18 DESIGNING AND IMPLEMENTING INNOVATIVE, INTERDISCIPLINARY PRACTICA

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Janet's story, as presented in Chapter 1, reflects the changing roles that personnel in early intervention are expected to perform. Her experience has implications for designing personnel programs that prepare individuals for these new roles. This young professional would have been better prepared to work as a team member if her professional preparation program had included mentored opportunities to collaborate with students from other disciplines via one or more interdisciplinary practica.

The following are elements of an interdisciplinary practicum as the term is used in this chapter:

- Supervised field experiences with children and families
- Adherence to family-centered philosophy and inclusion of family members during all phases of developing and implementing the field experience
- Involvement of students, faculty, and service providers from two or more disciplines
- Student participation and active membership on an interdisciplinary team
- Systematic supervision to help students reflect on their skills as team members

Disciplines may include nutrition, psychology, speech-language pathology, early childhood education, early childhood special education, nursing, physical therapy, occupational therapy, social work, audiology, and others. Interdisciplinary practica have been recommended in the early intervention literature (McCollum, Rowan, & Thorp, 1994; McCollum & Stayton, 1996; Stayton & Miller, 1993), encouraged by the U.S. Department of Education in its funding of innovative personnel preparation programs, and increasingly implemented across academic departments in a variety of higher education institutions.

RATIONALE FOR INTERDISCIPLINARY PRACTICA

Interdisciplinary practica are beneficial in a variety of ways. Faculty involvement in interdisciplinary experiences builds the professional knowledge and skills of individual par-

ticipants as they learn firsthand about the discipline-specific roles, philosophy, and language of other disciplines and as they reflect on, practice, and explain their own skills. Moreover, shared faculty supervision of students allows for elimination of duplication and pooling of resources across disciplinary programs. Most important, the faculty team has the opportunity to evaluate and model interdisciplinary practices for students, increasing the effectiveness of both faculty and students in this important area. Like their faculty mentors, students in an interdisciplinary practicum can begin to appreciate the discipline-specific roles, philosophy, vocabulary, and methods of other disciplines. Such a practicum creates a setting in which students can continue to learn about early intervention and to apply related collaborative skills under supervision. Given the diversity among students (McCollum et al., 1994; McCollum & Stayton, 1996; Stayton & Miller, 1993), practicum participants often can learn from one another's previous employment, practica, or volunteer experiences in early childhood settings.

This chapter describes the results of a national survey of practicum practices, defines critical factors necessary for successful practicum implementation, identifies persistent challenges and ways to address them, and makes recommendations to personnel developers and policy makers regarding interdisciplinary practica. Practicum models from diverse settings illustrate the process of developing and implementing an interdisciplinary practicum.

SURVEY OF EXISTING PRACTICES

We used three strategies to gather the information reported in this chapter on interdisciplinary practica: 1) literature review, 2) reflections on personal experiences, and 3) a survey of university personnel preparation programs that prepare professionals for early intervention. A list of potential informants was generated by noting all institutions holding grants to develop innovative personnel preparation programs for early childhood services from the U.S. Department of Education, Office of Special Education Programs; these projects are intended to prepare students from a variety of disciplines to work in early intervention. This project list was supplemented with help from the Council for Exceptional Children, which provided addresses for all institutions with programs leading to certification in early childhood special education (ECSE) or its equivalent. We reasoned that ECSE was likely to be a partner in most interdisciplinary personnel preparation for services to infants and toddlers with special needs and their families. A total of 289 institutions were identified in this manner.

A six-page, 24-item questionnaire was prepared seeking answers to frequently asked questions about interdisciplinary practica. The survey included both open-ended and multiple-choice questions. The survey was sent to contact people at each of the 289 institutions. Responses were received from 155 of the 289 schools, yielding a participation rate of 54%. Faculty personnel in different roles completed the survey. Of the 155 respondents, 58 institutions (38%) indicated that they sponsor interdisciplinary practica, though not necessarily with all the components previously listed. The characteristics of survey respondents are summarized in Table 18.1. Many respondents sent additional supportive information (e.g., practicum handbooks, curriculum guides, evaluation forms) to amplify their answers. Data from the survey, including quotations from participants and supportive materials they contributed, were used to inform this chapter and illustrate its key concepts.

The institutions that reported sponsoring such field experiences vary widely in the degree to which students and faculty members from multiple disciplines collaborate with

TABLE 18.1.   Demographics of survey respondents

Institutional sponsorship	Location of institution	Size of student body	Credit given for interdisciplinary practicum
Public university—44	Rural—10	12,000+—38	Graduate—27
	Suburban—5	5,000–12,000—9	Undergraduate and graduate—20
Private university—11	Urban—21	2,000–5,000—2	Undergraduate only—3
	Two of above locations—8	less than 2,000—5	
	All three locations—12		

Note: When all responses in a column do not total 58, some respondents did not answer the question.

service providers and families in planning, implementing, and evaluating shared practicum experiences. Most respondents see their interdisciplinary collaboration for practicum as "under development," "unfinished," or "in process," which is not surprising as the majority of these projects reportedly began around 1990.

ORIGINS OF INTERDISCIPLINARY PRACTICA

Most interdisciplinary practica began in response to one or more of the following influences, as described by survey respondents:

- Recommended practices by professional organizations that espouse interdisciplinary training, in many cases involving families (e.g., Division for Early Childhood [DEC] Task Force on Recommended Practices, 1993)
- Funding priority given to interdisciplinary personnel preparation projects, including interdisciplinary field experiences, by federal and state agencies and foundation grants officers
- Encouragement of interdisciplinary practica by regional faculty training institutes of the Early Education Program for Children with Disabilities and by presenters at national conferences: "At the Institute, they convinced us we needed to try this."
- Leadership by the state's university affiliated program (UAP), whose mission, in part, is to provide interdisciplinary training: "We were teaching about interdisciplinary service."
- Existing models for community-based services that feature interdisciplinary and transdisciplinary service delivery, which require competence in interdisciplinary collaboration on the part of higher education's graduates (McGonigel, Woodruff, & Roszmann-Millican, 1994; Stayton & Karnes, 1994)
- Desire by university faculty to model the collaborative skills they describe during class presentations (McCollum & Stayton, 1996): "Our department made a commitment to teaching **and utilizing** the transdisciplinary approach."
- Expressed needs by program graduates to appreciate the knowledge base and specialized expertise of colleagues in related human services professions: "The practicum is essential for students to develop better understanding of the perspectives of professionals from different disciplines."

- Desire to help students develop greater sensitivity to families as team members (McCollum & Stayton, 1996): "Working with families to develop our interdisciplinary practicum has affected our whole program in a positive way."
- Assertiveness by a single faculty member—typically the one most directly involved in early intervention training—who took the lead in seeking other faculty, bolstering their understanding of early intervention, defining common objectives for field experiences, and inviting participation in planning and implementing an interdisciplinary practicum: "It seemed silly to have a speech-language pathology program and an ECSE program in the same department and not have interdisciplinary efforts."

