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Paraprofessional Support of Students With Disabilities: Literature From the Past Decade

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ABSTRACT: *This article summarizes and analyzes a set of 43 pieces of professional literature pertaining to paraprofessional supports for students with disabilities published between 1991 and early 2000. Twenty-six nondatabased sources and 17 research studies were included. The findings identify topical gaps in the literature, review the major databased findings, and present implications for the field. The review concludes with suggestions for future research that emphasize the need for more student outcome data, conceptual alignment of roles, training, and supervision, and the exploration of alternatives to paraprofessional supports.*

Though no reliable national data are available, leaders in the field of special education believe that the utilization of paraprofessionals to support the education of students with disabilities has increased dramatically over the past 10 years (French & Pickett, 1997). Staff of the *National Resource Center for Paraprofessionals in Education and Related Services* estimate the number of paraprofessionals working in special education in the United States is over 300,000. Lack of standardized reporting procedures from state to state render any such numbers rough estimates (Kent Gerlach and Anna Lou Pickett, personal communication, August 3, 2000).

Despite the proliferation of paraprofessionals to support the education of students with disabilities, it remains one of the least studied and potentially most significant aspects of special education over the past decade. Yet, the most recent scholarly review of the literature on the utilization of paraprofessionals in special education was published nearly a decade ago (Jones & Bender, 1993). In that review the authors stated, "[O]ne phenomenal change in recent years, which has largely gone unnoticed, is the growth in the utilization of paraprofessionals in special education classes" (p. 7). As we enter this new decade, the growth has continued, the context has expanded beyond special class, and undoubtedly the field has noticed!

Despite the proliferation of paraprofessionals to support the education of students with disabilities, it remains one of the least studied and potentially most significant aspects of special education over the past decade.

Since the early 1990s, significant changes in special education have fueled an increase in paraprofessional supports for students with disabilities and a focus on this topic. Increases in early childhood special education services and those for transition-aged students with disabilities have contributed to the burgeoning numbers of paraprofessionals (French & Pickett, 1997; Rogan & Held, 1999). Qualified special educators are in shorter supply and concerns exist that adverse working conditions (e.g., excessive paperwork, unmanageable caseloads, inadequate administrative support) are contributing to the problem (Kozleski, Mainzer, & Deshler, 2000; Pickett, 1999).

Inclusive educational opportunities have expanded steadily as school-aged students with increasingly severe disabilities are being provided with access to general education classes (Hunt & Goetz, 1997; McGregor & Vogelsberg, 1998). Having paraprofessionals accompany these students in general education classes is considered by many teachers to be an essential support (Wolery, Werts, Caldwell, Snyder, & Liskowski, 1995).

This is particularly interesting when viewed from a historical perspective. As a result of *Pennsylvania Association for Retarded Citizens v. Pennsylvania* (1971) and the passage of Public Law No. 94-142 (Education for All Handicapped Children Act of 1975), federal officials embarked on discussions about the training of personnel to educate a new population of students with more severe disabilities entering the public schools (Sontag & Haring, 1999).

> One of the recommendations that emerged from the discussions was to begin training a new cadre of personnel who would, essentially, be paraprofessionals. That is, the initial reaction to the need for personnel was to create a teacher for children with severe disabilities who would not need a baccalaureate degree and traditional certification (p. 11).

This consideration occurred, in part, because some professionals questioned the educability of children with more severe disabilities, arguing that they only needed someone to provide custodial care. They reasoned that such work did not require skilled special educators, so paraprofessionals would suffice and be less expensive. Others presumed that given appropriate instruction and support, children with more severe disabilities were educable, and that the nature of their characteristics required skilled special educators to design individualized curriculum and instruction (Sontag & Haring, 1999). Eventually, the officials within the federal government began to advocate for comparability in teacher standards and ultimately sanctioned the professionalization of teachers of children with severe disabilities (Sontag & Haring, 1999).

Is today's increasing reliance on paraprofessionals within general education settings, particularly for students with low incidence disabilities (e.g., autism, mental retardation, multiple disabilities, deaf-blindness), bringing the field full circle? In some situations, are we approaching a model of paraprofessional service provision that the early pioneers of the Education for All Handicapped Children Act/Individuals with Disabilities Education Act (EHA/IDEA) actively sought to avoid? Brown, Farrington, Ziegler, Knight, and Ross (1999) focused a renewed spotlight on these issues by suggesting that students with the most complex challenges to learning "are in dire need of continuous exposure to the most ingenious, creative, powerful, competent, interpersonally effective, and informed professionals" (p. 252).

The reauthorization the *Individuals with Disabilities Education Act Amendments of 1997* (IDEA) (20 U.S.C. §1400 *et seq.*) also prompted renewed interest in paraprofessional issues. The law allows for "paraprofessionals and assistants who are appropriately trained and supervised … to be used to assist in the provision of special education and related services to children with disabilities" (20 U.S.C. §1412 (a)(15)(B)(iii).

