Journal of Research in Rural Education, Spring, 1996, Vol. 12, No. 1, 33-43

Challenges and Strategies for Early Childhood Special Education Services in Florida's Rural Schools: A DELPHI Study

Keith E. Weiss and Vivian I. Correa
University of Florida

In this study, we asked early childhood special educators and administrators in rural areas to provide insight into educational issues in rural Florida school districts. The Delphi technique used in this investigation incorporated two rounds of questionnaires to generate responses and develop agreement from a panel of rural service providers. The panel was asked to (a) identify the problems facing rural educational service providers that hinder their ability to serve the needs of children 3 to 5 years of age with disabilities and (b) determine the modifications in current service programs that would help improve the delivery of services to these children.

In both urban and rural America, public school systems are faced with a wide variety of challenges. Many of them are not new; some are becoming worse. Some are of such complexity—intertwined with economic patterns and social trends—that their impact on education is often unaffected by educational policy and action. Providing services to very young children with disabilities represents one such challenge.

The past decade has seen dramatic growth in educational services to young children between the years of birth and kindergarten. The passage of Public Law 99-457 has further increased the numbers and types of services provided by school systems (Stegelin, 1992). Still, schools are challenged by the recruitment and training of educational staff; the identification and assessment of young children; and the development and implementation of effective, comprehensive service delivery models. Although a variety of service delivery models and staff development programs have been implemented, the long-term effectiveness of many of these programs remains in question (LeLaurin, 1992; Peters & Klinzing, 1990). Further, there is little information available on how the families of young children with disabilities use these programs (Huang & Van Horn, 1995).

Rural school districts face diverse challenges in providing quality educational services for students with disabilities and their families (Hare, 1991; Helge, 1981, 1992; Magrab, 1992; Stephens, 1994). The prevalence of children with disabilities seems to be higher in rural areas, even though they may not be identified by school professionals as often (Helge, 1992; Huang & Van Horn, 1995). The levels of poverty and unemployment are generally higher in rural families (Miller, 1993). For example, a recent national study of child care services for children aged 3 to 5 in 7,655 households in both rural and urban settings concluded that (a) rural households were more prone to poverty and (b) fewer parents had graduated from high school or attended post secondary schools (Huang & Van Horn, 1995). As a consequence, family resources are more limited, which may lead to increased levels of stress within the family (Mulkey, 1993). Rural families seem to be more close-knit, but untrusting and unwilling to interact with nonfamily care providers (Helge, 1992; Huang & Van Horn, 1995). Rural schools often have fewer dollars to spend per pupil because of a reduced local tax base and a normed allocation of state and federal money (Phelps & Prock, 1991). Funding for special education programs is an even greater problem (McIntosh, 1986). Current economic trends towards a global and information-based economy appear to be worsening the economic, family, and community foundations of rural areas to a greater extent than in urban areas (Miller, 1993).

The need for adequately trained special and early childhood educators is more critical in rural areas because of limited professional interactions, small recruiting budgets, rural climate, and the urban orientation of many teacher-education programs (Berkeley & Ludlow, 1991; Helge, 1992; Lemke, 1995; Mallory & Berkeley, 1988; Stegelin, 1992). Serving fewer students over larger geographic areas with limited trained staff becomes, more often than not, a logistical problem and a drain on the rural educational budget (Helge, 1987; Helge, 1992). The logistics may be even more complex when attempting to serve children with low-incidence disabilities (Sebastian & McDonnell, 1995).

Correspondence concerning this article should be addressed to Keith Weiss, Department of Special Education, University of Florida, P.O. Box 117050, Gainesville, FL 32611-7050.

The purpose of this study was to learn about the key educational issues faced by early childhood special educators and administrators in rural areas. A Delphi technique was used to develop a consensus on the important problems facing these rural educators and on the changes in service that may benefit young children with disabilities and their families.

The Delphi Technique

The Delphi technique is an idea-generating procedure useful in situations where individual judgments are being tapped and combined to arrive at a satisfactory level of consensus (Delbecq, Van de Ven, & Gustafson, 1975). It is a special-purpose technique, developed by Norman Dalkey and Olaf Helmer with the Rand Corporation in the 1950s, and it is useful in reaching decisions that cannot be calculated by one person. Simply put, it is a group process that solicits written responses from a number of knowledgeable individuals in isolation from each other.