KEY CONCEPTS OF INTERDISCIPLINARY PRACTICA

Common Philosophy as a Foundation

Most significant in developing, implementing, and evaluating an interdisciplinary practicum, according to respondents, is the establishment of a shared philosophy (McCollum et al., 1994). It is desirable for all groups with a role in the practicum (i.e., students, practicum site staff, university administrators and faculty from multiple departments, families) to participate in writing its philosophy. At a minimum, the philosophy should be jointly developed by all faculty involved in the practicum and then critiqued by other participants. For example, Western Kentucky University's philosophy statement was jointly developed by its interdisciplinary faculty and is shared with students and on-site practicum staff as part of their orientation (see Figure 18.1).

Important or significant features of a philosophy statement include outlining consensus on both content and process for the practicum. Specifically, the philosophy statement conveys the team's understanding of the terms early intervention, family centered, and interdisciplinary. Furthermore, the statement delineates the significant outcomes desired for students and describes how those outcomes are to be achieved (e.g., "This practicum will embody family-centered services," "It will provide practice in inclusive settings," "The student will experience interdisciplinary team membership").

ONE UNIVERSITY'S PHILOSOPHY STATEMENT

1. Current research and best practice suggest that social work, psychology, and speech/communication disorders professionals must develop knowledge and skills specific to young children with disabilities to be adequately prepared to work in early intervention programs.

2. Young children with disabilities and their families receive services from a variety of professionals who must be trained to work as team members.

3. Services for young children must exemplify a family-centered approach, with personnel having knowledge and skills in a family systems model.

4. Young children with disabilities benefit from placement in integrated settings, and professionals require integrated training to work in such settings.

5. Research concerning adult education points to the importance of adults' being actively involved in the learning process, with course work having the flexibility for students to make choices about their learning experiences.

Figure 18.1.   The philosophy statement that guides Western Kentucky University's interdisciplinary early childhood program. (Reprinted by permission of Western Kentucky University.)

According to survey respondents, the faculty and students who come together to develop, implement, and evaluate an interdisciplinary practicum must collaborate on a regular and ongoing basis regarding roles on the team; strategies for decision making; and responsibilities of students, faculty, administrators, and practicum site staff for accomplishing practicum activities and achieving desired outcomes (Stayton & Miller, 1993). Commitment to this shared responsibility should be stated in the philosophy statement. The philosophy statement then influences the attitudes displayed by practicum leaders and shapes the knowledge and skill competencies to be taught. It guides the selection of specific activities to achieve those competencies during the practicum experience. This philosophy statement should be shared among students, service providers, and practicum leaders and should regularly be used to guide practicum decisions. When disagreements arise, revisiting the philosophy statement can often serve to build consensus. Respondents to the survey varied greatly in the degree to which they have developed and are using local philosophy statements to guide their interdisciplinary work.

Faculty and Students from Diverse Disciplines

By definition, an interdisciplinary practicum involves faculty and students from more than one discipline. According to survey results, the most commonly involved disciplines are psychology, speech-language pathology, early childhood education, early childhood special education, physical therapy, occupational therapy, nursing, and social work. Most respondents did not describe family members as a ''discipline'' among their practicum collaborators, though many use family consultants to help plan, conduct, and/or evaluate their practicum.

Although 2–12 disciplines reportedly participate in interdisciplinary practica on various campuses, the most frequently cited number of disciplines is 2. Moreover, 8 of the 11 universities with two disciplines link early childhood education (ECE) and ECSE as the collaborating disciplines, with no other related disciplines participating. The next most frequently cited number of disciplines partnering for practicum is four, with 7 institutions indicating that number. Across the survey's 58 respondents, only two programs, other than those that pair ECE and ECSE, have identical combinations of participating disciplines. Interdepartmental collaboration appears to be guided by local factors, such as the discipline-specific programs offered on campus and the disciplines typically represented in nearby early intervention services.

The following practicum model illustrates how a practicum can be organized across six different disciplines.

UAP-Initiated Practica Across Six Disciplines

Virginia Commonwealth University (VCU) is a public, state-supported university enrolling more than 21,000 undergraduate, graduate, and health professional students on its two campuses in Richmond, Virginia. Through its university affiliated program (UAP), VCU has offered a unique interdisciplinary option for graduate students in psychology, ECSE, physical therapy (PT), occupational therapy (OT), nursing, and social work for approximately 9 years. An Interdisciplinary Steering Committee, comprising faculty from these six disciplines, plans and oversees the coursework, practica, and seminars that constitute this interdisciplinary program in early intervention/education. The committee meets at least quarterly to plan and discuss issues related to the program and to promote interdisciplinary cooperation and collaboration within the university's programs.

Twelve to 15 students per semester participate in the interdisciplinary program in early intervention/education. Students from the disciplines of OT, PT, psychology, nursing, and social work complete 12 graduate hours over a 1-year period, in addition to the regular graduate program in their home discipline. The early

intervention program consists of three courses, four seminars, required program tasks (competencies), and an interdisciplinary practicum in a program serving infants and toddlers with disabilities and their families. One of the courses, ''Interdisciplinary Teamwork,'' addresses issues related to effective team building. The other two courses provide content specific to providing family-centered services to young children with disabilities and their families. ECSE students enroll in ''Interdisciplinary Teamwork,'' attend the seminars, and participate in the practicum, but they do not enroll in the other two courses because this content is fully covered elsewhere.

Before initiating this program, university faculty made an extensive study of potential practicum sites to locate ones with positive interdisciplinary practices. Most students in the interdisciplinary program are placed in one of these practicum sites with a cooperating professional from their own discipline. ECSE students are occasionally supervised on site by a cooperating professional from a discipline other than education, especially in infant-toddler programs where few educators are employed. Students are typically placed individually at different locations. Faculty from each student's home discipline provide university supervision for field-based experiences.

Cooperating professionals are oriented to the interdisciplinary practicum via individual meetings with the university supervisor. One very successful aspect of the VCU experience is that individualized contracts are jointly developed by the university supervisor, student, and on-site cooperating professional. Each contract addresses unique site and student characteristics and clearly specifies interdisciplinary tasks to be completed. Students and cooperating professionals believe that this contract helps to set clear expectations for interdisciplinary performance and guide the accomplishment of defined tasks.

The field-based experience is formally evaluated in several ways. Students complete pre– and post–self-assessments of their knowledge and skills in defined areas, and these self-assessments are compared. University supervisors and cooperating professionals write at least three formal evaluations during each practicum and provide feedback to students. At the conclusion of the placement, the student completes an evaluation of the university's procedure and the supervisor's performance.

