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FOCUS ON EXCEPTIONAL CHILDREN

Action Versus Reaction: A Curriculum Development Approach to Inservice Education

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Enactment of PL 94-142 has created a discrepancy between the roles regular and special education personnel have been trained to fill and the roles they now must perform. This is clearly evident when one compares the preservice training curricula operational in most colleges of education with the competency demands inherent in successful implementation of PL 94-142. Undoubtedly, provision of an appropriate education for all handicapped students depends upon the revision of preservice training curricula, establishment of effective inservice programs and corresponding adjustments in certification requirements and procedures.

Curricular modifications began to appear in special education personnel preparation programs in the late 1960s and early 1970s when disenchantment with the self-contained special class model was heightened by litigation, legislative mandates, and the efforts of advocacy groups. More recently, the Bureau of Education for the Handicapped has provided seed money through the Deans' Grants Projects (cf. Grosenick & Reynolds, 1978) for colleges of education to revise their curricula to reduce the training discrepancy created by PL 94-142. Approximately 60 Deans' Grants Projects were funded in 1975 and nearly twice as many are operational today. The overall goal of these Projects is the reconceptualization of teacher education programs to meet the instructional demands of educating handicapped learners in less restrictive settings.

Modifications in certification requirements also have been initiated in several states—e.g., Georgia, Missouri, and Kansas. As a result, those seeking certification or certification renewal in these states are required to have had coursework in the general area of the education and psychology of exceptional children.

Although certification adjustments and curricular revision in teacher education programs are needed and applauded, such a response will have only a limited impact on those responsible for implementing PL 94-142—i.e., *personnel currently in the field.* Given the

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urgency of the situation, inservice education emerges as the most viable training option for the immediate future.

The National Advisory Committee on the Handicapped (1977) estimated that 260,000 special education personnel and over 2,000,000 regular educators require inservice training to implement PL 94-142. The Bureau of Education for the Handicapped identified inservice training as a national priority and earmarked over 48 percent (or $26,858,000) of its FY 1979 personnel preparation budget for inservice education (Siantz & Moore, 1978). The authors of PL 94-142 recognized the importance of inservice training to implementation of PL 94-142 when they made compliance contingent upon the ability of each state to develop and implement a comprehensive system of personnel development [Sec. 613.(a)(3)(A)].

This article presents a model for inservice education based on the process of curriculum development; the approach to inservice education emphasizes the philosophy that local education personnel can and should respond to their own training needs. Proficiency in curriculum development enables local personnel to respond to their immediate training needs in regard to PL 94-142, as well as to acquire skills that are generalizable to future training needs and instructional programming for students. As a background to discussion of the model, we first provide a review of personnel development requirements, past inservice practices, and guidelines for effective inservice education.

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PERSONNEL DEVELOPMENT REQUIREMENTS

The rules and regulations for implementation of PL 94-142 specify two major requirements. The first relates to changes that must occur in public schools as a consequence of compliance with the law. The process of compliance and, in turn, bringing about change, necessitates that teachers and other school personnel become knowledgeable about the law and the principles upon which it is based, in addition to developing new skills and conducive attitudes. Regular and special educators must be able to accommodate the instructional and social needs of handicapped students within the instructional and social needs of handicapped settings. Although content priorities will not be the same for all districts or personnel within a district, a broad base of inservice content has been generated by passage of PL 94-142 (Meyen, 1977).

The second, more specific requirement—the rules and regulations describing personnel development [Section 121a.380]—states that provisions must be made to assure appropriate and adequate training of all new as well as currently employed personnel. Disseminating information, research results, and promising practices applicable to educating handicapped students becomes an added responsibility of education agencies. Although these new responsibilities represent a formidable task, the authors of PL 94-142 have expressed confidence in the ability of educators to comply with the law [Sec. 3.(b)(7)].

The rules and regulations pertaining to personnel development make local and state education agencies accountable for providing inservice education. They require that annual needs assessments be conducted to determine inservice training needs and that an ongoing inservice program be made available to all personnel engaged in the education of handicapped students [Sec. 121a.382]. To ensure the active participation of appropriate personnel in such programs, each annual program plan must provide for incentives, such as "released time, payment for participation, options for academic credit, salary step credit, certification renewal, or updating professional skills" [Sec. 121a.382(e)(1)].

The personnel preparation requirements of PL 94-142 are reasonable from the perspective of what must be done to assure achievement of the *intent* of the law. Implementation, however, will require a cooperative effort on the part of local

education agencies (LEAs), state education agencies (SEAs), institutions of higher education (IHEs), and professional organizations (POs), for which few precedents exist. Institutions of higher education traditionally have played the primary leadership role in the professional development of teachers, while state education agencies have set requirements for certification. Local education agencies—the consumers of the teachers trained by the other two agencies—have had the least input (Orrange & Van Ryn, 1975). Professional teacher organizations have been characterized by Orrange and Van Ryn as "perhaps the least recognized but most crucial agencies in developing successful inservice training programs" (p. 52). This is not to say that the four agencies have not worked together in the past. Nevertheless, the level of cooperation needed to deliver the required training goes far beyond the relationships that have characterized most inservice training efforts to date (Bottoms, 1975).

INSERVICE EDUCATION: HISTORICAL PERSPECTIVE

Two philosophical positions regarding inservice education have been prominent over the past 130 years. Tyler (1971) described these positions as *remedial* and *continuous growth*. Jackson (1971) characterized this dichotomy as *defect* versus *growth*. He explained that the deficit point of view "begins with the assumption that something is wrong with the way practicing teachers now operate and the purpose of inservice training is to set them straight—to repair their defects, so to speak" (p. 21). He described the growth approach, conversely, as beginning with the assumption that teaching is a complex and multifaceted activity about which there is more to know than can be known by any one person. From this point of view, the motive for learning is not to repair a personal inadequacy, but rather to facilitate *normal development* of the teacher. The remedial or defect view of inservice education was prominent during the mid-nineteenth century, when teachers had little or no formal preparation for their role. During this time, the idea that knowledge and skills related to teaching were in continuous development was not commonly accepted. The curriculum and teaching were viewed as relatively stable.