The important features of the Delphi method are (a) anonymous panel interaction and responses, (b) a series of questionnaires with feedback to the group, and (c) the presentation of statistical information on group responses (Murry & Hammons, 1995). Selection of the participants is the key to the success of the process. The chief selection criteria are expertise and motivation. Panel size is determined according to the characteristics of the expert group: An acceptable size for a group with homogeneous characteristics could be as low as ten, but a heterogeneous group—representing a variety of reference groups—could necessitate as many as several hundred people. Studies by Delbecq et al. (1975) and others (Hoffman & Maier, 1961; Murry & Hammons, 1995) suggest that few ideas are generated by more homogeneous groups once the size exceeds 30 individuals.

Typically, the process includes a set of questionnaires to which the panel responds. In one approach, the panelists are asked to generate several concise statements in response to open-ended questions. A second questionnaire would ask the panel to rate or rank statements received in the first round. In an alternative approach, a series of structured statements developed by a prior group is submitted to the panel to rate or rank. In either case, the process would continue until consensus or stability was achieved, generally in one or two rounds after the formation of the concise statements (Delbecq et al., 1975).

In recent years, Delphi has been used in a number of instances to develop consensus of expert opinion or to suggest future directions in educational planning and programming of services for students with disabilities (Campeau, Hesse, Wolman, & Weisgerber, 1992; Cannon, Idol, & West, 1992; LaGrange & Reed, 1990; Putnam, Spiegel, & Bruininks, 1995; Repetto, 1993; West & Cannon, 1988). Campeau et al. (1992), for example, formed a heterogeneous panel of 31 special educators and adult service experts to develop agreement regarding the knowledge base professionals require in order to anticipate the various service needs of students with disabilities. A lengthy series of needs statements was presented to the panel, who responded using a three-point Likert scale in the second round. The LaGrange and Reed (1990) study of Canadian child care professionals used three rounds (the first was a request for responses) to establish an agenda of topics and issues worth further investigation.

Method

Sample

Counties. Currently, there is no completely accepted definition of *rural* (Helge, 1987; Stephens, 1992a). The most widely accepted definition is drawn from the U.S. Office of Budget and Management's definition of metropolitan statistical areas (MSA). A MSA must include "at least (a) one city with 50,000 or more inhabitants or (b) a Census Bureau-defined urbanized area of at least 50,000 inhabitants and a total MSA population of at least 100,000" (Hobbs, 1994). "Rural," therefore, is all counties not lying within a MSA. However, using a MSA definition can present certain problems; as a result, a number of other population-based taxonomies have been designed (Hobbs, 1994; Stephens, 1992a, 1992b).

The definition of rural used in this Delphi exercise was based on MSA as refined by the ten-class ERS/USDA taxonomy (Stephens, 1992b). Specifically, rural counties were those (a) not part of a MSA as per the 1990 census report of the U.S. Bureau of Census; (b) that did not have a large urbanized population (i.e., residents of an incorporated area, greater than 20,000); and (c) were not adjacent to the primary county comprising the MSA. Twenty-seven counties of the 67 counties in Florida met this definition. Twenty-one counties were in the northern section of the state and six were in south Florida. Counties were then stratified geographically into north and south Florida groups. A table of random numbers was used to select a total of 14 counties from the stratified sample.

Delphi panel. The Delphi panel was composed of one early childhood special education program administrator and one early childhood special education certified instructor from each of the selected school districts. In order to qualify, a panelist must have had at least 3 years of full-time experience in the county school system and at least 5 years of full-time experience with early childhood and special education programs, preferably in rural areas. Names of possible panelists were taken from a list of county early childhood personnel provided by the Florida Department of Education and developed from telephone calls to the

county administrative office. Each individual was interviewed on the telephone for relevant professional information, including the number of years experience in early childhood education, knowledge of the county, and interest in participating in this exercise. Only individuals who were interested in completing the project and who had acceptable qualifications were selected.

The final panel was composed of 14 program administrators and 13 teachers (in one county, it was not possible to find a qualified teacher). Administrators had a mean rural residency of 21.9 years and 16.9 years experience in special education instruction and programming. Eleven possessed a master's degree and three a specialist or doctorate. Teachers had a mean rural residency of 8.5 years and 7.9 years experience in early childhood special education. Seven held a bachelor's degree and six a master's degree.

Procedures

The panelists received two rounds of questionnaires. The purpose of the first round of questions was to generate potential ideas and problems. Round 1 questionnaire posed two questions: (a) What are the problems facing rural educational service providers that hinder your ability to serve the needs of children pre-K to age 5 with disabilities? (b) What modifications in current service would help improve the delivery of services to these children? All panelists responded to this first round, with the exception of one teacher of an early childhood gifted program who withdrew from the study.