Institutional Support for Innovation

Faculty responding to this survey agreed that administrative support is essential for the effective implementation of an interdisciplinary practicum, just as it is for other interdisciplinary efforts (McCollum & Stayton, 1996; Stayton & Miller, 1993). The type and level of support reported by survey respondents varied across institutions. The most basic need is for verbal acceptance of the interdisciplinary effort by deans and department heads, along with their willingness to permit faculty decision making and flexibility in implementing the practicum. One respondent referred to this basic approval as ''iron-clad administrative support.'' At a more significant level of commitment, survey respondents identified other administrative contributions, including funding for continuing education and travel, secretarial assistance, space for meetings, instructional materials, teaching assistants, hiring of qualified supervisors, minigrants to practicum sites to prepare staff for practicum roles, and support for a new course to support the innovative practicum concept. Release time for faculty to collaborate in initiating the practicum is an especially significant contribution that the institution can make to encourage the development of a quality practicum experience.

However, 29 of the 58 survey respondents provided no information about the types of administrative support they receive. Because many of the participants in this survey receive grant support for their practica, it may be that specific administrative support has not yet been an issue. Experience suggests that this issue will increase in importance as

federal grants end and universities address the need to institutionalize their interdisciplinary practicum without grant support (Rooney, 1995).

Flexibility of Practicum Participants

Flexibility, flexibility, and more flexibility—this factor is stressed as critical in the sparse literature, professional presentations, and survey results collected for this chapter.

Faculty   Faculty involved with interdisciplinary practica must be open to considering new concepts from early intervention as well as to examining challenges to the assumptions and standard routines represented in their own disciplines. Faculty may need to address the following issues: different definitions of familiar terms; varied ways to supervise students; disagreements about how to involve students in planning; and diverse methods of assessment, intervention, and reporting. Expectations of family members on the intervention team, students, and site supervisors may vary across departments. These must be reconciled with one another and with the requirements of accrediting organizations. Creativity and careful explanation are needed to help the latter understand how local arrangements address their standards. Time lines for an unfamiliar collaborative effort are likely to require flexibility. Faculty must be willing to commit the hours required to resolve challenging issues.

Students   Flexibility is also an important attribute for students. Although practicum students are still learning their own discipline's philosophy, language, and roles, an interdisciplinary practicum experience requires them simultaneously to assimilate practices from other disciplines and also to engage in advanced skills such as role exchange and role release. Students must also learn to collaborate with numerous unfamiliar individuals such as family members, staff at the practicum site, and faculty and students from other departments. Students encounter unaccustomed routines and unexplained regulations. Respondents to the survey emphasized that undergraduates particularly need discipline-specific support and guidance in conjunction with their interdisciplinary supervision. The prepracticum orientation that many faculty provide to new students can draw attention to the elements of flexibility needed during the practicum.

Site Supervisors and Other Staff   The flexibility required of staff in supervising practicum students at the practicum site constitutes yet another juggling act. Staff must be able to grasp what faculty members hope to accomplish in the practicum, even though this experience is likely to differ from traditional practicum expectations. Site staff need to take the perspective of faculty and students to orient them to the expectations, policies, and procedures of the site. In addition, staff must communicate with faculty and students from multiple disciplines, articulate clearly their own needs, and release some responsibility to individuals who may have less education and experience in early intervention than they do. All of these elements will happen more quickly when site supervisors have worked out trusting relationships and information exchange across the disciplines providing services at the site on an ongoing basis.

Families   As with others on the service team, families are called on to be flexible in the practicum relationship. Families at participating sites will be asked to accept a new, less-experienced person on their child's team, as the university student learns to implement family-centered intervention. Some families may resist new personnel, no matter how carefully the student is introduced, and their feelings must be honored. For those family members who choose to participate on the practicum planning team, there is a need to look beyond their individual family situation to issues of students, professors, site supervisors, and other families and to discuss intervention questions at some distance from their immediate family's concerns.

Within the new relationships that result from the interdisciplinary practicum, a family may confront some unfamiliar questions. Family members may choose to rethink the nature and amount of their investment in early intervention with their own child and, more broadly, in the community's advocacy. The personal reflection that results can have positive outcomes or negative consequences. For example, one family who interacted considerably with a faculty–student team decided, as a result, to become more involved in advocacy groups in the state. Another mother decided to return to school to study social work to enter the field of early intervention. A third family tired of the frequent interaction with so many students and faculty and decided to end participation in their center's parent support groups.

The Institution   Flexibility is needed from university administrators in terms of examining traditional practices for student registration and faculty supervision; fostering cross-department, or even cross-college, decision making; and encouraging locally appropriate solutions to the challenges of interdisciplinary efforts. Flexibility can also assist administrators in scheduling practica and supportive coursework, assigning faculty to practica, allowing release time for ongoing development activities, assigning space for use by multiple programs, fostering collaboration with community programs, allocating resources to support the practicum, and negotiating with external accrediting agencies to accomplish the positive, if nontraditional, aims of practicum planners. For example, one administrator released faculty from other teaching responsibilities during the summer that the interdisciplinary practicum was instituted to give them time to develop a quality experience that could be replicated in the future.

Contextual Sensitivity

When multiple disciplines come together across university and community early intervention programs, a variety of relationships (i.e., contexts) for learning may overlap or even conflict. All practicum participants need to develop sensitivity to the local situation, which includes at least five significant components: 1) the multiple disciplines represented by the university faculty; 2) the university–community program relationship; 3) the nature of teaming among staff at the intervention site; 4) service provider–family relationships; and 5) relationships among faculty, students, and site staff. The language, values, and work styles of the various practicum participants must be understood and considered in building the overall practicum plan as well as the plans of individual students or teams of students. When students see faculty and site supervisors discussing the collaborative relationship in order to improve their work together, this presents a powerful model for students.

In addition to the personalities, discipline-specific preparation, roles, and previous experiences of the practicum participants, practicum planners must consider many other variables, as listed in Figure 18.2. Any interdisciplinary practicum must be responsive to its local context to survive and accomplish the goals of the institution.

Use of Quality Practicum Sites

To achieve desired outcomes, practicum sites must provide quality services; that is, they must model appropriate relationships among families and professionals. They must also practice intervention strategies recommended specifically by the participating disciplines as well as generally by leaders in early intervention. They must regularly evaluate the impact of their services and refine service delivery in accord with consumer feedback.

