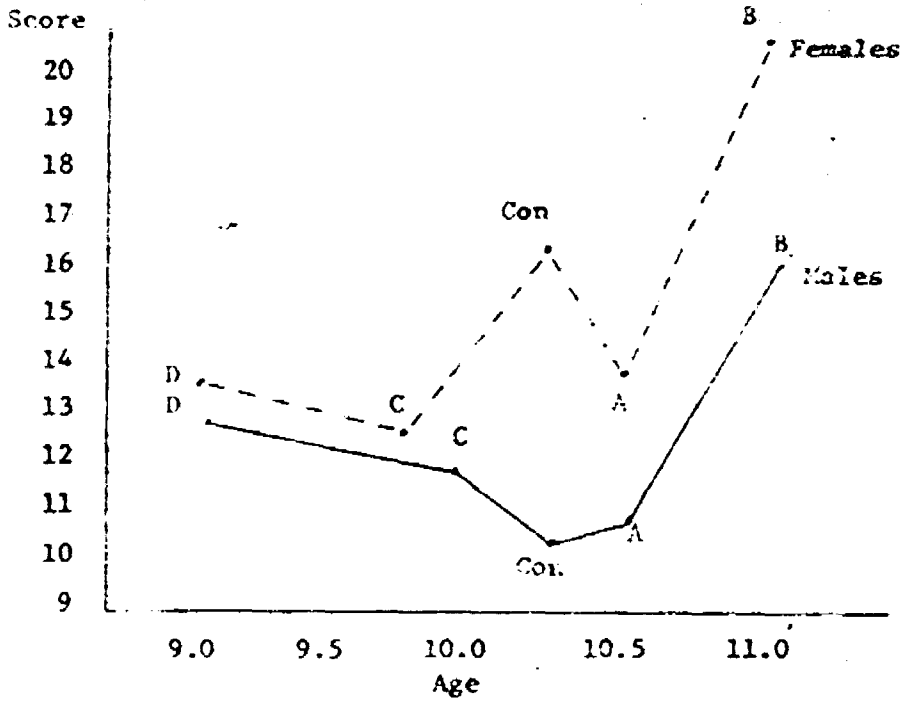
IDEA FLUENCY - Pre

Conclusions:

1. There is no clear-cut relationship between age and high scores on this measure, except for a slight tendency for higher scores in the middle age range.

2. Females in all groups and age levels outscore their male classmates.

3. Control School students scored significantly lower than their Middle School counterparts.



IDEA FLUENCY - Post

Conclusions:

1. Though there is still no obvious relationship between age & high scores, the slight tendency for high scores to occur in the middle age range has been reversed. Higher scores now occur at extremes.

2. Females still outscore males at all age levels and across schools.

3. Females in Control School & Unit B made largest gains from Pre- to Post-test.

4. Only about half of groups improved in test performance over the year.

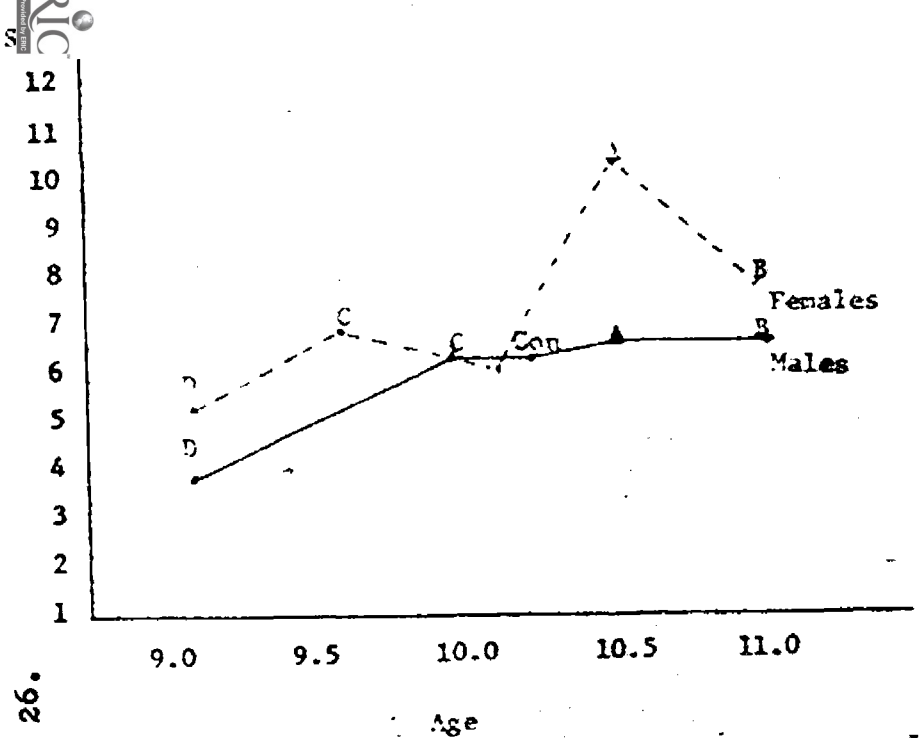


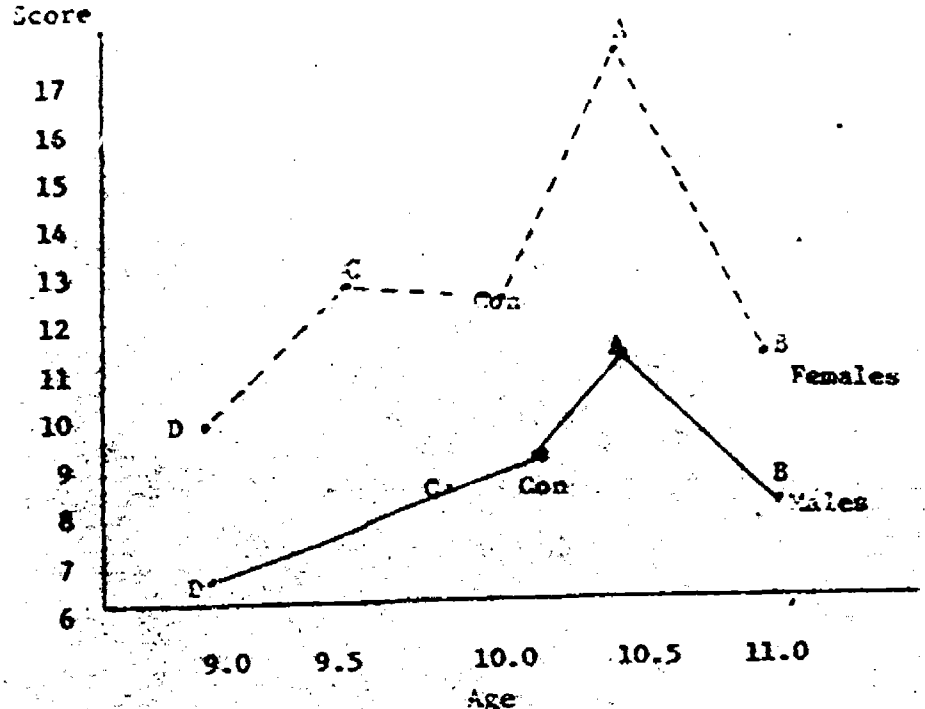
Table 26.

LET'S IMAGINE - Pre

Conclusions:

1. Test performance is at least partially a function of age, with older children scoring higher than younger children.

2. Females in Middle School units outscore their male classmates; the reverse is true in the Control School.



1970 - 71

LET'S IMAGINE - Post

Conclusions:

1. Again, test performance is partially a function of age, with older children scoring higher than younger children.

2. Females at all age levels, both in Middle School units and in Control School, outscore their male classmates.

3. There are significant gains in scores from Pre- to Post-test for all groups and age levels involved.

Table 27.

WORD FLUENCY - 1970-71

Means and Standard Deviations

		Pre		Post	
		Mean	S.D.	Mean	S.D.
Unit A	Males	17.22	9.04	28.96	8.13
	Females	22.17	8.58	36.87	8.15
Unit B	Males	28.12	9.29	30.71	10.96
	Females	39.19	12.32	33.68	8.40
Unit C	Males	22.29	7.65	25.96	8.25
	Females	26.95	8.17	30.71	8.76
Unit D	Males	18.24	7.53	22.67	9.29
	Females	21.61	6.82	30.26	8.05
Brooklyn					
	Males	19.00	9.54	19.86	9.08
	Females	27.45	8.46	28.00	6.20

Table 28.

ASSOCIATIONAL FLUENCY - 1970-71

Means and Standard Deviations

		Pre		Post	
		Mean	S.D.	Mean	S.D.
Unit A	Males	6.04	2.93	5.78	3.10
	Females	9.50	3.24	10.20	4.06
Unit B	Males	6.47	4.42	9.06	2.95
	Females	9.16	4.07	13.58	3.68
Unit C	Males	8.23	3.28	8.10	3.94
	Females	10.46	3.99	10.57	3.70
Unit D	Males	6.67	3.18	6.98	3.66
	Females	9.30	3.26	9.17	3.74
Brooklyn					
	Males	3.81	3.36	6.33	5.04
	Females	5.45	4.90	10.20	2.46

Table 29.

IDRA FLUENCY - 1970-71

Means and Standard Deviations

		Pre		Post	
		Mean	S.D.	Mean	S.D.
Unit A	Males	9.96	5.44	10.81	5.25
	Females	16.07	3.97	13.90	4.65
Unit B	Males	10.28	5.22	16.53	5.21
	Females	13.29	5.41	20.61	5.39
Unit C	Males	12.02	5.04	11.82	4.00
	Females	14.54	5.36	12.71	4.86
Unit D	Males	9.13	5.58	12.89	5.85
	Females	12.78	4.24	13.63	3.89
Brooklyn					
	Males	8.05	4.81	10.43	5.81
	Females	9.90	4.23	16.55	4.65

Table 10.

LET'S IMAGINE - 1970-71

Means and Standard Deviations

		Pre		Post	
		Mean	S.D.	Mean	S.D.
Unit A	Males	6.52	3.46	11.04	6.13
	Females	10.42	5.29	17.37	7.25
Unit B	Males	6.52	3.23	7.89	4.15
	Females	7.75	2.89	11.00	6.22
Unit C	Males	6.22	2.95	8.33	5.50
	Females	6.86	2.66	12.50	5.12
Unit D	Males	3.88	1.98	6.24	3.13
	Females	5.21	2.11	9.71	4.91
Brooklyn					
	Males	6.13	2.23	9.00	5.14
	Females	6.00	2.24	12.29	6.00

Table 31.

REPEATED MEASURES ANALYSIS OF VARIANCE FOR ASSOCIATIONAL FLUENCY

1971-72

Source	Sums of Squares	Degrees of Freedom	Mean Squares	F-ratios
Total	7314.655	457		
Between	1614.786	11		
A	499.314	2	249.6569	1.9069
B	166.378	1	166.3783	1.2708
AB	163.536	2	81.7630	-
Error	785.558	6	130.9263	
Within	5699.809	446		
C	367.591	1	367.5910	31.1605**
AC	128.397	2	64.4484	5.4633**
BC	3.534	1	3.5337	-
ABC	9.312	2	4.6562	-
Error	5190.535	440	11.7967	

** = Significant beyond the .01 level

A = Class Differences
B = Sex Differences
AB = Interaction between Class and Sex
C = Pre-Post test Differences
AC = Interaction between Class and Pre-Post test scores
BC = Interaction between Sex and Pre-Post test scores
ABC = Interaction between Class, Sex and Pre-Post test scores

Table 32.

SIGNIFICANCE TESTS FOR CLASS GAINS ON
ASSOCIATIONAL FLUENCY
1971-72

Part A. Table of Means

	Classes		
	AB	CD	Brooklyn
Pre-test	7.099	5.291	4.929
Post-test	9.248	5.733	8.143
N	101	86	42

Part B. Table of F-tests

$$F_{AB} = \frac{[\gamma(\bar{AB}_{pre} - \bar{AB}_{post})]^2}{S.E.} = \frac{[(66.2252)(2.1490)]^2}{(4)(66.2252)(11.7967)}$$

$$= \frac{20254.4131}{3124.9553} = 6.4815^{**}$$

Class AB

F_{CD} = 8568207/S.E. = .2742 — Class CD

$F_{Brooklyn}$ = 45304.1860/S.E. = 14.4975** — Class Brooklyn

** = Significant beyond the .01 level

Table 33.