Over 230 responses were received from Round 1. These were coded and sorted into topical clusters by three research assistants; each cluster was devoted to a specific problem or solution suggested by the panelists. Disagreements in sorting were resolved by consensus of opinion. A brief, sentence-like statement was then developed by the research assistants to describe each cluster of responses from the panel describing a particular problem or potential modification. A total of 51 common statements were developed from the panel's responses to the first question (areas of challenge). Thirty-nine statements were developed from the responses to the second question posed (potential strategy solutions). These panel-generated statements made up the second questionnaire.

In Round 2, the Delphi panelists were asked to rate the importance of a series of composite statements derived from the tabulated responses to Round 1. A five-point Likert-type scale was employed: 4 (very important or desirable), 3 (important or desirable), 2 (slight importance or benefit), 1 (not important or no benefit), and 0 (don't know). No neutral position was provided, as it adds little information in Delphi methodology (Turoff, 1975). The questionnaire provided space for comments or clarification to each statement and for additions to the list of statements. Twenty-five out of the final twenty-six panelists responded to the second round questionnaire.

Data analysis. The responses to the second questionnaire were entered into a SAS data file using the Northeast Regional Data Center in Gainesville (FL), and the mean, median, and mode were determined for each statement. Table 1 lists the statements of local problems in providing services; Table 2 lists modifications in current local service programs. The statements are listed in descending order by percentage of panel agreement to each topical statement. This percentage represents the percent of responding panelists who marked that the statement was very important or very desirable (4) or important or desirable (3).

Results

In Round 2, the Delphi panel was less able to agree on the challenges facing their rural districts than they were able to recognize the potential value of specific strategies in dealing with the various challenges (see Table 1). The means for the 51 challenge-related statements ranged from a high of 3.38 to a low of 1.39. Further, the degree of separation between the mean, median, and mode for each statement generally reveals a greater uncertainty regarding the impact of the challenge in question. The panel's uncertainty is also reflected in the percentage of panelists agreeing that the problem was very important or important. Only two challenges were recognized as being very important to important by more than 80% of the panelists responding to the statement, while 29 of the 51 were supported by more than 50% of the group.

On the other hand, the panel reached more agreement on the 39 strategy statements (see Table 2). The means ranged from a high of 3.56 to a low of 1.61. More importantly, there was increased unison. Not only were the median and mode closer to the mean for each strategy, but unison was evident in the percentage of panelists noting the strategy to be very desirable or desirable. Over one third of the 31 solutions were believed to be very desirable to desirable by over 90% of the responding panelists, while only three strategies received less than 50% acceptance.

The challenges with the most panel unison were parental child care skills and knowledge (88%, $M = 3.38$) and the stability of the family environment (83%, $M = 3.29$). Next, the panel recognized the difficulty of finding and keeping specialized service providers (79%) and the limited funding for hiring more teachers (79%) and for facilities (75%). At 72% were the challenges of limited parental involvement in their child's education, extended bus rides, and insufficient preschool experiences due to rural isolation.

Four strategies were perceived to be very desirable or desirable by 96% of responding panelists. These were establishing a parent liaison or case manager program ($M =$

Table 1
Challenges: Local Problems in Providing Services as Described by DELPHI Panel