Practicum sites may be required to support students in an ongoing manner or during just one period of the year, such as a summer session. The majority of respondents indicated that practica occur over a full semester with the credit hours granted varying from

1. Which university departments are available?
2. Which university departments want to be involved?
3. What philosophy will undergird the interdisciplinary practicum?
4. What university and community structures (e.g., Educational Policies Committee, local interagency coordinating council), as well as other resources, are available to assist practicum development?
5. What early intervention programs might participate as practicum sites?
6. How well might each of the potential sites model teaming and collaboration?
7. What type of inservice training might be necessary for university faculty during practicum development?
8. What type of inservice training might be necessary for site staff during practicum development?
9. What type of orientation might be helpful for families prior to the practicum?
10. Which students (e.g., level, previous coursework, previous employment experience) could be involved in the practicum?
11. What students want to be involved in the practicum?
12. Will students be placed individually or in interdisciplinary teams?
13. What time of year (school year, between semesters, summer, combination) is available for interdisciplinary practicum, considering student schedules, site schedules, and faculty supervisors' schedules?
14. What shared expectations pertain for the practicum among
     Faculty from different departments?
     Personnel at the practicum site from various disciplines?
     Students from different disciplines and at different stages in career development?
     Families to be served?
15. What procedures will be followed for student placement, orientation, supervision, communication, and grading?
16. How will the practicum be evaluated by each of the participants, including
     Students?
     Families?
     Site personnel?
     Faculty from participating departments?
     University administrators?
     Accrediting agencies?
17. What formative and summative evaluation procedures will be used to assess the effectiveness of the practicum?

Figure 18.2.   Questions to consider in evaluating the local context.

1 to 8 and the days of the week varying from 1 to 5. Practica in a few programs, however, continue across two semesters, whereas others include only a few weeks during a semester or a shorter summer term. Practicum sites seem to be selected based on the following variables: 1) their location—community based or university based, 2) the number and characteristics of children and families served, 3) program philosophy, 4) staffing patterns, 5) types of services offered, and 6) relationship with the university. Ten programs among the 56 survey respondents employed university-based sites for some of their practicum experiences. Various community-based sites, including hospitals, child care centers, Head Start, public schools, and evaluation centers, were also used. Some settings served only young children with disabilities, whereas others were inclusive. Respondents to the survey emphasized that programs were selected as practicum sites because they offered family-centered, team-based services. Another factor in the selection of practicum sites was staff willingness to accept students and to participate in their supervision.

Whatever the structure of potential interdisciplinary practicum sites, it is desirable for them to exemplify the philosophy(ies) of both the university's institutional programs and that developed by the practicum planning team. Programs must actively welcome family leadership in both their own individualized family service plan (IFSP) development and in the decision making that occurs regarding agency policies. Students should be allowed to work with families functioning in both of these roles during the practicum. Personnel at the practicum site should demonstrate expertise in collaborative skills as well as in those required by their individual disciplines to model appropriate behaviors for students. Team members must be open to innovation and change, showing students the flexibility necessary to meet family needs. Stability in staff is desirable to provide cohesive team functioning as well as informed leadership for students.

Respondents' comments, as well as the authors' personal experience, suggest that this list of quality descriptors cannot always be satisfied in arranging practicum sites. Furthermore, there is a need to respect agencies' limits for student supervision and not overload the exemplary programs. University faculty are advised to determine their basic requirements (e.g., respect for families, team functioning) and then to support agency change in positive directions through providing staff development opportunities, sharing videotapes and reading materials, and, if tactfully done, modeling appropriate practices. The dilemma of insufficient numbers of quality practicum sites remains, and survey results show that this dilemma is widespread across the United States.

Evaluation of the Practicum

Both formative and summative evaluations are critical to improving the interdisciplinary practicum. Formative evaluation can be used to identify potential problems that the appropriate team needs to address in an ongoing fashion during the course of the practicum. Summative evaluation provides information on the overall effectiveness of the practicum in achieving its goals. Survey respondents reported involving students, on-site staff, parents, and university faculty in overall evaluation of the practicum. Students also evaluated themselves and their on-site supervisors. On-site supervisors and faculty typically evaluated students. Five programs provided no response to the survey's evaluation questions. Of the 58 respondents, 23 (39%) indicated that parents are not involved in the evaluation process. Overall, it appears that evaluation data collected for interdisciplinary practica were similar to those used in other practicum situations. The most common data collection methods appeared to be pre- and postassessment of competencies/objectives by students, postevaluation questionnaires regarding the practicum, and direct performance observations with written feedback. Some programs required journals with self-reflection about the interdisciplinary experience. One program employed a team self-evaluation tool on a weekly basis, and another program used a team roles survey before and after the practicum as well as a questionnaire on team functioning as a follow-up evaluation measure. Three universities reported using external evaluation.

Challenges and Solutions

An interdisciplinary practicum brings together a variety of participants with different histories of education and professional service. Creating an effective learning experience for students, while also rewarding site personnel and families for their contributions, can be a challenging task. Success in this endeavor requires specific actions before and during the practicum as well as initial and ongoing attention to the relationships involved.

Assembling the Interdisciplinary Team to Plan the Practicum   One of the challenges inherent in interdisciplinary practica is the task of bringing together people who have not worked together before. This frequently requires crossing departmental, even college, lines. To mirror early intervention, the university's interdisciplinary team must go beyond ECE and ECSE to include other disciplines. Developing collaborative relationships with representatives of disciplines such as nursing, social work, allied health, psychology, and nutrition will simulate for faculty the experiences of practitioners who work daily on interdisciplinary teams. One strategy for identifying who should be on the planning team is to determine which disciplines are typically included on early intervention teams within the community; identify the parallel personnel preparation programs represented within the university, community, or region; and establish procedures for involving faculty and students from those disciplines within the practicum.

Faculty representing all participating disciplines may not be present in the same location. The following practicum model illustrates a creative approach to offering interdisciplinary practica when higher education disciplines are limited.

When Higher Education Disciplines Are Limited

One personnel preparation program in ECSE exists within a consortium of six small liberal arts colleges ranging in size from 200 to 700 students. The colleges lie within a diamond approximately 75 miles by 85 miles in a rural area of the Great Plains. The consortium, called the Associated Colleges of Central Kansas (ACCK), has operated a collaborative program in special education since 1972 and a certification program in ECSE since 1987. Although the ECSE program is designed as an undergraduate offering in terms of credit, it attracts a significant percentage of students with bachelor's or master's degrees, who enroll in the 33-hour program seeking endorsement to teach children birth to age 8 and their families. In 1995, 15 graduates received Kansas certification. With the help of federal grants since 1990, ACCK has developed an Infant Specialization to be taken concurrently with the core ECSE program. Last year 13 graduates completed the Infant Specialization. A number of practicing professionals in the area also participated.

Although committed to offering interdisciplinary field experiences, the ACCK faculty has been challenged in implementing them. The small colleges of the consortium contain no departments of school psychology, speech-language pathology, nutrition, school administration, occupational therapy, or physical therapy. Two schools among the six sponsor undergraduate nursing programs with a life-span emphasis. Two of the colleges include undergraduate social work programs, also with a life-span orientation. Opportunities for cross-departmental practica are limited in this context.

The ECSE faculty are themselves a diverse group, with initial preparation in psychology, ECE, special education (mental retardation, trainable level; learning disabilities), and educational administration. They bring these diverse backgrounds, along with many years of experience as ECE/ECSE teachers, to practicum supervision.

