

THE SPEECH-LANGUAGE PATHOLOGIST'S CHANGING ROLE:  
COLLABORATION WITHIN THE CLASSROOM

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**THE SPEECH-LANGUAGE PATHOLOGIST'S CHANGING ROLE:  
COLLABORATION WITHIN THE CLASSROOM**

Margaret Dohan, B.A., M.Sc., S-LP(C)

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submitted to the School of Graduate Studies  
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## ABSTRACT

This study gathered descriptive information on the status of classroom-based delivery of speech and language services in Canada. A sample of Canadian speech-language pathologists working in schools were surveyed using a questionnaire mailed in March, 1996. By June, 1996, 253 usable questionnaires had been received, resulting in an 82% return rate. A total of 73% of respondents spent time on intervention in classrooms. The mean percentage of time spent was 22.1%.

Seven service delivery approaches for classroom-based intervention, ranging from least collaborative (Approach One) to most collaborative (Approach Seven), were listed on the questionnaire. Respondents were asked to indicate the approaches they had used. Use was compared to respondents' personal, professional, and situational characteristics. Results of chi-square analyses revealed no pattern of significant relationships among variables.

Respondents were questioned about their use of the seven classroom-based approaches with four disorder types and four grade level categories. Additionally, they were asked to judge the success and appropriateness of the approaches. The approaches were used by the largest percentages of respondents for language disorders, followed in order by those for articulation, fluency, and voice disorders, and for students in Kindergarten to Grade 3, followed in order by those for Grades 4 to 6, Grades 7 to 9, and Grades 10 to 12. The approaches were judged successful and appropriate with all disorder types and all grade level categories by a majority of respondents who used them.

Respondents were asked to rank advantages and disadvantages of the approaches to speech-language pathologists, teachers, and caseload and non-caseload students, and factors that encourage and discourage use of the approaches. The chief benefits of classroom-based service delivery were considered the increased harmonization of speech and language goals and curriculum goals and the carryover of speech and language skills to the

classroom. The prime drawbacks of classroom-based approaches were judged to be the additional time required for planning and the de-emphasis on individualized programming for students requiring speech and language services. The largest factor facilitating the use of classroom-based intervention was perceived to be teacher support. The greatest constraining factor was considered lack of time.

Respondents were queried on needs for further information about the approaches and preferred methods of obtaining information. A large majority of respondents perceived that further information is needed for speech-language pathologists who use classroom-based approaches. The area of greatest need was judged to be curriculum content. The preferred method of obtaining information was inservices or conferences.

Chi-square analyses showed that for all disorder types and grade level categories, the approaches were judged more appropriate by respondents who had used them than by respondents who had not used them. Nondirectional independent samples *t*-tests were conducted to test for differences between the views of the two groups on advantages and disadvantages of the approaches to speech-language pathologists, teachers, caseload and non-caseload students, and on factors that encourage and discourage use. The two groups' views on advantages and disadvantages to the four groups were similar to one another, although the groups' views on encouraging and discouraging factors differed. More respondents who had used the approaches perceived a need for additional information. Respondents in the two groups shared views on perceived areas of need and preferred methods of obtaining information.

Results of the study are consistent with reports in the literature on the use of classroom-based approaches by speech-language pathologists. Its findings reflect the speech-language pathologist's current shift from a diagnostician of speech and language disorders to a language specialist who collaborates with teachers through use of a holistic approach to students' communication needs.

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## CHAPTER ONE

### INTRODUCTION

Current trends illustrate that public education systems in North America are undergoing vast revision. Major changes within social, political, and economic domains have forced reevaluation of the effectiveness and efficiency of the delivery of educational programs. Movements toward restructuring share the goal of modifying that which has not appeared to produce successful educational outcomes. Acknowledging that the needs of students have been altered by societal forces, educators recognize the necessity of using educational approaches that represent a departure from past methods. These innovations are aimed not only at students in regular education but also at those students with special needs (Damico, 1987; Huffman, 1992).

