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ABSTRACT

The "Curriculum for Meeting Modern Problems" was tested by the Project Evaluator in 36 Classrooms in 10 communities within the State of Ohio. Two areas of investigation were established. The first area was conceived as follows: Do students who are subjected to the experimental treatment learn to apply their knowledge about behavior and constructive methods of resolving problems in their everyday living? The following conclusions were reached: (a) through cognitive testing, it was concluded that students exposed to the curriculum are able to examine behavior in search of appropriate causation, alternatives, and long and short term consequences; (b) through attitude testing, the conclusion was reached that although the experimental students gained slightly more in self concept attitude, the differences were inconsequential; (c) behavioral testing established that both experimental and control students gained in positive behavior during the study period. The second area of investigation was conceived as follows: Will the experimental treatment affect teachers in such a manner that they move toward a more indirect, student centered value position? The following conclusion was reached: teacher pre- and post-testing established that experimental group teachers gained significantly in student centered attitudes in relationship to control group teachers. (JA)

# STUDENT LEARNING OF PERSONAL BEHAVIOR

# in the

# "MEETING MODERN PROBLEMS" CURRICULUM

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Evaluation Design (Category 2):
Field-testing Phase of the
"Curriculum for Meeting Modern
Problems" (K-3, 4-5, 6-8)

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The "Curriculum for Meeting Modern Problems" has been tested by the Project Evaluator in 36 classrooms in 10 communities within the State of Ohio. The communities and their schools represented a cross-section of American society--urban, rural and suburban. Experimental groups(18) were exposed to the "Modern Problems" curriculum for varying treatment periods--six, nine and twelve weeks. Control groups(18) received social living instruction using normal methods and materials. Teachers were randomly assigned to either a control or an experimental group. Over 1000 students and 34 teachers were included in the study during the period December,1974, to April, 1975. Two overarching areas of investigation were established. The first area was conceived as follows:

A. Do students who are subjected to the experimental treatment "learn to apply their knowledge about behavior and constructive methods for resolving problems in their everyday living?"

This first investigation comprised four interrelated questions:

Evaluation Question #1. Using post testing only, will experimental group students demonstrate a greater knowledge of the causal approach to behavior than do their counterparts in the control groups?

To assess student knowledge of the causal approach to behavior, the Problem Situation Examination (PSE), a series of open-ended situations which elicit student behavioral responses was created. Questions after each situation permitted respondents to search for appropriate causation, probe for alternative solutions and consider the consequences of various solutions. The PSE was administered to a random sample of control and experimental students. A panel of Lakewood, Ohio teachers evaluated each student's responses with the ultimate goal to identify the experimental students utilizing only their responses as data. The results from this testing are shown in Table I.

TABLE 1. RESULTS OF LAKEWOOD TEACHER PANEL'S EVALUATION OF STUDENT RESPONSES TO PROBLEM SITUATION EXAMINATION.

| | N | Correct Responses | Z | P |
|---|---|---|---|---|
| Third grade Responses | 87 | 57 | 2.51 | .01 |
| Fifth grade Responses | 105 | 60 | 2.43 | .01 |
| Seventh grade Responses | 64 | 39 | 1.75 | .05 |

The results of cognitive testing shown in Table 1 indicate that the experimental treatment had sufficient intellectual power to alter student normal verbal responses in such a way as to fulfill the "Curriculum for Meeting Modern Problems" cognitive goals. The fact that this was accomplished in a treatment period consisting of one forty minute class session for a six to twelve week duration yields a hypothesis that greater treatment length would increase the ability of experimental students to examine behavior in search of appropriate causation, alternative solutions and long and short term consequences.

Evaluation Question #2. Using pre and post testing, will experimental group students gain in positive self-concept attitude as compared to their counterparts in the control group?

The Piers-Harris Children's Self Concept Scale was administered to all control and experimental students. In the case of the Piers-Harris statistic a higher score represents more positive attitudes toward self. After scoring the individual tests, the results were subjected to one-way analysis of covariance using group mean post test scores as the experimental variable and the group pre-test scores as the covariate. The summaries for all groups are shown in Table 2.