Given the rural location of the ACCK colleges, potential practicum sites are limited in number. However, available practicum sites accurately reflect the settings most program graduates will enter for employment. Students complete a total of three ECSE practica, totaling at least 12 weeks, in addition to their 8-week student teaching placement in general education. They are placed for practica chiefly within a 115-mile by 170-mile diamond. All students take a course on collaboration skills, all participate in five seminars per year led by professionals from a variety of disciplines, and all student practica require experiences with and reflection on interdisciplinary decision making. In addition to placement in community- or school-based intervention programs, students may request a hos-

pital, institution, or specialized intervention program placement for their third practicum. They may also request to specialize in interdisciplinary experiences. The following examples illustrate the diversity of practicum settings experienced by students:

- **A team of four students spent 2 weeks at the University of Kansas Medical Center's Child Developmental Unit, assigned to diagnostic and intervention teams representing multiple disciplines.**
- **A student with previous certification in hearing-impaired education and extensive experience in early intervention with deaf infants spent 4 weeks at a Wichita medical center. Her supervision was shared by the ACCK supervisor in ECSE and the hospital's pediatric audiologist, a child life specialist, and a neonatal intensive care unit (NICU) nurse. This student spent a great deal of her time with the interdisciplinary team, interpreting the hospital's assessments to parents and developing collaborative transition plans from hospital to community for babies with multiple impairments.**
- **A young undergraduate who aims to practice in a rural area was assigned to an intensive care nursery at a hospital in Garden City, Kansas, with supervision from an ECSE-trained Infant Specialist and NICU nurses.**
- **Other undergraduates regularly are placed in a community program with an innovative hospital-based program to monitor infants at risk. The team to which these students are assigned includes a speech-language pathologist, a physical therapist, a special educator, a nutritionist, a social worker, and a nurse.**

Interdisciplinary practicum experiences are highly individualized, matching the practicum context and supervision with each student's needs, preferences, and previous experience. Types of interdisciplinary activities vary considerably from student to student. Nevertheless, the emphasis on interdisciplinary collaboration, transdisciplinary service delivery, and family-centered services is constant for all students. Although imperfect and certainly still evolving, ACCK's practicum plan is one example of using available resources creatively to accomplish interdisciplinary practica.

Developing Common Understandings of Early Intervention   Faculty from diverse disciplines may differ in various ways. Some faculty members and service providers have focused attention on infants, toddlers, and young children throughout their careers, whereas others have worked with an older age group or have a life-span perspective. Similarly, some professionals operate from a medical model, diagnosing impairments and prescribing remediation or cure, whereas others employ an empowerment model that collaborates with families to identify strengths and build on them. Some identify themselves as behavioral in approach, whereas others emphasize their developmental orientation. Furthermore, some professionals are most comfortable with clinical, highly specialized forms of service delivery, whereas others have adopted ecological approaches and transdisciplinary service delivery. Different disciplines, as educated in various regions of the United States, may bring idiosyncratic approaches to early intervention as well as to the planning process for an interdisciplinary practicum. Despite this potential diversity, it is essential for faculty to develop a shared philosophy of early intervention to communicate effectively with students.

Existing differences in perspective need to be acknowledged and discussed within a climate of respect and honest exploration. One strategy for initiating such discussions is to ask representatives from each department to share articles from their disciplines' early intervention literature for group study. Another strategy is to invite an expert in the field to meet with the faculty group and help them clarify the key early intervention concepts

in their own language. It is also valuable for faculty to attend state or regional early childhood meetings together and discuss presentations.

Reconciling Different Understandings of the Roles of Families in Early Intervention By law and by recommended practice, families are at the heart of early intervention; however, this concept tends to be understood and applied differently. To speak to students with a single voice, faculty for the interdisciplinary practicum need a common understanding about family roles in early intervention. Again, joint study of articles and books on family-centered practices can be useful (see also Chapter 10). Panel discussions by families with children in early intervention or by representatives from the state's parent training and information center can expedite the development of shared understanding. Better yet, inclusion of experienced parents on the practicum's planning team will positively shape its actions.

Creating a Shared Plan for Team Functioning Some members of the practicum planning team will be experienced and highly skilled at collaborative planning, whereas others will not. Established ways of interacting within the university's or practicum site's governance may need to be modified to develop procedures for shared decision making and joint supervision across departments and even across colleges. Societal emphasis on differential respect for individuals according to their salary and educational level must be openly acknowledged but deemphasized while contributions according to individual and shared expertise are rewarded. For example, family members and community-based early childhood program staff can make significant contributions to the planning and evaluation processes for the practicum and even to other university functions, such as student admissions decisions and course development, even though these individuals may not have graduate degrees. It is essential for university faculty to experience with cooperating professionals at the practicum site the concept of teaming and horizontal decision making that they seek to model for students. Members of the faculty team must recognize that as a team they will experience the same stages of team development (SkillPath, Inc., 1991) and assume similar team roles (Handley & Spencer, 1986) as will their students. Reflection and discussion about team process as well as practicum content are essential for the practicum planning team.

Useful strategies include discussion of shared readings (see Chapter 14) and safe exploration of the concepts of collaboration in both university and practicum settings. One respondent stated, ''Focus on trust, humor, openness, flexibility, and a climate that supports risk taking and change. This interpersonal component is the highest priority.''

Determining the Aims of the Interdisciplinary Practicum What is it designed to teach? What is it not designed to teach? What must students experience, and what ''would be nice if . . . ''? In short, what are the priorities, and which are the ''attractive incidentals'' for the practicum experience? Without a clearly articulated focus and defined instructional priorities, the practicum is destined to mean different things to different participants, and some will undoubtedly become disillusioned.

A strategy identified by several respondents is to determine specific practicum goals before the practicum in collaboration with families, service providers, and students and to define how their achievement will be measured. If faculty are divided in their aims for the practicum, this disagreement should be reconciled before initiating the experience. Everyone involved with the practicum should have a clear understanding of the outcomes desired, and the expectations for each role and the daily activities that are planned should flow from the previously agreed-upon philosophy. Programs should identify one set of core competencies for all disciplines involved in the practicum placement; unique com-

petencies may be added for specific disciplines. An illustration of an interdisciplinary practicum with clear focus and priorities is provided in the following practicum model.

Practicum Teams Across Four Disciplines

Western Kentucky University (WKU), a regional university in south-central Kentucky, has an enrollment of 15,000 and draws students from both rural and suburban areas. WKU has had a master's-degree program in Interdisciplinary Early Childhood Education, Birth through Kindergarten (IECE,B–K) since the summer of 1991. This program, partially grant supported, attracts approximately 15 new students per year with a variety of professional backgrounds and formal education. In addition, since the fall of 1993, WKU has offered, with federal support, a specialization in early intervention for up to five students per year in each of the disciplines of social work, school psychology, and speech-language pathology. Students in the latter two programs are enrolled in graduate programs and tend to have matriculated directly from an undergraduate to a graduate program. The social work students are undergraduates. Students must apply to participate in this program and are selected partly based on career interests in early intervention.