Mean	Median	Mode	% Responding *Important* or *Very Important*	Statement
3.38	3.5	4	88	Lack of parental child care skills and knowledge.
3.29	4	4	83	Lack of stable home family environments.
3.25	4	4	79	Lack of specialized service providers (PT, OT, medical, speech, etc.).
3.17	3.5	4	79	Lack of sufficient funds to hire more teachers.
3.13	3	4	75	Lack of sufficient funds for facilities.
3.16	3	4	72	Lack of parental involvement in children's education.
3.08	3	4	72	Long distances in rural areas require lengthy bus rides for students.
2.88	3	3	72	Children lack sufficient preschool experiences because of rural isolation.
3.04	3	4	68	The lack of qualified teachers to meet the needs of students.
3.00	3	3	68	Lack of sufficient funds to hire teacher aides.
2.96	3.5	4	68	A staff not trained to meet the broad range of disabilities in the same classroom.
2.88	3	3	68	Limited base of "worldly" and cultural experiences of many families.
2.68	3	4, 3	64	Lack of family transportation limiting the family from attending screenings, meetings, medical appointments, etc.
3.00	3	4	64	The numbers of students in a class being too many.
2.96	3	4	64	Limited number of buses resulting in lengthy bus rides for children.
2.96	3	4	64	A staff not trained in language development.
2.95	3	4	63	Lack of parental participation in regard to child's educational and medical needs.
2.75	3	3	63	Family economic concerns limit their participation in child's educational program.
2.48	3	3	63	Lack of inclusion or mainstreaming with other children in regular education.
2.72	3	3	60	A lack of knowledgeable classroom aides.
2.72	3	4	56	Difficulty in providing adequate services to low incidence populations.
2.32	3	4, 3	55	Tendency of many families in rural and low socioeconomic areas to be isolated from others.
2.75	3	2	54	Parents lacking knowledge of the rights and programs for special needs children.
2.72	3	2	52	Having many diverse exceptionalities in one class.
2.70	3	3, 2	50	Inadequate and inaccurate evaluation of very young children.
2.46	2.5	3	50	Limited flexibility in program modification due to a limited, but diverse population.
2.79	2.5	2	50	Lack of sufficient funds for necessary equipment, materials, and supplies.
2.75	2.5	2	50	Different standards, rules, and forms used by various agencies.
2.67	2.5	2	50	Limited ability for early identification of children from birth to 3 years old.
2.48	2	2	48	Limited flexibility in program modification due to funds and state guidelines.
2.44	2	3, 2	48	A high turn-over of teaching staff each year.

Table 1 (Continued)

Mean	Median	Mode	% Responding *Important* or *Very Important*	Statement
2.42	2	2	42	Lack of understanding of standards, processes, and professional language between agencies serving children.
2.42	2	2	42	Lack of support to classroom teachers from county program administrators.
2.41	2	2	42	Parents do not understand the importance of early intervention.
2.29	2	2	42	Lack of information concerning specific needs of children assigned to a classroom.
2.28	2	1	40	Need to use a varying exceptionally (VE) model for pre-kindergarten programs.
2.38	2	4, 1	38	Lengthy bus rides because of cooperative programs with other counties.
2.33	2	2	38	Lack of interagency cooperation or communication.
2.44	2	2	36	Limited planning and preparation time for class.
2.32	2	2	36	A staff which is not knowledgeable of the requirements and federal/state laws regarding education.
2.21	2	2, 1	33	County administration lacks knowledge of good practices in early childhood special education.
2.12	2	2	28	"Mind set" of rural community against special needs children and the worth of early intervention.
2.00	2	1	26	Limited staff skills and knowledge in regard to multicultural and non-English language needs.
1.91	2	1	26	Students placed in exceptional student education (ESE) only to increase state and federal monies received by the district.
1.78	1	1	26	Students from migrant populations missing part of school year.
2.25	2	3, 2	24	Poor parent-teacher communication.
2.08	2	2	24	Limited flexibility in program modification due to controls of county administration.
1.74	1	1	22	County program director dictates and does not allow for staff and teacher input.
1.71	1.5	1	17	IEP meetings scheduled only at convenience of county staff.
1.78	2	1	17	Teachers new to the rural areas find it hard to adjust to a rural environment.
1.39	2	1	13	Lack of adequate or effective multicultural and second languages programs.

Note. N = 23-25 for each item. All items rest on a scale of 0 to 4: (0) Do not know or do not wish to answer, (1) Not important—has no effect; should be dropped from questionnaire, (2) Slight importance—little impact; not determining factor in any major issue, (3) Important significant impact, but cannot be dealt with until other issues are resolved, and (4) Very important—direct impact; must be dealt with, treated, resolved before others.

Table 2
Strategies: Modifications in Current Local Service Programs as Described by the DELPHI Panel

