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ABSTRACT

The effectiveness of the elementary level guidance program, Developing Understanding of Self and Others (DUSO), is assessed. Intended for use by counselors of children ages 5-8, the DUSO program is designed to help children understand social-emotional behavior through listening, inquiry, discussion, and role play. The DUSO Affectivity Device, containing 51 Yes/No items was administered to students in 14 classrooms. Classes were randomly assigned to treatment and nontreatment groups. Results indicated that exposure to DUSO produced desired results among children participating in the program when comparing the experimental and control group means, using the number of children participating as the sample size. The author states, however, that the proper sample size for the study design used is the number of classes, not the number of students, since the classes, not the students, were randomly assigned. Using this correct data analysis method, it was found that the experimental group was not significantly different from the control group in accomplishing DUSO objectives. (Author/DB)

DEVELOPING UNDERSTANDING OF SELF AND OTHERS AND THE APPROPRIATE EXPERIMENTAL GUIDANCE MODEL

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March 21, 1973

Abstract

This study was designed to assess the relative effectiveness of one available guidance program at the elementary level, Developing Understanding of Self and Others (DUSO). The program, published by American Guidance Services, Incorporated, is appropriate for young children, ages 5 through 8, and attempts through listening, inquiry, discussion, puppetry, and role playing to help children better understand social-emotional behavior. A review of the literature produced no appropriate measuring instrument. Thus, a specially prepared device for assessing the affective objectives of the program was constructed and used. The data were analyzed using the frequently followed guidance research model wherein the statistical and experimental unit is confused. These results are then compared with the results using an appropriate research model wherein the statistical and experimental unit approach isomorphism.

Background and Introduction

Educators are becoming more aware of the need to provide programs which facilitate social and emotional development. Although schools have always proclaimed the importance of social, emotional, as well as intellectual development, the curriculum has reflected a disparity between objectives and actual experiences. A program of activities concerned with developing understanding of self and others titled DUSO focuses on social and emotional learnings.

This study was designed to test the effectiveness of the DUSO Guidance Program (Developing Understanding of Self and Others) with selected first and second grade children. This Program, published by American Guidance Services, is aimed at young children, ages 5 through 8, and attempts, primarily through a listening, inquiry, experiential, discussion approach, to help children better understand social-emotional behavior. Based on the assumption that affective components have a significant effect on learning, the DUSO program attempts to improve self concept, and/or the feeling and behavioral side of social-emotional maturity.

Program exercised are structured so that teachers may work with children on varied activities and through flexible scheduling. There is enough material that teachers may use the program on a daily basis throughout a full school year, or the teacher may select activities to fit the needs and interests of the group at the moment. In addition to the manual, the materials include two story books, records or cassettes, posters, puppet activity cards, puppets, puppet props, role playing cards and group discussion cards. There are eight units to the Program, developed around eight themes:

I	Understanding and Accepting Self
II	Understanding Feelings
III	Understanding Others
IV	Understanding Independence
V	Understanding Goals and Pruposeful Behavior
VI	Understanding Mastery, Competence and Resourcefulness
VIII	Understanding Choices and Consequences

For each unit there is an introductory story and a unit song concerning the unit theme. After this introduction, the following set of activities are suggested, as a weekly cycle:

1. A story following by discussion
2. A poster to be discussed
3. A problem situation followed by discussion
4. A role playing activity
5. A puppet activity
6. Several supplementary activities to be used as desired
7. Recommended supplementary reading (stories to be read to the class by the teacher, or read independently by individual pupils).

The author of the DUSO Program developed a rationale for the program model following some of the ideas of Piaget, Dewey, and Long.

> Developing an understanding of self and others is central to the education process. The child is at once a thinking acting and feeling being. His thoughts and actions always involve feelings. He may like some subjects, be excited and stimulated by certain media, dislike doing routine drills or homework, be angry with a certain teacher, or be intensely involved with a project. He is future oriented, goal directed, and can solve problems by role playing or gathering data now for future use. (Dinkmeyer, 1972)

He also suggests that there are certain social-emotional tasks which the child must accomplish as he progresses (matures) (Dinkmeyer, 1970). In this respect the model is fashioned after the theories of Adler, Havighurst, and Combs. Underlying the author's rationale, three themes or assumptions become apparent: (1) learning is experiencing, (2) affective components have a significant effect on attaining cognitive skills, and (3) the teacher is an effective agent in arranging learning experiences for children.

To more fully understand the goals of the program, one can read the objectives found in the role playing descriptions and the puppet activities.

