DOCUMENT RESUME

ED 123 473 CE 007 256

AUTHOR Zurhellen, Joan H.
TITLE Strategies to Overcome Discrepancies between Curriculum Objectives and Affect.
PUB DATE Apr 76
NOTE 28p.; Paper presented at the annual meeting of the American Educational Research Association (San Francisco, California, April 19-23, 1976)

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS *Affective Behavior; *Comparative Analysis; *Educational Objectives; Educational Programs; Educational Strategies; Evaluation Methods; Measurement Techniques; Medical Education; *Nurses; *Student Behavior; Student Teacher Relationship; Tables (Data); *Teacher Influence
IDENTIFIERS Congruency Testing

ABSTRACT

Congruency testing of stated curriculum objectives and their observed or measured affective behavior counterparts among current students and recent graduates of five nursing education programs revealed discrepancies ranging from slight to extreme. (The programs were representative of the three major types of nursing education: (1) diploma (hospital connected), (2) associate degree, and (3) baccalaureate.) The discrepancies were examined through content analysis of stated program goals, utilizing written summaries of faculty interviews and four testing instruments (Personal Orientation Inventory, 16PF, a Humanitarianism Scale, and a Rokeach Dogmatism Scale). Comparison of stated curriculum objectives with instructor-supervisor-environmental program components indicated that educational strategies of many instructional/supervisory personnel were a probable source of many of the discrepancies. Altering strategies in a direction more congruent to the affective behavior predicted in the curriculum goals, and/or adopting those strategies recommended by a panel of educational experts, improved the observational/measurement indicators of attained affect and, often, instructor-supervisor's interest in monitoring for congruence. The document concludes with 11 pages of testing result data and a two-page bibliography. (Author/BP)

STRATEGIES TO OVERCOME DISCREPANCIES BETWEEN CURRICULUM OBJECTIVES AND AFFECT

Joan H. Zurhellen
Director
Five School Consortium Project
204 Overton Avenue
Memphis, Tennessee 38105

Paper presented at the Annual Meeting
American Educational Research Association
San Francisco, California, April 19-23, 1976

ABSTRACT

After identification of the commonly shared educational goals of five nursing education programs through content analysis of stated program goals and written summaries of interviews with faculty samples, instruments were identified with which to assess the end products of the programs for attainment of the stated goals. This congruency testing of stated curriculum objectives and some of their measurable affective behavior components among students about to complete the programs revealed discrepancies between objectives and end product affective behaviors.

Comparison of stated curriculum goals with instructor-supervisor-environmental program components (goal structure) indicated that the educational strategies of many instructional/supervisory personnel were a probable source of many of the discrepancies. A pilot program component in one school was designed incorporating strategies recommended by experts as congruent with the stated curriculum goals and more likely to alter the affective behavior patterning of program graduates. Comparison of pilot component students with traditional program students on the same variables previously used to establish incongruities between objectives and product affect showed a significant positive change following introduction of more facilitative educational strategies.

INTRODUCTION

Summative educational program-product evaluation often reveals disparities between the stated goals of a given program and the observable/measurable behaviors of the same program's human products. Formative evaluation results compiled from programs where such gaps are apparent often reveal a lack of congruence between the stated program goals and the instructional practices and processing within the program. Nowhere are such discrepancies more apparent than in many professional schools, and the dissonant results are often disruptive to the professional disciplines, their practice settings, the practitioners and, often, their clients as well.

Johnson and Johnson (1974) have pointed out the powerful impact of goal structures on student behavior and have documented research evidence indicating that the processes and outcomes of learning are largely determined not by the stated goals structure but by the goal structure implemented by educators.

Many educational programs preparing students for the nursing profession project generalized goals which may be summarized in terms of production of professionals who are *independent thinkers, creative professionals, and change agents with the knowledge and skills to bring about needed innovations in the health care system.* Yura (1975) stated that the essence of nursing is the nursing process and that in order to utilize this process, the nurse must possess skills in the intellectual, interpersonal and technical realms.

In her view the intellectual skills comprised problem solving, critical thinking and making nursing judgments. The interpersonal skills, which foster client, significant other, co-worker and collegial relationships, included abilities to communicate and listen, convey interest, compassion, knowledge, information and obtain necessary data in such a way as to underscore the client's individuality and personhood. Technical skills encompassed methods, procedures and manipulations used to produce specific end behaviors in clients. Yura further pointed out that decision making is a part of every component of the nursing process.

Nursing education programs preparing students to write state board examinations for R.N. licensure usually include stated goals positing the development of professionals with skills and competencies such as those which Yura indicated as necessary to utilize and apply the nursing process. Many graduates of these same programs, however, fail to demonstrate application of or competence in some of these skill areas. Often, the main culprit responsible for the disparity is the goal structure implemented by nursing educators.

This exploratory study was undertaken to determine the feasibility of applying scientific research principles, design and analysis to rather nebulous areas involving the assessment of program outcome affect as projected by program objectives and as behaviorally evidenced by the graduates of these same programs, the design of strategies to accomplish projected outcome affect and the evaluation of the effectiveness of such strategies.

The purposes of this study were:

1. to compare the curriculum objectives of given nursing education programs with the product output of the same programs.
2. based on the above comparison, to identify the major discrepancies existing between projection and outcome.
3. to analyze instructor/instructional strategies (goal structure) which may be incongruent with stated program goals.
4. based on input from experts, to identify instructor/instructional strategies (goal structure) most likely to accomplish stated program objectives.
5. to compare products of program components utilizing instructional approaches congruent to stated objectives with products of components in which instructional affect is incongruent with stated objectives.

An entire investigation might have been undertaken for each of the purposes stated above or for various combinations of two or three of them. However, since data from a prior investigation, collected for other purposes, yielded results which could be used to initiate work on purposes one and two above, and since the design and implementation of a small pilot program component which might incorporate the outcomes of purpose four and provide, with outcomes of ongoing nursing education program components, the type of comparison data needed for purpose five, above, the decision was made to incorporate all aspects of the projected undertaking into one unified investigative effort.