The importance of training and supervision is paramount because employing paraprofessionals to assist in the provision of special education and related services is an *indirect*, rather than a *direct* service. Direct services are those provided by *qualified personnel* directly to a student. Qualified personnel refer to those who have met state-approved "certification, licensing, registration, or other comparable requirements that apply to the area in which the individuals are providing special education or related services" (34 CFR §300.23). Such personnel include special educators, physical therapists, speech-language pathologists, occupational therapists, school psychologists, among others. Indirect services are services delivered to a student by another individual under the direct supervision of qualified personnel (Smith-Davis & Littlejohn, 1991).

For some schools that continue to operate primarily special class or resource room models, paraprofessionals may work in much the way they have for the past 3 decades, under the close supervision and direction of a special educator who is present in the classroom all or most of the time. Yet, as increasing numbers of paraprofessionals have taken on expanded roles assisting in the education of students with disabilities within general education classrooms, many questions arise. Are the roles and duties they are asked to perform appropriate? Are they adequately trained for their roles? Are they appropriately supervised? Are they truly *assisting* qualified personnel, or are they functioning as the primary instructors and decisionmakers for some students with disabilities? Are models of service delivery that rely on paraprofessionals effective and, if so, under what conditions? What does the literature tell us about these and related issues?

While such questions have always been of interest to the field, they have taken on renewed importance given the expanding utilization of paraprofessionals to support students with disabilities within general education settings. The services provided by paraprofessionals can have a major impact on whether students with disabilities receive a free, appropriate public education. The remainder of this article describes: (a) the literature review methods; (b) nondatabased and databased findings; and (c) a discussion, including implications for the field and suggestions for future research.

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METHOD

Selection Criteria and Procedures

This review of the literature picked up where Jones and Bender (1993) left off. We did not review sources they had previously reviewed; though we did include pre-1993 literature that was not in their article. The current review included databased and nondatabased sources published between 1991 and early 2000, primarily in special education journals and a small number of widely available books. All were topically focused on paraprofessionals supporting students with disabilities.

We did not review newsletter articles, book chapters, government/agency/organization manuals, grant reports, conference proceedings, or other unpublished documents. Nor did we review articles dealing with specialty areas where training and supervision standards for assistants were well established (e.g., certified occupational therapy assistants). Last, we did not review articles geared toward providing career ladder opportunities for paraprofessionals to become teachers, special educators, or related services providers, since our focus was on paraprofessionals functioning in that role.

The reviewed literature was identified by searching (a) ERIC online (http://ericir.syr.edu/Eric/), (b) tables of contents of special education journals, and (c) reference lists of identified articles.

Parameters of Analysis

The literature was analyzed across a variety of parameters. The *Social Science Citation Index*

(*SSCI* Institute for Scientific Information, January 1992-April 2000) was used to ascertain the extent to which reviewed sources had been referenced in refered journals beginning with the calendar year following their publication through April 2000. This provided a measure of the impact this work has had within the literature.

The authors coded each source using one or more of six topical categories: (a) acknowledging, (b) orientation and training, (c) hiring and assigning, (d) interactions with students and staff, (e) roles and responsibilities, and (f) supervision and evaluation (Giangreco, CichoskiKelly et al., 1999; Lamont & Hill, 1991). Literature was also coded by whether the setting it focused on was inclusive/general education, special education (e.g., special class), or unspecified. Review of all databased studies explored the participants, research designs, major findings, and reported limitations.

FINDINGS

As shown in Tables 1, 2, and 3, 43 pieces of literature meeting the selection criteria were identified. Twenty-six were nondatabased sources (see Tables 1 and 2), including 23 articles published in 11 different journals and 3 books by different publishers. Seventeen were databased studies (see Tables 1 and 3) published in 12 different journals. Nearly 40% (n = 17) of this literature was published between 1991 and 1995; 60% (n = 26) was published between 1996 and early 2000.

Impact on the Literature Using SSCI

Eighty-eight percent (n = 23) of the 26 nondatabased sources were listed in the *SSCI* two or fewer times from January 1992 through April 2000; 10 of those were not cited at all. Only three nondatabased sources were cited three or four times during that period (Doyle, 1997; French & Pickett, 1997; Salzberg & Morgan, 1995).

Over 88% (n = 15) of the databased studies were cited in the *SSCI* four or fewer times between 1992 and April 2000. Eleven of those studies were listed two or fewer times. The only two studies referenced more frequently were Welch, Richards, Okada, Richards, and Prescott (1995; n = 6), and Giangreco, Edelman, Luiselli, and MacFarland (1997; n = 10). Approximately 30% (n = 13) of the total number of reviewed sources were published in 1999 or 2000, therefore they were either too recent or had limited opportunities to be listed in *SSCI*.

Paraprofessionals are paid poorly and often are underappreciated. They are asked to engage in a wide variety of roles, some of which may be inappropriate.

Nondatabased Literature

As shown in Table 2, the nondatabased literature has been dominated by two topics. Nearly 58% of the articles (n = 15) discussed the roles and responsibilities of paraprofessionals as a primary topical focus. Over 42% of the articles (n = 11) had a focus on orientation or training.