TABLE 2. MEANS, STANDARD DEVIATIONS AND F-TESTS FOR CONTROL AND EXPERIMENTAL STUDENTS ON PIERS-HARRIS SELF CONCEPT TEST.

| School | Grade Level Group | N. | Pre Mean | Pre S.D. | Post Mean | Post S.D. | F |
|---|---|---|---|---|---|---|---|
| 1 | 7E | 35 | 53.80 | 11.75 | 53.57 | 11.21 | .60 |
| 1 | 7C | 30 | 53.76 | 9.75 | 55.00 | 10.21 | |
| 2 | 5E | 30 | 56.80 | 10.91 | 60.00 | 11.10 | .59 |
| 2 | 5C | 34 | 50.64 | 7.98 | 56.80 | 10.91 | |
| 3 | 3E | 29 | 56.32 | 12.74 | 62.36 | 8.66 | .54 |
| 3 | 3C | 28 | 55.62 | 10.88 | 60.10 | 13.10 | |
| 4 | 7E | 31 | 49.16 | 11.28 | 57.83 | 11.60 | 9.89 * |
| 4 | 7C | 30 | 46.73 | 11.22 | 48.87 | 14.00 | |
| 4 | 5E | 33 | 46.75 | 11.58 | 54.57 | 14.48 | .01 |
| 4 | 5C | 33 | 48.90 | 9.97 | 55.90 | 12.62 | |
| 5 | 3E | 25 | 55.82 | 11.76 | 55.52 | 12.10 | .00 |
| 5 | 3C | 26 | 51.15 | 9.83 | 51.80 | 10.39 | |
| 6 | 7E | 22 | 48.13 | 7.40 | 54.09 | 12.61 | .03 |
| 6 | 7C | 23 | 47.60 | 13.66 | 54.39 | 16.37 | |
| 6 | 5E | 31 | 50.74 | 9.26 | 51.45 | 13.69 | .27 |
| 6 | 5C | 30 | 56.66 | 9.29 | 58.00 | 14.99 | |
| 6 | 3E | 25 | 47.78 | 7.81 | 54.13 | 12.02 | .49 |
| 6 | 3C | 23 | 52.25 | 10.06 | 53.72 | 12.39 | |

* Signficant to .05 level.

TABLE 2. CONTINUED

| School | Grade Level Group | N. | Pre Mean | Pre S.D. | Post Mean | Post S.D. | F |
|---|---|---|---|---|---|---|---|
| 7 | 7E | 26 | 50.19 | 9.86 | 60.19 | 12.56 | 15.89 * |
| 7 | 7C | 34 | 51.50 | 11.83 | 48.55 | 15.18 | |
| 7 | 5E | 24 | 56.95 | 13.32 | 59.45 | 14.05 | .82 |
| 7 | 5C | 24 | 60.50 | 13.38 | 60.41 | 14.89 | |
| 7 | 3E | 26 | 56.30 | 10.70 | 58.69 | 9.01 | 3.80 |
| 7 | 3C | 27 | 55.51 | 9.86 | 54.46 | 10.99 | |
| 8 | 5E | 26 | 51.59 | 10.61 | 54.44 | 13.76 | .02 |
| 8 | 5C | 26 | 53.78 | 11.43 | 56.44 | 15.66 | |
| 8 | 3E | 23 | 45.60 | 8.57 | 52.08 | 11.18 | .17 |
| 8 | 3C | 24 | 51.00 | 11.11 | 53.91 | 14.50 | |
| 9 | 7E | 28 | 45.07 | 10.13 | 45.32 | 14.06 | .01 |
| 9 | 7C | 28 | 48.85 | 10.49 | 50.82 | 13.47 | |
| 10 | 7E | 36 | 49.02 | 10.60 | 54.38 | 11.06 | 1.10 |
| 10 | 7C | 36 | 52.30 | 10.55 | 58.97 | 8.27 | |
| 10 | 5E | 34 | 54.35 | 11.72 | 61.41 | 10.82 | .14 |
| 10 | 5C | 38 | 52.94 | 11.11 | 59.55 | 13.81 | |
| 10 | 7E | 35 | 55.94 | 10.14 | 61.82 | 10.74 | .19 |
| 10 | 7C | 36 | 53.33 | 9.46 | 61.69 | 13.09 | |
| Total experimental groups | | 18 | 51.53 | 11.54 | 55.79 | 12.84 | .12 |
| Total control groups | | 18 | 52.68 | 10.52 | 56.39 | 13.24 | |