REPEATED MEASURES ANALYSIS OF VARIANCE FOR IDEA FLUENCY

1971-72

Source	Sums of Squares	Degrees of Freedom	Mean Squares	F-ratios
Total	11413.41	457		
Between	3377.62	11		
A	1613.07	2	806.5328	3.2608
B	264.27	1	264.2729	1.0683
AB	16.22	2	8.1101	-
Error	1484.06	6	247.3433	
Within	8035.79	446		
C	913.28	1	913.2781	57.4331**
AC	120.10	2	60.0493	3.7763*
BC	.49	1	.4851	-
ABC	5.22	2	2.6091	-
Error	6996.70	440	15.9016	

* = Significant beyond the .05 level
** = Significant beyond the .01 level

A = Class Differences
B = Sex Differences
AB = Interaction between Class and Sex
C = Pre/Post test Differences
AC = Interaction between Class and Pre/Post test scores
BC = Interaction between Sex and Pre/Post test scores
ABC = Interaction between Class, Sex and Pre/Post test scores

SIGNIFICANCE TESTS FOR CLASS GAINS ON
IDEA FLUENCY

1971-72

Part A. Table of Means

	Classes		
	AB	CD	Brooklyn
Pre-test	12.287	8.384	10.857
Post-test	15.238	10.116	15.286
N	101	86	42

Part B. Table of F-tests

$$F_{AB} = \frac{[\tilde{n}(\bar{AB}_{pre} - \bar{AB}_{post})]^2}{\tilde{n}rA \quad MS_{error}} = \frac{[n(\bar{AB}_{pre} - \bar{AB}_{post})]^2}{S.E.}$$

$$= \frac{38193.1194}{(66.225)(4)(15.9016)} = 9.0669^{**}$$

Class AB

$F_{CD} = 13156.5488/S.E. = 3.1233^{*}$ — Class CD

$F_{Brooklyn} = 86031.5774/S.E. = 20.4237^{**}$ — Class Brooklyn

* Significant beyond the .05 level
** Significant beyond the .01 level

INTERACTION OF PRE-POST TESTS WITH CLASSES ON ASSOCIATIONAL FLUENCY

1971-72

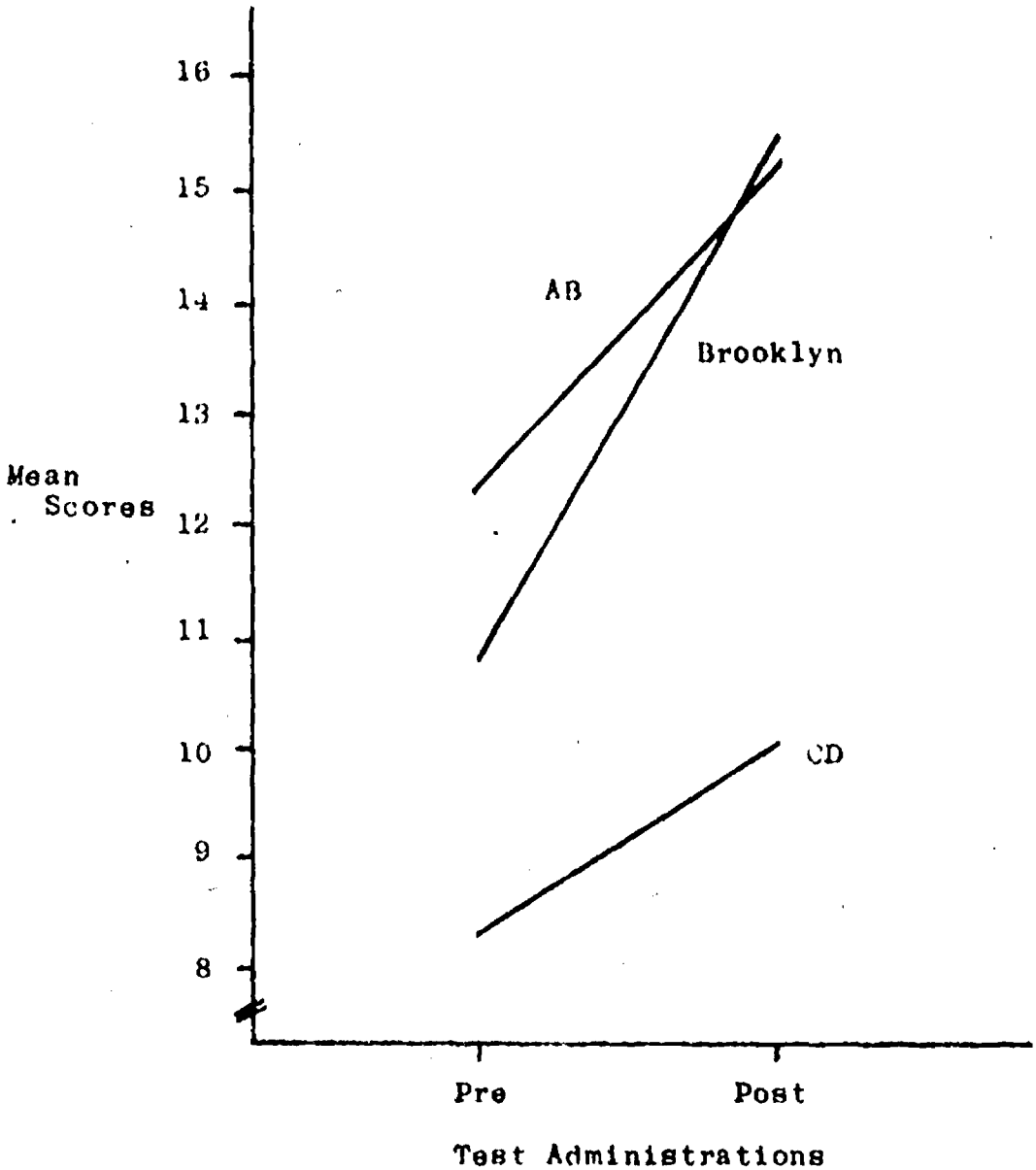


Figure 1

INTERACTION OF PRE-POST TESTS
WITH CLASSES ON IDRA FLUENCY

1971-72

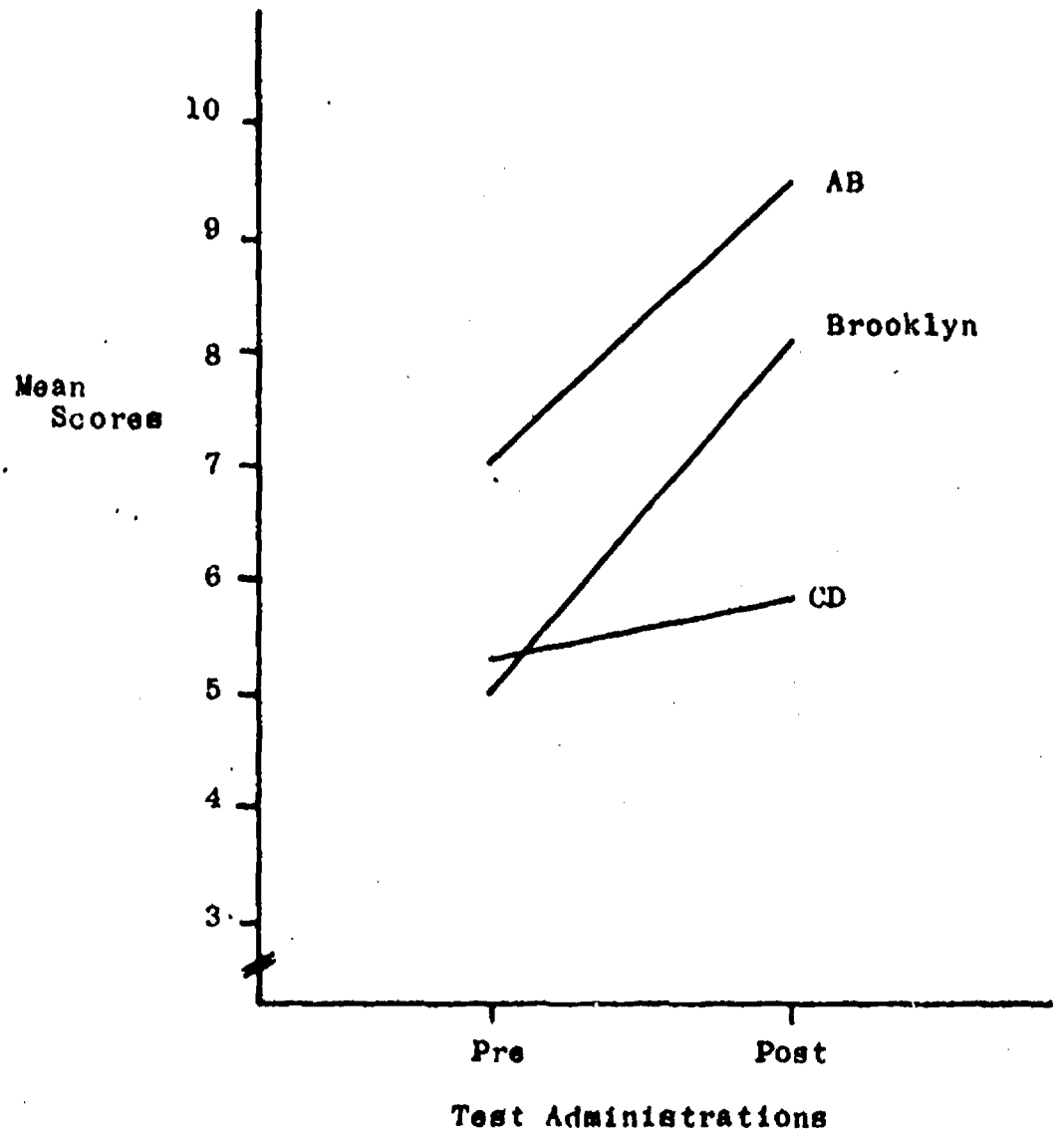


Figure 2

Table 35.

REPEATED MEASURES ANALYSIS OF VARIANCE FOR
WORD FLUENCY
1971-72

Source	Sums of Squares	Degrees of Freedom	Mean Squares	F-ratios
Total	38809.92	451		
Between	10190.46	11		
A	4557.52	2	2278.760	3.5657
B	1732.09	1	1732.085	2.7105
AB	66.64	2	33.320	-
Error	3834.21	6	639.035	
Within	28619.46	440		
C	1442.12	1	1442.125	23.3745**
AC	82.75	2	41.374	-
BC	41.28	1	41.279	-
ABC	277.06	2	138.530	2.2453
Error	26776.25	434	61.696	

** = Significant beyond the .01 level

A = Class Differences
B = Sex Differences
AB = Interaction between Class and Sex
C = Pre/Post test Differences
AC = Interaction between Class and pre/Post test scores
BC = Interaction between Sex and Pre/Post test scores
ABC = Interaction between Class, Sex and Pre/Post test scores

Table 36.

REPEATED MEASURES ANALYSIS OF VARIANCE FOR
LET'S IMAGINE

1971-72

Source	Sums of Squares	Degrees of Freedom	Mean Squares	F-ratios
Total	18983.56	445		
Between	5658.78	11		
A	1654.94	2	827.472	3.1027
B	1847.41	1	1847.408	6.9271
AB	56.28	2	28.139	-
Error	1600.15	6	266.692	
Within	13824.78	434		
C	467.86	1	467.860	14.6659**
AC	32.30	2	16.151	-
BC	23.11	1	28.105	-
ABC	68.25	2	34.123	1.0696
Error	13653.76	428	31.901	

** = Significant beyond the .01 level

A — Class Differences
B — Sex Differences
AB — Interaction between Class and Sex
C — Pre/Post test Differences
AC — Interaction between Class and Pre/Post test scores
BC — Interaction between Sex and Pre/Post test scores
ABC — Interaction between Class, Sex and Pre/Post test scores

Table 37.

SIGNIFICANCE TESTS FOR CLASS GAINS FOR WORD FLUENCY: 1972-73

Classes	N	Pretest Means	Posttest Means	F-Ratio
Unit A	67	21.45	34.79	47.64**
Unit B	65	27.86	32.80	6.53**
Unit C	56	17.43	23.39	9.51**
Unit D	55	16.64	26.53	26.19**
Brooklyn	81	20.58	29.15	19.66**

*$p < .05$
**$p < .01$

Table 38.

REPEATED MEASURES ANOVA FOR WORD FLUENCY: 1972-73

Source	Sum of Squares	Degrees of Freedom	Mean Square	R-Ratio
Total	77695.89	647		
Between	27450.16	19	1444.75	
A: Classes	9497.21	4	2374.30	1.86
B: Sex	4649.15	1	4649.15	3.64
AB	521.66	4	130.41	
Error	12782.14	10	1278.21	
Within	50245.73	628		
C: Pre-Post	11497.11	1	11497.11	192.07**
AC	1472.65	4	368.16	6.15**
BC	141.08	1	141.08	2.36
ABC	139.23	4	34.81	
Error	36995.66	618	59.86	

*$p < .05$
**$p < .01$

Table 39.

SIGNIFICANCE TESTS FOR CLASS GAINS
FOR ASSOCIATIONAL FLUENCY: 1972-73

Classes	N	Pretest Means	Posttest Means	F-Ratio
Unit A	67	10.76	7.00	17.48**
Unit B	65	10.34	8.29	5.20**
Unit C	56	6.95	6.13	.83
Unit D	55	8.00	6.35	3.37**
Brooklyn	81	8.40	7.53	.94

*$p < .05$
**$p < .01$

Table 40.

REPEATED MEASURES ANOVA FOR ASSOCIATIONAL FLUENCY: 1972-73

Source	Sum of Squares	Degrees of Freedom	Mean Squares	F-Ratio
Total	10544.79	647		
Between	1989.17	19		
A: Classes	729.87	4	182.47	2.73
B: Sexes	559.72	1	559.72	8.37**
AB	30.92	4	7.73	
Error	668.66	10	66.87	
Within	8555.62	628		
C: Pre-Post	511.78	1	511.78	40.33**
AC	179.32	4	44.83	3.53**
BC	9.50	1	9.50	
ABC	12.36	4	3.09	
Error	7942.66	618	12.69	

*p < .05
**p < .01

Table 41.

REPEATED MEASURES ANOVA FOR IDEA FLUENCY: 1972-73

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio
Total	15557.59	647		
Between	3257.15	19		
A: Classes	2093.30	4	523.32	34.00**
B: Sexes	984.38	1	984.38	63.95**
AB	25.54	4	6.39	
Error	153.93	10	15.39	
Within	12300.44	628		
C: Pre-Post	.75	1	.75	
AC	65.62	4	16.41	
BC	174.48	1	174.48	8.98**
ABC	54.03	4	13.51	
Error	12005.56	618	19.43	

*p < .05
**p < .01

Table 42.