The other topical categories received much less attention in the nondatabased literature; though given their interrelated nature, they often received some mention in many articles. Only two articles (Hilton & Gerlach, 1997; Salzberg, & Morgan, 1995), and one book (Pickett & Gerlach, 1997) focused on supervision of paraprofessionals. This literature consistently suggests that teachers and special educators have insufficient training related to the supervision of paraprofessionals.

Four articles included a primary focus on hiring or assigning paraprofessionals. The two earlier articles addressed hiring considerations (Blalock, 1991; Fletcher-Campbell, 1992). Two more recent articles addressed assignment issues by proposing guidelines for determining when a student with a disability may need individual paraprofessional support (Freschi, 1999; Giangreco, Broer, & Edelman, 1999). Both articles also emphasized potential drawbacks associated with assignment of one-to-one paraprofessional support and suggested alternatives such as fading supports, relying on natural supports, trading paraprofessionals for special educators, and exploring differentiated teacher roles.

TABLE 1

Sources of Literature Pertaining to Paraprofessionals Reviewed

Non-Databased Sources	n	*Databased Sources*	n
Teaching Exceptional Children	6	Remedial and Special Education	3
Journal of the Association for Persons with Severe Handicaps	4	British Columbia Journal of Special Education	2
Intervention in School and Clinic	3	Exceptional Children	2
Rural Special Education Quarterly	2	Journal of the Association for Persons with Severe Handicaps	2
Teacher Education and Special Education	2	Community College Journal of Research and Practice	1
American Speech and Hearing Supplement	1	Education and Training in Mental Retardation and Dev. Dis.	1
British Journal of Special Education	1	Exceptionality	1
Education and Training in Mental Retardation and Dev. Dis.	1	Focus on Autism and Other Developmental Disabilities	1
Focus on Autistic Behavior	1	Infant-Toddler Intervention	1
Learning Disabilities Forum	1	Journal of Positive Behavioral Interventions	1
Paul H. Brookes Publishing	1	Rural Special Education Quarterly	1
Peytral Publications	1	Teacher Education and Special Education	1
Pro-Ed Publications	1		
Reaching Today's Youth: The Community Circle of Caring Journal	1		
Total *n* of non-databased sources	26	Total *n* of databased sources	17

TABLE 2

Topical Focus of Nondatabased Literature

Authors	*I or U*	*Acknowledging*	*Orientation & Training*	*Hiring & Assigning*	*Interactions with Students and Staff*	*Roles & Responsibilities*	*Supervision & Evaluation*
Blalock (1991)	U		✔	✔			
Blalock, Rivera, Anderson, & Kottler (1992)	U		✔				
Fletcher-Campbell (1992)	U		✔	✔		✔	
Boomer (1994)	U					✔	
Palma (1994)	U	✔					
Kotkin (1995)	I		✔				
Martella, Marchand-Martella, Miller, Young & Mcfarland (1995)	U		✔				
Salzberg & Morgan (1995)	U						✔
Hammeken (1996)	I					✔	
Wadsworth & Knight (1996)	I		✔			✔	
Doyle (1997)	I					✔	
French & Pickett (1997)	U		✔				

Note: I = inclusive settings, U = unspecified

TABLE 2
(Continued)

Authors	*I or U*	*Acknowledging*	*Orientation & Training*	*Hiring & Assigning*	*Interactions with Students and Staff*	*Roles & Responsibilities*	*Supervision & Evaluation*
Hilton & Gerlach (1997)	U		✔			✔	✔
Pickett & Gerlach (Eds.) (1997)	U						✔
Demchak & Morgan (1998)	U					✔	
Ernsperger (1998)	I		✔			✔	
Steckelberg & Vasa (1998)	U		✔				
Brown, Farrington, Ziegler, Knight, & Ross (1999)	I					✔	
French (1999a)	U					✔	
French (1999b)	U					✔	
Freschi (1999)	I			✔		✔	
Giangreco, Broer, & Edelman (1999)	I			✔			
National Joint Commission on Learning Disabilities (1999)	U					✔	
Palladino, Cornoldi, Vianello, Scruggs & Mastropieri (1999)	I					✔	
Parsons & Reid (1999)	U		✔				

Note: I = inclusive settings, U = unspecified

TABLE 3
Primary Areas Addressed in Research Studies of Paraprofessionals

Authors	*Acknowledging*	*Orientation & Training*	*Hiring & Assigning*	*Interactions with Students & Staff*	*Roles & Responsibilities*	*Supervision & Evaluation*
Lamont & Hill (1991)					✔	
Morehouse & Albright (1991)		✔				
French & Cabell (1993)					✔	
Martella, Marchand-Martella, Macfarlane & Young (1993)		✔		✔		
Storey, Smith & Strain (1993)		✔		✔		
Passaro, Pickett, Latham, & HongBo (1994)		✔	✔			
Reinoehl & Halle (1994)		✔				
Hall, McClannahan & Krantz (1995)		✔		✔		
Welch, Richards, Okada, Richards, & Prescott (1995)					✔	
Giangreco, Edelman, Luiselli, & MacFarland (1997)				✔	✔	
Young, Simpson, Myles, & Kamps (1997)				✔	✔	
French (1998)				✔	✔	✔
Hadadian & Yssel (1998)		✔			✔	
French & Chopra (1999)					✔	
Marks, Schrader, & Levine (1999)				✔		
Shukla, Kennedy, & Cushing (1999)				✔		
Downing, Ryndak, & Clark (2000)				✔	✔	

Palma's (1994) article was the lone source that focused on the importance of acknowledging the work of paraprofessionals. None of the articles focused on how paraprofessionals interact with students and school personnel, although aspects of this were embedded in discussions of roles and responsibilities and suggestions for collaboration between professionals and paraprofessionals (Demchak & Morgan, 1998).