Mean	Median	Mode	% Responding *Important* or *Very Important*	Statement
3.60	4	4	96	Establish a parent liaison or case manager to assist parents in coordinating and providing for services for their child with schools and other agencies.
3.56	4	4	96	Increase counseling services for families and children.
3.52	4	4	96	Provide funding mechanisms sufficient to bring service providers into rural areas.
3.52	4	4	96	Lower exceptional student education (ESE) child-teacher ratios in rural counties.
3.58	4	4	92	Develop ways to obtain more PT, OT, speech, and other service providers.
3.54	4	4	92	Develop effective family and parenting education programs for parents.
3.48	4	4	92	Increase the general funding for pre-K special education programs.
3.44	4	4	92	Provide more training and staff development opportunities to update skills and knowledge.
3.44	4	4	92	Develop a teacher aides training and certification program at a community college.
3.42	4	4	92	Provide incentives to perspective teachers to teach ESE programs.
3.36	3	3	92	Re-evaluate the funding formula for support services and outreach programs.
3.32	3	3	92	Establish a program to allow home visits by teachers to work on specific child needs and develop rapport with families.
3.32	3	4	88	Use a transdisciplinary team approach starting at birth involving all agencies to assess and determine appropriate child services.
3.29	4	4	88	Provide more mainstreaming opportunities, especially in speech/language or in PT/OT settings.
3.17	3	3	88	Use an inclusion model rather than always putting ESE students in special education classrooms.
3.08	3	3	88	Improve cooperation and collaboration of information between schools and other service providers.
3.43	4	4	87	Provide other service providers, such as PT and OT, on a consistent basis.
3.04	3	3	87	Use trained aides in classrooms and have ESE teachers work with children in resource centers.
3.40	4	4	84	Develop a uniform system of paperwork for all agencies involved in a child's educational plan.
3.36	4	4	84	Provide greater flexibility in funding mechanism so as to improve child placement.
3.36	4	4	84	Earmark funds for field trips and children's hands-on experiences.
3.29	4	3	83	Have child find screenings at various day care sites.
3.21	3	3	83	Improve support from regional DOE personnel for low-incidence exceptionalities.
3.13	3	3	83	Limit the use of teachers teaching outside of their areas of certification.

Table 2 (Continued)

Mean	Median	Mode	% Responding *Important* or *Very Important*	Statement
3.16	3	4, 3	80	Establish outreach clinics, mobile or site-based, for support and medical care.
3.08	3	3	80	Increase collaboration between teachers and local administration in developing local goals, objectives, and plans of pre-K programs.
3.25	4	4	79	Provide incentives to perspective teachers to teach in rural counties.
3.08	3	3	79	Improve support and understanding of local administration in early childhood issues.
3.13	3	4, 3	78	Increase support and collaboration of Fla. Diagnostic Learning Resource System with schools and teachers.
3.04	3	4	76	Provide preschool services to every child under age 5 regardless of socio-economic status.
3.08	3	3	75	Develop an effective transition program that contacts families at least 6 months prior to full-time placement.
3.00	3	3	71	Increase the number of bus routes so as to shorten the length of children's ride.
3.13	3	4	70	Link parenting workshops to the receipt of family financial support.
3.00	3	4	67	Improve quality and amount of teacher recruiting efforts.
2.86	3	4, 3	64	Increase the numbers and varieties of early childhood special education programs and classes.
2.92	3	4, 2	54	Decrease the number of meetings during preplanning so teachers can plan and prepare their classroom.
2.33	2	2	33	Establish regional offices of the Bureau of Exceptional Student Services around the state.
1.84	1	1	28	Separate the various exceptionalities into separate classroom settings.
1.61	1	1	9	Begin some academic learning in preschools instead of only developmental activities.

Note. N = 23-25 for each item. All items rest on a scale of 0 to 4: (0) Do not know or do not wish to answer, (1) Undesirable—harmful or no effect; not justifiable or possible, (2) Limited desirability—little effect; will only have some influence; justified only as by-product, (3) Desirable—beneficial; will have positive effect and little or no negative effect; justifiable as a by-product to other programs, (4) Very desirable—extremely beneficial; will have positive effect and no negative effect; justifiable on its own merit.

3.60), increasing family counseling services (M = 3.56), developing funding mechanisms to attract service providers (M = 3.52), and lowering classroom child-teacher ratios (M = 3.52). The only strategies not rated by a majority of the panel as very desirable/desirable were establishing regional exceptional education offices (33%), segregating students by disability (28%), and including some academic learning in the preschool curriculum (9%).

Discussion

The responses of these teachers and administrators indicate the complex problems faced by early intervention professionals in rural counties in Florida. Furthermore, this panel of educators provided an array of modifications in current local service programs that might help to improve the delivery of services to young children with disabilities. Major themes emerged from the Delphi analysis concerning (a) rural ecology, (b) family conditions, (c) professional staff, and (d) educational programs and funding.

Rural Ecology

The panel reported many of the same problems researchers have described in other rural areas across the United States (Hare, 1991; Helge, 1987). For example, the

panel identified concerns related to the geographic location of the children, schools, and medical services. It was apparent that long distances and lengthy bus rides continued to present barriers to educating young children with disabilities in rural communities. This isolation may have had an impact on families, children, and educators in at least three ways. First, the long distances between school and home may have discouraged family involvement in school activities and may have discouraged child participation in school services. Second, the long distances between school and medical support services may have resulted in lack of accurate and current information on the child's medical condition and treatment. Third, the long distances between home and medical support services may have resulted in a lack of diagnosis, treatment, and follow-up related to the child's medical condition.