BACKGROUND

The goals of most nursing education programs are stated in terms of the skills, prerequisites and competencies which nursing and health care leaders posit as "ideals" for nursing practitioners in real work settings. Zurhellen (1974) pointed out that unfortunately, much formal education is contrived; and educational settings, though often appearing "real" to instructors, equally often appear artificial to students. The disparities between goals stated for the real world and instructor-learner behaviors in contrived educational settings often lead to anxiety, frustration, and dissatisfaction with the learning environment on the part of both learners and instructors. Benne and Bennis (1959), Oleson and Whittaker (1968), Olmstead and Paget (1969) and Kramer (1974), among others, have pointed out the often existing discrepancies between the professional work settings and roles of nurse practitioners and the settings and roles of nursing students and the outcome consequences of the existing divergencies. Zurhellen (1974) has further noted the role changes demanded of nursing faculties if their actions and affect are to become consonant with stated program goals.

Johnson and Johnson (1974) have categorized four possible goal structures which can be implemented in learning situations: competitive, cooperative, individualistic and no structure, and they have theorized that each projects an unconscious curriculum, an implicit value structure subtly taught to the student interacting with the goal structure(s). While categorization of all instructional-curricular affect combinations under four broad headings may produce some oversimplification, there appears to be adequate justification in the literature for such classification. [See, e.g., Lewin (1935), Deutsch (1962), Kelley and Thibaut (1969), etc.] The active goal structure systems may be described as follows, based on work by Deutsch (1949b, 1962)

Cooperative - Positive correlations exist between and among the goal attainments of the individuals involved. There is a close linking together of goals and goal attainment by others as well as the individual in question.

Competitive - Negative correlations or inverse relationships exist between and among the goal attainments of the individuals involved. Goal attainment by a given individual is usually linked to non-attainment by another or others.

Individualistic - No correlation exists between or among goal attainment of individuals. Goal attainment is linked to the quality of a given individual's work. No across-individual comparisons (relationships) exist.

Johnson and Johnson (1974) stated that conscious selection and application of goal structure should depend on outcome objectives because of the interactive and interpersonal and group process effects of the goal structure, thus directly affecting cognitive and affective learning outcomes. Conclusions drawn from the results of research done in the field indicate that optimal combinations of goal structure and learning outcome objectives are possible. Clayton (1964), Clifford (1971) and Julian and Perry (1967) found that objectives requiring simple, repetitive drill situations or situations demanding quantity of work or mechanical learning were best accomplished by competitive structure.

However, problem solving learning and activities--vitally important learning components in nursing education--are much better suited to and likely to be accomplished by cooperative structure. [See Deutsch (1949a), Devries and Edwards (1972), Jones and Vroom (1964), Wodarski et al. (1971).] Crombag (1966), Hammond and Goldman (1961) and Raven and Eachus (1963) demonstrated the efficiency of cooperative structure in increasing group productivity. Smith, Madfen and Sobel (1957) and Yuker (1955) found evidence that cooperative structure enhanced memory, staying power and retrieval of facts presented/discussed in class. Researchers such as Deutsch (1949a), Raven and Eachus (1963), and Crombag (1966) also indicated that cooperative structure results in more positive student attitude toward learning and learning components.

Individualistic structure is widespread in nursing education today, and most initial evaluation results following the implementation of "individualized instruction" are liberal in praise of the cognitive and psychomotor attainments of students involved. Somewhat negative affect, however, is associated with widespread and lengthy preponderant or sole use of individualized instruction, and these negative results seem to become more serious as individualistic structure prevails to the exclusion of all other types of structure. Reported negative affect ranges from student alienation and dissatisfaction with program, learning and/or nursing, in general, to supervisor complaints of egocentricity and self-centeredness of students long exposed to such learning structure.

Overall, there is agreement in the literature that the structure category most likely to accomplish stated nursing education goals is the cooperative model.

Emphasis in the discussion of literature findings has been placed on goal structure categories because the same instructional strategies may be used with various types of goal structure with widely varying outcome-affect results.

Since this was an exploratory study to check the feasibility of certain, methodological approaches and results, it was decided to use an available sample of five nursing education programs to collect the data needed for purposes one, two and three of the investigation.

The available programs comprised representatives of the three major types (levels) of nursing education--Diploma (hospital connected), Associate Degree and Baccalaureate Degree. The sample programs are all located in an urban setting in a large Southeastern city (population in excess of 500,000) which is also the site of one of the largest medical centers in the region.

Purpose One

Data concerning formal curriculum objectives were obtained by content analyzing statements of program and course goals, objectives, purposes, etc. from all five programs. Informal curriculum objectives were identified by means of interviewing deliberately selected faculty, representatives from different program components or divisions within each of the schools. The interviews were open ended with the interviewer probing for the faculty member's concerns and opinions regarding what that faculty member felt were the most important goals/objectives toward which she(he) worked in her(his) classes and clinical supervision. Written briefs of interview responses were content analyzed. After a listing of all discrete objectives, identified from the two content analyses steps above, was compiled, three experienced nursing educators were asked, independently, to group or categorize all similar objectives under single headings. After working independently the three came together as a panel and, at the researcher's request, met jointly, discussed their individual classificatory schemes, reached consensus on the major broad categories and distilled all the objectives under one category heading into a single broad, general goal statement.

Measurable components of these broad goal statements were then identified. Due to time restrictions imposed by the desire to ready information for a pilot program (see purpose four) with a previously established implementation date which was imminent, and to paucity of personnel and monetary resources, it was decided to deliberately select from these measurable components only the ones which could be readily and easily measured by means of available paper and pencil instruments. A random or better deliberate selection of variables to measure could have been achieved if observational techniques had been used to some degree, but such techniques require personnel and time for personnel training and instrument/technique validation which were not available to the researcher because of the strictures, noted above.