The nondatabased literature reiterates many of the same themes in 2000 that it did in 1991. Paraprofessionals continue to be assigned to work with students who have the most challenging behavioral and learning characteristics (Blalock, 1991; Giangreco, Broer, & Edelman, 1999). Paraprofessionals continue to engage in a broad range of roles, many of which they are untrained or insufficiently trained to perform (Blalock, 1991; Fletcher-Campbell, 1992; French & Pickett, 1997). Some of these roles include: (a) providing instruction in academic subjects; (b) teaching functional life skills, (c) teaching vocational skills at community-based work sites, (d) collecting and managing data, (e) supporting students who exhibit challenging behaviors, (f) facilitating interactions with peers who do not have disabilities, (g) providing personal care (e.g., feeding, bathroom assistance), and (h) engaging in clerical tasks (Boomer, 1994; Doyle, 1997; French, 1999a, 1999b; Hammeken, 1996; Rogan & Held, 1999). Paraprofessionals can play key roles in assisting students avoid, or return from, more restrictive educational settings (Ernsperger, 1998).

Confusion still exists about the roles of paraprofessionals compared to the roles of the teachers, special educators, and related service personnel (French & Pickett, 1997). Confusion also exists about whether what paraprofessionals *actually do* is what professionals think they *should be* doing. Correspondingly, should their training reflect what they *actually do* or what professionals believe they *should be* doing?

The National Joint Committee on Learning Disabilities (1999) described their position on the uses and misuses of paraprofessional supports, in part, by stating, "The intent of using paraprofessionals is to supplement, not supplant, the work of the teacher/service provider" (p. 37). Giangreco, Broer, & Edelman (1999) echoed this concern by suggesting that one sign that too much responsibility has been delegated to paraprofessionals is when, "Experienced, skilled classroom teachers and special educators defer important curricular, instructional, and management decisions about a student with disabilities to the paraprofessional" (p. 283).

Since inclusive education models in the United States frequently have embraced paraprofessionals playing extensive instructional roles, it is interesting to note how their roles differ in Italy, where inclusive education has been the norm since the 1970s. According to Palladino, Cornoldi, Vianello, Scruggs, and Mastropieri (1999), paraprofessionals are utilized less extensively in Italian schools. Primarily their roles are to provide personal care and mobility supports for students with disabilities. In Italy it is almost exclusively the role of the teacher and special educator to provide instruction. While cultural and definitional differences undoubtedly are factors in this comparison, presumably, teachers and special educators are able to spend more time with students who have disabilities in Italian schools because both general class size and caseloads for special educators are smaller (Palladino et al., 1999).

Only 38% (n = 10) of the nondatabased sources explicitly focus on general education settings; the remainder are unspecified. Similarly, a small number of training programs are specifically geared toward inclusion of students with disabilities in general education classes using paraprofessional supports (Kotkin, 1995; Wadsworth & Knight, 1996).

Training models often focus on specific intervention techniques such as delivering instructional prompts, reinforcement, or error correction (Martella, Marchand-Martella, Miller, Young, & Macfarlane, 1995; Parsons & Reid, 1999). Others include a broader base of content and varied formats. Steckelberg & Vasa (1998) described Internet self-study units for paraeducators. Blalock, Rivera, Anderson, and Kottler (1992) described a university/school district partnership to train paraprofessionals. The non databased literature suggests that preservice training for paraprofessionals is virtually nonexistent and inservice training continues to be in-

sufficient.

Data-based Literature

Topically, the research literature also has been dominated by the same topics as the non-data-based literature (see Table 3). Slightly over half of the studies (n = 9) focused on roles and responsibilities of paraprofessionals, while over 41% (n = 7) focused on orientation or training.

Nearly 53% (n = 9) of the studies focused on paraprofessionals' interaction with students or staff (see Table 3). Seven of those studies addressed interactions between paraprofessionals and students with disabilities, while two explored the relationship between paraprofessionals and professionals (Downing, Ryndak, & Clark, 2000; French, 1998).

The remaining topical categories received limited attention in the data-based literature. French (1998) conducted the only study with a topical focus on supervision. She found that teachers were generally reluctant, unprepared, and untrained to supervise paraprofessionals. Passaro, Pickett, Latham, and HongBo (1994) conducted the only study focusing on conditions that affect hiring and attrition. No studies were identified about the assignment of paraprofessionals or acknowledgement of their work, though Passaro et al. (1994) did identify perceived lack of respect as a factor affecting attrition.