Students complete several discipline-specific practica as part of their respective degree programs. In addition, they complete a 5-week cross-disciplinary summer practicum together. Students are assigned to teams of five to six people at the beginning of the spring semester and then participate with their teams in a variety of activities (e.g., studies, role plays, simulations) during preparatory seminars. The goal is to have at least one student per discipline represented on each team. The teams are then assigned to infant-toddler or preschool settings based on students' interests and their work or practicum experiences.

One full-time faculty member from each of the participating disciplines is involved in planning, implementing, and evaluating the practicum. Depending on the number of IECE,B–K students involved in the practicum, additional faculty-level supervisors may be required. These individuals, typically graduates of the IECE,B–K program with extensive experience in early childhood settings, are supported with grant and departmental monies. Faculty have dual roles, serving on both the faculty team and a student team. Faculty provide supervision for both their student team and for students in their own discipline. Although the faculty have formal education in their respective disciplines, they also have previous early childhood experience such as counseling for Head Start, developing an inclusive child care program, assessing young children, teaching in Head Start and other preschool programs, and providing home-based intervention. The common faculty interest in early childhood services unifies the committee that designed the IECE,B–K program and continues to stimulate collaborative projects related to the early years.

The setting for the 5-week practicum is the WKU Child Care and Head Start Center. It was selected because it already existed on campus and operated during the summer, it was NAEYC accredited, its staff were flexible in meeting the needs of the practicum teams, and it serves children with and without disabilities. The center serves approximately 70 children in one infant classroom, one toddler classroom, and two preschool rooms. Classroom staff join with the student–faculty teams during the practicum. Four coordinators (i.e., education, disabilities, family services/mental health, nutrition/health) assist program staff and the practicum teams.

Students are expected to have the knowledge base to apply core competencies in the practicum setting. This knowledge base has been acquired through discipline-specific coursework, interdisciplinary coursework, and seminars. At least three seminars are scheduled in the preceding fall and spring semesters, and five in the 5-week summer term before the practicum; special seminars are also held during the practicum to support team functioning. These seminars are designed to introduce or expand on content with involvement from all practicum

students and faculty. Topics include an introduction to the program of study and its philosophy, the IFSP process, arena assessment, collaboration and teaming, early childhood curriculum, integrating objectives into the daily routine, and CPR instruction. Summer seminars also include a general orientation to the practicum for students and an orientation for both center staff and practicum students.

Practicum requirements are individualized based on program competencies with each student and supervisor developing a practicum plan. At minimum, each student must function as service coordinator for one child and family, plan and implement activities with children and families, participate in an arena assessment, and chair at least one of the required weekly team meetings. Each student completes a portfolio.

WKU offers an interdisciplinary practicum experience for students from four disciplines who participate as teams at a campus-based early childhood center. For institutions of higher education with several compatible disciplines and a suitable practicum site on campus, this model may be beneficial (McCollum & Stayton, 1996; Stayton & Miller, 1993). Its success depends on strong administrative support, recognition of the interdisciplinary process as part of faculty evaluation, commitment of faculty to the program, flexibility of professors in playing multiple roles, commitment of university funds after grant funds cease, broad-based participation of family members in developing the program, and comprehensive program evaluation consistent with all facets of the model.

Finding Time for Communication Among the Responsible Parties   Almost every survey respondent who had implemented an interdisciplinary practicum commented on the time factor: ''It would be easy to underestimate the time required to build bridges to other departments.'' Useful strategies include regularly scheduled meeting times that are held ''sacred'' by participants; study sessions for interdisciplinary discussions of early intervention and supervision; travel together to professional conferences dealing with personnel preparation in early intervention; and time lines that include considerable consultation time at all phases of practicum development, implementation, evaluation, and refinement.

Furthermore, university personnel need to commit considerable time to spend on site at the early intervention program if they are to develop a quality interdisciplinary practicum experience. ''Two visits a semester,'' as described by one survey respondent, will not accomplish a worthwhile outcome. Some of the necessary on-site time is spent mentoring the student(s), some is spent supporting and sharing expertise with the service providers, and some is spent analyzing the practicum process to improve it. The payoff for the time commitment by faculty is likely to be a cadre of competent faculty to ''cover the range of needed supervision'' and help all to adjust satisfactorily to the ebbs and flows of student enrollment in field experiences.

Finding/Creating Quality Practicum Sites   Survey respondents emphasized the importance of careful decision making regarding practicum sites. They suggested, ''Go and observe well-established, existing programs.'' ''Observe potential sites several times.'' Then ''focus on ones that really value family members as primary players and team members.'' Choosing sites that already follow many recommended practices is a good strategy.

But what if few options are available, as in many rural areas, and each of the alternative sites has some limitations? As early intervention has been changing rapidly, many agency personnel have not had access to professional development opportunities in collaboration and family-guided service delivery, or, even with exposure to these concepts, they have not made the necessary applications. University personnel must evaluate the potential for growth of available programs and consider the most promising, collaborative

means for supporting their adoption of recommended practices (Rosenkoetter & Mann-Rinehart, 1994).

Partnership in staff development may yield quality practicum sites in the long term as well as build mutually supportive relationships between early intervention providers and university faculty, relationships valuable for a variety of purposes. Faculty may invite program personnel to join them in study groups, in inservice presentations, or in class or conference sessions to exchange knowledge and skills. Professors may initiate joint visits to model programs that follow recommended practices and then discuss informally what has been observed. They may share books or videotapes or bring in outside experts to work as consultants with both program personnel and university faculty in designing the new interdisciplinary practicum. Site personnel may visit other practicum sites to learn from and contribute to their evolving practices and eventually to share ideas with faculty.

Faculty must respect the expertise of the program staff and the families in the community they serve. They must allow adequate time to nurture collaboration among agency personnel, university faculty, and families to build the infrastructure for the practicum. The quality of agency leadership, including hospitality to university faculty and general openness to change, along with the flexibility of student practicum participants is vital to making a practicum work in a less-than-ideal location.

The issue of site quality may also arise when one or more professional members of a program's team are not exemplary in their disciplinary competence for early intervention. Faculty personnel then need to determine how to support the service provider in achieving new knowledge and skills, to supplement the student's practicum experience beyond this agency, or to find another practicum site for the placement. Students should not be responsible for changing inappropriate practicum sites or supervisory personnel. Rather, differences of opinion between agency and university personnel must be worked out in their supervisory collaboration.

Two alternatives for using community-based practicum sites that may prove to be attractive to some faculty planners are using university-sponsored child care centers or establishing special playgroups. On some campuses, National Association for the Education of Young Children (NAEYC)–accredited, university-sponsored centers for infant-toddler care incorporate early intervention services under the leadership of professionals and graduate students (McCollum & Stayton, 1996). Although not fully real world, such locations may be advantageous because of their quality staff and their preexisting relationship to the university's programs. In such a setting, students may encounter fewer challenges to recommended practices, allowing them to focus on learning new intervention strategies. The setting may, however, limit their opportunities to observe conflict resolution.