The idea that American educational institutions should respond to the realities of social change was introduced by passage of the Land Grant College Act of 1862; although this Act was given no significant attention by leaders in education, schools and teachers for the first time had to accommodate a new population of students—i.e., children of the "agricultural and mechanical classes" (Tyler, 1971). The success of land grant colleges gave powerful support to development of the doctrine that education *must* and *can* respond to the changing needs of a modern society. Tyler concluded that continuous teacher development as a function of a changing society thus had its beginning.

Following the children of the agricultural and mechanical classes, a series of new populations of students emerged for whom teachers needed to be prepared—children of immigrants, children of the Depression who had left school to work and then returned, children from minority groups, and children from economically disadvantaged families. In 1975, the handicapped to age 18 were added to the list with passage of PL 94-142. The handicapped to age 21 are next in line to be served under law for 1980. As society has become less reluctant to share the mainstream of American life, public education consistently has been the point of entry for formerly excluded populations. Historical precedence has clearly established the role of public education in responding to shifts in educational philosophy and social priority.

In addition to accommodating new populations of students, public education continuously has had to adjust to technological advances in materials, curriculum, and methodology—the core curriculum, teaching machines, modularized instruction, modern mathematics, the rise and fall of science education, discovery learning, programmed instruction, and so on. Changes in educational philosophy (e.g., open classrooms, competency-based education, the basic skills movement) also highlight the contemporary outlook that teaching is a constantly changing and continually developing task (Tyler, 1971).

Although teacher education as *continuous development* emerged more than 100 years ago, practical application of this concept in the area of inservice education has yet to be actualized (Rubin, 1971; Edelfelt & Lawrence, 1975). Don Davies (1967), then of the U.S. Office of Education, testified before the Senate Subcommittee on Education that inservice education is "the slum of American education—disadvantaged, poverty-stricken, neglected, psychologically isolated, whittled with exploitation, broken promises, and conflict." More specifically, Meade (1971) contended that:

> Inservice education—the continual updating of the practitioner in the classroom—is clearly suffering as much from the sins of omission as from those of commission. The list of what has been left undone is long and varied, and in the vacuum created by these failures, often trivial and inconsequential substitutes have flourished. What should be a vital component of teacher preparation has been allowed to remain piecemeal and

> haphazard. What should inspire teachers to maximize their potential is too often regarded by education management as either an onerous burden or an incidental ritual (p. 211).

Echoing Meade's contention, Edelfelt and Lawrence (1975) summarized the findings of their state-of-the-art review by saying that "inservice education has been the weakest and most haphazard component of teacher education" (p. 16).

GUIDELINES FOR EFFECTIVE INSERVICE EDUCATION

Although the literature is replete with condemnations of inservice education, few authors have provided suggestions for positive change. The magnitude of the problem has been recognized and addressed recently in discussions by Lawrence, Baker, Elzie, and Hansen (1974) and Edelfelt (1977). Based on a review of 97 research studies, Lawrence and his colleagues identified 11 characteristics of effective inservice programs. Edelfelt, in the development of 29 criteria for inservice education, sought input from participants in Teacher Corps workshops and from educators nationwide. Prior to publication of the criteria, Edelfelt solicited comments and critiques from teachers, administrators, university and state department personnel and representatives of teacher organizations. More recently, a National Advisory Board convened by the Bureau of Education for the Handicapped published recommendations for development of inservice education projects relative to PL 94-142 (Siantz & Moore, 1978). The following discussion represents a compilation of these three sources and a formulation of specific guidelines for ongoing inservice education programs related to the education of handicapped students.

1. *Inservice education related to the education of handicapped students should be based on an assessment of the strengths and needs of regular and special education personnel.*

Teachers' needs as perceived by teachers themselves should form the basis for inservice education programs (Edelfelt, 1977). The involvement of regular and special education personnel, however, should be sought not only as the inservice program is initially designed but also during implementation, to ensure a responsiveness to their changing needs. In essence, this ongoing assessment of inservice needs serves as a formative evaluation of the inservice program with ramifications for the modification of objectives and activities. Assessment of the inservice needs of regular and special education personnel must include an examination of attitudes toward handicapped students as well as skills related to the provision of an appropriate education.

Lawrence et al. (1974) found that inservice programs that are school-based rather than college-based are more likely to effect changes in both teacher behavior and teacher attitudes. As education responds to the mandate of PL 94-142, unique strengths and needs will be increasingly evident at the LEA level. Inservice education planned and offered at that level can more appropriately respond to these situational variables.

Although the primary role of educators relates directly to the instruction of students, additional roles and responsibilities are required of them (Edelfelt, 1977). The advent of PL 94-142 requires new roles of both regular and special education personnel if an appropriate education is to be available to all handicapped students.

For regular classroom teachers, inservice education must be designed to prepare them as teachers of handicapped students in mainstream settings, co-workers with special education teachers and ancillary personnel, active participants in the IEP conference, and other new roles. Special education teachers must be prepared, for example, to participate in IEP conferences, coordinate programs for handicapped students, and work with parents, regular classroom teachers, and ancillary personnel. Regular education administrators will be asked not only to interact with new populations of handicapped students and their teachers, but also to coordinate building-level programs addressing the educational needs of both handicapped and nonhandicapped students. For special education administrators, new roles and responsibilities will develop through their involvement with regular education programs. In addition, they are being required to facilitate the inclusion of more severely handicapped populations in public school programs.

2. *Regular and special education personnel should assume roles as planners and teachers of inservice programs.*

Although the traditional design of inservice activities places school personnel in the role of learners, they could and should assume leadership roles in the planning and delivery of inservice education. Because all participants in the inservice education effort possess unique strengths and needs, each individual must assume the role of planner, teacher, and learner at various times (Edelfelt, 1977). Individuals who perceive themselves as needing additional knowledge and skills in certain areas also have ideas about how those needs can best be met. Personnel who are respected by their peers

and who speak from direct experience are often the best teachers in the eyes of their colleagues (Edelfelt, 1977). Individuals selected to train their peers should be chosen not only on the basis of their knowledge and skills but also on the basis of their credibility among those peers (Meyen, 1969).

