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AUTHOR   Southern, Stephen; Smith, Robert L.
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ABSTRACT
        A multimodal career education model entitled BEST
IDEA was field tested as an approach to the problem of retaining
skilled nurses in the work force. Using multimodal assessment and
intervention strategies derived from the multimodal behavior therapy
of Arnold Lazarus, researchers developed an individualized career
development assessment and counseling program for use with student
nurses. To test the program, researchers offered a two-semester-hour
applied psychology course that was designed to serve as an entire
unit of multimodal career education to 17 freshmen entering the
career ladder nursing program at Odessa College in Texas in the
spring of 1981. Addressed during the course were the following
modalities: behavior, emotion, self-talk, thought, interpersonal
relationships, developmental level, economic and societal factors,
and alpha factors (those which affect physiological functioning, such
as drug or alcohol abuse). Nine of the initial 17 students completed
the program, causing the researchers to conclude that many students
changed perceptions about careers in nursing. Participation in the
program was associated with gains in assertiveness, sex role
flexibility, personal adjustment, and career commitment. Based on the
field test, researchers recommended a number of group and individual
activities for use in any career development program. (MN)

Multimodal Career Education

for Nursing Students

Stephen Southern

Temple University

Robert L. Smith
East Texas State University

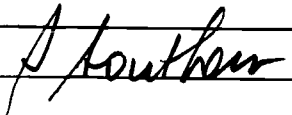Running head: Multimodal Career Education

Abstract

Retaining students in training programs and nurses in the work force is a current critical problem that is related to inadequate career development among nursing students. Multimodal career education (BEST IDEA), an adaptation of Lazarus' (1976) broad-spectrum behavior therapy (BASIC ID), is presented as a tool for career assessment and intervention. A trial of a multimodal career education program was conducted by means of a Developmental Research and Utilization strategy (Thomas, Note 1). The results of the trial and promising applications of the BEST IDEA are described.

Introduction

Multimodal career education is an instructional design model
that is proposed as an approach to alleviating the shortage of nurses
through systematic career development intervention. Multimodal career
assessment and intervention should be implemented early in the educa-
tion of nursing students in order to promote realism in career choice,
readiness for clinical training, commitment to career growth, and
understanding of career as lifelong learning and personal development.
Multimodal career education was implemented in the career ladder cur-
riculum of a community college nursing program as a state-funded, oc-
cupational research project (Southern, Topper, Raley, & Walton, 1981).
The project was guided by a Developmental Research and Utilization
(DRU) strategy, first proposed by Thomas (Note 1), and produced some
promising results. The integrative and comprehensive approach man-
ifested in multimodal career education make the model compatible, with
professional nursing education at undergraduate, graduate, and continu-
ing education levels.

Current health workforce studies (e.g., Center for Research, 1980;
Coordinating Board, 1930; Texas Nursing Association, 1981; U.S. Depart-
ment of Labor, 1980) indicate that demand for skilled nursing personnel
exceeds supply in Texas and most areas of the country. In the hospital
setting, demand for nurses is so critical that "bounties" and induce-
ments are offered through conferences and placement services in order
to recruit staff (Haddad, Note 2). Employment of graduates of foreign
nursing schools and "part-time" nurses, who are often employed by tem-
porary staffing agencies, is an increasingly common response to the
shortage.

Although sufficiently large numbers of nurses may be graduated, major factors in the imbalance between supply and demand are the rapid turnover and dramatic attrition rates among skilled nurses (LaRochelle, Note 3). Some nursing students leave training programs due to inaccurate assumptions regarding the clinical side of nursing (Adams, Note 4). For example, individuals may enter nursing based upon sincere desires to help people; however, communicating with terminally ill patients and their families, working demanding shifts, and treating patients with bleeding wounds, present potentially aversive realities for unprepared students. "Reality shock" in the neophyte nurse is also manifested in the incongruency of ideals and roles, taught in school, and the values and expectations, manifested in the work setting (Schmalenberg & Kramer, 1979). Path to Biculturalism (Kramer & Schmalenberg, 1977) seminars have proven valuable in addressing the retention problem by reducing nurse-organization conflict, and enhancing individual coping and self-esteem.