REPEATED MEASURES ANOVA FOR LET'S IMAGINE 1972-73

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio
Total	18274.03	653		
Between	3084.47	19		
A: Classes	1208.14	4	302.04	19.90**
B: Sex	1678.92	1	1678.92	110.59**
AB	45.59	4	11.40	
Error	151.82	10	15.18	
Within	15189.56	634		
C: Pre-Post	52.09	1	52.09	2.18
AC	127.21	4	31.80	1.33
BC	11.91	1	11.91	
ABC	53.46	4	13.37	
Error	14944.89	624	23.95	

*$p < .05$
**$p < .01$

OBJECTIVE 6

To increase both the variety and frequency of learning materials used by students, as measured by a tally of all raw materials in the Instructional Materials Center taken every six weeks.

Evaluation Measures

1. Build-It Box - a box containing numerous materials (scissors, construction paper, tape, pipe cleaners, etc.) which may be used for a wide variety of purposes. Designed (by project) to tap non-verbal creative responses.
2. Tally of Learning Materials Used.

Procedure

Build-It Box. Twelve students (6 boys and 6 girls) were chosen alphabetically from Unit C and Unit D in the Experimental School, for a total of 24 students. Only students in Units C and D were chosen because it was desireable to compare responses on this measure over time, and Units C and D contain the youngest students; consequently these same students were likely to still be in the Middle School during the third year of the project, and would thus be available for further testing.

By 1972-'73, four students of the original 24 had moved or transferred to other schools, but we continued to test the remaining 20 students. Each student was tested twice during 1972-'73, once at the beginning of the school year, and once at the end.

The test was administered to 6 students at a time in either the IMC or the Conference Room (where each student would have room to work on his task individually). The printed directions were read (see Appendix for directions and a list of materials included in each box), and students were told that their final

product would have to be able to be moved to another room for storage. The task takes about 45 minutes.

Tally of Learning Center (IMC) Materials. These tallies are posted in carrels and on tables in the IMC one week out of every six during the school year. Students are instructed by their homeroom teachers, the IMC Coordinator and the Project Aide to mark the tallies accurately, but some inaccuracies occured nevertheless.

Scoring and Analysis

Build-It Box. Each child's structure was judged on the basis of strength (scored 0 if it fell apart, 1 if only one or two pieces fell off, and 2 if all parts were sturdy and transported without damage), style and design (scored 0 if there seemed to be no integrity or pattern of design clearly visible, and 1 if integral design was clearly present), and on an open-ended category, such as holiday spirit (scored with as many points as there were manifestations of holiday spirit). In addition, the frequency and variety of materials used were also noted. All subscores combine to give a total score for the structure for each student. Project Consultant and Project Aide did all scoring together.

Learning Materials Tally. At the end of the week, tally sheets were collected from the IMC and results were simply added up. Differences in types of equipment used, frequencies used, and preferences of each unit were noted. Cumulative records were made of each unit's responses after each tally and the results given to unit staff and the IMC Coordinator.

Results

Build-It Box. Three sets of test results were analysed on

the Build-it Box. In 1971-'72, no significant sex differences were found on the Total Score, and data were not analyzed by sex (see Table 43). At the end of 1972-'73, scores for each testing (December 1971, October 1972 and May 1973) on "Types of Materials" "Numbers of Materials" and Total Score" on this measure were compared (see Table 44). No significant differences were found between testings in terms of the "Types of Materials" indicating that the students basically chose and incorporated about 11 different materials in their construction. However, significant differences were found between the first testing and the second testing, and between the first testing and the last testing in terms of the "Number of Materials" and "Total Score." By 1972-'73, after one experience with the Build-It Box, students were using around 22 pieces of material in their constructions, thus indicating an apparent increase in the complexity of their constructions. Based on the stated data, then, significant increases were reported in the numbers of materials employed in construction and in overall quality of the construction (Total Score) during the project period.

Learning Materials Tally. During 1971-'72, variety of media used by Experimental students is reported as proportions in Table 45, the relative emphasis during the 5 time periods are displayed in Table 46. No invidious comparison is possible with the Control School, as special monies were provided to the Experimental School for media through Title II, ESEA. A comparison of the two groups would thus be spurious.

Cassettes and Film-loops are the most consistently used media type. Although all types of medial are used with some frequency during the time frames recorded, these two types are dominant throughout. Filmstrips are seen as popular during

1971-'72 and 1972-'73, but we can see a slight loss of popularity in this media type as well as Reel Tapes, Transparencies, Picture Sets and Games, and a gain in popularity for Records.

In examining the total numbers of media checked out by students, we find that during 1971-'72 the numbers started out at a modestly high level and climbed throughout the year. During 1972-'73, the numbers started at a rather high level and continued almost without exception at that level (see Table 47).

Limited variety in choosing types of media is indicated, along with rather high level of media useage by students, which stabilized during the last project year.

Table 43.

BUILD-IT BOX
#1 (1970-71)

Groups	N	$\bar{X}$	Standard Deviation	t-value
Boys	12	29.167	8.561	1.20
Girls	12	33.417	8.788	

Table 44.

SIGNIFICANCE TESTS FOR BUILD-IT-BOX: 1972-72

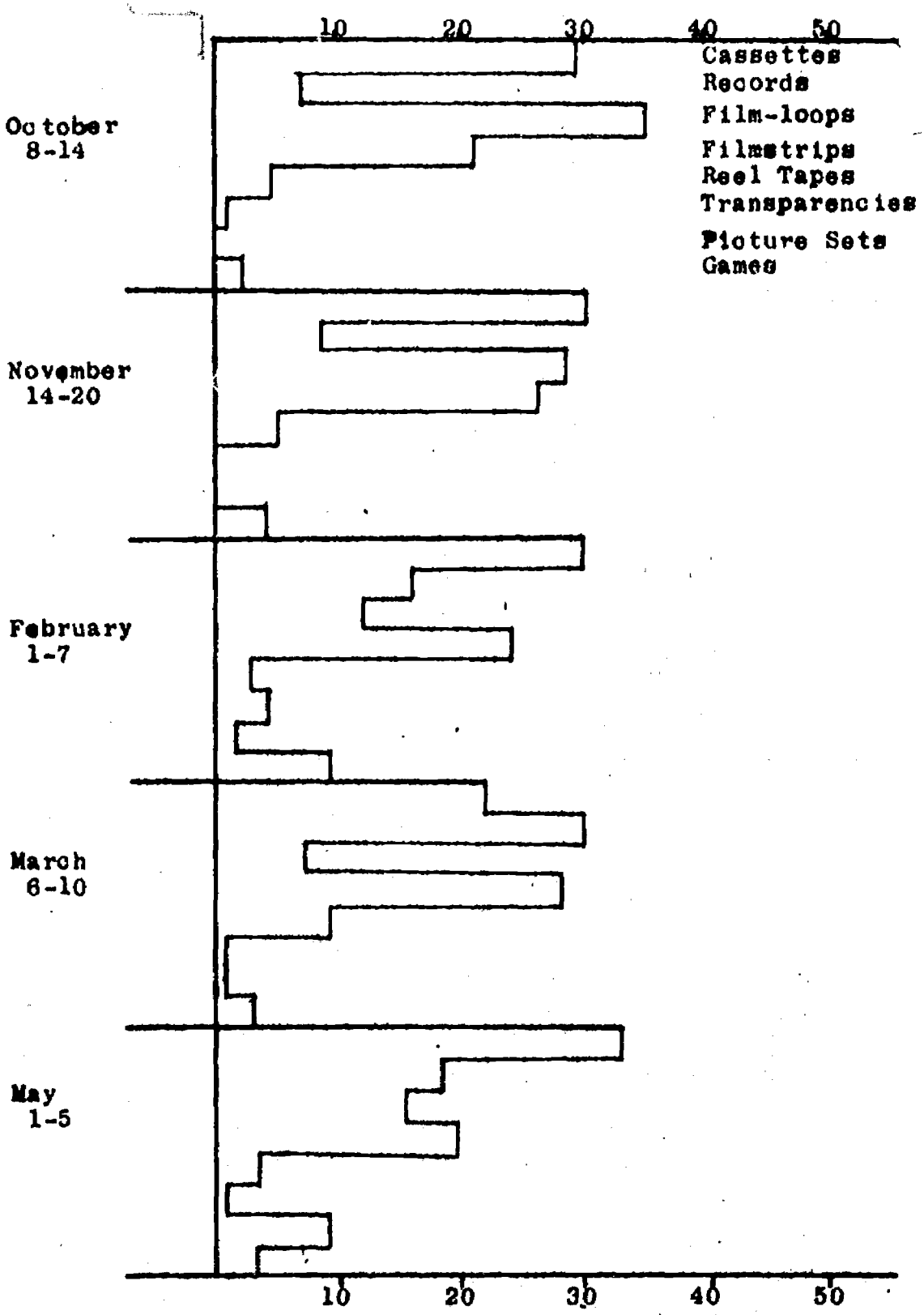
I. Types of Materials						
	A 12-71	B 10-72	C 5-73	Contrasts (t-values) A vs. B	A vs. C	B vs. C
N	24	21	20			
Mean	10.63	11.62	11.45	1.19	1.04	<1.00
Standard Deviation	2.68	2.76	2.35			

II. Numbers of Materials						
N	24	21	20			
Mean	17.79	21.52	21.45	1.94*	1.96*	<1.00
Standard Deviation	6.30	6.3.	5.66			

III. Total Score						
N	24	21	20			
Mean	31.29	37.57	37.10	2.28*	2.21*	<1.00
Standard Deviation	8.93	9.13	7.89			

Table 45.

DISTRIBUTION OF THE FREQUENCY AND VARIETY OF LEARNING MATERIALS USED BY STUDENTS 1971-2



DISTRIBUTION OF THE FREQUENCY AND VARIETY OF LEARNING MATERIALS USED BY STUDENTS 1971-2*

Media Type	Time Frames									
	Oct. 8-14		Nov. 14-20		Feb. 1-7		March 6-10		May 1-5	
	N	%	N	%	N	%	N	%	N	%
Cassettes	86	29	84	30	153	30	63	22	242	33
Records	20	7	22	8	80	16	87	30	137	18
Film-loops	104	35	80	28	62	12	19	7	109	15
Filmstrips	62	21	73	26	119	24	82	28	140	19
Reel Tapes	13	4	14	5	14	3	26	9	19	3
Transparencies	2	1	0	0	20	4	2	1	8	1
Picture Sets	0	0	0	0	12	2	3	1	66	9
Games	6	2	10	4	45	9	9	3	24	3
Totals	293		283		505		291		745	

* Tallies were taken of all learning materials in the IMC one week out of every six.

Table 46.

DISTRIBUTION OF THE FREQUENCY AND VARIETY OF
LEARNING MATERIALS USED BY STUDENTS 1972-73

Table 47.

Media Type	Time Frames									
	Oct. 16-20		Nov. 27-Dec. 4		Jan. 15-19		Feb. 26-March 2		April 11-17	
	N	%	N	%	N	%	N	%	N	%
Cassettes	145	26	83	24	166	29	222	39	176	32
Records	127	22	90	25	132	23	131	23	153	28
Film-loops	115	20	75	21	74	13	49	9	162	30
Filmstrips	99	17	46	13	108	19	111	20	25	5
Reel Tapes	40	7	31	9	27	5	31	5	20	4
Transparencies	12	2	3	<1	2	<1	12	2	4	<1
Picture Sets	29	5	17	5	29	5	2	<1	5	<1
Games	1	<1	8	2	36	6	12	2	4	<1
Totals	568		353		574		570		549	

* Tallies were taken of all learning materials in the IMC one week out of every six.

OBJECTIVE 7

To increase student satisfaction and participation in his learning curriculum, as measured by attitudes toward classroom activities, teachers, learning pace and self.

Evaluation Measures

Student Attitude Questionnaire - Versions A and B, a 36-item questionnaire designed (by the project) to measure student attitudes as specified in the objective, as well as to try to assess a student's perception of how his school and teachers respond to him.

Procedure

This questionnaire was administered in a pre/post pattern to randomly selected students in both Experimental and Control Schools in 1970-'71 (randomization method has been previously described, as it is identical to that of the Verbal Fluency tests of Objective 5). The printed instructions were read to the students. Students were also told that the test was an opportunity to communicate to teachers and administrators how they <u>really</u> feel about school. It was emphasized that their teachers would not see their tests (only the results of the whole class), so as to minimize fear of attitude responses influencing academic grades or teacher's good will. The questionnaire takes about 20 minutes to complete.

Scoring and Analysis

Questionnaires are hand-scored according to a key prepared by Project Consultant and Project Aide. Scores are recorded on Student score cards. In 1970-'71, total scores were analyzed via multiple

t-tests. In 1971-'72, scores were analyzed in a repeated measures design to study the effects of additional independent variables (age, sex, and group), due to concerns about possible sex differences and preliminary evidence indicating an age factor running within the Experimental units. In 1972-'73, analysis of this measure was identical to the analysis done in the Verbal Fluency measures (Objective 5).

Results

In 1970-'71, the pre-test of this measure was erroneously given annonymously; that is, the Project Director at that time felt that more reliable responses would be obtained if students did not sign their tests. This may have been true, but we also have no pre-post comparison for the first year of the project. A comparison of the means on the post-test (see Table 48) indicates no clear pattern of responses: females have a very slight tendency to have higher scores than males, but the tendency is not significant; and there is no significant difference either between schools or between older and younger children.

Results of the repeated measures analysis (described in Objective 5) for 1971-'72 are presented in Table 49. Highly significant differences were found on the Class and Sex main effects on the Student Attitude Questionnaire. However, no interaction was found significant. This means that, although the classes differed and the sexes differed, these differences were common to both test administrations (pre-and post-tests). Similar results were found for 1972-'73 (see Table 50).