Decisions were made to use four well-established paper-pencil instruments to measure variables inferred to be importantly related to various components of the ten broad goal statements.

The instruments designated for use were the:

1. Personal Orientation Inventory (P.O.I.) - a 150 item, forced choice instrument measuring the degree of self-actualization or placement on Maslow's Hierarchy of Basic Human Needs. Author: Dr. Everett Shostrom.

2. 16PF - a 187 item multiple choice, factor analytically developed personality questionnaire measuring sixteen major dimensions of human personality. Authors: Dr. Raymond Cattell and Dr. Herbert Eber.
3. Humanitarianism Scale (H Scale) - a 28 item, Likert-scaled instrument measuring degree of humanitarianism or concern for others.
4. Rokeach Dogmatism Scale - a 50 item, Likert-scaled instrument measuring cognitive structure, i.e. degree of open or closed-mindedness.

The instruments were administered to upper level students. They comprised approximately 20-25% of the student body in each of the sample schools. Comparisons across the schools were made using Analysis of Variance. Comparisons of mean group scores and previously established criterion expectations on the total instruments and on the individual scales of the P.O.I. and the 16 PF were also made. The expectation scores had been arbitrarily set by a panel of five experts, two nursing educators, one nursing service administrator and two educators using the above mentioned nursing education goals as guides. This panel had thoroughly familiarized themselves with the tests in question and the norming population results before undertaking this task.

Purpose Two

Using the results of the comparison of mean group scores on the instrument components with the criterion expectations, as noted in the previous section, the major discrepant affect areas were identified. These discrepancies were ranked from greatest to least by difference scores obtained by using only positive values of the difference between a projected expectation score and its corresponding observed mean score negative values requested over-achievement of goals.

Purpose Three

Limited observation of classroom, seminar, pre and post conferences, clinical practice and one-to-one student-instructor conferences were observed by the researcher. Each observation consisted in part of recording of interactions utilizing an interaction analysis system which provides means of analyzing both teacher and student talk patterns; in part of free-flowing written narrative description of the events transpiring, the climate, etc.; and in part of analytically observing the environment and the human participants, interactions etc. to synthesize an overall climate/interaction/structure impression which was briefly summarized in writing as soon after the end of the observation as practicable.

Again, because of time and personal constraints, the methods applied to data collection for purpose three were far from the ideal. The situations observed were few in number (total observations: 23); the number of faculty observed was small (8); observations were conducted in only three of the sample schools; only one observer was present for each observation; all instructors observed were volunteer subjects. The possible data biases inherent in these situations are obvious.

Since other constraints prohibited further observation and better representative selection of observations, another effort was made to secure representative data, this time through retrospective data. Faculties of all the sample

schools were given the ranked listing of discrepant affect areas (See discussion under Purpose Two, above.) and asked for a written response indicating their analysis of teaching/instructional/faculty interaction patterns, modes or techniques which might account for the discrepancies. Responses were content analyzed, and the major reasons given were compared with indicators identified from observation results.

Purpose Four

A listing of the ten major program goals developed from the content analyses of program/instructor objectives as discussed under Purpose One, above was sent to available samples of nursing educators, faculty of a College of Education and graduate Education students. Total samples, on initial inspection, appeared to provide representation across variables such as age, educational experience, professional experience and traditionalism vs. innovativeness of approach to instruction. Along with the list of objectives went a letter explaining the purpose of the data collection and a request for a brief written summary of the instructional structure, strategies, techniques, or approaches which that subject would recommend, based on his knowledge and expertise in Education, if in the capacity of consultant to a professional school desiring to produce graduates who would fulfill the stated goals.

Responses were content analyzed and a list compiled of the most commonly recurring suggestions ranked according to frequency.

A nursing educator and two professional Educators with expertise in the field of curriculum and instruction utilized the data provided above and the data resulting from the analyses discussed under Purpose Three above to design the pilot educational component mentioned earlier in this paper. During the first year implementation of this pilot component, the researcher monitored its instructional activities to assure execution of the program designed and to assess the congruence of this component's goals and instructional goal structure/affect. At the end of one year, the same paper-pencil instruments used to collect the original data regarding goals/outcomes discrepancies were administered to students in this program component and students in the other similar components of the same nursing education program. Comparisons of the results of the two groups of students were made using t-test and analysis of variance.

RESULTS

Purpose One

Content analysis of the formal and informal objectives of the five sample schools, clustering similar objectives under a single heading and developing a single broad goal statement to encompass the major points made under such heading produced a list of ten broadly stated major goals of nursing education programs:

Upon completion of a major in this department graduates should

1. perform the basic psychomotor skills and behaviors requisite to the practice of their profession.
2. demonstrate ability and competence in data analysis, problem solving and decision-making.
3. exhibit characteristics of continuous learners.
4. manage the professional care of their clients on both individual and group bases in the various settings characteristic of their duties and responsibilities.
5. humanize the professional-client relationship.
6. identify teaching needs of clients, formulate objectives, implement appropriate strategies in teaching clients and evaluate teaching outcomes.
7. apply counseling techniques and role when appropriate to the needs of client(s).
8. utilize collaborative techniques and skills in working with other professionals.
9. demonstrate leadership skills and abilities.
10. serve as role models to other professionals and to para-professionals.

The four paper-pencil instruments used to assess outcome behavior systems, measured a total of thirty variables. Variables measured by each instrument and the broad goal with which that characteristic was judged associated by a panel of three nursing education experts are shown in Table I, page 13. Mean scores, standard deviations and F ratios across the five sample schools on these characteristics, grouped by instruments, are shown in Tables II-VI, pp. 14-18.