One major change has been the emphasis on a collaborative philosophy of service delivery to exceptional students, a philosophy that has foundations in legislative, ethical, and empirical contexts. The espoused principle of equal right to education for all students has fostered the notion that special needs are preferably addressed within the regular classroom through the integration of special with regular services. A growing body of research that questions the efficacy of practices involving segregation, such as traditional withdrawal approaches, has provided added impetus for a move toward collaborative efforts by multidisciplinary teams consisting of teachers, administrators, specialists, support staff, and parents. Through the combined input of all individuals involved with students who have special needs, an individualized plan to capitalize on students' strengths and address their needs is designed and implemented to a greater or lesser degree in the inclusionary environment of the classroom (Gerber, 1987; Idol, Paolucci-Whitcomb, and Nevin, 1986; Will, 1986).

Another major change has been the increased awareness of the fundamental role of communication skills and language proficiency in academic and social success. School is a

context that demands that students listen, speak, read, and write on a daily basis. Speech-language pathologists have a broad perspective on language, with academic backgrounds in linguistics, language acquisition, language learning disabilities, speech and hearing sciences, communication assessment and intervention, and cognitive and developmental psychology. For this reason, educational speech-language pathologists<sup>1</sup> are ideally suited to addressing students' needs and teachers' concerns related to oral language in classrooms (Simon & Myrold-Gunyuz, 1990; Wallach & Butler, 1984).

Given this present focus on collaboration in general and the acknowledgement of the centrality of language to the educational process in particular, speech-language pathologists are extending services to classroom settings. Increasingly, practices are being adapted with the aim of making them more directly relevant to the curriculum. Although speech-language pathologists have always interacted with other educational personnel while attempting to provide functional intervention for students, recent trends provide additional incentive to work more frequently with teachers and students directly within the classroom environment (Cirrin & Penner, 1995; Damico, 1987).

### Overview of the Study

The thesis, designed to investigate speech-language pathologists' collaboration with teachers within the classroom, consists of five chapters. Chapter One creates a context for the study, describing its background, purpose, research questions, significance, and terms in common usage. Chapter Two offers a comprehensive review of literature pertinent to the study. Chapter Three provides justification for the choice of methodology and describes the methodology. Chapter Four presents and analyzes the data. Chapter Five summarizes the results in the dual contexts of the research questions and relevant research, draws

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<sup>1</sup> The term "speech-language pathologist" will be used throughout the study to refer to speech-language pathologists who work in school settings, unless otherwise specified.



conclusions based on the results, makes recommendations for further movement toward collaboration, and suggests related areas on which future studies can usefully focus.

### Background to the Study

This section provides background information requisite to understanding the study and interpreting its findings. The history of speech-language pathology in Canada is outlined. The roles of the speech-language pathologist in general and of the school speech-language pathologist in particular are described, and information on the prevalence and nature of communication disorders is presented.

#### A Brief History of Speech-Language Pathology in Canada

Speech-language pathology is a young profession in Canada. The earliest record of an individual working in the area of speech-language pathology in schools dates back to 1938, when a teacher in the Winnipeg School Division began instruction in lipreading and speech correction (Martin, 1995). In 1964, the first meeting of the Canadian Speech and Hearing Association (superseded by the Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) in 1985), was held among twelve participants from across Canada. At that time, there were only three university programs in Canada, all recently founded: at the University of Montreal (1956), at the University of Toronto (1958), and at McGill University (1963). By 1976, there were seven university programs and approximately 700 members of the national association, including both speech-language pathologists and audiologists (Martin & Penko, 1996).