The 1970-'71 and 1971-'72 data on this instrument were also reanalyzed in terms of the four categories of items (see Appendix for consideration of what items go into what category): Category

I, attitudes toward teachers; Category II, attitudes toward Self; Category III, attitudes toward Classes; and Category IV, attitudes toward School in general. Table 51 reports, for each year, pre- and post-test proportions for the Experimental and Control Schools. Contrasts were made between the groups on each of the four categories. (Student item data were not available, so that a more encompassing subscore analysis procedure was precluded.) Only one contrast was found significant (probably due to chance), indicating that attitude shifts in the four areas did not occur. These results support the findings on the entire measure from the 1971-'72 analysis. Also see Table 52 for comparisons between Control and Experimental Schools (expressed in percentiles) for each questionnaire item for all three years.

Table 48.

STUDENT ATTITUDE QUESTIONNAIRE 1970-71

(Post-test only)

Group	Sex	Mean	Standard Deviation	N
Unit A	Males	19.600	3.9424	15
	Females	24.692	5.3289	13
Unit B	Males	20.053	5.6221	19
	Females	18.045	4.1344	22
Unit C	Males	20.636	7.0324	11
	Females	20.182	5.3445	11
Unit D	Males	18.722	4.4166	18
	Feamles	22.909	3.4491	22
Brooklyn	Males	18.625	6.4794	8
	Females	22.125	3.9074	8

Table 49.

REPEATED MEASURES ANALYSIS OF VARIANCE FOR
STUDENT ATTITUDE QUESTIONNAIRE

Source	Sums of Squares	Degrees of Freedom	Mean Squared	F-ratios
Total	14023.69	453		
Between	847.97	11		
A	660.44	2	330.2207	41.1490**
B	126.73	1	126.7327	15.7922**
AB	12.64	2	6.3212	-
Error	48.16	6	8.0250	
Within	13175.72	442		
C	.00	1	.0022	-
AC	103.93	2	51.9629	1.7336
BC	.77	1	.7682	-
ABC	2.56	2	1.2781	-
Error	13068.56	436	29.9738	

** = Significant beyond the .01 level

A — Class Differences
B — Sex Differences
AB — Interaction between Class and Sex
C — Pre/Post test Differences
AC — Interaction between Class and Pre/Post test scores
BC — Interaction between Sex and Pre/Post test scores
ABC — Interaction between Class, Sex and Pre/Post test scores

Table 50.

Repeated Measures ANOVA for Student Attitude Questionnaire: 1972-73

Source	Sum of Squares	Degrees Of Freedom	Mean Squares	F-Ratio
Total	17401.47	649		
Between	1478.89	19		
A: Classes	898.44	4	224.61	6.47**
B: Sex	191.09	1	191.09	5.50**
AB	42.18	4	10.55	
Error	347.18	10	34.72	
Within	15922.58	630		
C: Pre-Post	71.21	1	71.21	2.83
AC	212.99	4	53.29	2.12
BC	1.66	1	1.66	
ABC	57.67	4	14.42	
Error	15579.05	620	25.13	

*p < .05
**p < .01

ANALYSIS OF CATEGORIES OF ATTITUDES ON STUDENT ATTITUDE QUESTIONNAIRE

Category I	1970-71 N		Average Proportion		S.E.	t-value	1971-72 N		Average Proportion		S.E.	t-value
Pre/Post: Exp.	219	201	58.4	42.1	.0698	2.477*	208	217	47.7	39.9	.0642	1.216
Pre/Post: Control	42	39	58.8	47.4	.1560	1.224	40	42	58.3	56.2	.1671	.126
Post: Exp.vs Cont.	201	39	42.1	47.4	.1147	- .462	217	42	39.9	56.2	.1099	-1.482
Category II												
Pre/Post: Exp.	219	201	62.8	60.6	.0768	.456	208	217	54.3	58.9	.0730	.288
Pre/Post: Control	42	39	57.3	54.9	.1666	.144	40	42	66.7	66.3	.1802	.022
Post: Exp.vs Cont.	201	39	60.6	54.9	.1352	.422	217	42	58.9	66.3	.1307	-.566
Category III												
Pre/Post: Exp.	219	201	76.1	64.4	.0831	.926	208	217	61.1	67.3	.0778	-.797
Pre/Post: Control	42	39	64.1	63.9	.1400	1.011	40	42	79.1	79.9	.1970	-.041
Post: Exp.vs Cont.	201	39	68.4	63.9	.1439	.313	217	42	67.3	79.9	.1404	-.102
Category IV												
Pre/Post: Exp.	219	201	61.2	50.7	.0732	1.434	208	217	55.6	46.9	.0694	1.254
Pre/Post: Control	42	39	50.0	54.5	.1606	-.280	40	42	61.3	48.7	.1636	.770
Post: Exp.vs Cont.	201	39	50.7	54.5	.1253	-.303	217	42	46.9	48.7	.1158	-.155

Table 51.

Table 52.

STUDENT ATTITUDE QUESTIONNAIRE

Three Years Comparisons Between Control and Experimental Schools*

1. I like most of my classes.

	TRUE						NOT TRUE						NOT SURE					
	9/70	5/71	9/71	5/72	9/72	5/73	9/70	5/71	9/71	5/72	9/72	5/73	9/70	5/71	9/71	5/72	9/72	5/73
O.	79.4	60.7	63.4	57.1	61.8	60.2	10.0	17.4	11.5	23.1	.713	22.9	10.5	21.9	25.0	19.8	20.8	16.8
B.	69.0	66.6	65.0	66.6	63.4	59.3	2.4	15.3	25.0	11.9	14.6	14.4	28.5	17.8	10.0	21.4	21.9	26.3

2. I think most of my teachers really listen to me when I say something.

O.	67.1	33.9	56.2	36.8	44.0	37.1	10.0	37.9	12.5	31.3	18.1	29.8	22.8	28.4	31.0	36.8	37.8	32.9
B.	80.9	43.6	50.0	42.8	54.8	42.1	2.4	25.4	30.0	45.2	17.1	23.6	16.7	30.8	20.0	11.9	28.0	34.2

3. Most of my classes are so boring that I wish I could do something else.

O.	15.1	25.4	27.4	28.5	25.2	32.9	64.8	39.9	48.1	48.3	55.1	45.2	20.1	34.9	24.5	23.0	19.6	21.8
B.	23.8	28.2	25.0	33.3	26.8	27.6	42.8	43.6	57.5	59.5	59.7	53.9	33.3	28.2	17.5	7.1	13.4	18.4

4. Some of my classes are more fun than work.

O.	88.1	85.1	75.4	71.4	70.0	70.4	5.9	8.4	9.6	13.8	14.9	13.4	5.9	6.4	14.9	14.7	14.9	16.1
B.	69.0	76.9	77.5	88.0	78.0	86.8	14.3	17.8	22.5	7.1	13.4	9.3	16.7	5.1	0.0	4.7	8.5	3.9

* Data expressed in percentile

STUDENT ATTITUDE QUESTIONNAIRE (2)

5. I often get a chance to choose what I want to study.

	TRUE						NOT TRUE						NOT SURE					
	9/70	5/71	9/71	5/72	9/72	5/73	9/70	5/71	9/71	5/72	9/72	5/73	9/70	5/71	9/71	5/72	9/72	5/73
O.	42.0	42.9	36.0	31.3	46.0	43.3	35.1	42.9	31.7	44.7	36.2	36.0	20.5	14.4	32.2	23.9	17.7	20.7
B.	4.0	28.2	67.5	50.0	29.2	43.4	78.5	64.1	30.0	40.4	62.2	42.1	16.7	7.6	2.5	9.5	8.5	14.4

6. I often get a chance to choose how I want to do something.

O.	49.3	40.4	38.4	28.5	35.4	31.8	32.4	39.9	27.9	40.0	35.8	43.3	18.3	19.9	33.6	31.3	28.7	21.1
B.	21.4	33.3	35.0	26.1	24.4	23.6	52.3	53.8	62.5	52.3	54.8	48.6	26.1	12.8	2.5	21.4	20.7	27.6

7. I like to work by myself better than working with the whole class.

O.	51.1	58.2	54.8	64.5	72.8	65.5	42.5	22.4	24.0	23.9	14.9	19.5	6.8	19.4	21.1	11.5	12.2	14.9
B.	59.5	53.8	62.5	61.9	62.2	50.9	33.3	28.2	30.0	33.3	28.0	39.5	7.1	17.8	7.5	4.7	9.7	10.5

8. I feel shy about saying what I think when I'm in class.

O.	30.1	29.4	33.6	35.0	40.5	26.8	52.9	46.9	45.6	41.9	41.3	51.7	16.4	23.9	20.6	23.0	18.1	21.4
B.	16.7	35.8	22.5	35.7	34.2	35.5	52.5	41.0	65.0	47.6	43.9	46.0	23.8	23.0	12.5	16.7	21.9	18.4

9. If I don't like what we're doing in class, I'm not afraid to say so.

O.	36.0	36.4	26.4	35.0	22.4	29.8	35.1	32.9	42.3	39.6	55.1	49.0	26.4	30.9	31.2	25.0	22.4	24.9
B.	11.9	25.4	25.0	40.4	26.8	15.6	54.7	38.4	50.0	52.3	50.0	64.4	33.3	35.8	25.0	7.1	23.1	19.8

STUDENT ATTITUDE QUESTIONNAIRE (3)

10. If I don't like what we're doing in class and I say so, my teacher lets me work on something else.

	TRUE						NOT TRUE						NOT SURE					
	9/70	5/71	9/71	5/72	9/72	5/73	9/70	5/71	9/71	5/72	9/72	5/73	9/70	5/71	9/71	5/72	9/72	5/73
O.	6.8	6.4	5.8	2.3	7.4	4.6	70.7	69.1	60.5	76.5	66.9	77.0	22.2	24.4	33.6	21.2	25.6	18.4
B.	7.1	7.6	2.5	4.7	4.8	5.3	78.5	66.6	82.5	88.0	79.2	80.5	14.3	25.4	15.0	7.1	15.8	13.3

11. I can remember one time when I had a good idea and my teacher let the whole class work on my idea.

O.	32.2	20.4	22.1	24.4	17.3	12.6	54.8	61.6	55.7	51.1	61.4	67.0	21.9	17.9	22.1	24.4	21.2	20.3
B.	9.5	12.8	32.5	26.1	18.3	14.4	76.1	58.9	57.5	64.2	58.5	60.5	14.3	28.2	10.0	9.5	23.1	25.0

12. I don't like working on something and then getting a grade for it. I'd rather not have any grades for anything.

13. I like being in school.

O.	57.1	45.4	45.6	46.5	51.5	40.9	21.0	20.9	26.4	31.3	27.1	35.6	21.9	33.9	27.9	22.1	21.2	23.3
B.	45.2	43.6	52.5	66.6	50.0	40.8	35.7	17.8	30.0	21.4	24.4	31.5	19.0	38.4	17.5	11.9	25.6	27.6

14. My teachers make my classes a lot of fun.

O.	60.7	29.4	57.2	29.4	43.5	34.1	16.8	35.4	15.9	34.5	27.1	30.6	22.3	35.4	26.9	35.9	29.1	35.2
B.	38.1	35.8	47.5	59.5	48.7	52.6	38.1	25.4	25.0	35.7	24.4	22.3	23.8	38.4	27.5	4.7	26.8	25.0

STUDENT ATTITUDE QUESTIONNAIRE (4)

15. I have plenty of time to work on subjects I like the best.

	TRUE						NOT TRUE						NOT SURE					
	9/70	5/71	9/71	5/72	9/72	5/73	9/70	5/71	9/71	5/72	9/12	5/73	9/70	5/71	9/71	5/72	9/72	5/73
O.	44.7	21.9	44.7	29.9	47.2	30.2	36.0	58.7	37.9	42.4	34.2	50.9	19.1	19.4	17.3	27.6	18.5	18.7
B.	45.2	25.4	42.5	38.0	46.3	43.4	38.1	53.8	52.5	45.2	30.4	39.5	16.7	20.5	5.0	16.7	23.1	17.1

16. I like thinking of ideas myself.

O.	65.3	66.1	67.3	65.4	67.7	57.4	15.9	8.9	12.9	14.2	11.0	15.3	18.7	24.9	19.7	20.2	21.2	26.8
B.	66.6	56.4	65.0	85.7	68.3	59.3	14.3	25.4	12.5	11.9	15.8	11.8	19.0	17.8	22.5	2.3	15.8	29.0

17. Learning the things that are taught in school is important.

O.	91.3	79.6	82.6	71.8	82.2	79.3	3.2	5.4	5.8	6.9	5.9	7.6	5.5	14.9	11.5	21.2	11.8	13.0
B.	83.3	87.1	80.0	83.3	85.2	80.5	7.1	7.6	10.0	14.2	7.3	5.3	9.5	5.1	10.0	2.3	7.2	13.1

18. Learning the things that are taught in school is interesting and fun.

O.	53.8	41.9	56.2	30.8	41.7	42.9	14.2	19.9	16.3	23.1	24.0	19.9	31.9	38.4	27.4	45.6	34.2	37.1
B.	40.5	56.1	60.0	40.4	56.1	60.5	30.2	17.8	17.5	40.4	18.3	15.6	28.5	35.8	22.5	19.0	25.6	23.6

19. I don't think my teachers like me as much as the other students.

O.	16.4	27.4	15.3	26.2	22.8	22.9	51.1	38.4	49.0	33.6	48.4	45.9	32.4	34.4	34.6	40.0	28.7	31.0
B.	16.7	20.5	27.5	40.4	19.5	22.3	40.5	38.4	55.0	33.3	48.7	47.3	42.8	41.0	17.5	26.1	31.7	30.2