Other factors in the attrition of nursing students and new graduates are deficiencies in interpersonal and decision-making skills. Most nursing education is oriented toward the development of technical and administrative competencies. Some educators assume that nursing students will develop human relations and career decision-making skills when they enter the work setting, while some employers assume that graduates will present the skills upon completion of technical training (Southern, Topper, Raley, & Walton, 1981). Yet, deficits in assertiveness, time and stress management, applied psychology, communication, and change agent skills, are often associated with job dissatisfaction and abandonment of career goals (Davis, 1977; Grissum & Spengler, 1976; Herman,

1977; Holt, 1977). Acceptance of the traditional roles of women and failure to develop androgynous behaviors can lead to unsatisfactory re- lationships with supervisors, physicians, allied health co-workers, and hospital administrators (Herman, 1977). Female nurses may also act upon assumptions--based on sex bias and sex role stereotyping--which restrict their career development and impose obstacles to career commitment (Hall, 1977; Holt, 1977; Hutchens & Colburn, 1979).

The problem of retaining nurses in the workforce is a function of personal and environmental factors which vary among individuals, train- ing programs, and work settings. Career education, since its inception, has taken an appropriate multifaceted perspective, which holds promise for solving the nurse shortage. Career education--a process-oriented, "learning how to learn" approach to lifelong development (Bailey, 1977) --has emphasized systematic learning experiences that link the interests and abilities of the individual student with the demands and trends in the world of work (Herr & Kramer, 1976). By focusing upon personal and environmental factors education is an individuation process that also meets the needs of the community. In nursing, career education programs should focus upon examining personal assumptions regarding clinical training, professionalism, and advancement, as well as, investigating environmental characteristics of hospitals, work settings, and health care service delivery teams.

In recent years, counseling and therapy have focused more upon the person interacting with various natural environments. The cognitive- learning trend in psychotherapy (Mahoney, 1977) is one example of the concern for integrating personal and environmental factors in a treat-

ment perspective. Herr (1982) in a survey of comprehensive career guidance in the future, noted that interventions in career behavior should address the multidimensional and cognitive restructuring perspectives extant in the works of Lazarus (1976), Mahoney (1977), Meichenbaum (1977), and others. Multimodal career education for nursing students was conceived within such a framework, building upon the interactional perspective and broad spectrum of the "multimodal behavior therapy" of Arnold Lazarus.

Multimodal Behavior Therapy

Multimodal behavior therapy (Lazarus, 1973, 1976) is guided by the acronym, "BASIC ID." Seven areas of human functioning, or modalities, are designated by "BASIC ID:" Behavior, Affect, Sensation, Imagery, Cognition, Interpersonal Relations, and Drugs. The "Drugs" modality was later modified to include a variety of physical factors which seriously affect functioning--e.g., diet and exercise (Gerler, 1979; Lazarus, 1976). Two basic tenets of multimodal behavior therapy suggested its potential value as a model for career counseling.

The major appeal of the BASIC ID for career counseling is its comprehensive focus as an assessment device. The model requires the counselor to examine seven major modalities in determining strengths and problems of clients. The second tenet of the multimodal approach is an injunction not to "muddle" or aimlessly concentrate upon only one facet of human behavior. Rather, the counselor should address concerns in as many modalities as possible, thus increasing the likelihood of maintenance and generalization of treatment gains (Lazarus, 1976).

Keat (1978) referred to the "multimodal evolution" in counseling and guidance. According to Keat (1978, p. 12), the BASIC ID represents a ".

". . .new way of conducting effective counseling. . .by first identify-
ing problems and then utilizing effective intervention strategies in
order to ameliorate the client's condition." Keat's adaptation of the
multimodal approach is specifically directed at elementary school guidance
and counseling activities. The technical eclecticism embraced by the
"multimodal evolution" is concerned with efficient and effective prac-
tice at all levels through the use of the BASIC ID, or a related heuris-
tic device, to guide assessment and intervention.