In addition to the problems caused by geographic isolation, the panel recognized the impact of poverty, particularly on family involvement and children's experiences. The panel also noted the difficulty young teachers had adjusting to rural life, and the resulting high turnover of staff. Similarly, physical, occupational, and speech therapists were difficult to find and keep in these rural communities. Finally, the panel noted that the need to provide for diverse, but low-incidence, exceptionalities strained the already limited pool of available educational resources.

Solutions to the rural ecology issue were few. The panel suggested that the number of bus routes be increased to reduce the length of children's bus rides and that incentives be provided to teachers and teacher aides to work in rural counties.

Family Conditions

The panel identified multiple challenges related to working with families. Many of the concerns related to the lack of parental child care skills, instability of the home environments, lack of parental involvement in the child's education, limited base of "worldly" and cultural experiences of many families, and limited family economics. The panel's concerns indicated that the families they work with may be at risk due mainly to poverty, isolation, and disenfranchisement from the school system. These findings support Mallory's (1995) observation that physical isolation, lack of transportation and substitute child care, and limited job opportunities (combined with inequitable wage scales) create added stressors for rural families. To further illustrate the point, one panel member wrote that some parents are not involved with their child's education due to apathy, but more often it is due to the lack of transportation and child care services. The dollars aren't available to alleviate this problem or to provide incentives to parents for participating.

The panel suggested the following solutions: parent liaison programs, increased counseling services for families, and effective family and parenting education programs. The panel also recognized the need to increase home visit programs. Another interesting solution was to link parent workshops to the receipt of financial support for families.

Professional Staff

On items related to educational staff, the panel's concerns ranged from excessive regulation and inadequate support at the county administrative level to concern about the classroom competencies of teachers and teacher aides. The panel felt that professional staff sometimes were not adequately prepared to meet the educational, physical, and cultural needs of their rural students. This is in concert with the findings of others (Helge, 1992; Lemke, 1995). Lemke (1995) noted that the needs of rural teachers were different from the needs of teachers in urban districts, which provided greater resources. For instance, rural teachers must have a broader range of generalizable skills and must be prepared to work with various categories of disabilities. The panel was also concerned about the knowledge and skills of teacher aides working with very young children. Suggestions to improve staff competencies included more opportunities for inservice training and preplanning time, more formal training and certification programs for teacher aides, and reduced teacher-student ratios.

The panel also recognized their county's continuous efforts to find and keep specialized related service providers. Here again, the panel identified a problem that more often than not is experienced by most rural school districts around the country (Magrab, 1992): difficulty in recruiting related service staff such as speech, physical, and occupational therapists. Other concerns included interagency cooperation, the lack of collaboration between professionals, and the large number of forms with varying terminology used by different agencies. The highest rated strategy was to develop creative ways to attract physical therapists, occupational therapists, and other professionals. Other highly rated strategies were a uniform paperwork system and a transdisciplinary team approach to assess and design appropriate child services.

Educational Programs and Funding

The panel recognized that funding issues and educational programs were important in providing quality educational services to young children with disabilities and their families in rural communities. Funding challenges were seen as influencing the quality of educational services, but there was wide disagreement as to their impact. The panel saw the lack of sufficient funds to hire more teachers and teacher aides as the two most serious results. The panel

felt that solutions to the funding issue, outside of increased monies, exist in providing greater flexibility within the funding mechanism and in restructuring the funding formulas used for outreach programs and support services. The panel also hoped for an increased funding base and greater flexibility in state and federal funding mechanisms. Increased placement in a least restrictive environment was seen as a viable solution for improving the quality of a child's educational and social experiences at a lesser per student cost. This approach is consistent with rural school districts nationwide, which more often than their urban counterparts prefer least restrictive settings whenever possible (Mallory & Berkley, 1988).

Challenges that the panel associated with educational programming were primarily focused on the inability to properly identify and evaluate at an early age those young children who may be in need of educational and medical supports. Strategies to remediate the problem involved improved, expanded screening in day centers and broader, more intensive transition programs. Panel members also recognized the need to further their efforts to develop a philosophy of inclusive placements.