3. *Inservice education programs should provide participants many different ways to accomplish their individual goals.*

Within inservice education programs, opportunities should exist for individuals to select from a number of alternative activities those which meet their needs (Edelfelt, 1977). The concept of individually tailored educational plans for handicapped students can be extended to the design of individual inservice plans for regular and special education personnel. Such individual inservice plans would recognize differences in strengths and needs, interests, current roles, and professional goals. Students and inservice participants each have different learning styles that must be provided for in educational programs. An inservice program that provides varied ways of meeting the goals of its participants will allow them to select activities based on their own learning style and preferences.

Lawrence et al. (1974) described successful inservice programs as those characterized by:

- self-initiated and self-directed training activities (p. 15)
- self-instruction (p.12)
- active involvement; i.e., constructing and generating materials, ideas, and behavior (p. 14)
- demonstrations, supervised trials, and feedback (p. 14) and
- teachers sharing and providing mutual assistance to each other.

Options also should be available in the types of inservice sessions—e.g., workshops, demonstrations, field trips, classes and courses, conferences, teacher exchanges, research, and so on (National Education Association, 1966). Above all, inservice sessions should be examples of good teaching practices. The principles of good teaching are as applicable in adult education as in child and adolescent learning (Edelfelt, 1977).

4. *Evaluation, an integral part of any educational endeavor, should examine the impact of inservice education on participants' behavior and, ultimately, on student performance.*

With the current emphasis on accountability in education, evaluative data are critical—data that provide feedback regarding the level of attainment of goals and objectives of the inservice program. Continuous assessment of the program will allow use of the evaluative data to modify objectives and activities as necessary (Edelfelt, 1977). The ultimate goal of any inservice education program should be to effect positive change in student performance. Evaluation strategies should be designed to examine participants' attitudes, knowledge, skills, and behaviors; resulting impact on student performance; and parental satisfaction with the student's program (Siantz & Moore, 1978).

5. *Local education agencies must make a commitment to the concept of continuing professional development through implementation of an ongoing coordinated inservice program.*

Inservice education should represent an attempt by each LEA to provide a comprehensive program that addresses the needs of regular and special education personnel related to the education of handicapped students. Lawrence et al. (1974) found that "teachers are more likely to benefit from inservice education activities that are linked to a general effort of the school than they are from 'single-shot' programs that are not part of a general staff development plan" (p. 15). Inservice education related to PL 94-142, particularly, must be coordinated both with and *within* other inservice programs offered for regular and special education personnel. The manner in which the inservice program is presented to school personnel conveys the attitude of the administration toward the mandate of PL 94-142. A program that presents content in a coordinated inservice effort will demonstrate a district's commitment to move beyond mere compliance with PL 94-142 to meet the *intent* of the law.

Implementation of a coordinated inservice program will require a commitment from the LEA, and other participating agencies, of both time and resources. Adequate resources, human and material, unquestionably are essential to providing a coordinated program. An even larger commitment on the part of LEAs will be that of personnel time. Inservice education should be viewed as part of the role of teaching, and time should be allowed during the traditional school day for educators to learn (Edelfelt, 1977). Officially, teachers receive state certification of their teaching competency upon completion of preservice training. Nevertheless, a continu-

ing program of professional development is required if they are to refine their skills according to the changing needs of their students.

6. *Inservice education should be a collaborative effort that recognizes and uses the strengths of LEAs, SEAs, IHEs, and POs.*

The personnel development demands of PL 94-142 necessitates the cooperative involvement of all four agencies if the intent of the law is to be realized. In addition, the rules and regulations related to PL 94-142 specifically require SEAs to involve other agencies "in the development, review, and annual updating of the comprehensive system of personnel development" [Sec. 121a.381]. These agencies must collaborate not only at the state level, but also at the local level. Their cooperation at the local level will enhance the resources available for development of inservice education. Realistic appraisal of the strengths each agency brings to the situation will facilitate the design and delivery of an inservice program that capitalizes on these strengths (Edelfelt, 1977).

Depending upon situational variables and the strengths of the agencies involved, one agency may be more visible than others during certain phases of the program. Initial planning should include a timeline for LEAs to assume primary responsibility for inservice education as soon as possible, with other agencies providing assistance and support as necessary. Within some LEAs, collective bargaining agreements or other policies may exist that govern relationships between and among the groups, as well as the procedures for inservice education.

A CURRICULUM DEVELOPMENT APPROACH TO INSERVICE EDUCATION

The critical factors of inservice education programs specified above—content and guidelines for development—can be used to identify a cohesive personnel development system. To assure attention to the guidelines, the authors have designed an inservice education model based on a curriculum development approach. The process of curriculum development involves:

1. Identification of needs,
2. Specification and validation of objectives,
3. Design of learning activities,
4. Delivery of instruction, and
5. Evaluation of that instruction.

This same curriculum development process can be used by regular and special education personnel to design and deliver inservice education related to the education of handicapped students.

The inservice education model presented here can be implemented on a statewide, regional, or individual district level. Through the collaborative efforts of the SEAs, IHEs, POs, and a group of LEAs, inservice education can be developed for several districts within a state. On a regional basis, LEAs within an intermediate education agency can cooperate with other agencies to train regular and special educators to design inservice education programs. In an individual LEA, teams of educators can develop programs for their individual schools. Consortia of state departments of education, such as the Kansas-Iowa-Nebraska Consortia Model (Kansas State Department of Education, 1978b), or professional organizations such as the American Federation of Teachers, Council for Exceptional Children, National Association of Secondary School Principals, and National Education Association also might be formed to facilitate implementation of this model. Whether an individual agency or consortia of agencies is involved, the procedures for implementation are essentially the same.

These procedures are described as they relate to three major phases of activities: Planning, Curriculum Development Training, and Content Delivery (see Figure 1). Because evaluation permeates the entire inservice program and is critical to each phase of the curriculum development process, a separate section on evaluation follows discussion of the model.