RESEARCH DESIGNS

Seventy percent (n = 12) of the studies reviewed were descriptive; approximately 30% (n = 5) were experimental (see Figure 1). The most common type of research reviewed were descriptive studies where data were analyzed quantitatively (n = 8). Seven of those studies were based on questionnaire responses that solicited the opinions of educational team members. Three studies used combined methodologies by also including interview data. Only one descriptive/quantitative study was based on direct observation of both adults and students (Young, Simpson, Myles, & Kamps, 1997).

Four descriptive studies were qualitative in design. Three relied exclusively on interview data from specific categories of educational team members, paraprofessionals (Downing, Ryndak, & Clark, 2000; Marks, Schrader, & Levine, 1999), and parents whose children had disabilities (French & Chopra, 1999). The remaining qualitative study (Giangreco et al., 1997) reported interview data from a variety of educational team members and direct observational data.

Five experimental studies were identified; all were single-subject designs. Two studies reported on dependent variables based on behaviors of the paraprofessionals, such as the delivery of instructional cues and probing (Martella, Marchand-Martella, Macfarlane, & Young, 1993; Reinoehl & Halle, 1994). Three other studies reported on dependent variables based on the behaviors of students with disabilities (e.g., social interactions, instructional engagement) who were being instructed by paraprofessionals as well as the behaviors of the paraprofessionals (e.g., prompt reduction, cueing; Hall, McClannahan, & Krantz, 1995; Shukla, Kennedy, & Cushing, 1999; Storey, Smith, & Strain, 1993). No group experimental studies were identified.

Settings

Nearly 65% (n = 11) of the studies were conducted in general education settings (see Figure 1); three were conducted completely or partially in special education settings (Hadadian & Yssel, 1998; Martella et al., 1993; Reinoehl & Halle, 1994). The settings in which the three remaining studies were conducted were unspecified (French & Cabell, 1993; Morehouse & Albright, 1991; Passaro et al., 1994).

Participants Studied

In approximately 70% (n = 12) of the investigations, the primary participants studied were educational team members (e.g., paraprofessionals, teachers, special educators, parents, administrators). In some cases the types of students with disabilities with whom these individuals worked were presented generically as students with disabilities (French & Cabell, 1993; Lamont & Hill, 1991; Morehouse & Albright, 1991; Passaro et al., 1994). In other cases the students had low-incidence disability labels such as, moderate to severe disabilities (Downing, Ryndak, &

Whether willingly or reluctantly, many classroom teachers relinquish primary responsibility for the education of students with disabilities to paraprofessionals.

Clark, 2000; Reinoehl & Halle, 1994); Down syndrome (Martella et al., 1993); deaf-blindness and multiple disabilities (Giangreco et al., 1997); and "significant behavioral challenges" (Marks, Schrader, & Levine, 1999).

Approximately 30% (n = 5) of the studies included data exclusively pertaining to students with disabilities or to both students with disabilities and their educational team members. The types of students in these studies spanned both disability categories and age groups. For example, Welch et al. (1995) reported data from elementary school teachers as well as their students with and without disability labels. Others reported on preschoolers with mild developmental delays (Storey, Smith, & Strain, 1993); elementary-aged students with autism, Fragile X syndrome, and intellectual disability (Hall, McClannahan, & Krantz, 1995; Young et al., 1997); and secondary-aged students with profound disabilities (Shukla, Kennedy, & Cushing, 1999).

The number of subjects studied varied widely. As would be expected, the single-subject studies (see Figure 1) reported on a small number of target participants, between 1 and 8. The combined methodology studies reported on a range of between 36 (French, 1998) and 95 (Morehouse & Albright, 1991) educational team members. The Welch et al. (1995) study provided data on 47 teachers plus over 1,000 elementary students, with and without disabilities.

The descriptive/quantitative studies had the widest range in the number of subjects. Young et al. (1997) reported observational data on 3 students with autism. The remaining studies in this category, each based on questionnaire responses, ranged from 30 (French & Cabell, 1993) to 1,100 participants (Hadadian & Yssel, 1998). The qualitative studies all included 20 or fewer subjects with the exception of Giangreco et al. (1997), which reported data from 134 educational team members.

Major Data-based Findings

The literature suggests that it is becoming increasingly difficult to attract and retain paraprofessionals in special education. Lack of orientation and training, poorly defined job descriptions, limited opportunities to advance, low pay, lack of administrative support, and lack of respect have been identified as some of the main culprits (French & Cabell, 1993; French & Chopra, 1999; Hadadian & Yssel, 1998; Morehouse & Albright, 1991; Passaro et al., 1994).

The research literature identifies roles that some paraprofessionals engage in, but which varying sources have identified differently in terms of appropriateness. The roles in question include: (a) student testing and assessment, (b) lesson planning, (c) design of learning activities, (d) extent and nature of instruction, (e) adaptation and modification of curricular materials and activities, and (f) communication and interactions with families (Downing, Ryndak, & Clark, 2000; French, 1998; French & Chopra, 1999; Giangreco et al., 1997; Lamont & Hill, 1991; Marks, Schrader, & Levine, 1999; Welch et al., 1995). Disagreement persists about whether, to what extent, or under what conditions such roles are appropriate for paraprofessionals.