Smith and Southern (1979) adapted the BASIC ID to fit the needs of
career counseling. Their multimodal career counseling model represented
an application of Lazarus' (1976) assessment scheme within a systematic
intervention strategy. Multimodal career counseling involves the fol-
lowing stages: (1) establishing the relationship; (2) screening the
modalities (multimodal assessment); (3) intervening with specific, tar-
geted modalities; (4) assigning homework and "tryout" experiences (sy-
stematic behavioral assignments and self-management training); and (5)
following-up effects of counseling. The follow-up is a major stage be-
cause post-treatment multimodal assessment may indicate needs for "re-
cycling" through earlier stages or novel problem areas.

Another adaptation of the BASIC ID directly addressed concerns in
career education. Gerler's (1977) exciting approach integrated aspects
of career counseling, behavior therapy, psychological education, and
career development. The underlying concern of the approach is the de-
sign of career education programs by addressing each of the BASIC ID
modalities.

These programs should deal with" (a) career-related behaviors
such as interviewing for jobs and information seeking, (b) the

role of affect in decision making, (c) the painful and pleasur-
able sensations associated with work, (d) the role of mental
imagery in vocational development, including the part imagery
plays in one's ability to relax during vocational crises, (e)
the importance of cognition in vocational development, in-
cluding the attitudes, values, and beliefs that affect career
decision making, (f) the effect of interpersonal relations on
an individual's ability to find and maintain employment, and
(g) the effect of alcohol and other drugs on career develop-
ment (Gerler, 1977, p. 239).

According to this approach, various training and learning experiences--
drawn primarily from existing resources--would be incorporated into
career education programs in order to address each of the seven modal-
ities. While Gerler's (1977) method is comprehensive, it is not
necessarily "systematic" in the sense that individual career develop-
ment concerns are addressed according to unique priorities.

The BEST IDEA in Career Education

The "BEST IDEA" acronym refers to an expansion of the multimodal
career education approach to insure that programs address individual
career development needs. Although the labels of the areas have been
modified, the BEST IDEA incorporates Lazarus' seven modalities, as well
as other factors, within its boundary. The modalities are conceived as
primary factors, environmental setting events and referent conditions,
and secondary factors, or individual responses. Primary factors must
receive initial attention in individualized career development activities
because these factors influence the frequencies and strengths of secondary

variables. Secondary factors must be considered when the potential con-
founding of the setting events and referent conditions has been eliminated.
Work with primary factors may be effective enough to reduce or suppress
individual career problems expressed at the secondary level of assessment.
Emphasis upon the primary factors is also cost effective because career
development activities can be conducted in groups. The factors in the
BEST IDEA are presented in Table 1.

Insert Table 1 about here

The correspondence between Lazarus' (1976) model and multimodal
career education (i.e., the BEST IDEA) is great. "Behavior" and "Inter-
personal Relationships" factors are the same in both approaches. The
"Emotion" factors represent a combination of "Affect" and "Sensation"
from multimodal behavior therapy. "Self-Talk" is a delimitation of
Lazarus' "Cognition," while "Thought" stresses the so-called "mental"
aspects of the "Imagery" modality. Collectively, "Affect," "Self-Talk,"
and "Thought" constitute a class of covert behaviors. "Behavior" repre-
sents the overt responses or operants.

The primary factors within multimodal career education account for
the extensive influences of situations upon individual overt and covert
behavior. Inclusion of primary factors in the BEST IDEA renders the
model "complete" with respect to conditioning theory and somewhat more
resistant to the criticisms directed at multimodal behavior therapy
(e.g., Wilkins & Thorpe, 1978). "Developmental Level" and "Alpha Factors"
are setting events in that such influences as learning disability (develop-
mental level) and alcoholism (alpha factor) establish the limits of the

secondary factors and affect the contingencies which maintain or sup-
press overt and covert behaviors. "Developmental Level" and "Economic
and Societal Factors" have no parallels in multimodal behavior therapy.