Some of these objectives for Unit I, Understanding and Accepting Self, follow:

To help children to learn to recognize and accept individuality in themselves and others.

To help children accept themselves as they are unique individuals.

To help children accept imperfection in themselves.

To help children to see that people are different.

Procedure

The Randomized Post Test Only Design was selected for the study. Fundamental to this design is the presence of a control group as well as the random assignment of subjects to the experimental and control conditions. At the end of the treatment or no treatment period, both groups are given a test. If one group (E or C) scores significantly different from the other group, this difference can presumably be attributed to the treatment or absence of treatment, since all other factors are assumed to be randomized. The important rival hypotheses of history and maturation are ruled out. That is, although the experiment takes place over some time period, both groups are subjected to the same events of the time (history) and both groups can logically be expected to be influenced equally by experiencing life (maturation) or growing older.

The purpose of the study was to assess the effectiveness of the DUSO Program. The rationale of the author of the program indicates that one would expect children who experience these activities to accomplish certain stated objectives. One might conclude, therefore, that children who do not experience these activities would not accomplish the objectives to the same extent. Since there is a theoretical as well as logical foundation for

the expectation, the statistical hypotheses to be tested is a directional or alternative hypothesis, following Kimmel (1957). Specifically, one would expect the mean of the experimental group to be greater than the mean of the control group. Symbolically, this might be represented as follows:

$$H_1 : \mu_E > \mu_C$$

The sample for this study was drawn from seven available schools in Illinois, where one of the authors had contacts with members of the teaching and/or administrative staff. Only those classrooms volunteered by teachers were used. In each school, the subjects of one volunteered classroom were randomly assigned to the experiment group and the subjects of the other volunteered classroom were randomly assigned to the control group. The experimental subjects in seven classrooms were exposed to the DUSO Program. The control subjects in seven other classrooms were not. Aside from this program, the courses of study for the experimental and control groups were similar.

No attempt was made to vigorously supervise the activities of the teacher. Thus, some teachers used the DUSO materials regularly while others only used them more or less. The DUSO materials were made available to the teachers in January and February. Final testing occurred in May. Thus, the treatment period was approximately 15 weeks.

Upon completion of the DUSO Program of Activities, presentation of which took place over approximately eight weeks during one school year, the DUSO Affectivity Device was administered to all subjects. The DUSO Affectivity Device consists of 51 items to which the child responds "yes" or "no". It was especially designed to assess the objectives stated in the DUSO Program. The initial steps in the development of this instrument have been reported by Nelson and Amedore (1971). Further use of the device with a limited sample

and a report of the initial reliability and validity has been made by Holmes and Flugsrud (1972).

Results Following the Traditional Experimental Guidance Model

Since the items on the DUSO Affectivity Device were written to correspond to the specific objectives of each of the eight groups, the scores are similarly computed and reported separately for each unit. The means for each sub-part and for the total score are reported for the 77 experimental and the 77 control subjects in Table I. For Unit I, the mean of the Experimental group was 5.84, while the mean for the Control group was 5.23. Other figures in the Table can be interpreted similarly.

The mean total score of the Experimental Group was greater than the mean of the Control Group, 38.78 vs 37.01. The critical value for the .05 level of significance (one tailed test) is 1.67. The computed critical value was 1.83. Therefore, we can conclude that the mean of the experimental group is greater than the mean for the control group. Furthermore, on the basis of our design, we might logically take this to mean that the DUSO Program was effective in producing the difference.

TABLE I - POST TEST MEANS: EXPERIMENTAL AND CONTROL SUBJECTS

Unit	$\bar{X}_E$	$\bar{X}_C$
I	5.84	5.23
II	5.86	5.78
III	4.49	4.21
IV	5.03	4.94
V	5.13	5.01
VI	4.92	4.68
VII	2.09	1.95
VIII	4.26	5.22
Total	38.78	37.01

$N_E = 77$ C.R. = 1.83
$N_C = 77$ $\alpha = .05$
d.f. = 152 = crit. value = 1.67

The One Tail Test and the Two Tail Test

The dilemma of whether to use a directional hypothesis and the corresponding one tailed test or a null hypothesis and the two tailed test faces every researcher. Obviously, many do not agree with the conclusions of Kimmel (1957) or Marks (1951). For example, Burke (1954) questions whether the use of the one-tailed test is ever appropriate. Baken (1966) questions the ethics and perhaps the morality of any researcher who uses a one tail test. Almost all agree, of course, that if the results are in the opposite direction one has nothing (whether significant or not)! That is, if the mean in our example for the control group was 38.78 and the mean for the experimental group was 37.01, and if we used a directional hypothesis (one tailed test) as we did, in the direction we did, in our results reported previously, we could only state that the results were not significant in the predicted direction. We could not say the results were significant in the opposite direction from that predicted. Our directional hypothesis and the resulting one tail test obviated this.