Planning Activities

During the planning phase, the foundation for cooperation among all agencies participating in the inservice education effort is established. The initial stages of joint planning among LEAs, SEAs, IHEs, and POs must include a realistic appraisal of the contributions each group can make to the total inservice effort. A delineation of the role and responsibilities of each agency ensures that these strengths are recognized and used to the benefit of the inservice program. For example, a specific agency might be especially skilled in evaluation or curriculum design and assume primary responsibility for those specific activities. Even though one agency may assume coordination of a single element of the inservice endeavor, the understanding that all participants have a voice in decisions affecting the program is crucial to its success.

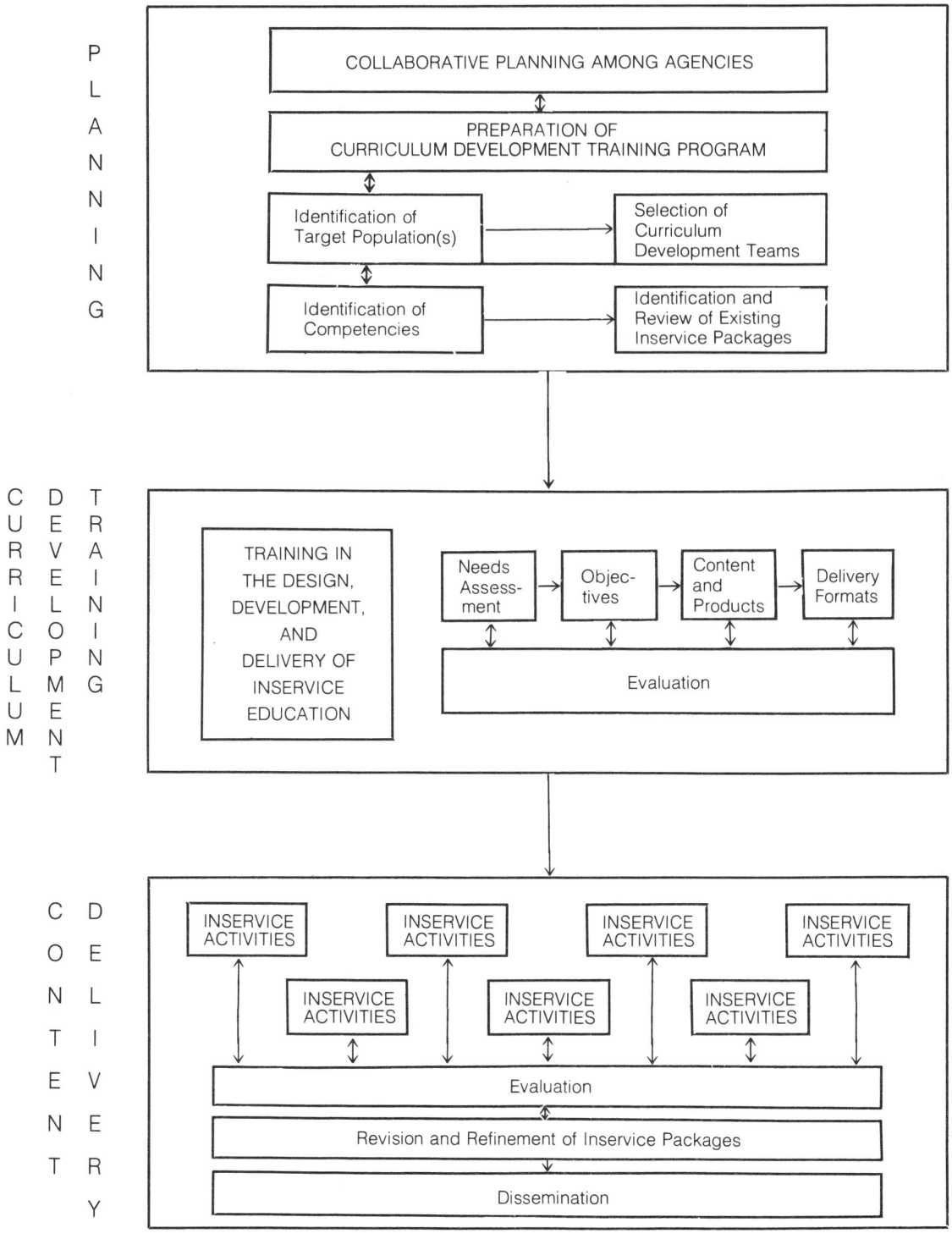

Figure 1. Inservice Education Model: A Curriculum Development Approach

Preparation of Curriculum Development Training Program

A curriculum development program must be designed to train regular and special educators to serve as inservice planners and trainers. The responsibility for development of this training program is assumed by the cooperating agency or agencies skilled in curriculum development. Through this training program, curriculum development team members acquire the skills necessary to fulfill roles as inservice planner and trainer, and also to design inservice programs for their local districts. Materials and activities are developed for use in training related to

—assessment of needs,
—identification and validation of corresponding training objectives,
—development of inservice activities and delivery formats,
—delivery of inservice activities, and
—evaluation of inservice sessions.

Essentially, members of curriculum development teams must be prepared to conduct a complete inservice program specific to the needs of their district upon completion of this training. Mayer (1975) suggested systematic procedures that can be used as a basis for identifying district-specific needs and objectives, developing training procedures, field-testing the procedures, and revising them for dissemination. Many of the substantive facets of these procedures could be adopted for the curriculum development program. In some instances, however, specific instructional materials and activities need to be developed or adapted from other sources (e.g., Davis & McCallon, 1974).

Identification of Target Population(s)

The target populations for both curriculum development and inservice education activities are regular and special education personnel (teachers, administrators, support staff, paraprofessionals). An individual district, based upon its specific needs, might identify other populations, such as students, parent groups, school board members, community leaders, and potential employers of handicapped persons, as participants in and contributors to training and awareness efforts. Beyond the LEAs, training in the inservice education model might be provided for SEA representatives from other states, IHE faculty and students in regular and special education, PO representatives, etc. In addition, the inservice education model may be generalized to development of education programs for other agencies that serve handicapped individuals, such as Social Rehabilitative Services.