Developmental Research and Utilization

One strength of the BEST IDEA is its scope as an assessment tool.
However, the multimodal approach is not simply a framework for organiz-
ing case notes, a claim made by Wachowiak (1978). Rather, multimodal
career education incorporates assessment rules that direct career develop-
ment activities in a stepwise fashion (Southern, Topper, Raley, & Walton,
1981). Generally, the rules include assessment of primary factors, then
secondary factors, beginning with the least complex, most objectively
measured modality, and progressing through the more difficulty, time-
consuming modalities to measure. Initial work in assessing the factors
involved a brief questionnaire or a structured interview protocol (Smith
& Southern, 1979; Southern & Smith, 1982). Using the Developmental Re-
search & Utilization model, an assessment system was created for use
with nursing students. The system included a Career Development Ques-
tionnaire (CDQ), suggested by Lazarus' Life History Questionnaire, and
some supporting psychometric instruments: Vocational Preference Inven-
tory, Rathus Assertiveness Scale, Bem Sex Role Inventory, Sixteen Person-
ality Factor Test, Attitudes Toward Women Scale, Work and Family Orient-
ation Scale, and a Nursing Self-Talk Log, a behavioral assessment. Uses
of the assessment system in program design and outcome evaluation of a
trial multimodal career education curriculum are described in a final
project report available from the Texas Education Agency[1] (Southern
et al., 1981).

The Developmental Research & Utilization model proved to be a use-
ful guide to curriculum development, as well. The model emerged from
the planned change and educational innovation work of Guba and Clark
(1965). Thomas (Note 1) created the model for the purpose of innovat-
ing social technology for large system change efforts. The nature and
logic of the model make it quite appropriate for use in remediating the
nurse shortage problem, which is a function of a complex social system.
Developmental Research and Utilization also complemented the systems
approach to occupational curriculum development, described by Bailey
and Stadt (1973). The model is described in Table 2.

Insert Table 2 about here

Activities within the Analysis Phase of Developmental Research in-
cluded problem specification, consultation with guidance and assessment
specialists, collaboration with an advisory panel (composed of profes-
sional nurses who possessed expertise in the areas of nursing education
and nurse employment), and identification of career education as a vi-
able approach to the shortage. During the Development Phase, advisory
panel members and consultants guided the selection of relevant litera-
ture within the nursing, curriculum development, assessment, career
education, and personnel and guidance domains. Operations within this
critical phase included innovation and production of the multimodal
career assessment package, construction of a course outline and a train-
ing plan within which to conduct trial uses of career development activ-
ities, and development of some individual and group activities that seemed

to address the needs identified by the consulting specialists and by program review and visitation. A formal statement of the problem, with recommendations for remediating the nurse shortage and designing curricula, was realized in the completion of a position paper, which was based upon material and commentary provided by advisory committee (see Southern, Note 5). The development operations enabled pilot implementation of the assessment system and the multimodal career development activities.

During the Fall 1980 semester at Odessa College (Texas), data were gathered through trial use of the Career Development Questionnaire and supporting instruments in academic advisement and an applied psychology course called "Personal Development for Nursing Students." Individual and group career development activities were selected according to the identified needs and pilot tested within the aforementioned coures. The assessment procedures and activities that produced the best results were then incorporated into an instructional resource guide, "Multimodal Career Education for Nursing Students," by means of a formative evaluation strategy (Southern et al., 1981). The resource guide directed a quasi-experimental trial of the multimodal career education curriculum.

The two-semester hour applied psychology course was adapted to offer an entire unit of multimodal career education to seventeen freshman students entering the career ladder nursing program in the Spring 1981. The assessments and activities are described in Table 3.

Insert Table 3 about here

In Table 3, the instructional components, numbers of sessions (from the fifteen-week semester), goals, and modalities addressed by the activities, are depicted. Since three class meetings were used to collect data,

twelve two-hour meetings were actually devoted to BEST IDEA activities. Most of the components were presented to the entire class, due to the shared concerns and needs of the group; however, some activities were conducted in smaller homogeneous groups or as individual exercises within the class. Most individual interventions were offered as homework assignments.