As can be seen in Table II, results across schools on the P.O.I. are highly consistent. There are no significant F ratios on any of the characteristics (scales). Time ratios (See Table III) across the five sample schools range from 1:2.1 to 1:3.0, all values lying in the theoretical non-self-actualized range and well below the so-called "normal" range of 1:5.1. The self-actualized time ratio is approximately 1:7.7. Support ratios across the sample schools range from 1:1.7 to 1:1.8. These values are in the upper realms of the non-self actualized range, but definitely below the average 1:2.5 "normal" value. The self-actualized support ratio value is 1:3. [See Shostrom (1972).]

The results obtained from the 16 PF (See Table IV) again show a high degree of consistency across sample schools. On only one Factor (B) is there difference across schools, significant beyond the .05 level. Results across the five sample schools on Humanitarianism and Dogmatism (Tables V and VI) are also consistent with no significant differences evidenced.

The analysis of the sample schools' objectives had indicated a similarity of purpose as expressed in their statements of objectives. The consistency of results across schools on the instruments administered to students in the final level of the same programs to assess achievement of some of those goals also indicated a similarity of level of accomplishment or attainment of the behaviors measured by the four instruments in question.

Since the majority of the behavior/behavior systems measured by the instruments used, were judged by a panel of nursing education experts to

be of importance to nursing practitioners and since it was agreed that attainment of high placement on these behavior/behavior systems was essential to the attainment of the expected goals of nursing education, the same panel arbitrarily determined that expectation outcomes of graduates of their programs should be at least within a score range placing them approximately one-half to one standard deviation unit above the mean of the norming population for the instrument. Utilizing the values of the lower end of that range, a comparison was made between the expected values and the across sample schools' means on the corresponding characteristic. These results are shown in Table VII, p. 19.

Purpose Two

Expected values were reached or surpassed on seven variables. Expected values were not attained on twenty-three variables with difference scores ranging from 0.1 to 3.8. The characteristics where discrepant scores indicated non-attainment, rather than exceeding, of expectations were listed. This list is shown in Table VIII. It should be noted that many of these differences are not significant. However, it had been previously agreed with the panel that all discrepancies in attainment would be viewed.

Based on the objectives judged associated with each of the discrepant characteristics and their percent of achievement/mention re: measured characteristics, the objectives farthest from attainment were numbers 3, 4, 9 and 10. Numbers 2, 6 and 8 were only slightly better in record of achievement. Reasonable attainment of objectives 1, 5 and 7 were indicated.

Purpose Three

Classroom observation results indicated a highly consistent pattern of teacher-dominance and direction. This was true even in seminar, small conference and many one-to-one conferences as well. Discussion sessions, for example, consisted almost entirely of teacher questions, sometimes to class as whole, sometimes to specific students with answer given to teacher by designated student. Declarative input by students was funneled to or through the teacher, and teacher comment or question was usual before additional input was made or recognition given for same. Spontaneity was almost totally lacking. Comments re: its presence are found in only one observational record.

Most information requested/accepted from students appeared to be rote recall, and authority references were often requested. The two times when students seemed to offer (1) or inquire(1) about innovative solutions or clinical applications, they were "put down" by requests for authority references.

Results such as these from classroom observation indicated a lack of the type of learning climate which might generally be associated with achievement of such objectives as 3, 4, 9, 10, 2, 6 or 8.

Response to the faculty questionnaires seeking instructors' opinions re: reasons for discrepant areas was approximately 65%. Several (approximately 10-20% on various items) indicated lack of agreement with discrepant areas identified. None disagreed with lack of accomplishment of objectives

3, 8, 9 or 10. However, objections were raised to evidence of poor accomplishment of objectives 4 and 6, and, to a lesser degree, objective 2.

Although the questionnaire requested faculty opinions regarding teaching/instructional/faculty interaction patterns, modes, strategies or techniques which might be judged to interfere with desired attainment of objectives, some responses listed items beyond that scope, e.g. "faculty overload, poor calibre of present students."

Pertinent items mentioned by at least 10% of the respondents included:

- Lack of audiovisual hardware/software.
- Lack of independent study or learning center facilities.
- Absence of nursing role models in clinical areas.
- Lack of facilities appropriate for small group work (conferences, seminars, etc.).
- Poor/poor choice of clinical practice areas.
- Too many other schools/ students in or vying for same clinical areas.
- Lack of adequate planning/preparation time.

Purpose Four

Responses to the questionnaire sent to nursing educators, graduate Education students and professional Educators are shown in Table IX.

Using the data collected thus far, a group consisting of one experienced nurse educator and two experienced professional educators with expertise in curriculum and instruction, designed a special pilot program component, one year in length for one of the nursing education programs. The design incorporated strategies judged essential to accomplish the ten goals presented elsewhere in this paper. The design called for roughly 50% independent study, 50% group work. Group process and cooperative interactions were stressed. Lecture time was held to a minimum, and discussion, group interaction and discovery learning were maximally stressed. Within definite outcome expectation guidelines for each quarter, which spelled out text coverage, outside readings, skills to be attained, etc., students were given alternative and optional learning experiences and they had control of flexible "due dates", etc. In the latter part of the component, as they become more knowledgeable and experienced, students were made responsible for presenting material to other students and assessing their peer's application of such learning. In the latter portions of this component students also exercised wide latitude for their clinical assignment selections and were charged with equivalent responsibilities.

The faculty for this component worked as learning facilitators. They were readily accessible to students and available as resource personnel when needed, but they attempted to remove themselves as much as possible from "fountain of knowledge" activities. Random monitoring of this program component throughout its first year of implementation indicated 75%-90% success in maintaining classroom climate/affect congruent with the design.

Comparison of students who learned in the component described above with students at the same levels of the traditional nursing education program in the same

school by means of their scores on two of the paper-pencil instruments previously administered across schools indicated that the pilot component group had significantly different scores on many of the characteristics compared. Table X shows the comparison of the two groups on P.O.I. scale scores; 16 PF scores of the two groups are shown in Table XI.

As can be seen from the data in these two tables, students in the pilot group had higher mean scores than did the traditional program students on every variable measured by the P.O.I. Several of the differences are significant beyond the .05 level.