If we had used the two tailed test and the .05 level of significance in the reported study, we would fail to reject the null hypothesis; there is no significant difference between the means of the experimental and control groups. In that case, we would have concluded that the treatment (DUSO Program) was ineffective. For interest, a comparison of one tail and two tail tests (directional vs null) of the significant differences between means is reported for all sub-scores and the total score in Table II.

TABLE II - POST TEST MEANS: EXPERIMENTAL AND CONTROL GROUPS (ONE TAIL AND TWO TAIL TESTS

Unit	$\bar{X}_E$	$\bar{X}_C$	CR	Two Tail	One Tail
I	5.84	5.23	2.32	Sign.	Sign.
II	5.86	5.78	.39	NS	NS
III	4.49	4.23	1.97	NS	Sign.
IV	5.13	4.94	1.78	NS	Sign.
V	5.13	5.01	2.14	Sign.	Sign.
VI	4.92	4.68	1.43	NS	NS
VII	2.09	1.95	1.09	NS	NS
VIII	4.26	5.22	2.42	Sign.	Sign.
Total	38.78	37.01	1.83	NS	Sign.

The Appropriate Experimental Guidance Model

Whether the one tail or the two tail test and its corresponding hypothesis should have been used is not the primary error of the design and analysis, however. The major flaw is that the authors have followed the model frequently found in the guidance literature wherein they have confused the experimental and/or statistical unit. For the statistical analysis, the data which are to be considered are the outcomes of independent replications of the experiment. "The experimental units are the smallest divisions of the collection of experimental subject which have been randomly assigned to the different conditions in the experiment ...." (Peckham, 1969). In following the guidance research model, the results reported above were not based on the smallest division randomly assigned to the different conditions in the experiment. The random assignment was made in terms of teachers volunteered classrooms, not in terms of randomly assigned pupils. Since the smallest unit randomly assigned was the classroom, the appropriate unit for analysis is the classroom mean, which is treated

as a raw score. The n for this analysis is the number of classrooms: seven experimental and seven control.

In purposely confusing the experimental and statistical unit in the results reported above, the authors were following a model frequently found in guidance research and perhaps more frequently in curriculum, or methods of instruction research. That is, the random assignment to conditions in the classroom and the teacher or the guidance counselor, rather than the pupil.

In any experiment where differences in counselors or differences in teachers may be a factor, the randomization should be moved back to the counseling group or the classroom. Stated another way, when there is a remote possibility that the treatment across groups may vary due to counselor or teacher ability or personality, the score for analysis is the mean of the group, rather than the scores of the subjects in each group (Rusch, 1969).

The data presented in Table III show the corrected analysis. The mean for the seven experimental groups on Unit I is 5.85 and for the seven control groups is 5.20. Other figures in the table can be interpreted similarly.

TABLE III - POST TEST MEANS: USING THE CLASS AS THE EXPERIMENTAL UNIT (ONE TAIL AND TWO TAIL TESTS)

Unit	$\bar{X}_E$	$\bar{X}_C$	CR	Two Tail	One Tail
I	5.85	5.20	1.60	NS	NS
II	5.88	5.71	.54	NS	NS
III	4.49	4.17	1.57	NS	NS
IV	5.11	4.91	.26	NS	NS
V	5.11	5.02	.40	NS	NS
VI	4.91	4.64	1.50	NS	NS
VII	2.07	1.95	.69	NS	NS
VIII	5.32	5.27	.09	NS	NS
Total	38.48	36.80	1.28	NS	NS

N_E = 7 two tail α = .05 crit. val. 2.18

N_C = 7 one tail α = .05 crit. val. 1.78

d.f. = 12

Each of the means in Table III is the mean of either seven experimental group means or seven control group means. Thus, the individual group means are treated as raw scores, the classrooms are randomized, the experimental unit and statistical unit approach isomorphism, and the components of the experimental conditions approximate the mathematical model employed.

Under the correct data analysis, one concludes that the experimental group was not significantly different from the control group and in this case, whether one used a directional or null hypothesis the conclusion is quite the same.

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