Implications

The results of our study underscore the need for designing specialized early intervention and family support practices for rural communities. Perhaps one of the most critical implications is a need to increase the service providers' awareness of the cultural diversity in rural communities. Mallory (1995) noted that in order to design special education programs that embrace an ecocultural perspective, the "diversity of rural context and people that live within them must be recognized and respected" (p. 7). The following suggestions for improving the conditions of rural early intervention from an ecocultural perspective were synthesized from the panel's responses to the question on modifications.

Recruit teachers to teach in rural school districts. It seems important to recruit college-bound students from rural settings to enter early intervention teacher education programs. Yellin, Bull, and Warner (1988) note that rural teacher education programs "should primarily focus their recruiting efforts on students who will return to a specific rural community because they have ties there (preferably by marriage)" (p. 35). Students who will attend universities in an urban setting should receive incentives that encourage them to return to their rural communities to teach (McIntosh, 1989). Furthermore, local community colleges might link their teacher education efforts with larger 4-year institutions and provide distance education programs in the local setting.

Continue to prepare preservice teachers for rural settings and provide incentives for them to teach in rural areas. Incentives might include repayment of education loans through teaching in rural areas. Additionally, community colleges and distance education could be used to prepare teacher aides for early intervention programs.

Support outreach efforts by medical and social service agencies. The use of mobile clinics staffed by interdisciplinary professionals allows families access to otherwise unavailable services.

Support efforts to implement a service coordination model of service delivery for families in rural communities (Rosenkoetter, Hains, & Fowler, 1994). A service coordinator can integrate all services provided to the family and serve as a liaison to the interdisciplinary team of providers. Coordinators can serve as the key cultural broker and coordinator of all services and the contact person for all information about the child and family.

Link families to related service personnel providers via distance satellite technology (Folio & Richey, 1991). Related service personnel could observe the child via an interactive video linkage system and provide consultant services to the family and early interventionists without the family having to travel to regions far from the child's community.

Provide inservice professional development to early interventionists via distance education or sponsored summer institutes (McIntosh, 1989). The content of inservice programs should concentrate on strategies for inclusive education, collaboration, teaming, and consultation, and should develop in teachers a higher awareness and understanding of the culture of poverty and rural-ness. Additionally, teachers in rural schools must have broad knowledge of different areas of exceptionalities.

In conclusion, the Delphi panel supported current research on the issues facing special educators in rural areas and applied those issues to early intervention. There was much variability in the panel's responses to the problems, but, overall, panelists believed that the lack of resources and services in rural environments and issues related to families were of greatest concern. In regard to solutions and modifications, the panel was largely in agreement about the ways schools should tackle the problems of rural early intervention. Providing support for families and giving teachers and teacher aides incentives to remain in rural school districts were among the most important solutions. The effects of implementing the various modifications to rural early intervention programs should be the subject of subsequent research.

References

Berkeley, T. R., & Ludlow, B. L. (1991). Meeting the needs of special student populations in rural locales. In A. J. DeYoung (Ed.), *Rural education: Issues and practice* (pp. 239-268). New York: Garland Publishing.

Campeau, P., Hesse, B., Wolman, J., & Weisgerber, R. (1992, April). *Representing knowledge base diversity in an expert system designed to anticipate service needs for students with disabilities.* Paper presented at the annual meeting of the American Education Research Association, San Francisco, CA. (ERIC Documentation Reproduction Service No. ED 347 731)

Cannon, G., Idol, L., & West, J. (1992). Educating students with mild handicaps in general classrooms: Essential teaching practices. *Journal of Learning Disabilities, 25,* 300-317.

Delbecq, A., Van de Ven, A., & Gustafson, D. (1975). *Group techniques for program planning: A guide to nominal group and Delphi processes.* Glenview, IL: Scott Foresman.

Folio, R., & Richey, D. (1991). Public television and video technology for rural families with special needs young children. *Topics in Early Childhood Special Education, 10,* 45-55.

Hare, D. (1991). Identifying, recruiting, selecting, inducting and supervising rural teachers. In A. J. DeYoung (Ed.), *Rural education: Issues and practice* (pp. 149-176). New York: Garland Publishing.

Helge, D. (1981). Problems in implementing comprehensive special education programming in rural areas. *Exceptional Children, 47,* 514-520.

Helge, D. (1987). Strategies for improving rural special education program evaluation. *Remedial & Special Education, 8*(4), 53-60.

Helge, D. (1992). Special education. In M. W. Galbraith (Ed.), *Education in the rural American community: A lifelong process* (pp. 107-136). Malabar, FL: Krieger Publishing.

Hobbs, D. (1994). Demographic trends in nonmetropolitian America. *Journal of Research in Rural Education, 10,* 149-160.