* Significant to .05 level.

The results of Piers-Harris attitude testing indicate that both experimental and control group students showed positive changes in self-concept from the beginning to the conclusion of the treatment period. Although the experimental group gained slightly more, the differences are inconsequential. Examining the data from each grade level pair, one can observe that only two pairs showed significant changes, in each case in favor of the experimental group.

Evaluation Question #3. Using pre and post testing and an examination of grades and deportment statistics, will experimental group students demonstrate positive behavioral changes as compared to their counterparts in the control groups?

The Devereux Elementary School Behavior Rating Scale was used as a pre and post test observational scale, to record data on 10 students in each control and experimental class. Both a general classroom behavior profile(T) and a sub-test (SUB) score focusing directly on classroom disturbance were generated. Both the behavior profile (T) and the sub-test (SUB) scores reflect negative teacher perceptions of the student as the number increases in magnitude. Thus, the lower the score, the more positive the teacher perception of the student behavior.

The results of the Devereux observations are displayed in Table 3. The statistical analysis was identical to that used in Table 2.

TABLE 3. MEANS AND F-TESTS FOR CONTROL AND EXPERIMENTAL STUDENTS ON DEVEREUX OBSERVATION SCALE (N=10)

| School | Grade Level | Groups | Devereux T Pre | Devereux T Post | F | Devereux SUB Pre | Devereux SUB Post | F |
|---|---|---|---|---|---|---|---|---|
| 1 | | 7E | 11.51 | 11.89 | 2.38 | 10.72 | 9.00 | .92 |
| 1 | | 7C | 12.12 | 10.26 | | 9.45 | 10.13 | |
| 2 | | 5E | 10.59 | 8.97 | 12.82 * | 9.32 | 7.23 | 4.30 |
| 2 | | 5C | 12.76 | 13.82 | | 13.83 | 12.80 | |
| 3 | | 3E | 10.19 | 9.11 | 2.88 | 9.24 | 8.92 | .89 |
| 3 | | 3C | 8.83 | 9.05 | | 8.12 | 8.75 | |
| 4 | | 7E | 10.15 | 8.61 | .01 | 7.55 | 7.51 | .32 |
| 4 | | 7C | 9.67 | 8.42 | | 6.76 | 6.74 | |
| 4 | | 5E | 11.83 | 11.02 | 1.51 | 8.73 | 8.64 | 11.71 * |
| 4 | | 5C | 5.76 | 5.58 | | 5.69 | 4.92 | |
| 5 | | 3E | 10.86 | 10.64 | 2.16 | 8.48 | 9.87 | 8.10 * |
| 5 | | 3C | 10.87 | 9.58 | | 7.22 | 7.59 | |
| 6 | | 7E | 11.76 | 10.93 | .48 | 10.46 | 10.00 | .49 |
| 6 | | 7C | 10.59 | 10.19 | | 7.50 | 8.00 | |
| 6 | | 5E | 13.61 | 10.59 | 8.40 * | 10.46 | 10.00 | .48 |
| 6 | | 5C | 11.68 | 13.63 | | 7.50 | 8.00 | |
| 6 | | 3E | 8.45 | 7.42 | 1.28 | 7.08 | 6.81 | 2.71 |
| 6 | | 3C | 11.71 | 10.85 | | 10.23 | 10.43 | |

* Significant to .05 level.