It should be noted that all mean scores of students, both pilot program group and traditional, were equal to or higher than the minimum artibrary expected values on the P.O.I. scales. On the two self-actualizing ratios, only the pilot group on the support ratio met the minimum expected value. The time ratio of the same group approached but did not meet the minimum expectation. On both ratios the pilot students had higher ratio values than did the traditional students.

Results on the 16 PF scales were mixed with the pilot group failing to meet minimum expected values more often than they exceeded these values. Mean values of the pilot group were less than expected values on eleven scales-A, C, E, F, G, H, I, N, O, Q_2 and Q_3. On one of these scales-I- the traditional group exceeded the expected minimum value. On two other scales-G and Q_3-the traditional group approached the expected value. On all other scales except B, the mean score of the traditional group was less than minimum expectations.

On scale B both groups exceeded minimum expectations. The pilot group also exceeded minimum expectations on five of the scales-B, L, M, Q_1 and Q_4. Applying the t-test for independent means to the mean score values for both groups on each scale showed that the two student groups differed significantly at or beyond the .05 level on all scales except B, E, H, Q_1 and Q_2.

DISCUSSION

Content analysis of the stated objectives of nursing education programs and of written summaries of interviews with nursing educators and clustering of the major ideas, thus identified, were useful techniques in identifying common goals of nursing education shared across programs. Informal validation of the ten goals, thus produced, by approximately thirty nurse educators who did not share in their formulation, indicated their acceptability and completeness. Formal validation with pertinent data collection and presentation is in order before utilizing these goal statements in a more rigorous investigation.

While the approach to assessment of goal attainment used in this exploratory study (application of four paper-pencil instruments) proved viable in providing useful information which was repeated in other measures, further use of such assessment techniques to evaluate goal attainment should also make use of identified behaviors, criteria and observational techniques applied over time.

While the instruments used appeared sensitive to changes occurring within the programs in question, i.e. scores on many scales changing positively as educational design incorporated techniques more likely to facilitate the product

affect described in program goals, additional investigative efforts are needed to assure that these instruments are measuring characteristics related to abilities and competencies essential to the delivery of high-quality nursing care.

Future investigations might include a component in which nursing personnel identified as superior/excellent by their supervisors/peers were asked to respond to these instruments or other measuring instruments or to permit application of such observational techniques as mentioned above. The mean scores of these nurses could be compared to the arbitrarily set minimum expectancy scores. If there are significant differences between the two sets of scores, the mean scores of the practicing nurses should be used as the comparison standard for students.

The discriminatory ability of the measuring instruments could be checked by comparing scores of a nursing group such as the above with scores of a group judged fair/barely adequate by their supervisors.

If replication of this study is practicable, it is hoped that time, personnel and funds will permit adequate observation of educational situations. Permission to make random class/seminar/conference observation would also help to assure better representativeness of results. A minimum of two observers' ratings of the same situation is also desirable for cross-validation of observational results.

Faculty questionnaire responses concerning reasons for affect discrepancies appear, from the results obtained in this study to be relatively uninformative and extraneous. This did not prove to be a desirable technique for providing data regarding reasons for discrepancies and this approach will be dropped from replication studies.

Observational monitoring of the pilot program which was designed to facilitate achievement of stated goals indicated successful implementation of a program designed by experts, and measurement results on the P.O.I. and the 16 PF instruments indicated much greater success in accomplishing goals than the mean results from all of the sample schools or than the results of the traditional program students in the same school measured a year earlier.

However, the improvement of the traditional program students, especially on the P.O.I. where their mean scores, though less than those of the pilot group, exceeded expectations on all scales (though not on the self-actualizing ratios) indicated either lack of instrument validity in measuring what was projected to be measured or contamination. The researcher, based on observation and analysis, leans to the latter explanation, positing that the contamination was largely a result of informing faculty of the discrepancies between projected goals and end product measurement when seeking other information. These data plus ready access to information about the pilot program and its techniques seemed to have effects on the instructional practices of certain faculty. Future utilization of these techniques and instruments should be designed to control for these effects.

Finally, questions were raised concerning several scales of the 16 PF. Results on this instrument were erratic as compared to those on the P.O.I. The P.O.I. may be a more appropriate measure of the characteristics suggested by the generalized program objectives. Several nursing educators and Education faculty have indicated agreement to this stance. Additional investigative work needs to be done to identify the pertinent scales of the 16 PF; then, those not appropriate or minimally appropriate may be eliminated.

Overall, the approaches suggested in this study have yielded promising results. With further investigation and the refinements indicated in this discussion, these techniques should enable reliable assessment of components of curriculum affect.

TABLE I

CHARACTERISTICS MEASURED BY PAPER-PENCIL INSTRUMENTS AND THE OUTCOME GOAL WITH WHICH EACH WAS JUDGED TO BE ASSOCIATED

Instrument	Characteristics Measured*	Goals with which Characteristic was Judged Associated
P.O.I.	Self Actualizing values	5
	Existentiality	4, 5, 6
	Feeling Reactivity	9, 10
	Spontaneity	5, 6, 7, 8
	Self Regard	9, 10
	Self Acceptance	3, 5, 7
	Nature of Man, Constructive	4, 5, 7
	Synergy	2, 3, 4, 5, 6
	Acceptance of Aggression	9, 10
	Capacity for Intimate Contact	4, 5, 7, 8, 9, 10
	Time Ratio	2, 3, 4, 9
	Support Ratio	5, 6, 7, 8, 9, 10
16 PF	A (Sizothymia vs. Affectothymia)	4, 8
	B (Low vs. High Intelligence)	1, 2
	C (Low vs. High Ego Strength)	4, 8, 9
	E (Submissiveness vs. Dominance)	9, 10
	F (Desurgency vs. Surgency)	10
	G (Weak vs. Strong Superego Strength)	4, 10
	H (Threctia vs. Parmia)	4, 8, 9
	I (Harria vs. Premsia)	4, 9
	L (Alaxia vs. Protentsion)	2, 4
	M (Praxernia vs. Autia)	2, 4, 6
	N (Artlessness vs. Shrewdness)	8, 9, 10
	O (Adequacy vs. Guilt Proneness)	1, 4, 7, 8, 9, 10
	Q_1 (Conservatism vs. Radicalism)	2, 3
	Q_2 (Group Adherence vs. Self Sufficiency)	4, 6, 9, 10
	Q_3 (Low vs. High Self Sentiment)	4, 9
	Q_4 (Low vs. High Ergic Tension)	8, 9, 10
Humanitarianism Scale	Concern for Others	4, 5, 6, 7
Rokeach Dogmatism Scale	Cognitive Structure	2, 3, 8