Due to the small sample size of course completers (nine of the initial seventeen students), great variability in some scores, other confounding variables, and inherent weaknesses of the evaluative design (see Southern et al., 1981), the results of the quasi-experimental trial must be interpreted cautiously. The high attrition rate was interpreted as an indicator that some students changed perceptions about careers in nursing because they withdrew from the required course, which was implemented with the same demands as in previous semesters. Although the attrition cannot be attributed to exposure to the new personal and environmental information, which constituted the multimodal career education, data gathered at pre-treatment assessment suggested some differences between attrition group members and program completers. Persons in the attrition group scored higher on the Conventional Scale and lower on the Intellectual Scale of the Vocational Preference Inventory than persons who completed the course. Attrition group members also scored lower on the Rathus Assertiveness Scale, a measure of assertive and action oriented behavior. The average age of course completers was 28.75 (Range-20-44), while the mean for the attrition group was 24.00 (Range-20-30). Two of the students were Mexican-American (both completing the course) and two were males (both withdrew from the course by the end of the semester).

Intensive data analyses by individual students are contained in the final report (Southern et al., 1981).

During the trial, there was movement toward the nursing occupational code (SA/I) on the Vocational Preference Inventory (VPI). In addition, increases in Masculinity and Status Scale scores and decreases in some high Infrequency and Acquiescence Scale scores indicated greater personal and vocational adjustment after exposure to multimodal career education. Program completers demonstrated gains in assertiveness as measured by the Rathus Assertiveness Scale and Factor E of the Sixteen Personality Factor Test (16PF). Changes in scores on the Bem Sex-Role Inventory confirmed shifts toward greater action-orientation and sex role flexibility. Gains in Attitudes Toward Women Scale scores indicated readiness to explore nontraditional roles and values. On the Work and Family Orientation questionnaire, increases in Mastery and decreases in Personal Unconcern scores showed heightened career commitment and diminished "fear of success" respectively. Unexpected decreases in Work and Competitiveness reflected less interest in hard work and competition among some of the nursing students. Changes in scores on the 16PF produced mixed results. There were beneficial shifts toward greater assertiveness (Factor E), enthusiasm (Factor F), astute behavior (Factor N), and self-assurance (Factor O). There was a dramatic gain in self-sufficiency (Factor Q2), but this result must be qualified in terms of some observed tendencies toward expediency (Factor G) and radicalism (Factor Q1). Data gathered by means of Nursing Self-Talk Logs reflected movement toward commitment to nursing as a career. Over the course of the trial, frequencies of "self-talk away from nursing" consistently decreased.

The results from the trial suggested that multimodal career education can produce good outcomes among nursing students. Gains in assertiveness, sex role flexibility, personal adjustment, and career commitment, are desirable among nursing students and recent graduates, according to the literature on nursing job satisfaction and career development. The preliminary evaluation of the "Multimodal Career Education for Nursing Students" curriculum indicated that the BEST IDEA has sufficient merit to warrant additional (more rigorous) investigation.

In terms of the DRU model, the project progressed to the Evaluation Phase of Developmental Research. Data secured from pilot and trial implementations have suggested directions for research and program evaluations. A proposal for a larger-scale, funded research project is being pursued. Given the promising early results and the broad utility of multimodal career education, Utilization Phase activities were initiated. Several reports and articles (Southern, Note 5; Southern et al., 1981; Southern & Smith, 1982) and a professional paper at the 1981 APGA convention (Southern, Note 6) were offered to facilitate diffusion of the BEST IDEA. Multimodal career education has not been adopted or institutionalized to date.

Multimodal Interventions

The BEST IDEA suggests a number of individual activities and group exercises that could contribute to any career development program. Interventions designed to address primary factors require timely implementation and significant involvement of resource persons. When an alpha factor, such as alcoholism or substance abuse, is identified as an impediment to career development, the individual should be referred immediately

to a professional helper. Frequently, in business and industry, treatment for substance abuse presents the interface between career, health, and safety components of the Human Resource Development program. Individual treatments for significant illness and psychopathology, insomnia, and stress-related lifestyle disorders are examples of other alpha interventions.

Individual needs associated with Developmental Level should also receive immediate attention. Students with serious developmental problems, such as learning disabilities or impoverished educational background, need not be referred exclusively to remedial programs. Rather, multimodal career education activities can be adapted so that they are accessible to all. This modality specifically addresses the concerns of handicapped and special needs populations by removing barriers to career development and building upon individual strengths. Developmental Level interventions often include modification of instructional resource materials to deal with cognitive organization and age-appropriate behavior.