TABLE 3. CONTINUED

| School | Grade Level Groups | Devereux T Pre | Devereux T Post | F | Devereux SUB Pre | Devereux SUB Post | F |
|---|---|---|---|---|---|---|---|
| 7 | 7E | 10.02 | 10.13 | .48 | 8.85 | 8.89 | .25 |
| 7 | 7C | 8.26 | 9.04 | | 6.87 | 8.43 | |
| 7 | 5E | 10.02 | 8.00 | .27 | 7.44 | 7.09 | .09 |
| 7 | 5C | 10.37 | 8.56 | | 6.13 | 5.99 | |
| 7 | 3E | 13.11 | 9.73 | 3.44 | 13.06 | 9.39 | 2.64 |
| 7 | 3C | 9.28 | 8.97 | | 6.89 | 7.21 | |
| 8 | 5E | 9.11 | 10.07 | 1.00 | 7.43 | 8.03 | .04 |
| 8 | 5C | 13.12 | 12.96 | | 11.27 | 11.20 | |
| 8 | 3E | 9.05 | 7.97 | .25 | 6.93 | 6.17 | .04 |
| 8 | 3C | 12.16 | 9.21 | | 10.54 | 8.59 | |
| 9 | 7E | 15.15 | 15.34 | 3.59 | 14.05 | 14.73 | 4.08 |
| 9 | 7C | 14.33 | 11.36 | | 13.61 | 10.05 | |
| 10 | 7E | 8.22 | 7.22 | 1.59 | 6.17 | 6.32 | 1.11 |
| 10 | 7C | 8.00 | 7.64 | | 5.22 | 5.96 | |
| 10 | 5E | 5.86 | 5.47 | 3.59 | 6.09 | 5.67 | 3.37 |
| 10 | 5C | 5.59 | 5.61 | | 5.41 | 5.47 | |
| 10 | 3E | 9.24 | 8.24 | 3.46 | 5.46 | 5.56 | 1.91 |
| 10 | 3C | 8.00 | 6.61 | | 5.72 | 5.09 | |
| Total experimental groups N=18 | | 10.47 | 9.52 | .52 | 8.74 | 8.37 | .00 |
| Total control groups N=18 | | 10.16 | 9.49 | | 8.44 | 8.20 | |

* Significant to .05 level.

The results of Devereux Elementary School Rating Scale observations indicate that both experimental and control students were perceived by their teachers to have made positive gains in general behavior during the study period. The same observation may be made in regard to the sub-test score which focused directly on disruptive student behavior.[1] Although the experimental group students showed slightly more positive changes, the differences were inconsequential. Examining the data from the perspective of the paired experimental-control groups, one can observe four significant changes; two favored experimental groups, the other two favored control groups.

Finally, an investigation was made to search for changing patterns after the termination of the testing period. Consequently, Devereux observations were repeated at the end of the school year, eight weeks after the conclusion of the treatment period. This investigation showed no discernible changes in the non-significant relationship reported previously.

In addition to the Devereux observation, pre and post grade and deportment statistics were gathered on all participating students. Due to the widely different evaluation systems at each school and grade level, it was decided to subject the data to a simple test: What patterns of substantial changes occurred within and between groups using grades and deportment statistics as dependent variables? Substantial changes were defined as shifts of at least 5% in either a positive or negative direction. Table 4 displays the results of this investigation.

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[1] This sub-test was composed of items "Classroom Disturbance", "Disrespect-Defiance" and "External Blame".

TABLE 4. GRADE AND DEPORTMENT CHANGES DURING TREATMENT PERIOD.

| | Control Classes | Experimental Classes |
|---|---|---|
| Grades | 9 showed substantial positive changes | 11 showed substantial positive changes |
| | 5 showed substantial negative changes | 4 showed substantial negative changes |
| Deportment | 1 showed substantial positive changes | 3 showed substantial positive changes |
| | 4 showed substantial negative changes | 1 showed substantial negative changes |

The grade and deportment patterns shown in Table 4 indicate that experimental group students slightly improved their relative position in the two areas as compared to their counterparts in the control groups. Such changes are consistent with the "Curriculum for Meeting Modern Problems" goals.