20. Sometimes we go too fast in class.

O.	57.1	49.4	42.8	49.7	47.2	43.3	35.1	33.4	37.0	30.8	36.6	36.4	7.7	17.4	20.0	19.3	16.1	20.3
B.	59.5	64.1	67.5	57.1	62.2	55.3	16.1	17.8	32.5	35.7	25.6	31.5	23.8	17.8	0.0	7.1	12.1	13.1

21. When I don't understand something, I don't say anything. I don't want the teacher or my friends to think I'm dumb.

	TRUE						NOT TRUE						NOT SURE					
	9/70	5/71	9/71	5/72	9/72	5/73	9/70	5/71	9/71	5/72	9/72	5/73	9/70	5/71	9/71	5/72	9/72	5/73
O.	20.5	18.4	18.2	21.6	25.6	20.3	66.6	60.2	61.0	62.2	63.7	65.5	12.7	26.4	10.6	16.1	.0.6	14.1
B.	19.0	15.3	27.5	28.5	29.2	32.9	54.7	64.1	62.5	66.6	56.1	52.6	26.1	20.0	10.0	4.7	14.6	14.4

22. I don't like changing classes when I'm working on something I like.

O.	57.9	70.1	71.1	32.9	82.2	84.6	20.5	10.9	13.4	10.6	11.0	8.4	21.4	18.9	14.4	6.4	6.7	6.8
B.	57.1	58.9	90.0	92.8	82.9	93.2	26.1	20.5	5.0	4.7	13.4	5.3	14.3	20.5	5.0	4.7	3.6	2.6

23. Even if I have a good idea, I don't say it. I'm afraid someone will laugh.

O.	21.9	22.4	32.2	20.7	25.6	22.9	59.3	57.2	55.2	59.4	54.7	60.9	18.7	20.4	12.5	19.8	19.6	16.1
B.	21.4	25.4	35.0	26.1	37.8	29.0	40.5	46.1	55.0	66.6	45.1	52.6	38.1	28.2	10.0	7.1	17.1	18.4

24. I need more time to learn some subjects, but I never seem to have enough.

O.	55.2	57.2	42.3	40.5	42.5	46.7	26.4	18.4	36.0	24.8	31.1	26.0	18.3	24.4	21.6	34.5	26.3	27.2
B.	45.2	48.6	55.0	54.7	51.3	51.3	35.7	28.2	30.0	40.8	28.0	25.0	19.0	23.0	15.0	4.7	20.7	23.6

25. My teachers let me take more time on subjects that are hard and work ahead on things that are easy.

O.	38.8	37.4	48.5	34.5	46.4	34.4	37.9	30.4	22.6	37.6	27.9	31.1	23.2	32.4	28.8	28.1	25.2	34.4
B.	23.8	30.8	55.0	45.2	36.6	29.0	54.7	51.2	30.0	50.0	32.9	38.1	21.4	17.8	15.0	4.7	30.8	32.9

STUDENT ATTITUDE QUESTIONNAIRE (6)

26. I like it when my teachers try to teach us something in a really different way.

	TRUE						NOT TRUE						NOT SURE					
	9/70	5/71	9/71	5/72	9/72	5/73	9/70	5/71	9/71	5/72	9/72	5/73	9/70	5/71	9/71	5/72	9/72	5/73
O.	78.5	71.6	70.0	73.7	73.6	69.7	12.8	11.4	9.6	10.6	7.8	13.4	8.6	16.9	20.0	15.6	18.5	16.8
B.	42.8	64.1	82.5	78.5	69.5	80.2	28.5	20.5	12.5	14.2	8.5	6.6	28.5	15.3	5.0	7.1	21.9	13.3

27. My teachers use lots of surprising or funny ways to help us learn something.

O.	50.2	43.4	49.5	34.7	42.9	35.2	33.3	36.4	23.1	41.9	34.6	37.5	16.4	20.4	27.4	25.3	22.4	25.2
B.	33.3	30.8	40.0	50.0	54.8	52.6	50.0	46.1	42.5	23.8	23.1	23.6	16.7	23.0	17.5	26.1	21.9	23.6

28. Some subjects mean more to me than other subjects.

O.	87.6	86.1	83.6	79.7	80.7	81.9	4.1	5.9	4.3	10.6	9.8	11.1	8.2	7.9	12.0	9.7	9.4	6.8
B.	80.9	76.9	80.0	88.0	71.9	76.3	14.3	5.1	17.5	9.5	13.4	5.3	4.8	18.3	2.5	2.3	14.6	3.9

29. I would like more freedom to choose <u>what</u> I study.

O.	52.0	75.6	56.7	64.5	57.4	62.8	23.7	10.4	19.2	15.4	22.8	18.7	24.2	13.9	24.0	20.2	23.6	18.4
B.	76.1	58.9	75.0	61.9	62.2	52.6	14.3	15.3	22.5	26.1	21.9	19.8	9.5	25.4	2.5	11.9	15.8	29.0

30. I would like more freedom to choose <u>how</u> I study.

O.	50.7	75.6	56.7	57.1	51.2	63.9	21.4	3.9	17.8	17.5	16.5	16.1	27.8	20.4	25.5	25.3	31.9	19.9
B.	76.1	66.6	67.5	64.2	54.8	56.5	14.3	7.6	22.5	16.7	24.4	10.5	9.5	25.4	2.5	11.9	15.8	29.0

STUDENT ATTITUDE QUESTIONNAIRE (7)

31. I think I'm as important as anyone else in my class.

	TRUE						NOT TRUE						NOT SURE					
	9/70	5/71	9/71	5/72	9/72	5/73	9/70	5/71	9/71	5/72	9/72	5/73	9/70	5/71	9/71	5/72	9/72	5/73
O.	67.5	68.1	62.0	59.4	64.9	71.6	16.8	16.9	9.6	14.7	19.2	9.5	15.5	14.9	28.3	25.8	15.7	18.7
B.	64.3	53.8	57.5	54.7	59.7	61.8	19.0	23.0	30.0	30.9	17.1	22.3	16.7	23.0	12.5	14.2	23.1	15.6

32. I wish I wouldn't have to go to school as much as I do.

O.	42.9	43.8	37.9	50.2	46.9	71.6	42.5	35.8	37.9	38.4	40.9	31.0	14.6	20.4	24.0	11.5	12.2	15.3
B.	59.9	43.6	37.5	47.6	46.3	46.0	30.9	41.0	52.5	47.6	42.6	29.0	9.5	15.3	10.0	4.7	10.9	25.0

33. Most of my teachers are too strict.

O.	10.9	23.9	15.7	35.0	24.8	27.5	76.7	62.1	62.0	42.3	51.9	50.5	12.3	13.9	22.6	22.5	23.2	21.8
B.	11.9	23.0	15.0	28.5	32.9	22.3	69.0	58.9	67.5	59.5	48.7	53.9	19.3	17.8	27.5	11.9	18.3	23.6

34. Tests scare me. I don't feel a test tells what you <u>really</u> know anyway.

O.	28.9	24.9	25.0	25.8	25.2	26.4	50.7	42.4	50.4	50.2	52.3	50.9	20.5	32.9	24.5	23.9	22.4	22.6
B.	19.0	23.0	24.0	33.3	28.0	27.6	47.6	35.8	62.5	64.2	56.1	57.9	33.3	41.0	12.5	2.3	9.7	14.4

35. Tests scare me a little, but I like them because I can see what I can do.

O.	59.8	42.4	49.0	44.2	52.7	47.5	22.8	30.4	27.9	35.0	31.5	32.9	17.3	27.4	23.1	20.7	15.7	19.5
B.	61.3	53.8	55.0	57.1	60.9	44.7	14.3	15.3	32.5	35.7	28.0	36.8	23.8	20.8	12.5	7.1	10.9	18.4

36. I think students should be able to make a report card for teachers.

O.	71.2	87.6	65.8	86.1	76.3	76.2	19.6	6.5	18.2	10.1	14.9	14.1	9.1	5.9	15.9	3.7	8.6	9.5
B.	85.7	84.6	77.5	73.8	68.3	64.4	9.5	10.2	12.5	21.4	26.8	26.3	4.8	5.1	10.0	2.3	4.8	9.3

Discussion and Summary

From the conception of this project, the goals have been to create a learning atmosphere where the individual talents and abilities of each student and staff member could be optimally utilized. The primary focus has been on staff members, to expand their attitudes, experiment with teaching approaches and materials, and to foster individualized learning in their students. It is this unique individual perspective which we have defined as "creative." The problems involved in studying an area as broad and complex as creativity are many. First, creativity can mean many things, depending on who is defining it; two people seldom agree on the exact specifications. Second, even if a satisfactory definition is determined, valid and reliable measures are extremely rare. In our own case, it has meant developing our own measures--some successful, some not--during the course of the study, which is not a particularly good procedure from strict design standpoint. Third, even if measures are found which can provide significant test results, such results are meaningful only in terms of a particular definition of creativity. Yet, with all the problems inherent in such a study, the Oregon Middle School has attempted to examine what it believes is an important relationship between creative behavior and learning.

Looking over the results achieved during the three years of the project, the problem of drawing clear conclusions is readily apparent. In the first place, the Control School--supposedly the "traditional" school with whom all comparisons were made--is located in the same school district as the Experimental School. They are so close, in fact, that children of some staff members and Project Aides in the Experimental School attend classes in

the Control School. Consequently, information about new techniques, projects, or other innovations travels quickly and, shortly after changes are begun in the Experimental School, the same changes suddenly crop up in the Control School. This has particularly affected the space sample data, where Control School teachers have often deliberately rearranged furniture on days photographs and seating charts are made (Control teachers are alwyas told when space samples will be taken because someone walking into a traditional classroom unannounced and taking pictures would inevitably disrupt the class). Competition between the two schools also may account for the strikingly similar responses on the Student Attitude Questionnaire. Control School teachers have been known to joke with their students about doing better than the Middle (Experimental) School just prior to taking one of the tests used for comparisons. During the third year of the project (1972-'73), Control School teachers have even visited the Experimental School and requested permission to use a very innovative Reading Program developed by one of the units in the Experimental School! And one can hardly refuse to share material.

From the Verbal Fluency tests, we have learned that, while creativity may exist in some degree in nearly all students, perhaps verbal tests are not effective measures of creative behavior in this age group. Recent results have shown that older children do better than younger children--apparently because of a broader vocabulary and more experience in self-expression. Though the Let's Imagine tests and the Build-It Box, because of the subjectivity involved in the scoring, has not provided the quality of information necessary to tell us if this is, indeed, the proper direction.

The truly frustrating part of this study is that the really beneficial and exciting things which are occurring in the Experimental School as a direct result of continual emphasis on creativity are either (1) not quantifiable or (2) unforeseen, and so are not even implied by any of the 7 original objectives. For example, to deal with very talented, but often bored students, the Art and Vocal Music teachers started a group called the Spoofers, which specialized in creative dramatization, dance, etc. an offshoot of this was a simialr group called The Dirty Dozen, consisting of 12 or 13 of the most troublesome boys in all four units. This group was organized by the same two teachers and it solved (or at least eased) many severe behavioral problems by encouraging these children to act out their anger and frustrations, and giving them special attention as reinforcement for good, rather than disruptive behavior. The development of many instructional programs, particularly in reading and math, would probably not have occurred without the freedom to "innovate, if you don't like things as they are." The Parent Newsletter, by providing information about many changes occurring in the school, has smoothed the way for these changes to occur, while minimizing antagonism, distrust and confusion on the part of parents. Parents are encouraged to tour the school during school hours to see what is going on and ask questions. Some parents participate in the programs as volunteer teachers of special interest groups. This is probably one of the few schools anywhere where so many big changes have occurred so quickly and the school board and community solidly support it. Yet this, too, is a direct result of this project. With so many changes and so much emphasis on even more innovation,

harmony between staff, students, administration, school board and community was critical, and a great deal of effort was expended in maintaining harmony.

Generally then, teachers innovate, evaluate, and innovate more. Students participate in parts of the decision-making of their own learning process, yet there is still ample structure. Probably more new student projects have been initiated in the last two years than in the ten preceding them. Visitors to the school almost invariably mention the closeness of the staff and the generally stimulating learning environment--but none of the "electricity" (which is also a fact) has apparently been measured, for it doesn't show up in the results so far obtained. The problem from the start has been (and apparently still is) to reduce "electricity" to a level of statistical significance.

APPENDICES

APPENDICES RELATED TO OBJECTIVE ONE

3 PAGES MISSING

APPENDICES RELATED TO OBJECTIVE TWO

THE MULTIPLE-CHOICE APPROACH TO CREATIVE TEACHING

Who said we won't try anything once? At least it's an innovative approach, considering that the association of multiple-choice questions and divergent thinking occurs about as often as a total solar eclipse. Please read through the following half-completed statements and the alternatives for completing each statement. Select an alternative that best expresses your feelings, and circle the letter in front of that alternative. If none of the alternatives comes close to the way you feel, write in your own alternative. Or combine alternatives. Whatever fulfills your desire for self-expression...

Please say what you really feel; ideas you have tried (whether with success or failure) and the perspective you have developed may be extremely helpful to other staff members. Also, please feel free to comment on the questionnaire (Fair is fair, after all), or to suggest areas where more questions and discussion might be helpful.

1. Generally speaking, I try to use creative approaches
   (a) every day; my survival depends upon it.
   (b) fairly often (2-4 times a week).
   (c) sometimes--I'd like to be more creative, but I never seem to have enough time to develop anything really imaginative.
   (d) whenever I have one of my wild "bursts" of creativity.
   (e) rarely. I just don't feel I'm a particularly creative person.
   (f) only under duress. I truly believe there are more important things to do than come up with new "gimmicks" to "sell" a subject.
   (g) ?