A second alternative involves inviting a group of young children, including some eligible for early intervention, to participate as volunteers in special playgroups established for the express purpose of the interdisciplinary practicum (Rowan, Thorp, & McCollum, 1990). In such an arranged setting, faculty and students will not encounter service providers with philosophies different from their own. This makes practicing agreed-upon skills easier, but preparing students to function in real-world agencies, such as the one that Janet entered (see Janet's story in Chapter 1), may then need to be addressed through other practica.

Meeting Accreditation Standards of National Professional Organizations and Satisfying State Licensure/Certification Requirements   Many states (e.g., New Mexico, North Carolina, Washington) include in their licensure requirements for early intervention professionals a number of competencies related to interdisciplinary teaming and

family-guided services. Similarly, the standards published by many professional organizations (American Speech-Language-Hearing Association, 1990; Division for Early Childhood of the Council for Exceptional Children, National Association for the Education of Young Children, & Association of Teacher Education, 1996; National Association for the Education of Young Children, 1995; University of Kentucky College of Nursing, 1993) incorporate these two domains. A well-designed interdisciplinary practicum is an excellent strategy for addressing these competencies. Said one respondent, "Many problems that arise are due to the rigid, disciplinary nature of service systems." Advised another, "Be prepared to defend the adequacy of training students at least partially under a professional outside their field. The coordination necessary and the politics of pulling it off can be tremendous."

Necessary strategies include the following:

- Careful research about licensure/certification requirements for each discipline involved in the practicum
- Documentation of time spent by each of the relevant disciplines in collaborative development of the practicum experience ("They wanted to know that our discipline had been involved throughout the planning")
- Monitoring of proposed changes in standards for licensure
- Education of state and national leaders of the professions about ways that interdisciplinary field experiences motivate student learning of essential competencies (cf. Merrill-Palmer Institute, 1994)
- Advocacy to move the field as a whole and one discipline in particular toward embracing this concept

In situations in which strict supervisory guidelines prevent students from participating in interdisciplinary practica, faculty can develop opportunities for students to spend time in community-based interdisciplinary services as a part of their required coursework.

Recruiting Understanding and Support from University Administrators
Administrators with broad responsibilities may be unaware of the importance of interdisciplinary practica for the preparation of early intervention personnel. Education about this new field, its importance to the university's programs, and the opportunity for the school to provide exemplary training across disciplines must be shared with administrators initially and through repeated brief updates on the progress of the effort. Comments and outcome data from graduates, information about publicity accruing to the university from the interdisciplinary practicum project, copies of published manuscripts, lists of professional presentations, and testimonials from involved faculty can contribute to the ongoing information sharing. Where support is needed (e.g., release time to implement the initial effort, secretarial assistance, encouragement from administration to minimize cross-college red tape), it should be concisely requested and explained.

Respecting Differences in Personalities and Styles of Student Supervision Among Participating Faculty   Variation in work styles, supervision practices, and personalities is a necessary concomitant of shared leadership, and it parallels the team situations in which students are being prepared to function. Diversity can strengthen the team's ultimate product, the practicum experience, as long as it is recognized, aimed toward the common goal, and used to support student learning.

One respondent commented, "Examine a variety of models for supervision and a host of supervisory practices" before deciding how students will be mentored. The interdisciplinary practicum offers an opportunity for faculty and service providers to grow in

their leadership skills while challenging them to supervise in ways appropriate to individual students' needs. It also offers students an opportunity to learn from faculty from other disciplines. Yet the survey results indicated that only 11 of the 56 responding programs employ cross-discipline supervision. Strategies for accommodating varied personal styles include attending to the collaboration process and communication styles, as well as the outcomes, of the interdisciplinary practicum; developing common statements of goals, procedures, and time lines to frame all practicum elements; using partnering and/or role-playing supervision techniques to provide modeling for colleagues; and establishing open, respectful discussion of differences to strengthen team functioning.

Planning and Implementing Program Evaluation Activities   As with any other component of the personnel preparation program, the practicum must be evaluated to determine its effectiveness in relationship to the resources expended. Empirical evidence is essential to document the need for institutionalization of the practicum. Data may differ from those to be collected for other practica; needs should be determined based on the philosophy and goals for the interdisciplinary practicum.

All practicum participants should contribute to the evaluation process. The survey shows a widespread weakness here: Although one rationale for an interdisciplinary experience is to prepare students to provide more family-centered services, only 59% of the universities responding definitely included parents in their practicum evaluation process. The authors have found many parents willing to complete satisfaction surveys and to participate in focus groups. Only one program reported follow-up contact with employers. That institution has been gathering such data since 1988 and has found them very useful in refining the institutional experience. Lack of more widespread data gathering from employers may be due partly to the relative "newness" of many interdisciplinary practica. Evaluation data can be collected from employers via questionnaires, focus groups, and interactions with advisory groups.

CONCLUSION

Survey results suggest that interdisciplinary practica have largely developed since 1990. They are designed to improve student preparation to contribute effectively in early intervention. It is unclear from the survey results, however, how many universities are actually offering interdisciplinary practica. Surveys were sent to 289 institutions, and 155 of those responded, yet only 38% of the respondents (20% of the total sample) reported interdisciplinary practica. Programs that do offer an interdisciplinary practicum are likely to be in larger, publicly funded institutions with graduate programs. Many of these programs, although we cannot provide a specific number, have received financial support through U.S. Department of Education personnel preparation grants.

If interdisciplinary practica are truly critical to ensure that students acquire the skills to provide collaborative, interdisciplinary, family-centered early intervention services, then mechanisms must be developed to encourage more universities with a variety of disciplines to provide interdisciplinary practicum experiences. Those respondents who have participated in interdisciplinary practica as students, faculty, or site supervisors were universally positive about the experience; they also identified some significant challenges to implementing the concept. However, the potential benefits outweigh the drawbacks.

The following nine recommendations are based on the authors' and respondents' experiences with interdisciplinary practica:

1. Recognize that an interdisciplinary practicum involves more than students' achieving separate competencies furnished by two or more departments. Faculty need to do the

hard work of deriving *one* set of competencies that pertains for early intervention across disciplines (cf. Florida Consortium of Newborn Intervention Programs, 1991; Merrill-Palmer Institute, 1994). Discipline-specific outcomes may be added to the foundational list.

2. Recognize that interdisciplinary practica involve more than mere exposure of students to personnel from different disciplines. Rather, collaboration needs to be consciously practiced, evaluated by students and their multidisciplinary supervisors, and reflected on throughout the practicum experience.

3. Recognize that interdisciplinary practica for early intervention should go beyond the fields of ECE and ECSE to include some of the 15 other disciplines mentioned in the Individuals with Disabilities Education Act. Which disciplines and which departments must be determined within the local context.