Evaluation Question #4. Do experimental students who are subjected to a nine or twelve week treatment period demonstrate greater treatment effect than do students who receive a six week treatment?

All previously discussed evaluative dimensions -- knowledge, attitude and behavior were analyzed for possible differential effects which might be attributed to treatment length. No evidence could be found to support a hypothesis that a variation from six to twelve weeks has any demonstrable payoff in student performance. Possibly a much longer treatment period would produce a different result.

B. Will the experimental treatment affect teachers in such a manner that they move toward a more indirect, student centered value position?

During the period March 15 - April 1, 1975, control and experimental teachers were post tested with the Minnesota Teachers Attitude Inventory which had been administered earlier as a pre-test. The MTAI is designed to expose teachers' attitudes toward children. The higher the score, the greater the teacher tendency to be student centered, tentative in judgement and flexible in thought. Since the test description matches the teacher qualities suggested by the curriculum project staff, pre and post testing of study teachers using the MTAI provides an important dimension of curriculum effectiveness. Table 5 displays the results from MTAI testing.

TABLE 5. PRE AND POST TEST MEANS, STANDARD DEVIATIONS AND T-TESTS FOR MTAI TEACHER ATTITUDES.

| Control (N=18) | | | | Experimental (N=18) | | | | |
|---|---|---|---|---|---|---|---|---|
| Pre | | Post | | Pre | | Post | | |
| $\bar{X}$ | S.D. | $\bar{X}$ | S.D. | $\bar{X}$ | S.D. | $\bar{X}$ | S.D. | t |
| 29.18 | 33.58 | 20.88 | 33.44 | 41.43 | 25.64 | 47.31 | 27.48 | 2.50* |

* significant to .05 level

The results shown in Table 5 indicate that significant changes in the relationship between control and experimental teachers resulted across the treatment period. There had also been differences on the pre test but these were not significant. The control teachers scores show a regression toward greater reliance on control and authority. Conversely, the experimental teachers scored higher (more student centered). Such results reinforce the conclusion that exposure to the "Curriculum for Meeting Modern Problems" can alter elementary school teacher's attitudes toward a non-directive, student centered philosophy.

## SUMMARY

Two areas of investigation have been reported.

A. Do students who are subjected to the experimental treatment "learn to apply their knowledge about behavior and constructive methods for resolving problems in their everyday living?"

1. Through cognitive testing the conclusion that students exposed to the curriculum are able to examine behavior in search of appropriate causation, alternatives and long and short term consequences was supported.

2. Through attitude testing using the Piers-Harris Children's Self Concept Scale, the conclusion was reached that although the experimental students gained slightly more in self concept attitude, the differences were inconsequential.

3. Behavioral testing using the Devereux Elementary School Behavior Rating Scale established that both experimental and control students gained in positive behavior during the study period. Although the experimental students gained slightly more, the differences were inconsequential. More experimental groups gained in positive grades and deportment than did control groups. Fewer experimental groups showed decreased grades and deportment than did control groups.

4. No differential results could be found which might be attributed to length of treatment.

B. Will the experimental treatment affect teachers in such a manner that they move toward a more indirect, student centered value position?

Teacher pre and post testing using the Minnesota Teacher Attitude Inventory established that experimental group teachers gained significantly in student centered attitudes in relationship to control group teachers during the treatment period.

## CONCLUSIONS

Students in the experimental groups gained in knowledge of the curriculum which altered their verbal responses in contrived behavioral situations to the extent that they could be identified as having been exposed to the experimental curriculum.

Standardized testing of self concept attitude and behavior showed no significant treatment effects attributable to the experimental curriculum after six, nine or twelve weeks. Grades and deportment did seem to be modestly influenced in a positive direction by exposure to the experimental curriculum.

Teachers who taught the experimental curriculum gained significantly in student-centered attitudes in comparison to their counterparts in the control groups.