*Terms used are those applied by authors of the instrument. Definitions are found in the manuals of each test.

TABLE II

MEANS AND STANDARD DEVIATIONS FOR THE SCORES FOR EACH SAMPLE SCHOOL AND F RATIOS ACROSS SAMPLES ON THE SCALES OF THE PERSONAL ORIENTATION INVENTORY

Characteristic	Statistic	Sample Schools 1	2	3	4	5	F Ratio
Self Actualizing Values	$\bar{X}$	20.03	18.4	19.2	20.2	19.6	
	S.D.	2.5	4.6	4.4	3.1	2.4	.69
Existentiality	$\bar{X}$	16.2	16.4	16.8	17.2	17.9	
	S.D.	4.8	3.4	4.8	3.6	4.1	.48
Feeling Reactivity	$\bar{X}$	14.0	15.1	14.0	14.9	14.0	
	S.D.	2.7	3.5	2.7	2.9	3.2	.49
Spontaneity	$\bar{X}$	11.2	10.9	11.0	10.8	11.7	
	S.D.	3.2	1.7	3.0	2.0	2.5	.96
Self Regard	$\bar{X}$	11.3	12.8	12.0	12.7	13.2	
	S.D.	1.7	2.6	1.9	2.7	3.2	1.23
Self Acceptance	$\bar{X}$	13.9	14.2	14.7	12.8	13.4	
	S.D.	2.9	3.1	4.2	2.7	3.6	1.62
Nature of Man, Constructive	$\bar{X}$	11.1	12.5	11.6	11.5	11.8	
	S.D.	1.2	2.6	1.7	1.4	1.9	.83
Synergy	$\bar{X}$	6.2	6.9	7.6	6.1	6.8	
	S.D.	1.1	1.4	2.8	1.1	1.2	1.3
Acceptance of Aggression	$\bar{X}$	15.0	15.7	15.2	15.0	15.6	
	S.D.	2.9	3.0	2.7	3.0	2.9	.32
Capacity for Intimate Contact	$\bar{X}$	16.4	16.3	17.1	17.9	16.4	
	S.D.	3.0	3.8	3.7	3.9	4.0	.87

TABLE III

TIME AND SUPPORT RATIOS FOR THE FIVE SAMPLE SCHOOLS COMPUTED FROM SCALE RESULTS ON THE PERSONAL ORIENTATION INVENTORY

Ratio	Theoretical Values			Observed Values				
	Self-Actualized	Normal	Non-Self-Actualized	Sample Schools				
				1	2	3	4	5
Time	1:7.7	1:5.1	1:2.9	1:2.1	1:2.8	1:2.7	1:2.2	1:3.0
Support	1:3	1:2.5	1:1.3	1:1.8	1:1.7	1:1.7	1:1.8	1:1.8

TABLE IV

MEANS, STANDARD DEVIATIONS AND STEN SCORES FOR EACH SAMPLE SCHOOL AND THE F RATIO ACROSS SCHOOLS ON THE FACTORS OF THE 16 PERSONALITY FACTORS TEST

Factor	Statistic	Sample Schools 1	2	3	4	5	F Ratio
A	$\bar{X}$	10.2	10.0	9.8	10.9	10.4	
	S.D.	2.3	2.5	2.7	2.6	4.2	
	Sten	4	4	4	5	4	.62
B	$\bar{X}$	8.1	7.3	8.2	9.3	8.4	
	S.D.	2.5	2.0	2.0	1.5	1.4	
	Sten	5	4	5	6	5	3.6*
C	$\bar{X}$	14.2	14.7	15.5	16.6	16.8	
	S.D.	4.0	2.1	2.9	3.7	4.6	
	Sten	5	5	6	6	6	2.1
E	$\bar{X}$	11.0	11.3	10.7	11.6	10.9	
	S.D.	4.0	4.1	2.8	4.7	4.3	
	Sten	5	6	5	6	6	1.1
F	$\bar{X}$	16.7	13.9	14.0	16.3	15.3	
	S.D.	4.2	4.5	3.8	3.6	5.2	
	Sten	6	4	4	6	5	1.6
G	$\bar{X}$	14.7	13.3	14.4	13.2	14.8	
	S.D.	2.9	2.4	3.2	3.7	3.0	
	Sten	7	6	7	6	7	1.4
H	$\bar{X}$	13.1	14.7	14.9	14.8	13.3	
	S.D.	6.2	5.9	4.7	6.7	4.1	
	Sten	5	6	6	6	5	.96
I	$\bar{X}$	14.7	12.9	13.0	13.5	14.6	
	S.D.	2.6	2.2	2.9	2.1	3.6	
	Sten	6	5	5	6	6	1.4
L	$\bar{X}$	6.2	7.7	8.0	7.8	8.2	
	S.D.	2.5	3.9	3.6	2.9	3.2	
	Sten	5	6	6	6	6	.78

TABLE IV (continued)