Selection of Curriculum Development Teams

Within the participating LEAs, curriculum development teams—each consisting of regular and special education staff members—are recruited. These team members are trained to develop and deliver inservice education for their individual schools or districts. Specific selection criteria for team members should be developed jointly by all agencies involved in the inservice program. Meyen (1969) suggested two areas relevant to selecting curriculum development team members. The first relates to the prospective team member's professional reputation. Essentially, the question to be answered is: Does the candidate consistently demonstrate behaviors associated with desired changes in student performance? The second area addresses the prospective team member's rapport with colleagues. Specifically, is the individual respected professionally and personally by his/her peers?

List of Competencies for Regular and Special Education Personnel

Early in the sequence of planning activities, a comprehensive list of competencies is generated related to the education of handicapped students. The domains from which competencies can be drawn for regular education personnel include: knowledge of PL 94-142, its underlying principles and its implications; characteristics of handicapped students; attitude toward handicapped students; learner analysis; instructional planning and implementation; classroom organization and management; use of resources; and communication. Competencies for special education personnel can be drawn from the following areas: knowledge of PL 94-142, its underlying principles, and its implications; assessment of student interests, abilities, and needs; knowledge of regular education curriculum, programs, and resources; and knowledge and skills in program coordination, counseling, and communication. Several sources from which to compile these competencies are available (cf. Deno, 1975; Glass &

Meckler, 1972; Haring, Stern, & Cruickshank, 1958; National Association of State Directors of Special Education, 1975; Shaw & Gillung, 1975). For regular education personnel, the Deans' Grants Projects mentioned earlier and other projects with similar goals have formulated objectives from which competencies might be drawn (cf. Baker, 1977; Haugh, 1978). The final list is a product of the amalgamation and refinement of these and other current lists. The major function of the final list will be to provide a basis for subsequent needs assessments conducted by curriculum development teams.

Identification of Existing Inservice Packages

In preparation for the design of inservice activities, existing staff development and inservice materials related to education of the handicapped are identified and evaluated. Peterson (1977) presented a summary of existing inservice education materials in this area. These previously developed inservice packages may have direct application to district-specific objectives, may be adapted to meet objectives, or may serve as a resource in the development of new activities.

Curriculum Development Training

The first level of training is conducted during this aspect of the inservice education program. Selected regular and special education staff members are trained to design, develop, and deliver inservice education for their peers. Though the emphasis of this phase of training is on acquiring skills related to the process of curriculum development, knowledge and skills related to the education of handicapped students will be acquired incidentally as inservice content is designed. Training of curriculum development team members is accomplished through demonstration and supervised implementation. One or more of the cooperating agencies assumes primary responsibility for initial training in, and demonstration and supervision of, the curriculum development process.

Initially, team members are trained in two basic areas—design, administration, and interpretation of needs assessment instrumentation; and specification of local needs. Within this training sequence, teams will design the needs assessment instrumentation for their districts, using the previously developed list of competencies as a basis. Procedures for conducting the needs assessment within a district should be developed by team members based upon the characteristics of their local districts. Team members next implement the needs assessment procedures. Support and assistance, when needed, along with on-the-job follow-up are provided by the curriculum development trainer(s).

Following the specification of needs, team members are trained to write objectives based on identified local needs, and to validate these objectives with their peers. At the conclusion of the validation process, a set of specific objectives for inservice education is available for each LEA.

During the final phase of the curriculum development training, team members are trained to adopt, adapt, and/or develop appropriate content and delivery formats for inservice activities; deliver the inservice content; and select, modify, and/or design procedures to evaluate inservice programs. The largest portion of time during this aspect of the program should be spent writing the activities and designing the packages that constitute the inservice program for each LEA. Although the specific content within the inservice program will be determined at the local level, this content *must* address the issue of attitudes toward the handicapped (Martin, 1974) as well as skills and knowledge related to the delivery of instruction. Particularly important at this time is the generation of a number of activities for each objective, thus allowing individual participants to select their own methods of instruction. Personnel from LEAs, SEAs, IHEs, and POs who have expertise in various areas related to the education of handicapped students should be available to assist team members in developing inservice activities.

Content Delivery

The most extensive activity in implementing the inservice program is the delivery of content designed to address the needs of regular and special education personnel. Curriculum development team members coordinate the content, delivery, and evaluation of inservice sessions. Both team members and representatives of designated agencies are involved in evaluation and follow-up activities as regular and special education personnel apply new knowledge and skills.

During the time local school districts are conducting inservice sessions for their staff members, the curriculum development training sequence is evaluated and revised, using feedback from all elements of the training sessions.

Revision and Refinement of Inservice Packages

Following delivery of segments of the inservice program, the curriculum development teams can use formative evaluation data to revise and refine the inservice packages. Revisions may be necessary in content, activities, or delivery formats. Team members from the participating districts have primary responsibility for the revisions, supported by technical assistance from the SEAs, IHEs, and POs as necessary.

Dissemination

Initially, inservice packages finalized by one LEA (or group of LEAs) are disseminated to surrounding districts. LEAs with similar strengths and needs might find the materials directly applicable to their current validated training objectives. Others, with different needs, can either adapt the packages or use them as models for their curriculum development teams.

SEAs appear to be in the best position to assume major responsibility for a statewide dissemination system for the newly developed materials. In addition to disseminating revised materials, SEAs might provide information regarding inservice programs currently being offered within the state, along with names of resource personnel and their areas of expertise—e.g., KEDDS/RESOURCES (Kansas State Department of Education, 1978a). Ultimately, this structure can be extended to form a multi-state dissemination network. Through their contact with all LEAs, the state facilitator projects associated with the National Diffusion Network (U.S. Office of Education, n.d.) would also provide an avenue for dissemination. For agencies wishing to seek national validation for their inservice education programs, dissemination could occur through the Network on a national level.

Materials for dissemination include inservice packages, needs assessment and evaluation instruments, as well as curriculum development training materials. The cross-fertilization of ideas likely to result from this process should produce an abundance of materials designed to meet the training needs of educators relative to PL 94-142.