2. For me, the biggest barricade to being creative and teaching creatively is
   (a) lack of time.
   (b) lack of resources.
   (c) I'm not really sure what I'm supposed to <u>do</u> to be more creative.
   (d) I have trouble coming up with "creative" ideas.
   (e) somehow, in the back of my mind, I'm not honestly convinced that creativity is all that important.
   (f) one or more of the above.
   (g) ?

3. One specific situation in which I tried a more "imaginative approach" was

(questions continued on next page)

Compared with a more traditional approach, I feel the results were
(a) well worth the extra noise and effort.
(b) ambiguous; the advantages and disadvantages seemed about equal.
(c) near-anarchy.
(d) ?

4. Is there one instance you know of where the idea of encouraging students to use their imagination simply ran amuck? Where trying a more creative approach didn't work? What went wrong?

Comments?

Date 1970-72

TEACHER REACTION FORM

The purpose of this form is to find out what your feelings, experiences, and areas of concern are toward the school at this time. Please fill this out at the end of the day.

1. Please circle the number that best represents your feelings about your day's instructional program at this time.

1	2	3	4	5	6	7	8	9
Bad								Good

2. Please describe one critical incident that describes a positive experience you had today in attempting to use creative approaches to teaching, and one negative critical incident that describes a negative experience or problem you had today in attempting to use creative approaches to teaching.

(+ Positive)

(- Negative)

TEACHER REACTION FORM - DAY RATING

DATE 1972-73

UNIT _____

NAME (optional) _____

The purpose of this form is to find out what your feelings, experiences, and areas of concern are toward the school at this time. Please fill this out at the end of the day.

Please circle the number that best represents your feelings about your day's instructional program at this time.

1	2	3	4	5	6	7	8	9
Bad								Good

TEACHER REACTION FORM - CRITICAL INCIDENTS

DATE 1972-73

UNIT _____

NAME (optional) _____

A critical incident means any "incident" you, personally, feel was important or unusual in your teaching. It encompasses ideas (from you or your students), innovative teaching techniques, the impact of new materials, and insights you have gained from interaction with other staff members and students. These "incidents" may be positive or negative (or both!). Please describe briefly (short paragraph) one critical incident which you consider to be a positive experience, and one incident you consider negative (e.g., something Didn't work the way you planned it; a class that Didn't respond the way you'd hoped.)

(+ Positive)

(- Negative)

OREGON
MIDDLE SCHOOL
OREGON, WISCONSIN

VIEW from the MIDDLE

OREGON MIDDLE SCHOOL
Oregon, Wisconsin

February, 1972

GUEST EDITORIAL

The Tragedy of Failure

"Once the child receives the failure label and sees himself as a failure, he will rarely succeed in school."

The above is a statement by Dr. William Glasser (M.D.) in his much publicized book Schools Without Failure and is used as a reflection of my own personal belief regarding a student's school experience.

I am not unaware that there are those who strongly believe that competition is one of the mainstays of our way of life. This axiom is true only to the degree that competition is designed to provide satisfaction to one's self for all rather than achievement for some and failure for others. We do not want our society so structured that because I fail as a chemist I cannot be successful as an auto mechanic.

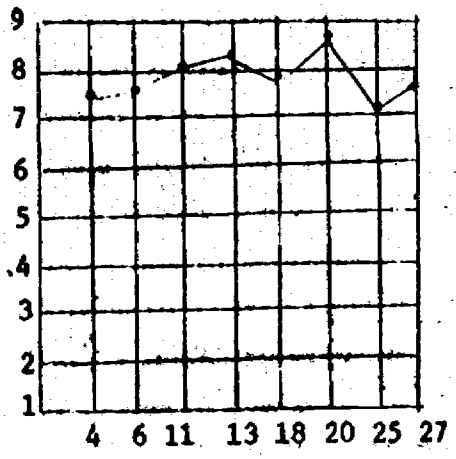
Perhaps the answer lies in an examination of why students fail and an attempt to provide a learning situation where they can succeed. In so doing, let's provide our young people with the opportunity to learn what is relevant to their lives, to participate in problem solving, to make some decisions for themselves, and to be a bit more free from pressures of grades and grading.

In summary, let's design our education in such a way that children will want to learn. They will want to learn because devoted teachers have recognized them as individuals and have planned with and for them an education premised on their needs and interests as future adults.

Roland J. Cross

More, More, MORE exotic, stimulating (and sometimes annotated) ideas from YOU--via your helpful, friendly Teacher Reaction Forms.

Average of Total Staff Reaction Forms for February.



1. Demonstrated the concept of <u>inference</u> by presenting gaily wrapped packages to be observed and discussed by the whole group; this technique was followed by having small groups observe and make inferences about something, later shared with the whole group.

2. <u>Creative Writing</u> - Since the unit has been studying Indians, teacher read the beginning of an Indian story ("Why Deer Have Short Teeth"), then let children write their own endings. Later these endings are shared with the rest of the class and compared with the "real" ending of the story.

3. <u>Writing Reports</u> - Sometimes verbalizing or writing gets boring for students, so class was allowed to decorate a bulletin board with pictures representing subjects of report. Putting things in a visual and graphic way added variety and allowed more scope of individual interpretation.

4. <u>Maps</u> - With the low-ability group in social studies, sometimes students seem to learn more if they are given a wide variety of maps and allowed to to discover for themselves what each showed (instead of memorizing oceans, rivers, mountains, etc., to put on blank maps).

5. <u>Music</u> - Film on and discussion of percussion instruments were presented to students who had just completed the study of "Early Man." (Sue Houtman's footnote: The timing here was perfect, but accidental. Music, Art and other "special classes" do not occur in isolation in The Real World, so why should they in school? Aren't there other times and subjects where what is taught in Art can perfectly complement what is being taught in history, social studies, science, etc.? Ditto for Music? Or drama? Could occasional lessons be planned <u>in collaboration with</u> these "special" teachers?)

6. <u>Science</u> - Drew chart of large tracks and small tracks coming toward each other, getting mixed up, and only large tracks going on. Boys, who had been studying inferences, made observations and inferred what had taken place.

7. Due to testing, the size of math and science groups was cut in half and much more was accomplished in both.

8. <u>Science</u> - Problems and concepts in classification were handled by having kids define and classify various concrete objects. (We used mixed nuts.) (Sue's comment: About that symbolism...)

continued....

9. Interest Group - (Film-making) Used magic markers to explain forerunners of animated films. Also used live demonstration of operation of closed circuit TV camera and allowed each child the opportunity to operate it.

10. Creative Writing - The children used Indian sign language to write marvelous stories.

11. Reading/Drama - Children have been working on choral reading about pirates and they made patches, boots, wooden legs, cannons, etc., to help dramatize the poem.

12. Spelling - Divided spelling group into 2 teams, the Blackhawks and the Bruins. The Bruins are the underdogs. If a Bruin gets all the spelling words right for two weeks in a row, he can become a Blackhawk; if a Blackhawk misses a word, he has to move to the Bruin team.

13. Language Arts - A visit to the Madison Newspapers was the culminating activity to "Learning About Newspapers" in the unit. A film strip describing the various processes in printing a daily paper was presented prior to the visit to make processes more familiar and relevant.

14. Language Arts - Children are writing original Christmas stories, which they are then adapting into plays. Students co-direct plays, working out dialogues as they go along.

Comments from or about the Teacher Reaction Form designed to drive consultants crazy...

1. "We did something for Veterans' Day." (What? WHAT! ?)
2. "Shared in....." (GAAAAAAaaaaaa.....!)
3. "No time to write anything today because I'm too busy." (..except to write the paragraph explaining how come there was no time to write anything...)
4. An entire unit rates the day as a 9, but the rest of the TRF for everyone in the unit was BLANK! What happened to make it such a good day? WHAT? AAAaaargh!

...and comments reflecting the rewards of teaching:

5. "The kids go home at 2:00."
6. "One of two students misbehaved. I accused the wrong one."
7. "Found out I'm incredibly flexible. Must be because I'm a Gemini.."
8. "Kids were hyper. So was I.."
9. "We got all (most of) the staples picked out of the carpet."

LARGE CLASSES UNFAIR TO STUDENTS

Since the newsletter is a place for airing views, I am airing this one. I feel it is grossly unfair to subject children continually to classes of 30 or more. As far as I am aware, this happens school-wide when student teachers and interns are in the process of change. It also happens many other times during the year for one reason or another. It is obvious to me that each unit needs one more fully certified staff member.

I keep hearing about small groups, individual attention and how many people share the burden of instruction. Still, I am continually being faced by classes which are too large. Some place between the ideal and the reality, there is a large gap.

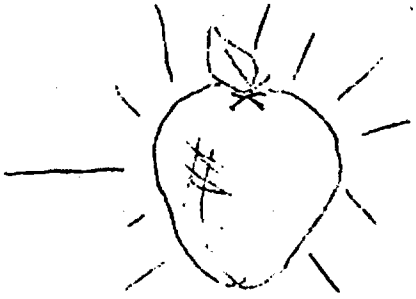
There may be times when the children are divided among the four certified staff members. 130÷4=32+ and that's conservative. Children cannot make the best of their learning opportunities if classes are so large that the teacher is not able to give individual help and guidance.

I realize that this is a time when people are trying to cut rather than add personnel. However, I do not feel I can sit by and watch the children I work with being short-changed. There has to be a solution and we should all work to discover it.

Kathleen Vaughn.

GIVE A CHILD A BIG SMILE FOR ABSOLUTELY NO REASON. BET HE'LL SMILE BACK!

AWARDS



APPLES TO....

Our new interns and student teachers.

All of our substitutes.

Our new aide in Unit C, Lila Larson.

WORMS TO.....

Anyone who makes a mess of the paper storage room.

Shirlee Schmale for leaving us.

Broken legs, sore backs, headaches, sickness, and more sickness.

YOU'VE MET THEM, BUT DID YOU KNOW THAT.....?

LILA LARSON, aide in Unit C, has lived in the area for most of her life. She is a graduate from O.H.S. She and her husband Don have three children in the Oregon Schools - Suzanne, 10; Michael, 7; and Joel, 6. Her hobbies are sewing and camping. She says, "The only thing that will get me out of the woods is a week of rain."

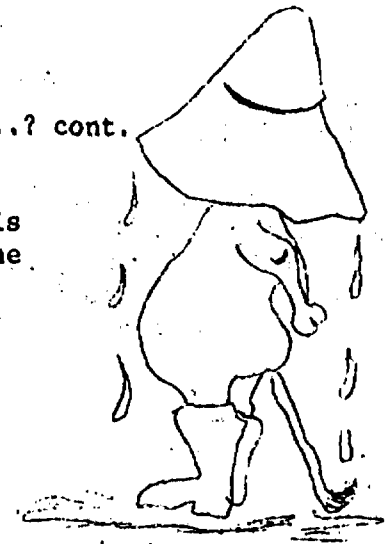
FRAN WONG, intern in Unit A, can easily be mistaken for a new student, and some of you already have! She is presently living in Madison. She will be graduating from the University of Wisconsin in June. This is her third semester of teaching experience. Her first two semesters were teaching in the Madison school system. She finds working in Oregon Middle School a challenging experience.

BARBARA WARRENCE, intern in Unit C, grew up in N.J., and went to college in Vermont. Her husband and she came to Madison 4 years ago - this is their 2nd year living in Oregon. For 3 years she taught pre-school, and enjoys working with very small children, (they have a little boy who is 13 mo. old). During the summer, they travel and go camping and hiking. In her spare time, she likes artwork and bicycling.

VICKI HENDRIX, student teacher in Unit A, is a senior at the University. She is here at Oregon Middle School for the spring semester to complete her student teaching requirement. She is originally from Belleville, Illinois, which is a small town about ten miles from St. Louis, Missouri. In her free time, she enjoys reading, cooking, fashion design, and playing tennis. She also enjoys talking to people and learning from their experiences. On Saturday mornings, she is the art director at one of the Madison schools for their Saturday Recreation Program. This position allows her with a chance to experiment with art and also provides her with a chance to work with children of various ages. Thus far, her student teaching experience in Unit A has been good. She is looking forward to a helpful and educational semester with her cooperating teachers!

SCOTT DAVIS, student teacher in Unit C, is from New York State, where he was raised, went to college, and taught high school. His main interests are sports and outdoor activities, including camping and fishing. His heros are Mohammed Ali and Bobby Fischer. Presently, his wife and he are living in McFarland, on Lake Waubesa.

YOU'VE MET THEM, BUT DID YOU KNOW THAT...? cont.



Unihibited one
Playground Duty C.N.

ROSE RUNDE, student teacher in Unit B, is the fourth child in a family of ten. She has lived in Wisconsin all of her life, but she doesn't "like it here" - it's too cold most of the time.

All four years of college were spent at the University of Wisconsin, Madison. Her area of concentration for education was in French. She's been told that that area will be of no help to her in an elementary school, but she enjoyed the courses while they lasted, and still may find herself using the knowledge. The way schools keep changing, who's to say. She's never seen such a beautiful school as this one. The little theater is her favorite place. And she's very glad to be in Unit B - it seems to have the "craziest people!"

FROM NED LEVINE ---

A leader is best
When people barely know that he exists,
Not so good when people obey and acclaim him,
Worst when they despise him.
'Fail to honor people,
They fail to honor you;'
But of a good leader, who talks little,
When his work is done, his aim fulfilled,
They will all say, 'We did this ourselves.'