Interventions that are matched with Economic and Societal Factors are less concerned with altering the stimulus properties of other career development activities (e.g., modifying resource materials) and more concerned with providing psychological education and career information about the world of work. Socioeconomic influences upon career choice, effects of various environmental motivations (money, prestiage, etc.), interactions of labor market demand and supply of workers, and ethnic/cultural pride can be presented in group or individual sessions.

Interventions with Interpersonal Relations are among the activities most easily managed by the instructor. These interventions concentrate

upon structured group experiences, social skills training (Bellack & Her-
sen, 1979), and assertiveness training (Lange & Jakubowski, 1976). The
goals of activities that typically involve organized groups of students
are increasing collaborative conflict resolution, human relations and
communication skills, and effective problem-solving. Many of the activi-
ties address individual needs to overcome anxiety and self-preoccupation,
fear of social situations, lack of assertiveness, and performance deficits.
Social skills training and behavioral counseling interventions focus upon
building interpersonal behaviors for a variety of settings and situations,
including speaking over the telephone, asking questions in class, and
addressing an employer regarding a grievance. The BEST IDEA for nursing
students emphasized appropriate and responsible assertion within the com-
plex social system of the hospital.

Secondary interventions, by their very nature, are very individualized,
reflecting the combined influences of the primary factors for the unique
person. Behavioral interventions are the most concrete and immediate
since they attempt to modify the overt surfeits and deficits, which inter-
fere with the individual's career development. Behavioral counseling
(e.g., Krumboltz & Thoresen, 1976) presents the major means for imple-
menting behavior change. In order to program for generalization and
maintenance of behavior change, behavioral self-management (Thoresen &
Mahoney, 1974; Watson & Tharp, 1977) and systematic behavioral assign-
ment (Shelton & Ackerman, 1976) should be applied whenever feasible.

Interventions with Self-Talk can be as rigorous as activities
concerned with modifying overt behaviors. Self-Talk interventions
include rational restructuring (Goldfried & Davison, 1976), self-instruc-

tion training (Meichenbaum, 1977), problem-solving training (D'Zurilla & Goldfried, 1971), and stress inoculation training (Meichenbaum, 1973). The techniques are concerned with the modification of internal state-ments--also called "attitudes," "evaluative beliefs," and "values"--which may be particularly problematic for women in American society due to years of sex bias and sex role stereotyping.

If the images and daydreams that constitute the Thought factor have been specified clearly, then effective interventions are possible. Vis-uomotor behavioral rehearsal (Suinn, 1975) and guided imagery (Crabbs, 1979; Kelly, 1974) are two important strategies. Interventions with Emotion usually will not be learner-or instructor-managed, at least initially. Skilled mental health practitioners should conduct the treat-ment procedures required to ameliorate emotional behaviors, including systematic desensitization (Wolpe, 1973) and anxiety management training (Suinn, 1977).

<div align="center">Summary</div>

Multimodal career education, the BEST IDEA, was proposed as an ap-proach to the problem of retaining skilled nurses in the workforce. Multimodal assessment and intervention strategies were derived from the multimodal behavior therapy of Arnold Lazarus (1973, 1976) and applica-tions of his BASIC ID in career counseling (Smith & Southern, 1979) and career education (Gerler, 1977). Multimodal career education for nurs-ing students was implemented as an applied occupational research project (Southern et al., 1981) guided by a comprehensive Developmental Research and Utilization (Thomas, Note 1) procedure. The results of a trial of the BEST IDEA suggested applications of the approach with nursing stu-dents, as well as, other individuals who present complex career develop-ment needs.

Footnote

[1]The project described in this article was funded by Texas Education Agency Research Grant #11230051. The final report, <u>Multimodal Career Education for Nursing Students</u>, can be ordered from the agency at the following address: Research Coordinating Unit, Texas Education Agency, 201 East 11th, Austin, Texas 78701.