Completion of the original inservice program need not mean the end of professional development for regular and special education personnel. The most salient feature of the model proposed here is the development of a lasting resource within school districts—i.e., regular and special education personnel who are capable of periodically assessing the inservice needs of their peers, developing appropriate instructional activities, delivering inservice sessions to meet the changing needs of their peers, and evaluating the resulting impact of inservice education programs. With this resource among their own staffs, districts no longer will be limited by the availability of outside individuals or previously developed training packages. The resources necessary to develop and deliver district-specific inservice education programs remain within the district rather than under the control of an outside agency.

EVALUATION

Many past attempts at training regular and special education personnel have been fraught with poorly designed, inoperative evaluation plans. Perhaps most crucial to the quality of inservice programs are the ways in which evaluation methods are used to determine continuous and overall program impact. Essentially, it is necessary to monitor participants' gradual development of the knowledge, attitudes, skills, and behaviors requisite to providing an appropriate education for handicapped students.

Evaluation Model

An operational evaluation model should be simple, yet comprehensive and attendant to the aims of a particular program. The present model was designed to provide a structure for delineating the relationship between benefits to target populations and the major features of the inservice education model. Figure 2 displays the evaluation model.

The model represents three-way interactions among the target populations, outcomes, and model features. Outcomes (knowledge, attitudes, skills and behavior) can be thought of in the traditional experimental sense as dependent variables. Similarly, the features of the inservice education model can be thought of as independent variables. The *curriculum development* process comprises the steps (needs assessment, etc.) outlined previously with reference to preparation and implementation of an inservice education program. *Peer training* is the process through which inservice is delivered to regular and special education personnel by their peers who demonstrate competency in inservice planning and training. *Education of handicapped students* refers to information about, and participation in, educational programming for handicapped students. Of primary concern is

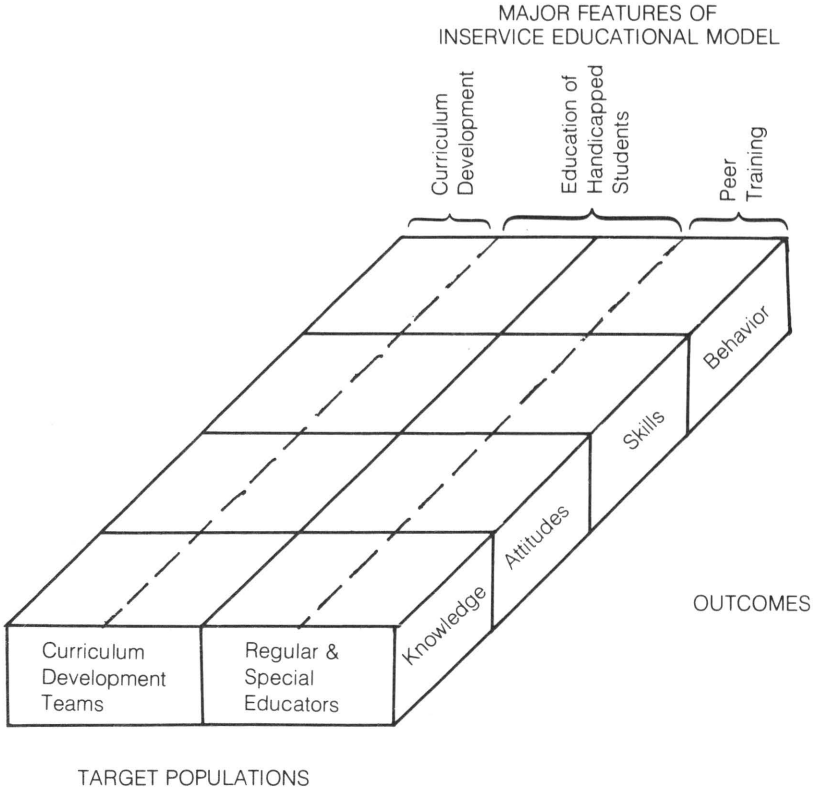

Figure 2. Model of Inservice Program Evaluation.

the impact of these features on the target populations in terms of increases in knowledge, changes in attitudes, and development of skills and behaviors related to the education of handicapped students. The ultimate criterion measure of this impact is the extent to which the goals and objectives specified in the Individualized Education Programs (IEPs) of handicapped students are achieved. These features derive from the curriculum development approach in that they represent the major impact factors resulting from implementation of the inservice education model.

Approaches to Inservice Program Evaluation

The goal of evaluation is to provide valid data concerning the impact of the program on target audiences. These data should enable judgments regarding its effectiveness. Steele (1973) and Airasian (1974) indicated that program evaluation determines the relationship between benefits to target populations and a given program of intervention.

Because of the nature of the variables implicit in the evaluative foci depicted in the model, a number of evaluation approaches can be employed. No single summative approach appears to be appropriate. Thus, four separate approaches are deemed to be germane to the evaluative foci of concern:

—the Data Management Approach (Phi Delta Kappa, 1971),
—the Means-Ends Hierarchy (Bennett, 1973),
—the Participant Reaction Approach (Steele, 1970, 1972), and
—the Materials Evaluation Approach (Crane & Clark, 1969).

Generally, the Data Management Approach is applied to knowledge and attitude outcomes, while the Means-Ends

Hierarchy is applied to skill and behavior outcomes. The Participant Reaction Approach can be applied specifically to monitor the planning and delivery skills on the part of the curriculum development teams. The Materials Evaluation Approach can be applied to training materials and media.

Formative evaluation is conducted on an ongoing basis and should occur within the framework of the Planning, Curriculum Development Training, and Content Delivery phases of the inservice program. Generation of competency statements during the planning phase, for example, can be structured according to a variety of procedures, such as the Critical Incidence Technique (cf. Flanagan, 1962; Ingram & Blackhurst, 1975). All activities specified in the inservice model are monitored across phases to ensure appropriate implementation of the curriculum development approach. Resultant data are used as a basis for immediate modification of the program if needed.