French (1998) reported on a different aspect of role confusion. Eighteen matched pairs of teachers and paraeducators were divided in their beliefs about whether the paraeducator was an assistant to the teacher or an assistant to the student. Such distinctions of allegiance likely have a significant impact on collaboration and supervision.

A series of single-subject studies documented that paraprofessionals have been trained to use specific instructional procedures such as cueing, reinforcement, probing, prompting, and fading of prompts (Hall, McClannahan, & Krantz, 1995; Martella et al., 1993; Reinoehl & Halle, 1994; Storey, Smith, & Strain, 1993). Paraprofessionals reported satisfaction learning and using new skills and corresponding data indicates positive student outcomes (e.g., social skills, independent task engagement) when those

FIGURE 1
Types of Research Pertaining to Paraprofessionals, 1991-2000

DESCRIPTIVE

QUALITATIVE

Giangreco, Edelman, Luiselli & MacFarland (1997) I

Marks, Schrader, & Levine (1999) I

French & Chopra (1999) I

Downing, Ryndak & Clark (2000) I

QUANTITATIVE

Lamont & Hill (1991) I

French & Cabell (1993) U

Passaro, Pickett, Latham & HongBo (1994) U

Young, Simpson, Myles & Kamps (1997) I

Hadadian & Yssel (1998) S

COMBINED METHODS (QUANTITATIVE/QUALITATIVE)

Morehouse & Albright (1991) U

Welch, Richards, Okada, Richards & Prescott (1995) I

French (1998) I

EXPERIMENTAL

SINGLE-SUBJECT

Martella, Marchand-Martella, Macfarlane & Young (1993) S

Storey, Smith & Strain (1993) I

Reinoehl & Halle (1994) S

Hall, McClannahan & Krantz (1995) I

Shukla, Kennedy & Cushing (1999) I

GROUP

None Identified

Note: I = inclusive setting;, S = Special education settings; U = unspecified.

skills are applied. No data were presented in the literature pertaining to the effectiveness of more global training of paraprofessionals.

In the only study that used whole schools as the unit of analysis, Welch et al. (1995) described the Model Consultation and Paraprofessional Pull-In System (CAPPS). This study yielded mixed results of teacher attitudes toward shared responsibility and preferences for the CAPPS Model. Student outcome data also were mixed, with some modest improvement in reading and math scores identified in the CAPPS site for students in Grades 1 and 4. After 1 year of employing the CAPPS model, the rate of referrals for special education was reduced by a third, while referrals at the comparison site nearly doubled. The nature of the design does not allow one to isolate what, if any, contribution the paraprofessional component of the CAPPS model had on the reported outcomes.

In the late 1990s three studies explored the effects of proximity of paraprofessionals on students with disabilities. Young et al. (1997) observed variation in both the extent of proximity and its impact on the behaviors (i.e., on-task, in-seat, self-stimulation) of three students with autism. Young et al. (1997) reported teacher-initiated interactions with the target students were

infrequent, though their involvement was higher when the paraprofessional was more than 2 feet away from the student.

Giangreco et al. (1997) reported that students with multiple disabilities in general education classes spent much of their time in close proximity to paraprofessionals who often functioned as the student's primary teacher. Excessive proximity resulted in a series of problems such as: (a) interference with teacher ownership and responsibility, (b) separation from classmates, (c) dependence on adults, (d) interference with peer interactions, (e) loss of personal control, (f) limitations on receiving competent instruction, and (g) interference with the instruction of other students.

Similarly, Marks, Schrader, & Levine (1999) found that the paraprofessionals they studied perceived that they had primary instructional responsibility for the students with behavioral challenges to whom they were assigned. They reported perceiving that they bore the "primary burden of success" for those students. These paraprofessionals also reported perceptions that their roles included: (a) not being a "bother" to the classroom teacher; (b) providing daily, "on the spot," curricular modifications with little or no support from a teacher; (c) being expected to be the "expert" on the student as well the recipient of recommendations from various professionals; and (d) a sense of being solely responsible for the inclusion of the student.

Shukla, Kennedy, and Cushing's (1999) experimental study reported favorable evidence for the use of a peer-support strategy in comparison to direct assistance from a paraprofessional to support students with profound disabilities in general education classes. Their intervention produced higher levels of social interaction between the students with disabilities and peers without disabilities, as well as increased social support behaviors from those peers. Active engagement of students with disabilities showed no differences in certain activities (e.g., art, industrial crafts) and some improvements in others (e.g., math, social studies). Of the five peers without disabilities who provided supports, two showed no decrease in active classroom engagement, while three (who were identified as having academic problems) increased their active classroom engagement as a result of participating in the peer support strategy.

Limitations Reported by Authors

Six of the databased articles did not report any specific study limitations. A primary limitation identified in several of the remaining studies was the limited ability to generalize findings based on factors such as small sample size, geographic scope, homogeneity of the study participants, and brevity of interventions.