Factor	Statistic	Sample Schools 1	2	3	4	5	F Ratio
M	$\bar{X}$	11.4	11.9	10.8	12.2	12.3	
	S.D.	3.8	2.6	3.6	3.1	3.2	
	Sten	5	5	5	5	5	1.9
N	$\bar{X}$	8.6	9.5	9.3	9.2	9.4	
	S.D.	2.8	3.1	2.6	2.1	2.7	
	Sten	6	6	6	6	6	.57
O	$\bar{X}$	10.1	11.6	11.2	10.9	11.4	
	S.D.	2.4	3.5	3.1	5.0	3.7	
	Sten	5	6	6	6	6	1.4
Q_1	$\bar{X}$	8.3	7.0	7.1	7.4	8.1	
	S.D.	3.1	2.6	2.9	2.2	3.9	
	Sten	6	5	5	5	6	1.2
Q_2	$\bar{X}$	10.1	10.2	10.2	10.3	10.7	
	S.D.	3.8	4.0	3.9	3.1	3.6	
	Sten	6	6	6	6	6	.19
Q_3	$\bar{X}$	13.9	12.6	12.4	14.4	12.2	
	S.D.	3.5	2.9	2.2	3.1	2.7	
	Sten	7	7	7	7	7	1.8
Q_4	$\bar{X}$	12.2	14.1	13.8	12.6	13.5	
	S.D.	3.8	4.9	5.6	3.6	3.9	
	Sten	5	5	5	5	5	.63

*$p(4,130) < .05, > .01$

TABLE V

MEANS, STANDARD DEVIATIONS AND RANGE OF EACH SAMPLE SCHOOL AND F RATIO ACROSS SCHOOLS ON THE HUMANITARIANISM SCALES SCORES

Statistic	Sample Schools 1	2	3	4	5	F Ratio
$\bar{X}$	157.2	166.2	159.2	158.2	161.2	
S.D.	10.9	18.2	16.1	15.7	10.1	
Range	141-183	116-187	124-186	134-189	144-172	
						1.3

TABLE VI

MEANS, STANDARD DEVIATIONS AND RANGE OF SCORES FROM EACH SAMPLE SCHOOL AND F RATIO AGROSS SCHOOLS ON ROKEACH DOGMATISM SCALE SCORES

Statistic	Sample Schools 1	2	3	4	5	F Ratio
$\bar{X}$	160.9	153.2	161.7	151.2	157.1	
S.D.	25.8	20.9	30.2	29.7	27.3	
Range	119-218	114-189	116-208	93-202	103-206	
						1.1

TABLE VII

GRAND MEAN ACROSS SAMPLE SCHOOLS FROM OBSERVED VALUES; AND ARBITRARY EXPECTED OUTCOME VALUES SET BY A PANEL OF EXPERTS FOR EACH ASSESSED CHARACTERISTIC AND DIFFERENCE SCORES

Instrument	Characteristic	Mean Across Schools	Minimum Arbitrary Expected Value	Difference Score
P.O.I.	Self Actualizing Values	19.5	19.5	0.0
	Existentiality	16.8	18.0	1.20
	Feeling Reactivity	14.3	14.6	0.3
	Spontaneity	11.1	10.2	0.1
	Self Regard	12.4	12.0	-0.4
	Self Acceptance	13.7	15.0	1.30
	Nature of Man, Constructive	11.7	12.0	0.3
	Synergy	6.8	6.5	-0.3
	Acceptance of Aggression	15.2	15.9	0.7
	Capacity for Intimate Contact	16.8	16.5	-0.3
	Time Ratio	1:2.6	1:6.0	*
	Support Ratio	1:1.8	1:3.0	*
16 PF	A	10.3	12.4	2.1
	B	8.2	8.1	-0.1
	C	15.4	18.1	2.7
	E	11.0	14.2	3.2
	F	15.2	16.0	0.8
	G	14.1	14.8	0.7
	H	14.3	16.6	2.3
	I	13.6	13.2	-0.4
	L**	7.6	Below 5.1	2.5
	M**	11.7	Below 11.2	0.5
	N	9.2	11.3	2.1
	O	11.0	12.2	2.2
	Q_1**	7.6	Below 7.0	0.6
	Q_2	10.3	12.0	1.7
	Q_3	13.1	14.6	1.5
	Q_4**	13.2	Below 9.4	3.8
Humanitarianism Scale	H	160.5	160.0	-0.5
Roakeach Dogmatism Scale	Open-Mindedness	158.3	160.0	1.7

*Difference large, but not calculable by method similar to other difference scores.

**Negative differences between expected value means observed are treated as positive since desired scores are below rather than above expected value.

TABLE VIII

CHARACTERISTICS FOR WHICH EXPECTED SCORE VALUES WERE NOT ATTAINED

Instrument	Scale	Difference Score
P.O.I.	Time Ratio	*
	Support Ratio	*
	Existentiality	1.2
	Feeling Reactivity	0.3
	Spontaneity	0.1
	Self Acceptance	1.3
	Nature of Man, Constructive	0.3
	Acceptance of Aggression	0.7
16 PF	A	2.1
	C	2.7
	E	3.2
	F	0.8
	G	0.8
	H	2.3
	L	2.5
	M	0.5
	N	2.1
	O	2.2
	Q_1	0.6
	Q_2	1.7
	Q_3	1.5
	Q_4	3.8
Rokeach	Open-Mindedness	1.7

*Difference large, but not calculable by method similar to other difference scores.

TABLE IX

PRINCIPAL EDUCATIONAL/INSTRUCTIONAL STRATEGIES/TECHNIQUES SUGGESTED TO ACCOMPLISH THE TEN GENERALIZED GOALS OF NURSING EDUCATION PROGRAMS BY NURSING EDUCATORS, PROFESSIONAL EDUCATORS AND GRADUATE EDUCATION STUDENTS

Suggested Activities	Percent of Group Making Response		
	Nurs. Educ.	Prof. Educ.	Grad. Ed. Stud.
Lab practica	86	38	67
Role playing/simulation	43	88	28
Seminar	29	38	22
Group Process	14	50	11
Case Studies	38	-	6
Internships	13	14	17
Interdisciplinary Courses	29	-	6
Human Values Content	29	-	6
Leadership Training	14	-	11
Research	29	-	6
Awareness/sensitivity Training	-	25	6
Individualized Modules	14	50	6
Varied Activity Choices by Student	25	14	6

TABLE X

MEAN SCORES OF PILOT COMPONENT STUDENTS AND TRADITIONAL STUDENTS AT THE SAME PROGRAM LEVEL ON THE SCALES OF THE P.O.I.