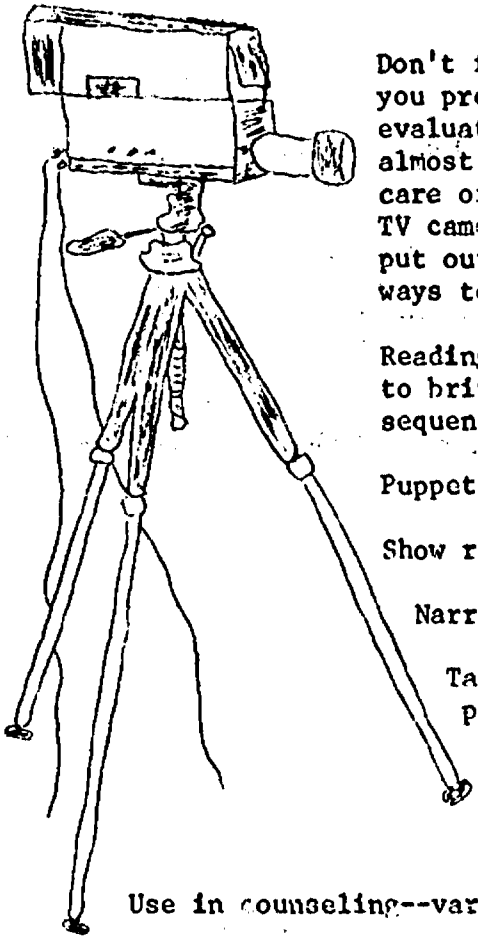
Lao Tzu

Above all else, children are people.

THEY'RE COMING! THEY'RE COMING!

On March 14, the Oregon Middle School will once again play host to federal visitors whose responsibility it is to evaluate the Staff Development Project in Creativity, now in its second year. This year our guests are Mrs. Fran Kimmey, Mr. Russell Way, Mr. Bob Gomoll (all of whom were here last year) and Mr. Earl Collins, whose special interest is art. These people are looking forward to spending some time visiting your units, talking, looking, asking questions, and generally getting the feel of our rarefied atmosphere. Please feel free to talk, look and ask questions back. Be frank. Make friends. Your cooperation is greatly appreciated.

TEACHERS! INTERNS! STUDENT TEACHERS!



Don't forget that we have a very special tool to help you present your classroom material and to help you evaluate your teaching methods. This tool requires almost no effort on your part. Lee York will take care of that part of it for you. The tool is the TV camera and the video tape. Here's a partial list put out by Mankato State College of some of the possible ways to make use of this tool.

Reading--dramatizing of student's own reading stories to bring out the main idea of their story or to show sequence in a story.

Puppet shows.

Show reading for accent and facial expression.

Narration and Pantomime.

Tape a class to show the next year's class on a particular performance.

Teachers filming demonstrations and explanations in activities, thus avoiding repetition and improving quality.

Use in counseling--various social encounters can be shown on the screen.

Show student teachers a normal classroom situation and how to cope with problems.

Tape teacher for self-criticism.

Tape class projects for future reference.

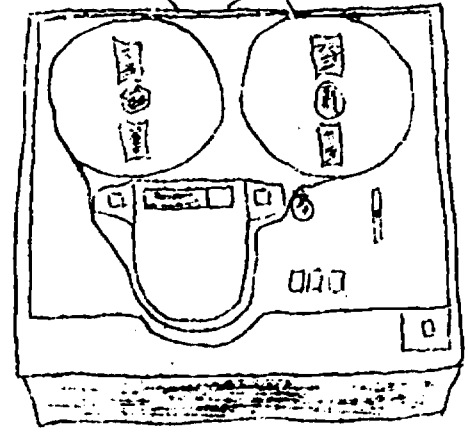
Tape student teachers to show good points and faults--constructive criticism.

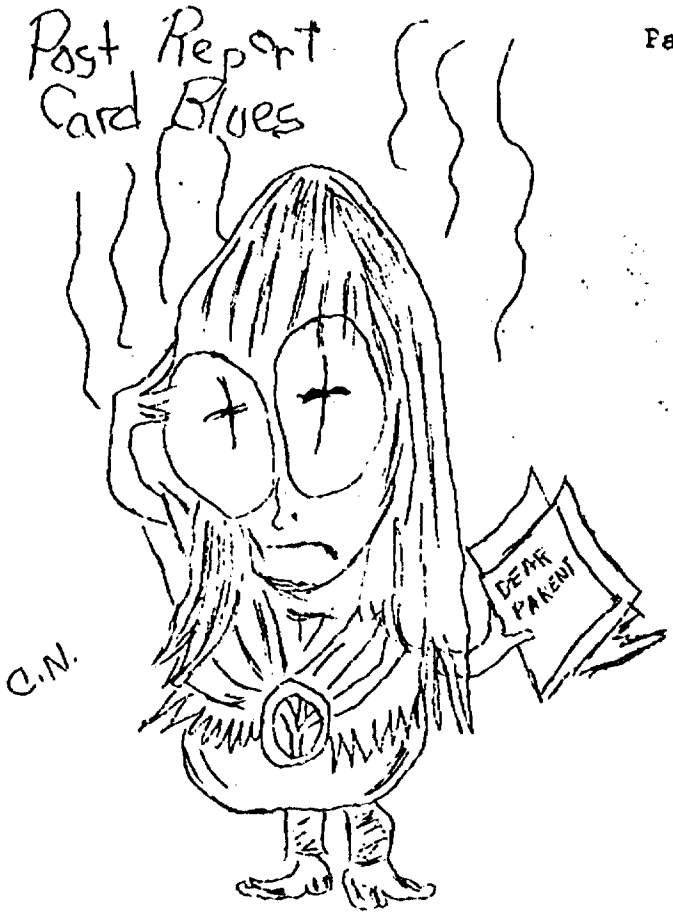
Use to help team teaching.

Students could evaluate their own behavior.

Use to dramatize certain historical events using students as actors.

Film students' mannerisms while giving speeches to show different actions.





FEBRUARY
(HaiKu)

Gathering cloaks of winds
About her ice-bone shoulders,
Winter tiptoes out.

Melting piles of snow
Are carelessly discarded
Like old, outgrown toys.

Gray gives way to sun
Which sears through clouds and cold
Clearning paths for Spring.

REPORT CARD REPORT

Below please find the results of our parent survey on our new report card. The responses are broken down by unit and by types of response. Below the unit breakdown the per cent (%) of each category is totaled up.

Survey Question: Please indicate whether this reporting system meets with your approval.

	YES	YES & NO	NO	NO COMMENT
Unit A	91	...	14	24
Unit B	107	...	5	16
Unit C	104	4	6	19
Unit D	109	...	6	15
	411	4	31	74

79% of parents responed "yes".
6% of parents responed "no".
14% of parents were undecided.
1% of parents checked both "yes" and "no".
100%

2 PAGES MISSING

THIS PAGE WAS MISSING FROM THE DOCUMENT THAT WAS SUBMITTED TO ERIC DOCUMENT REPRODUCTION SERVICE.

APPENDICES RELATED TO OBJECTIVE THREE

7 PAGES MISSING

APPENDICES RELATED TO OBJECTIVE FOUR

FAVORITE PLACE

Tally Sheet

Name:_____

Unit:_____

Age:_____

Sex:_____

Date:_____

I. Most Favorite (circle one)

Learning Center Art Room Music Room School Gym School Playground

In my unit Home Neighborhood Other (what?)

Why is this your favorite place?

II. Second Favorite (circle one)

Learning Center Art Room Music Room School Gym School Playground

In my unit Home Neighborhood Other (what?)

III. Least Favorite (circle one)

Learning Center Art Room Music Room School Gym School Playground

In my unit Home Neighborhood Other (what?)

Why is this your least favorite place?

FAVORITE SUBJECT

Tally Sheet

Name:_____

Unit:_____

Age:_____

Sex:_____

Date:_____

I. Most Favorite (circle one)

Reading Social Studies Creative Writing Skills Phy. Ed. Science

Math Vocal Music Band Art Special Interest Group

Why do you like this subject best?

II. Second Favorite (circle one)

Reading Social Studies Creative Writing Skills Phy. Ed. Science

Math Vocal Music Band Art Special Interest Group

III. Least Favorite (circle one)

Reading Social Studies Creative Writing SKills Phy. Ed. Science

Math Vocal Music Band Art Special Interest Group

Why is this your least favorite subject?

2 PAGES MISSING

THE OPEN DOOR

A Newsletter written especially for parents of
Oregon Middle School children

November, 1972 — Oregon, Wisconsin

In the Beginning...

Last year, the Oregon Middle School began this newsletter especially for parents who were curious about different aspects of their children's education. Many changes are taking place, and changes are often confusing. We believe parents have a right NOT to be confused. Last year The Open Door dealt with the goals of education today, multi-unit organization, open space, the creativity project, and Individually Guided Education. Since not all parents signed up for this newsletter last year, and since we have many new parents-of-Middle-School-children this year, this first edition summarizes subjects discussed last year. The future editions will discuss new topics, questions from parents and other interesting news about the school. We welcome any comments (or contributions, if you like to write) or questions on anything that confuses, frustrates, excites or interests you.

EDUCATIONAL GOALS:
Where Are We Going And Why Are We Going There?

Traditionally...

First and foremost was the responsibility to INFORM. The teacher talked, you memorized, then you were tested on how well you memorized. If you had average ability in all subjects, this system was not too bad; but if you found some subjects difficult and others easy, you wound up either frustrated or unchallenged.

The goal (informing) was (and is) excellent. The drawbacks--the situation and the method--put the goal almost beyond reach. First, with regard to the situation, teachers had too many students, too much paperwork and too little time to help each child realize his own potential. Large classes meant that a teacher must "teach to the average student," and since few students are average in all subject areas at all learning stages, few students received the full benefit of any teaching. Second, with regard to method, research has shown that facts learned by rote memorization (teacher gives information; student memorizes it) were forgotten quickly unless the information could be put into a context where a student could see its importance and practice using it. (Remember memorizing all those rules for term paper footnotes or geometry theorems? How many of those rules could you recite even one year later?) Besides, is MEMORIZING the same as THINKING? In addition, many children had negative attitudes toward school and toward learning in general. Everyone seemed to agree that something was wrong with the system, but no one was quite sure what it was or what to do about it.

Schools Today (Or, Out of the Frying Pan, and Into???)

In the past ten or fifteen years, the primary goal of education (informing) has not changed, but the method for achieving it has changed a LOT! At first, everyone seemed to be going machine crazy. With the invention of the teaching machine and programmed text, educators thought they'd at last found a way to teach the greatest amount of information in such a way that each child could learn it all. Subject areas were broken down into concepts, which were taught one easy step at a time. A child could now zip ahead in areas that were easy for him and take more time on areas of difficulty. (That's a very simplistic explanation of programming.) Advances in audio-visual media presented information in many new ways. Textbooks were updated, better written and illustrated, and many came with additional raw materials for live classroom demonstrations. Teachers' responsibilities were re-organized and clarified. Traditional barriers were being set aside in all quarters.

But there were still drawbacks. The emphasis was still on input--putting information into children's heads--rather than on output--how the information was interpreted and used. The teaching machine and programmed text still relied heavily on memorizing information and then being tested on how well you've memorized it. Only SOME things can and should be taught this way. Problems with more than one answer, or which depend on feelings or imagination must be approached differently. Teachers had less paperwork to do, but much more work keeping up on what new instructional materials were available and how to use them. Students' attitudes toward school and learning were better, but not as improved as educators hoped. And parents, viewing all the changes for which they had been given no explanation, walked around with worried looks, muttering things about the "good old days..."

Schools Today (Cont'd.) (Or, Specifically, the Oregon Middle School)

With a beautiful new building, a dedicated staff, and the latest books and raw materials, your children are provided with one of the best opportunities for learning in any public (and many private) schools in the state. The primary goal is still the same: to inform, to educate and prepare your children to cope successfully with whatever life they choose for themselves. But that wasn't enough. More important is the emphasis placed on the individual student--your child. His education is personalized, tailored especially for him. Basically, we look at (1) the task to be learned, (2) the learning behaviors of your child, and (3) the teacher's behavior as he presents material. The interaction of these three factors affects not only a child's immediate learning, but his motivation to learn more and to use what he has learned.

While in school, your child also discovers a wide variety of social relationships and responsibilities from his teachers and peers. From these, he learns his role and responsibility and, in turn, his sense of personal worth and identity are reinforced.

In addition, at a more subtle level, his school education teaches attitudes toward school, toward teachers, and (especially) toward himself. If a child feels he is succeeding in learning, his confidence in himself grows; as his confidence grows he can reach out to new challenges. If a child is happy and interested in what he is learning, if he feels his teachers personally CARE about how he does, his attitudes toward learning, school and himself are likely to be positive (which, incidentally, is exactly what recent attitude surveys of Oregon Middle School children indicate).

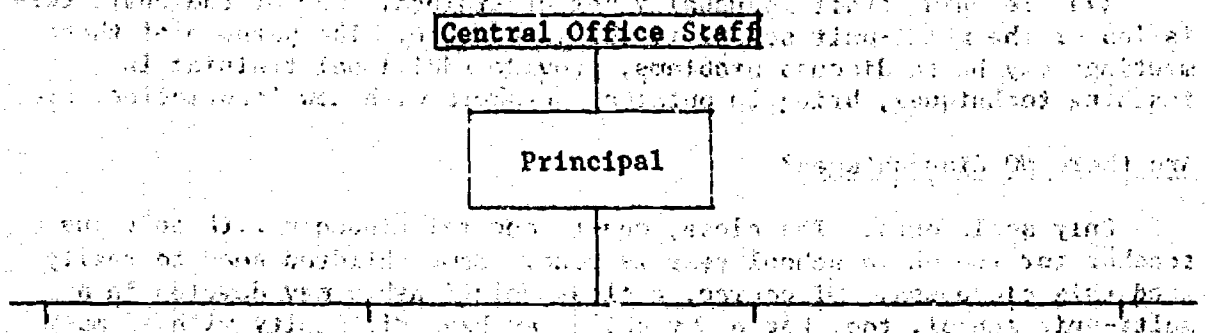
All the changes which have taken place in the Middle School recently have had only one purpose: to refocus the attention of educators and the educational system on YOUR CHILD. Preparing anyone to cope with life today is a tall order. Information is being added at such a phenomenal rate that it is almost impossible to give even a bright child enough facts to handle whatever he comes up against. Ultimately education must shift its emphasis away from the content of learning and toward the process of learning, making all possible sources of information accessible to an individual while sharpening and encouraging interpretation of that information. Only in this way can thinking occur and problems be solved.