DISCUSSION

The findings of this review indicate that the focus within the literature on paraprofessional support of students with disabilities has increased over the past decade and the trend continues upward. Despite this increase, the overall impact of the reviewed articles within the professional literature, as evidenced by the *SSCI* findings, has been quite limited. In part, this may be because much of the literature has offered few new perspectives over the last decade. The existing literature is top-heavy with nondatabased articles on roles and training of paraprofessionals calling for role clarification as well as more and better training. Gaps in the literature exist on other topics such as acknowledging the work of paraprofessionals, guidelines for hiring and assigning them, interactions with school staff and students, and supervision.

Much of the nondatabased literature reiterates points we suspect are well known to most people associated with special education, even if they have not read the professional literature. For example, it indicates that paraprofessionals are paid poorly and often are underappreciated. They are asked to engage in a wide variety of roles, some of which may be inappropriate. Often, they are assigned to work with students who have the most complex learning or behavioral challenges without adequate training, support, or supervision. The fact that these themes persist despite the attention drawn to them in the literature raises an important question. Are the protections afforded to students with disabilities under IDEA adhered to in schools? More

specifically, when paraprofessionals are utilized, as is allowed under IDEA, are they appropriately trained and supervised, as the law requires? In too many cases, particularly within general education classrooms, the answer still seems to be "No."

One gets the sense reading much of the literature, that if we merely did a better job with role clarification, training, supervision, and compensation, the field's identified problems would be solved. While any actions that result in personnel being better trained and supervised undoubtedly would be beneficial, having a more qualified paraprofessional workforce ignores more central questions.

Are models of service provision that rely heavily on paraprofessionals to provide instruction to students with disabilities appropriate, ethical, conceptually sound, and effective? Does it make sense to have the least qualified employee primarily responsible for students with the most complex challenges to learning? Is it acceptable for some students with disabilities to receive most of their education from a paraprofessional, regardless of training level, while students without disabilities receive the bulk of their instruction from certified teachers?

Do students with disabilities who receive a significant portion of their instruction from paraprofessionals have comparable outcomes as those who have more consistent interactions with qualified professionals? Is it fair to pay paraprofessionals less than a livable wage and expect them to perform duties that typically are expected of teachers, such as planning, adapting, and instructing? While much of the literature trumpets the politically correct rhetoric that paraprofessionals work under the direction and supervision of qualified professionals, the emerging qualitative database on special education paraprofessionals in general education classrooms offers contrary descriptions of paraprofessionals left to fend for themselves without appropriate training, supports, or supervision.

When reflecting on these issues, it is important to consider the historical roots of paraprofessional supports for students with disabilities. In the second half of the 20th century paraprofessionals had been utilized to address persistent shortages of qualified professionals (Pickett, 1999) within a cultural context that largely devalued people with disabilities (Taylor & Blatt, 1999; Wolfensberger, 1975).

Paraprofessional supports were not purposely initiated as a preferred model to facilitate quality education, yet they have been maintained and expanded in the absence of a supportive theoretical basis or efficacy data. Only in the late 1990s did a small set of nondatabased literature and corresponding research begin to raise serious questions about the appropriateness of support models that rely heavily on paraprofessionals to provide instruction to students with disabilities (Brown et al., 1999; Freschi, 1999; Giangreco et al., 1997; Marks, Schrader, & Levine, 1999).

The databased literature does little to help answer questions pertaining to the appropriateness, conceptual soundness, or effectiveness of paraprofessional supports for students with disabilities. In fairness, some of the issues that need to be explored are not empirical in nature. Like so many other issues in education and social policy, they are value-oriented, philosophical, and conceptual.

As a set of literature, the reviewed studies present no discernible line of research and insufficient data on student outcomes. The vast majority of descriptive investigations report data on the opinions, perspectives, or behaviors of educational team members, as do two of the experimental studies. Only three single-subject studies and two descriptive studies report any student outcome data.

One might wonder how paraprofessional supports have survived and expanded over the years without a strong conceptual foundation or efficacy data. Although limited data exist to illuminate this question, the literature alludes to some possible interrelated reasons. History, economic factors, changing demographics, parent advocacy, teacher advocacy, administrative convenience, ease, expedience, and momentum all have been identified as contributing factors. Often, hiring a paraprofessional is greeted positively by various stakeholders associated with a student's educational team, although sometimes for potentially competing reasons.

Whether willingly or reluctantly, many classroom teachers relinquish primary responsibility for the education of students with disabilities to paraprofessionals. Although understandable given the many demands on classroom teachers, the problem remains that there are no compelling data suggesting that deferring primary responsibilities to a paraprofessional is an effective way to educate students with disabilities in inclusive classrooms.

By raising questions about the efficacy of paraprofessional supports, we are not questioning the value of the hard working, underpaid paraprofessionals referred to in the literature and whom we encounter on a regular basis. Undoubtedly, many schools have been fortunate that so many dedicated people have been willing to work as paraprofessionals during an era when the field has been slow to consider other options for supporting students with disabilities in general education classes.