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Table 1

"BEST IDEA" in Career Education

Acronym	Factor	Description
B	Behavior	Observable actions or responses
E	Emotion	Covert behaviors or physiological arousal
S	Self-Talk	Internal speech
T	Thought	Images or fantasies
I	Interpersonal Relationships	Interactions with one or more persons
D	Developmental Level	Age-appropriate & special learning needs
E	Economic & Societal Factors	Cultural or socio-economic influences
A	Alpha Factors	Significant physiological settings factors such as drugs

Table 2

Developmental Research and Utilization Model

Developmental Research Phase		Concerns		Operations	Activities	General Curriculum Phase (Bailey & Stadt, 1975)
I. Analysis	A.	Problematic Human Condition	1.	Problem Statement	Problem analysis and identification "state of the art" review	Selection of a curricular language, formation of goals and objectives
	B.	Basic Information Source	2.	Information Selection	Selection of most relevant source, such as basic or applied research, scientific technology, practice experience	
II. Development	C.	Relevant Data	3.	Information Gathering and Assessment	Literature review, site visits, consultation	Preparation of instructional products
	D.	Product Design	4.	Product Innovation	Novel assembly, novel application, invention, selection of curricular language	
	E.	New Product	5.	Product Realization	Construction of prototype, written statement of practice procedure	
III. Evaluation	F.	Trial and Field Implementation	6.	Trial Use	Pilot implementation, demonstration project, evaluation study	Experimental tryout, evaluation and quality control
			7.	Data Collection	Collection of outcome data by means of field experimentation, field study, evaluative research	(Continued)

Table 2 (Continued)
Developmental Research and Utilization Model

Developmental Research Phase	Concerns	Operations	Activities	General Curriculm Phase (Baily & Stadt, 1975)
	G. Outcomes of Use	8. Product Evaluation	Research evaluation, program evaluation, cost-benefit analysis	
IV. Diffusion	H. Diffusion Media	9. Diffusion Media Preparation	Preparation of articles, books, and training media	Diffusion
		10. Product Information Dissemination	Publication, training, professional education, field demonstration workshop	
V. Adoption	I. Broad Use	11. Implementation by Users	Use by practitioners, program change and administrative follow through	Adoption
		12. Product Institutionalization		

Note: Evaluation often leads to product revision with subsequent testing and evaluation prior to Diffusion and Adoption.

Table 3

Multimodal Career Education Components

Component	Sessions	Goals
Assessment[a]	2	To secure pre-test data for the research project
Study Skills Training	2	To present instructional activities designed to improve skills in note-taking, studying, and test taking.
Multimodal[b] Career Education	1	To present an overview of the multimodal career development model, practice in reviewing cases with the approach, and the assignment of completing the CDQ
Sex Stereotyping	1	To present a program exploring the nature and extent of sex bias and sex role stereotyping
Assertiveness Training	3	To present an overview of assertion in nursing, practice in applying assertive behaviors in role-play situations, and some assignments to generalize the skills to natural environments
Problem Solving and Dec Decision Making	1	To present behavioral methods for self-managing change
Stress Management	1	To present an overview of stress and coping and practice in using stress management/tension reduction techniques
Career Planning[c]	2	To present opportunities for role-modeling in career development and understanding career from the social learning perspective

(Continued)

Table 3 (Continued)

Component	Sessions	Goals
Educational Planning	1	To present information related to continuing education, career ladders, and nursing education
Assessment[d]	1	To secure post-test data for the research project and to conduct debriefing sessions.

[a]The two sessions were used only for data acquisition for the project. In the ideal implementation of multimodal career education the data could be used for "individualizing" instruction and designing career development plans.

[b]The multimodal career education model was presented in class, three case studies were made, and the CDQ was assigned as an individual (homework) exercise. In an actual application of the curricula, the CDQ would be administered at the outset in order to determine instructional needs.

[c]Two guest speakers acted as role models and provided useful career information as well. The social learning model of career (see Mitchell, Jones, & Krumboltz, 1979) was presented to show the linkages between career exploration, decision-making, education, job acquisition, job maintenance, and career advancement. Students were asked to interview a professional in nursing as a homework assignment or individual exercise.

[d]Additional meetings with students were conducted after the close of the semester to recover data and debrief interested individuals.