MULTI-UNIT ORGANIZATION--IT'S NEW, BUT IS IT BETTER?

In the past, each teacher taught a separate grade; she had her own room and her own group of 25-35 students. Any decisions concerning educational goals and policies were made by Someone Else--someone who probably did not know her or her students. There was very little two-way communication. Time was always a problem because of all the paperwork and records that had to be kept; often there was just not enough time to help a student who didn't understand.

What Is Multi-Unit Organization?

Structure: Very simply, it's a new way of organizing a school. Where a "traditional" school had classrooms, a "multi-unit" school has units. A unit is larger than a classroom, with 75-150 students. (The Oregon Middle School has 4 units, or "pods", roughly divided along age lines.) You will find a diagram of the Middle School organization below.



1 Unit Leader
3 Certified Teachers
1 Intern Teacher
1 Student Teacher (4 days a week)
1 Instructional Aide
130-135 pupils

(All units have the same number and type of staff.)

Staff: Of the unit staff shown on the diagram, the Unit Leader plays the role of communicator/coordinator. She communicates the ideas of her teachers to the principal and vice-versa. The Unit Leader and teaching staff decide together how best to set and reach educational goals. Instructional aides take care of record-keeping, paperwork, run audio-visual equipment, and assist teachers whenever needed.

Supplementary Staff: A well-stocked, easy-to-get-to Learning Center (or Instructional Materials Center) is another characteristic of most multi-unit schools. Instead of each classroom having a few shelves of its own books, the Learning Center Coordinator keeps track of all books, magazines, audio-visual aides, etc., and provides each unit with the materials they need when they need them. (This way, everyone has more of everything!) A staff of "specials"--teachers specializing in art, music, physical education, drama, etc.,--are also key contributors to the education of your child.

But WHY were the changes made?

The changes in organization were made primarily to recognize and develop the potential of each individual child. Under the old system, a child was mainly a member of the class, rather than a separate person. Consequently, much talent and ability was necessarily ignored. The advantages of the new system are obvious:

(1) The communication between teaching staff and administrative staff is greatly improved. There is also more open communication between teachers, meaning more sharing of ideas and experiences and fewer frustrations.

(2) More flexibility in staffing. Teachers have more opportunity to teach what they teach best. And, if a teacher is ill or attending special in-service sessions, a fellow staff member can easily fill in temporarily.

(3) More opportunity to give the individual child personal attention.

(4) With the addition of Instructional Aides, teachers are relieved of much of the paperwork and record-keeping. They can now spend more of their time actually teaching and working with children than before.

(5) Attitudes of both teaching staff and students are more positive.

(6) A unit is generally better adapted to help train new teachers to develop teaching skills.

(7) Teaching staff is usually better trained. One of the characteristics of the multi-unit school is the in-service. The purpose of these meetings may be to discuss problems, provide additional training in teaching techniques, bring in outside speakers with new information, etc.

Are there NO disavantages?

Only small ones. The close, one-to-one relationship with only one teacher for the whole school year is gone. Some children seem to really need this closeness. Of course, a close relationship may develop in a multi-unit school, too, but a shy child may have difficulty with so many other children. On the other hand, there are occasionally conflicts of personality between a teacher and a child; in this case, having several teachers is an advantage. That way, a child is not forced to spend all his time with a teacher he dislikes a lot.

There is also a feeling (primarily for parents, but also for shy children) of "de-personalization"--of being swallowed up by the bigness and the activity. With 135 pupils,a unit teacher rarely knows every child as well as the "traditional" teacher knows her 25. Within the unit, however, there are homerooms of 20-25 children each, and you can bet a homeroom teacher knows her own students as well as any traditional teacher ever did!

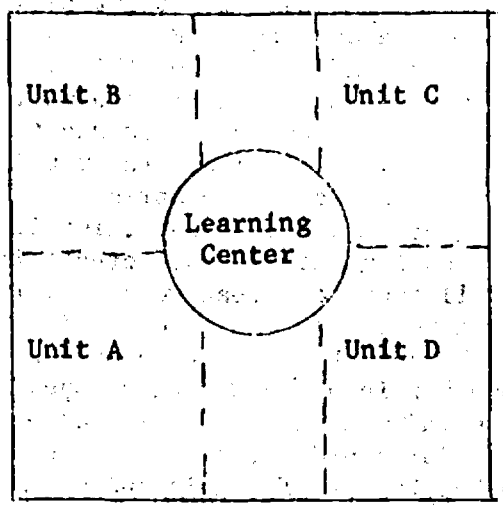
OPEN SPACE

What Is It?

The idea of "open space" (or "open concept") schools is to provide more freedom and flexibility. While multi-unit organization focuses on a more flexible teaching process, open space focuses on the place where this teaching can occur.

What does it look like?

There are no walls in an open concept school. There may be moveable partitions to separate units or areas within units, but no solid brick walls with thick doors--and no shutting out the world outside. In the Oregon Middle School, the Learning Center is located in the center of the 4 units; if you stand in the Learning Center, you can look out into all the units and watch the activities going on in each one. If you've ever visited an open concept school in action, you've probably noticed it is not quiet. The activities of 500 to 600 children make noise. However, the carpeting and sound-absorbing walls and ceiling cut the noise to an overall hum--sort of like getting used to an air conditioner. New students notice the noise at first because it's different, but they usually adapt easily and notice distractions less than in the kind of classroom where you can hear a pin drop.



But WHY open space?

Within each unit (each is about the size of 5 or 6 traditional classrooms), furniture and partitions can be moved to conform to the activities within that unit. If more space is needed for large-scale projects, partitions and furniture are pushed back out of the way. If individual or small-group projects are taking place, a unit can be divided up into smaller sections. So space and things conform to people and processes, and not the other way around.

More important, however, is the feeling, the atmosphere which is created. If students (and teachers) don't feel "locked in" and isolated, they seem to think more freely. A student who feels restless and uncomfortable sitting at a desk for several hours at a stretch (at that age, about 99% of them) may lie on the carpet and work, or go off in a corner by himself if that helps him to think better. There is an almost tangible sense of freedom evident in the day-to-day events. Openness and freedom do not mean lack of direction, however. Some students prefer a bit more flexibility to develop projects in a specific area; others need more guidance and structure. Being allowed more freedom occasionally makes the child responsible for handling that freedom and, consequently, he learns responsibility and self-discipline in amounts he can handle. Not distracting other students, seeing that a project is completed on time, etc., become personally important, not just a bunch of impersonal rules set down by someone else for other people. Open space, open mind.

THE CREATIVITY PROJECT
(Staff Development Project in Creativity)

> "In the early years, every child's imagination should be stimulated. He should be encouraged to explore, manipulate, experiment, question. In school, teachers have the tough job of trying to combine the traditional disciplinary approach with one that encourages spontaneity, independence and freedom."

These are the opening words from the formal proposal to study creative behavior. Two years ago the Oregon Middle School was awarded a financial grant from Title III (part of the U.S. Office of Education) to study the relationship between creativity and learning. We are one of a very small number of schools chosen from this state for such research and, as of this date, this is one of 2 projects from the state of Wisconsin nominated for national attention.

Exciting as this opportunity was, we found right from the start there were problems. First, what IS creativity? Creativity, after all, is a very individualized thing. Child geniuses aside, we believe Every child is creative in his own way, whether he writes plays, designs birdhouses, or discovers a new way to do a social studies project. Products, efforts, ideas--all are the results of the special way YOUR child puts together his own information and experience in order to solve a problem. So creative behavior may exist in many forms, degrees and interest areas.

Having settled what creativity wasn't, we looked for traits common to all types of creative behavior. Most research so far indicates creative people are more flexible in what they do and the way they look at things. By keeping an open mind, they are often able to put things together in new and better ways. Their attitudes, also, are more open, more independent, and more self-confident.

Our approach, then, was to encourage both staff members and students to become more flexible and open. By doing this, the atmosphere of the school would be one where individual creative effort could be recognized and developed.

Why is creativity important?

If a child's mind were a blank piece of paper, and education consisted only of writing facts on that paper, very little would ever Really be learned. It is man's (and children's) imagination, curiosity and individual perspective that makes him (and them) explore, manipulate and question. In other words, the process of learning must be studied as well as the content. The focus on creative aspects of learning has many specific objectives:

(1) Children are encouraged to use their own eyes to look at many sides of a problem, to ask questions and try many solutions.
(2) Teachers are urged to experiment with a wide variety of imaginative teaching approaches and materials. Most are quite adept at recognizing which techniques will work in a given situation. The project also provides saleries for Instructional Aides who take over some of the paperwork and free teachers to spend more time with children.

(3) To create an atmosphere which makes the Middle School a better place for learning. If teachers are more satisfied and students are happier, in general, what is taught is likely to be learned quicker and mean more.

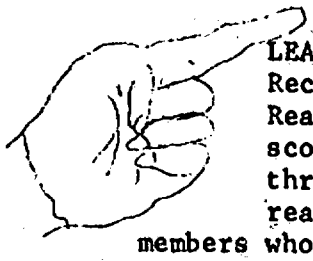
Especially with regard to the children, the creativity project is important. Instead of simply memorizing facts, they learn how the facts came about and how to interpret them. It is an introduction to problem-solving, decision-making and evaluation that each child will be expected to have mastered as an adult.

How is "creativity" or "creative behavior" measured?

Mostly, we ask questions. We ask teachers about their attitudes toward children, teaching, discipline, and classroom procedures. We ask students about teachers, studying, freedom, and classroom procedures. We watch how furniture and wall partitions are moved to see how space is used, and what books or other learning materials are best-liked. Teachers and students rate their day (separately) and the results are compared. Teachers also record new ideas for teaching they have tried, and these are shared with the entire staff. Children are given a wide variety of game-type tests--word games, pictures, constructions--to test the fluency and flexibility of their responses. This goes on throughout the school year and the results are compared to test scores of students in other schools.

What are the results?

So far, the results are very gratifying. Compared with other schools in the area, Oregon Middle School students are happier, more "verbally flexible" and feel they are an important part of "the system." There is approximately 10% less absenteeism than in other schools--in every academic quarter since the project began. Middle School teachers report they are more satisfied in their profession and feel they are more effective than before. In a widely-used attitude inventory, staff members' attitudes were scored "more positive" than 65% of the teachers in the national norm group.



AND, for those of you who are wondering if your kids are LEARNING any better for all this, the answer is a resounding YES! Recent STEP tests (which test children all over Wisconsin in Reading and Math) indicate that O.M.S. students, as a group, scored significantly higher than students in most other schools throughout the state. Much of this is due to the exceptional reading and math programs created in the Middle School by staff members who are good at combining experience and imagination.

In keeping alive a child's curiosity and imagination, his unique talents and perspectives are also preserved. The better to think with.

INDIVIDUALLY GUIDED EDUCATION (IGE)

In the field of education changes usually occur VERY slowly. John Wilkinson once said, "Generals are always fighting the last war and educators are always instructing the last generation." Is all this talk about "preparing our children for the future" just.. TALK? Or can we keep education relevant and valuable by finding a faster way to make necessary changes?

In 1965, the Institute for Development of Educational Activities (IDEA) was founded by the Charles F. Kettering Foundation in order to accelerate the pace of change in education. Individually Guided Education was developed by IDEA as one of the programs to improve the quality of your child's education. It does this by placing the needs, abilities, and personality of the individual child first.

Specifically, how does IGE improve my child's education?

1. First of all, the decisions about how and when materials should be presented are made by the teachers who present it, on the basis of their knowledge of the students in their classes. This means that your child will be taught to read, for example, by teachers who know his abilities and interests. They can set a pace that is challenging, but not intimidating. Children are different and learn differently. By insisting that all children learn the same material at the same rate, you automatically force a fast learner to become bored and a slow learner to become discouraged.

2. Material to be taught is analyzed very carefully in order to see exactly where a child may have difficulty. Just what should a child know or be able to do after learning this material? (A statement about exactly what a child will know or be able to do after learning something is called a "learning objective.") In each subject area, the process of learning is broken down into a series of smaller "steps." Each step may be a learning objective; for each of these learning objectives, a child's knowledge and rate of progress is checked continuously. This way, his teachers discover what areas he knows and those where he may need help.

3. There is greater emphasis on the process of learning. An IGE Program tries to teach children how to learn: how to analyze a problem, how to seek alternatives, how to apply the information, and how to understand why he is doing something the way he is.

4. An IGE program will create more aware, self-directed human beings. When children feel we (adults) respect their individual differences, they can, in turn learn to respect and value the differences of others. When we help our children to set their own learning objectives, choose their own learning activities, rate their own learning achievement, we are really asking them to accept responsibility for their own behavior.

If you've noticed a lot of similarity of purpose throughout all these OPEN DOOR articles, you're right. In fact, this unity is one of the things which make the Oregon Middle School one of the outstanding elementary schools in Wisconsin. No, that's not an exaggeration. The "open concept" design, the multi-unit organization, the special project in creativity, the focus on Individually Guided Education plus the warmth and informality of a small-town atmosphere, the closeness and dedication of the teaching staff, the personal interest and support of the community.. all contribute to the goal of providing the best possible education for your child. Utilizing a child's own individual needs, abilities and feelings in learning will produce not only a better education, but a better, more educated INDIVIDUAL.

FINAL PAGES ARE MISSING