It is somewhat ironic, if not surprising, that students with disabilities and paraprofessionals would come to be linked as they are. Both groups might reasonably be considered to include some of the most marginalized people within school hierarchies. As a result, assigning the least powerful staff to the least powerful students may be perpetuating the devalued status of both groups. We wonder whether there continues to be a lingering, unspoken perception that students with disabilities do not need or deserve the services of qualified professional educators. How, if at all, this is related to our society's generally low expectations and differential valuing of people with disabilities is yet to be fully understood. We wonder what impact these sometimes subtle messages of second-class status have on students with disabilities and the paraprofessionals who are assigned to educate them. By failing to develop alternatives to paraprofessional supports, has the field created a permanent underclass of students and staff?

RECOMMENDATIONS FOR FUTURE RESEARCH

The field could benefit from future literature that fills the topical gaps identified in this review. The development and descriptions of conceptually grounded models of paraprofessional support that correspond with IDEA and are consistent with exemplary and promising educational practices would also advance and benefit the field. Such models could contribute by demonstrating explicit alignment among roles, training, and supervision standards.

The field is in dire need of both descriptive and experimental data to address a series of unanswered and yet-to-be-asked questions. Descriptive research could help fill the topical gaps identified in this review and offer in-depth fact-finding to help more fully understand the scope and interrelated phenomena associated with paraprofessional supports, including the identification of factors that have led to our current practices. All types of research need to put a primary emphasis on reporting more student outcome data and its relationship to paraprofessional supports.

Research is needed to assist us in understanding and overcoming the barriers of effectively training and supervising paraprofessionals. Further, we need to know what effects training of paraprofessionals has on student outcomes and what types of training make the most difference.

Absent from the literature are the perspectives of students who receive paraprofessional supports. What do they think about these supports? How do paraprofessional supports affect them academically, socially, and personally? We need to spend more time listening to and trying to understand the perspectives of self-advocates. This should assist us in further exploring the role of self-determination in making decisions about paraprofessional and other forms of support.

Under conditions where paraprofessionals are known to be untrained and questionably supported, what are the conditions that have maintained a system where it is easy, accepted, and sometimes expected for professionals to relinquish their traditional roles to paraprofessionals? How are such practices that seemingly defy common sense and violate ethical professional standards maintained? What are constructive actions that can be taken by various stakeholders in an effort to meet their shared goal of provid-

ing students with disabilities a free, appropriate public education?

Future research should seek to address practical matters that can have immediate impact in schools. For example, it would be helpful to have data on models of paraprofessional support that address concerns unique to middle and high schools, where students typically encounter numerous teachers. It would be helpful to have research data on the utility and impact of guidelines for making decisions about the need for paraprofessional supports that have been described in the nondatabased literature, but which have not been systematically studied.

IMPLICATIONS FOR PRACTICE

The information provided in this review raises questions for educational teams to consider and offers information to assist in providing paraprofessional supports for students with disabilities. Each of the topical categories presented in Tables 2 and 3 (e.g., orientation and training, roles and responsibilities) can be used as starting points for teams or schools to assess their own status, prioritize their needs, and take constructive actions to improve paraprofessional supports.

Teams are encouraged to find ways to acknowledge the work done by paraprofessionals. While some potentially powerful forms of acknowledgement may be beyond the control of classroom teams (e.g., wages, benefits), they can identify actions that are within their control to express their appreciation and demonstrate their respect for the work of paraprofessionals. Beyond the typical expressions of appreciation (e.g., a nameplate on the door or desk, appreciative comments, an annual luncheon), paraprofessionals can be shown respect by providing a thorough orientation that allows them to become acquainted with the school, classroom, and students with whom they will work.

While role clarification continues to be debated in the literature, the roles of paraprofessionals can explicitly and individually be clarified within teams. In doing so, teams must ensure that whatever roles are identified are educationally appropriate. This requires congruence between the skills of the paraprofessional, the needs of the student, and the roles of other team members. Additionally, teams should critically scrutinize proposed roles to ensure that paraprofessionals are not being asked to assume responsibilities that are appropriately those of teachers, special educators, or related services providers.

Once appropriate roles have been agreed upon, plans should be established to ensure that paraprofessionals are adequately trained and supervised to carry out their roles. Such training can encompass a range of options (e.g., workshops, courses, Internet learning) and should include ongoing instruction, feedback, and mentoring from the qualified professionals with whom the paraprofessional works. This might include supports such as the provision of written plans, modeling instructional practices, and providing opportunities for participation in team meetings. Appropriate training and supervision of paraprofessionals is not an optional activity for schools; it is required under the IDEA if paraprofessionals are being used to assist in the provision of special education or related services for students with disabilities (20 U.S.C. §1412 (a)(15)(B)(iii).

In conclusion, it is our hope that this review of the literature will spur reflection, encourage discussion, and lead to actions that will benefit students with disabilities and their classmates. Nearly a decade ago Jones and Bender (1993) reported a lack of evidence attesting to the efficacy of paraprofessionals enhancing student outcomes and lamented that the research addressed peripheral issues. In that regard little has changed over the last decade. We hope that 10 years from now there will be a new set of substantial research about paraprofessional supports that guides educational policy and practice to improve those services so that they are effective or that will lead to effective alternatives.

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