4. Recognize that the special expertise of family members needs to be included on the interdisciplinary teams that develop, implement, and evaluate interdisciplinary practica for students. Most programs surveyed for this chapter appear to be making minimal use of families' expertise in providing field-based experiences for students.

5. Recognize that personnel in community-based early intervention programs, family members, and students are valuable partners in developing interdisciplinary practica. They bring different perspectives from those of faculty, and their observations will strengthen the practicum design. "Allow planning time to permit all parties to feel committed to the process. Continue setting aside time to ensure good and continuous communication among all parties."

6. Further work is needed to refine the concept of interdisciplinary practica and expand its applications. Formal research can be shared through professional journals. Equally important is the informal sharing of implementation experiences that helps to improve the development of interdisciplinary practica across the United States. Discussion sessions at professional meetings are useful for this purpose. Especially valuable is the sharing of ways to overcome common dilemmas.

7. Systematic evaluation of what students learn, and fail to learn, under different practicum conditions will help higher education planners choose the practicum configuration(s) that will best fit with the resources and constraints of local families, students, faculty, and service programs.

8. Dissemination concerning the concept of interdisciplinary practica needs to occur across the disciplines that serve young children with disabilities and their families. It also needs to occur through media that reach university administrators, who can provide the resources essential to support the development of interdisciplinary practica.

9. Along with community service providers, faculty members from various departments are likely to need technical assistance, inservice instruction, or external facilitation to develop their own skills in interdepartmental communication and collaboration. Survey respondents repeatedly emphasized that shared values and beliefs about early intervention and student learning, common understandings of language, and sufficient time to talk and learn together are essential for faculty members to achieve a successful practicum plan.

RESOURCES

American Speech-Language-Hearing Association. (1990). The role of speech-language pathologists in service delivery to infants, toddlers, and their families. *Asha, 32*(Suppl. 2), 31–34, 94. (301) 897-5700.

A description of expectations that fall within the professional scope of practice and expertise of speech-language pathologists in serving young children with disabilities and their families. The document is also designed to provide health care providers, educators, and the general public with an awareness of the services that speech-language pathologists can provide.

Division for Early Childhood of the Council for Exceptional Children, National Association for the Education of Young Children, & Association of Teacher Educators. (1995, June). *Personnel standards for early education and early intervention: Guidelines for licensure in early childhood special education.* Washington, DC: Authors.

Describes the knowledge and skills necessary for effective work with all young children, including those with special needs. This publication helps distinguish the roles of educators in both early childhood education and early childhood special education and outlines recommendations for licensure for early childhood special educators serving children with disabilities in a variety of settings.

Division for Early Childhood (DEC) Task Force on Recommended Practices. (1993). *DEC recommended practices: Indicators of quality in programs for infants and young children with special needs and their families.* Reston, VA: Division for Early Childhood of the Council for Exceptional Children. Cost: $20 plus shipping. (800) 232-7373.

Recommended practices for programs designed to meet the special needs of infants and young children. Aspects of early intervention that are examined include assessment; family participation; individualized family service plans and individualized education programs; interventions for children who are gifted; and interventions to foster cognitive, communication, social, adaptive behavior, and motor skills. Suggestions for service delivery models, supporting transitions, developing personnel competence, and evaluating programs are also included.

McCollum, J.A., & Stayton, V.D. (1996). Preparing early childhood special educators. In D. Bricker & A. Widerstrom (Eds.), *Preparing personnel to work with infants and young children and their families: A team approach* (pp. 67–90). Baltimore: Paul H. Brookes Publishing Co. Cost: $45 plus shipping and handling. (800) 638-3775.

An examination of the contributions and responsibilities of early childhood special educators working with young children and their families in a team approach. The authors describe the skills and knowledge that early childhood special educators bring to the field of early intervention, along with personnel preparation programs and recommended practices.

McGonigel, M.J., Woodruff, G., & Roszmann-Millican, M. (1994). The transdisciplinary team: A model for family-centered early intervention. In L.J. Johnson, R.J. Gallagher, M.J. LaMontagne, J.B. Jordan, J.J. Gallagher, P.L. Hutinger, & M.B. Karnes (Eds.), *Meeting early intervention challenges: Issues from birth to three* (2nd ed., pp. 95–131). Baltimore: Paul H. Brookes Publishing Co. Cost: $30 plus shipping and handling. (800) 638-3775.

Addresses the importance and challenges of using a transdisciplinary team approach to serving infants and young children in family-centered early intervention. The authors examine three team approaches, including a transagency team model.

Rowan, L.E., Thorp, E.K., & McCollum, J.A. (1990). An interdisciplinary practicum for infant–family related competencies in speech-language pathology and audiology. *Infants and Young Children, 3,* 58–66.

Insights from the implementation of an interdisciplinary instructional practicum for two graduate programs, Speech and Hearing Science and Early Childhood Special Education. Describes the instructional programs and approaches in terms of philosophy, implementation, challenges, and outcomes.

Stayton, V.D., & Miller, P.S. (1993). Combining early childhood and early childhood special education standards in personnel preparation programs: Experiences in two states. *Topics in Early Childhood Special Education, 13,* 372–387.

A rationale for the integration of early childhood special education and early childhood education programs as a strategy for promoting more cohesive and effective preservice training. Two unified programs are described, along with the barriers and facilitators.

University of Kentucky College of Nursing. (1993). *National standards of nursing practice for early intervention services.* Lexington: Author. Cost: Free while supplies last. (606) 233-5406.

An overview of the Education of the Handicapped Act Amendments of 1986, PL 99-457, and what it means to nursing professionals. Delineation of the scope of practice and standards of care for nurses, as well as standards of professional performance and guidelines for specialty practice.

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McGonigel, M.J., Woodruff, G., & Roszmann-Millican, M. (1994). The transdisciplinary team: A model for family-centered early intervention. In L.J. Johnson, R.J. Gallagher, M.J. LaMontagne, J.B. Jordan, J.J. Gallagher, P.L. Hutinger, & M.B. Karnes (Eds.), *Meeting early intervention challenges: Issues from birth to three* (2nd ed., pp. 95–131). Baltimore: Paul H. Brookes Publishing Co.

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Stayton, V.D., & Miller, P.S. (1993). Combining early childhood and early childhood special education standards in personnel preparation programs: Experiences in two states. *Topics in Early Childhood Special Education, 13,* 372–387.

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Innovation labs addressing global, wicked problems are becoming more prevalent. However, the innovative solutions often struggle to get implemented, due to them being "ad hoc, incremental, siloed and forgotten." Can participatory design increase buy-in and help change how these innovations are derived and implemented, thus making them more impactful? Purpose. I have long been interested in international development projects that attempt to solve big, global problems, but also shrink back from this type of work, not wanting to play out the narrative of "white savior" parachuting solutions into