Instrumentation

Both cost effectiveness and logistics must be considered in regard to prospective instruments (Airasian, 1974). Separate instruments corresponding to each evaluative focus are not necessary. For both formative and summative evaluation, use of a wide range of valid, reliable knowledge tests, attitude instruments, and observation coding systems appears particularly prudent, given cost-efficiency demands and the need to avoid possible reactive threats to the validity of the evaluation (Campbell & Stanley, 1967).

This is not to imply that program evaluation should entail the haphazard use of poorly constructed instruments. It is assumed that those responsible for coordinating evaluative aspects of the program will seek the technical assistance necessary for proper selection and adaptation of existing instruments. It should be recognized, though, that bombarding participants with questionnaires, tests, and probes should be avoided in favor of less obtrusive, yet sound, instrumentation.

Instruments should have demonstrable reliability and validity. This includes factors such as stability and internal consistency. These reliability data should be collected throughout the program. Content validity of these instruments can be assessed through expert appraisal of the items comprising each instrument. When appropriate, items can be generated, selected, and revised according to input from members of the participating agencies.

Brief descriptions of the proposed instrumentation with respect to the anticipated outcomes of knowledge, attitudes, skills, and behavior are given below. By attending to the evaluative focus representative of a particular outcome (Figure 2), the relationship among that outcome, the corresponding model feature, and a given target population can be conceptualized. The instrumentation to be discussed is appropriate both for formative judgments as to necessary alterations in various features of the inservice program and for summative determinations of overall program impact.

Knowledge

Instruments assessing knowledge gains contain items that yield cognitive and participant-perceived measures of knowledge of instructional programming for handicapped students and of inservice planning and delivery. Items can be chosen on the basis of matrix sampling (Sirotnik, 1974). The matrix sampling procedure allows the construction of multiple forms, thus enabling the use of both pretest/posttest and time series experimental designs (Campbell & Stanley, 1967).

Attitudes

Particular items can be chosen—again on the basis of matrix sampling—related to participants' perceptions of the feasibility and efficacy of the model features, and of the appropriateness of planning, delivery and content to local needs. Perhaps the most critical attitude variables that must be sampled are attitudes toward the inservice program and changes in attitudes toward handicapped students as a result of the program.

Skills and Behavior

Competencies and corresponding behaviors relative to the target populations are observed on a direct, periodic basis. Teaching skills and their respective component behaviors are evaluated according to the functional relationship between these skills and behaviors and observable gains of handicapped students. For teachers, teacher-student interaction scales and observation coding systems can be used by persons providing classroom follow-up (cf. Morine, 1975). IEPs of handicapped students receiving regular and special education programming can be monitored to evaluate the consequences of target competencies and behavior. Evaluations of inser-

vice sessions assess administrative behaviors of curriculum development team members related to inservice planning and implementation. Formative or summative judgments can be made on the basis of directly observable increases in behavior relative to the various standards or criteria implicit in specific training objectives.

Design

In an attempt to overcome logistical and cost constraints, several different experimental designs can be utilized (Campbell & Stanley, 1967). In as many cases as possible, random sampling and control groups should be employed. In some cases, it may be necessary to match control and experimental groups. With regard to skill and behavior outcomes, however, it may be more efficient to employ time series designs (Box & Jenkins, 1976; Campbell & Stanley, 1967) as an alternative to the use of control groups. Criteria for determining effectiveness regarding outcomes of the program can be either a prespecified significance level (e.g., $p<.05$, $p<.01$) or, in the case of time series designs, demonstration of a functional relationship between model features and outcomes relative to the specific populations.

Internal validation of an inservice program is determined through analysis and interpretation of data derived from the process described above. Given the achievement of specified outcomes, internal validity represents the extent to which the program, rather than extraneous factors, enables participants to meet their training objectives. A program's external validity is determined according to its documented generalizability. Dissemination and, in turn, external validation are conducted on a regional or statewide basis. Ultimately, external validation of exemplary programs should determine the extent to which a program can meet training needs across various settings and target populations.

Advantages of a Curriculum Development Approach for Inservice Education

Use of a curriculum development approach to design inservice education programs parallels instructional programming for students in that strengths and needs must be identified, objectives specified and validated, learning activities designed and delivered, and the attainment of objectives evaluated. The process of curriculum development as the basis of an inservice education model meets the previously presented guidelines for effective inservice education in the following ways:

1. Through the process of specifying and validating inservice education needs and objectives and through the development of corresponding activities, the curriculum development approach facilitates the design of need-based inservice education at the local level;
2. Their involvement in the curriculum development process prepares regular and special education personnel in the design, development, and delivery of inservice education for their peers;
3. Through the curriculum development process, many different ways to accomplish inservice objectives can be identified—this enables participants to determine how they will learn based on their individual preferences;
4. Since evaluation permeates the total curriculum development process, regular and special education personnel are trained in both the formative and summative aspects of evaluation; the assessment of needs and validation of objectives exemplify formative aspects of evaluation, while measurement of changes in personnel attitudes, knowledge, skills, and behavior and their impact on student performance contributes to summative evaluation;
5. Adoption of the curriculum development approach by education agencies represents a commitment to an ongoing inservice program sensitive to the current and evolving needs of regular and special education personnel.

Although cooperation among local and state education agencies, institutions of higher education, and professional organizations is not addressed specifically by the process of curriculum development, a cooperative effort is essential to its success as the basis of the inservice education model. All four agencies share a common interest as well as specific concerns about providing inservice education. Professional organizations, as the peer representatives of school personnel, are actively seeking more involvement in staff development and inservice education. Within IHEs, the concept of teacher education is expanding to view the training of teachers as a continuing effort—a preservice-inservice continuum that includes an effort to reach educators in the field (Jeffers & McDaniels, 1975). Both SEAs and LEAs must respond to the mandate of PL 94-142, including the specific section on personnel development; inservice education must

be a part of their response to this mandate. Each of these agencies brings specific interests and concerns to the inservice effort. Congruently, each has different strengths and needs that may be matched to specific tasks within the total inservice program. The roles of each agency will differ depending on situational variables such as available resources.