Hoffman, L., & Maier, N. (1961). Quality and acceptance of problem solutions by members of homogeneous and heterogeneous groups. *Journal of Abnormal and Social Psychology, 62,* 401-407.

Huang, G. G., & Van Horn, P. (1995). Using child care services: Families with disabled children in nonmetropolitan areas. *Rural Special Education Quarterly, 14*(4), 27-36.

LaGrange, A., & Read, M. (1990). *Towards a research agenda on child-care in Alberta.* Red Deer, Alberta: Childcare Matters. (ERIC Documentation Reproduction Service No. ED 329 357)

LeLaurin, K. (1992). Infant and toddler models of service delivery: Are they detrimental for some children and families? *Topics in Early Childhood Special Education, 12,* 82-104.

Lemke, J. C. (1995). Attracting and retaining special educators in rural and small schools: Issues and solutions. *Journal of Rural Special Education, 14*(2), 25-30.

Magrab, P. (1992). *Rural issues in planning services for young children with special needs.* (ERIC Document Reproduction Service No. ED 358 586)

Mallory, B. L. (1995). An ecological perspective on family support in rural special education. *Rural Special Education Quarterly, 14*(2), 3-9.

Mallory, B. L., & Berkley, T. (1988). The relationship between rural characteristics and the preparation of early childhood special educators. *Rural Special Education Quarterly, 7*(2), 1-5.

McIntosh, D. (1986). Problems and solutions in delivery of special education services in rural areas. *Rural Education, 8*(1), 12-15.

McIntosh, D. (1989). Retention of the teacher in rural areas. *The Rural Educator, 11*(1), 26-29.

Miller, B. A. (1993). Rural distress and survival: The school and the importance of "community." *Journal of Research in Rural Education, 9,* 84-103.

Mulkey, D. (1993). *Education in the South: Policy issues and research needs.* Mississippi State, MS: Southern Rural Development Center.

Murry, Jr., J. W., & Hammons, J. O. (1995) Delphi: A versatile methodology for conducting qualitative research. *The Review of Higher Education, 18,* 423-436.

Peters, D., & Klinzing, P. (1990). The content of early childhood programs: Child development. In B. Spodek & O. Saracho (Eds.), *Yearbook in early childhood education, volume 1* (pp. 67-81). New York: Teachers College.

Phelps, M., & Prock, G. (1991). Equality of educational opportunity in rural America. In A. J. DeYoung (Ed.), *Rural education: Issues and practice* (pp. 269-312). New York: Garland Publishing.

Putnam, J. W., Spiegel, A. N., & Bruininks, R. H. (1995). Future directions in education and inclusion of students with disabilities: A Delphi investigation. *Exceptional Children, 61,* 553-576.

Repetto, J. B. (1993). *The relationship between dropout prevention and transition for secondary school students with mild disabilities.* Tallahassee, FL: Bureau of Student Services and Exceptional Education, Department of Education.

Rosenkoetter, S. E., Hains, A. H., & Fowler, S. A. (1994). *Bridging early services for children with special needs and their families: A practical guide for transition planning.* Baltimore, MD: Paul H. Brookes..

Sebastian, J., & McDonnell, J. (1995). Rural students with low incidence disabilities: Recommended practices for the future. *Rural Special Education Quarterly, 14*(2), 31-38.

Stegelin, D. (1992). Early childhood policy: An introduction. In D. Stegelin (Ed.), *Early childhood education: Policy issues in the 1990s* (pp. 1 - 18). Norwood, NJ: Alex Publishing.

Stephens, E. R. (1992a). The conditions of the diverse regions of rural America. *Journal of Research in Rural Education, 8*(1), 1-14.

Stephens, E. R. (1992b). Mapping the research task for the construction of a federal system for classifying the nation's rural school districts. *Journal of Research in Rural Education, 8*(3), 3-28.

Stephens, E. R. (1994). Recent educational trends and their hypothesized impact on rural districts. *Journal of Research in Rural Education, 10*, 167-178.

Turoff, M. (1975). The policy Delphi. In H. Linstone & M. Turoff, (Eds.), *The Delphi method: Techniques and applications* (pp. 84-100). Reading, MA: Addison-Wesley.

West, J., & Cannon, G. (1988). Essential collaboration consultation competencies for regular and special educators. *Journal of Learning Disabilities, 21,* 56-61.

Yellin, D., Bull, K., & Warner, M. (1988). Preparing regular/special education teachers for rural schools: Perceptions of interest and capability. *Research in Rural Education, 5,* 31-35.