Scales	Pilot Students	Traditional Students	Minimum Arbitrary Expected Value
Self Actualizing Values	21.5	20.6	19.5
Existentiality	24.7	20.6	18.0
Feeling Reactivity	17.3	16.4	14.6
Spontaneity	14.0	11.9	10.2
Self Regard	13.4	12.2	12.0
Self Acceptance	18.5	15.4	15.0
Nature of Man, Constructive	13.4	11.9	12.0
Synergy	8.0	7.2	6.5
Acceptance of Aggression	18.8	17.1	15.9
Capacity for Intimate Contact	21.0	18.4	16.5
Ratios			
Time	1:4.9	1:3.2	1:6.0
Support	1:3.2	1:2.2	1:3.0

TABLE XI

MEAN SCORES OF PILOT COMPONENT STUDENTS AND TRADITIONAL STUDENTS AT THE SAME PROGRAM LEVEL ON THE SCALES OF THE 16 PF

Scales	Pilot Students	Traditional Students	Minimum Arbitrary Expected Value
A	5.50	10.25	12.4
B	9.75	9.06	8.1
C	11.17	16.38	18.1
E	9.75	11.00	14.2
F	9.00	14.06	16.0
G	8.00	14.56	14.8
H	10.08	13.06	16.6
I	6.42	13.50	13.2
L	4.58	7.69	Below 5.1
M	8.33	11.50	Below 11.2
N	4.67	9.31	11.3
O	6.08	11.31	12.2
Q_1	6.42	7.13	Below 7.0
Q_2	8.08	10.13	12.0
Q_3	7.92	14.38	14.6
Q_4	7.75	14.00	Below 9.4

BIBLIOGRAPHY

Benne, K. and Bennis, W. Role confusion and conflict within nursing. American Journal of Nursing, 1959, 59, 196-198 and 380-383.

Clayton, D. Competition motivates typewriting students. The Balance Sheet, December, 1964. As referenced in Johnson and Johnson, Instructional goal structure: cooperative, competitive, or individualistic. Review of Educational Research, 1974, 44, 213-240.

Cifford, M.M. Motivational effects of competition and goal setting in reward and non-reward conditions. Journal of Experimental Education, 1971, 39, 218-230.

Crombag, H.F. Cooperation and competition in means-interdependent triads. Journal of Personality and Social Psychology, 1966, 4, 692-695.

Deutsch, M. Cooperation and trust: some theoretical notes. In M.R. Jones, ed. Nebraska Symposium on Motivation. Lincoln: University of Nebraska Press, 1962, 275-320.

Deutsch, M. An experimental study of the effects of cooperation and competition upon group process. Human Relations, 1949, 2, 199-232 (a).

Deutsch, M. A theory of cooperation and competition. Human Relations, 1949, 2, 129-152 (b).

Hammond, L and Goldman, M. Competition and non-competition and its relationship to individual and group productivity. Sociometry, 1961, 24, 46-60.

Johnson, D.W. and Johnson, R.T. Instructional goal structure: cooperative, competitive, or individualistic. Review of Educational Research, 1974, 44, 213-240.

Jones, S.C. and Vroom, V.H. Division of labor and performance under cooperative-competitive conditions. Journal of Abnormal and Social Psychology, 1964, 68, 313-320.

Julian, J.W. and Perry, F.A. Cooperation contrasted with intra-group and inter-group competition. Sociometry, 1967, 30, 79-90.

Kelley, H.H. and Thibaut, J.W. Group problem solving. In G. Lindzey and E. Aronson, eds., The Handbook of Social Psychology. Vol. 4 Reading, Massachusetts: Addison-Wesley Publishing Company, 1969, 1-101.

Kramer, M Nursing in the relative when. In B. Reitt, ed., To Serve the Future Hour. Atlanta: Southern Regional Education Board, 1974.

Lewin, D. A Dynamic Theory of Personality. New York: McGraw-Hill, 1975.

Olesen, C.L. and Whittaker, E.W. The Silent Dialogue. San Francisco: Jossey-Bass, 1968.

Olmstead, A.C. and Paget, M. Some theoretical issues in professional socialization. Journal of Medical Education, 1969, 44, 663-669.

Raven, B.H. and Eachus, H.T. Cooperation and competition in means-interdependent triads. Journal of Abnormal and Social Psychology, 1963, 67, 307-316.

Shostrom, E.L. Manual-Personal Orientation Inventory. San Diego, California: Educational and Industrial Testing Service, 1972.

Smith, A.J., Madden, H.E. and Sobel, R. Productivity and recall in cooperative and competitive discussion groups. Journal of Psychology, 1957, 43, 193-204.

Wodarski, J.S., Hamblin, R.L., Buckholdt, D., and Ferritor, D. Individual consequences versus different shared consequences contingent on the performance of low achieving group members. Journal of Applied Social Psychology, 1973, 3, 276-290.

Yuker, H.E. Group atmosphere and memory. Journal of Abnormal and Social Psychology, 1955, 51, 17-23.

Yura, H. Climate to foster utilization of the nursing process. In Providing a Climate for the Utilization of Nursing Personnel. New York: National League for Nursing, Department of Hospital and Related Institutional Nursing Services, 1975, pp. 11-28.

Zurhellen, J.H. Individualization: a strategy to develop tomorrow's practitioners. Nursing Forum, 1974, 13, 87-93.