While cooperation among agencies is necessary, cooperation between regular education and special education is equally important. Representatives from each area bring different information and skills needed by others to both the curriculum development and inservice sessions. Within LEAs, regular and special education personnel are involved as co-planners and co-teachers of inservice education. Cooperation between regular and special education must not stop at the local level, though. Representatives from both areas within IHEs, SEAs, and POs must be available as resources to the planning effort. One example of cooperation between these areas is the development of a *resource professor* position at the University of Kansas; this individual is responsible for integration of PL 94-142 content within the training program for regular educators.

In addition to the ways in which the curriculum development approach is responsive to the guidelines for effective inservice education, four other contributions of this process should be mentioned. First, implementation of an inservice education program designed within the framework of the curriculum development approach allows LEAs to meet the specific personnel development requirements of PL 94-142. Second, participation of regular and special education personnel in a joint inservice effort establishes knowledge and understanding of each other's roles and provides a basis for communication related to the education of handicapped students. Third, the skills acquired as a result of training in the curriculum development process can be generalized to many areas, including:

1. The changing needs of regular and special education personnel as they accomplish their objectives and as the strengths and needs of their students change;
2. The training and awareness needs of other individuals within the school and community related to serving the handicapped;
3. The modification of regular education curricula for handicapped students;
4. The design of sequences of instruction for individual students, handicapped or nonhandicapped; and,
5. Curriculum development and/or inservice education needs in other areas such as English, science, math, effective teaching models, use of inquiry learning, and humanistic education.

Whatever the specific content area or concept to be addressed, the curriculum development skills that serve as the basis of the inservice education model may be used. Regular and special education personnel trained in curriculum development may either respond to training or curriculum needs or they may train others in the curriculum development process.

The fourth and perhaps greatest value of the curriculum development approach is undoubtedly its contribution to a lasting resource at the LEA level (Meyen, 1969). Beyond the tangible products resulting from implementation of this approach, a stronger and more lasting (though less visible) benefit to educators is in increased morale and professionalism. Establishment of an atmosphere that encourages educators to grow and develop professionally, to be *captured* by an idea (McDaniels, 1978), and to explore new avenues and approaches represents a valuable asset to schools and to the students they serve. Based on his participation in the Eight-Year Study conducted at The Ohio State University in 1933, Ralph Tyler (1971), Director of Evaluation Staff, made the following observation:

> At that time, most of us viewed the teacher education activities of these curriculum studies as necessary ancillary tasks, and we thought that the chief contributions were the new curricula developed, the new ideas such as the core curriculum, the new approaches to the subject fields, and the new achievement-testing theories. We were wrong. When ideas and materials are reified, they are likely to become the ends rather than the means. Every institution is subject to an ossification that arises when it becomes enamored with its program and finds itself seeking clients to fit the program rather than continually focusing on its clientele and their needs.
>
> Thus, in the Eight-Year Study many saw its contribution to be the core curriculum, or some course or set of materials developed in the project. They were deeply disappointed when these were no longer widely used. We now see that the most significant contribution of the Eight-Year Study was the education it provided in problem solving, in developing attitudes and skills of educational inquiry. We learned something of great importance to inservice education of teachers: *that the constructive involvement of teachers in attacking real educational problems that they face is a powerful instrument of continuing education* (pp. 12-13). [italics added for emphasis]

The intangible contributions of continuous growth, enthusiasm, and involvement establish an invaluable resource at the local level.

While many approaches exist for the design of inservice education programs, use of a curriculum development approach facilitates provision of programs responsive to the needs of educators. Additionally, through implementation of this inservice education model, vital resources are created

within schools—resources that extend beyond the timeline of any specific inservice program.

SUMMARY

Realization of Evelyn Deno's (1970) classic proposition that special education serve "as an instrument for the facilitation of educational change" (p. 229) has never been closer at hand. The training content generated by PL 94-142 will enhance the skills of teachers (cf. Deno, 1975), enabling them to improve the quality of education for *all* students. This law has mandated change and provided the financial and administrative structure to initiate efforts toward revitalizing public education. The ability of education to capitalize on the advantages posed by PL 94-142, nevertheless, is inexorably related to the ability to train educators in the field.

An evaluation of past efforts to update educators' skills and knowledge through inservice education is not encouraging. The fact that poor, minority, and/or culturally different students have been overrepresented in special education programs is, itself, an alarming assessment of the ability of public education to accommodate heterogeneous populations of students. Although staff development has been identified and funded as a priority area at state and national levels, local education agencies have been reluctant to finance inservice education because of their view of certified teachers as finished products. The best efforts to date have been random, ineffective and, obviously, not well-received. At worst, inservice education has been counterproductive—a waste of precious instructional time and money. If past inservice practices are perpetuated, the current thrust to integrate handicapped students into the mainstream of American education is destined to fail.

Even though the defect or remedial approach to inservice has been ineffective, initial efforts to respond to PL 94-142 may also be remedial in nature since regular and special education personnel are perceived as lacking a total set of skills and knowledge to perform their new roles. While in many cases preservice preparation has been adequate, implementation of the law requires additional training. A series of remedial attempts, however, must be abandoned in favor of one ongoing, continuous effort to meet the ever changing needs of inservice educators.

Many inservice efforts will be offered and accepted as complying with PL 94-142, but the curriculum development approach enables the education profession to respond to the immediate *and* continuing challenge presented by the law. Use of the curriculum development approach facilitates implementation of programs attendant to the guidelines for effective inservice education. This approach involves educators at all levels in the collaborative development and delivery of need-based inservice programs. The resulting impact amounts to more than a generation of content or of training packages. The process of curriculum development results in lasting *human* as well as material resources at the local level.

The skills, knowledge, and enthusiasm created through the curriculum development process offer education agencies the necessary ingredients to approach staff development from a position of *action* rather than *reaction*. The curriculum development approach to inservice education presented here holds the promise of truly operationalizing the concept of continuous professional growth in teacher education. And a profession growing in the right direction can work only to the advantage of the handicapped, both in the immediate and distant future.

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