In the mid-1980's, a long-term goal of the Association was met with the establishment of national standards for accreditation. In 1994, continuing education became a mandatory requirement for maintenance of certification (Martin & Penko, 1996). There are presently 3437 members of CASLPA, 2360 of whom are speech-language pathologists (P. Flemington, personal communications, February 26, March 21, 1996). In 1988, the latest year for which demographic statistics were available, 38% of speech-language

pathologists in Canada were employed by school districts, the total number approximating 960. A number of practising speech-language pathologists do not belong to the national association due to either ineligibility or choice. In 1988, 70% of speech-language pathologists and audiologists in Canada were members of CASLPA, with rates by province ranging from 38% (Quebec) to 93% (British Columbia) (CASLPA, 1990; Rubin, 1990).

Various titles have been used to describe professionals who work with individuals who have communication disorders. These have included speech correctionist, speech teacher, speech therapist, communication therapist, and speech-language clinician. In 1984, the national association officially sanctioned use of the title "speech-language pathologist", which was believed to most accurately reflect the training of members and the services that they provide (Newfoundland Department of Education, 1986). It is acknowledged that in the current context of the education system, the term "speech-language pathologist" with its focus on pathology is a misnomer. Several terms that recur in the literature on services to school-aged children are communication specialist, language specialist, and speech and language specialist. Although the latter terms are judged more appropriate to school settings, the title "speech-language pathologist" is used throughout this study in keeping with conventional usage.

### The Role of the Speech-Language Pathologist

Speech-language pathologists are specialists in human communication, its normal development, and its disorders and delays. They provide services aimed at preventing and lessening the impact of communication difficulties, including impairments of language, articulation, voice, and fluency. Their services include standardized and non-standardized assessment in addition to intervention appropriate to the individual's needs, abilities, and limitations (CASLPA, n.d.a).

In addition to working directly with individuals, speech-language pathologists play a major role on educational or health care interdisciplinary teams working with communicatively impaired individuals. Speech-language pathologists disseminate

information about limitations on the level of ability to communicate and the implications of those limitations for educational or rehabilitation programs. As speech or language impairments often have major effects on social interaction and education, speech-language pathologists provide support and counselling to individuals and their families (CASLPA, n.d.a).

### The Role of the Speech-Language Pathologist in Educational Settings

Speech and language programs in schools have been developed at different times with different priorities under different divisions within governments and school districts. This has resulted in wide variation among program objectives. However, speech-language pathologists are continually seeking ways to improve practice in relation to outcomes. Both speech-language pathologists and program administrators are evaluating the effectiveness and efficiency of various service delivery approaches. The resulting refinement of programs is altering the role of the educational speech-language pathologist (e.g., Ontario Association of Speech-Language Pathologists and Audiologists (OSLA), 1996; New Brunswick Department of Health and Community Services, 1994).

The major responsibilities of the speech-language pathologist in educational settings have always included the evaluation and management of communication disorders. In addition to these general responsibilities, which involve direct contact with speech and language disordered students, the school speech-language pathologist's duties have included, but have not been limited to, conducting speech, language, and hearing screenings; supervising speech-language pathology student interns; writing reports and additional required documentation; and other administrative duties related to coordination of the speech and language program (American Speech-Language-Hearing Association (ASHA), 1993; Nussbaum, 1991).

The late 1980's and 1990's have witnessed heavy demand for speech and language services in the absence of additional human resource allocations. The impact has been that speech-language pathologists in school settings have been increasingly required to fulfill the

role of specialist consultant and resource person in addition to that of a provider of direct service to students. This expanded role has placed greater emphasis on consultation and support to educators, parents, and other caregivers, and on provision of programs for implementation with other professionals who are involved with students on daily basis. Recently added duties of school speech-language pathologists are planning modifications to curriculum and instruction; helping develop individualized educational programs (IEPs); participating in conferences as a member of a multidisciplinary team; participating in ongoing teacher and parent conferences; coordinating assistive technology support services; and providing inservice education for school personnel (ASHA, 1993; New Brunswick Department of Health and Community Services, 1994).

#### The Prevalence and Nature of Communication Disorders

Estimates of the prevalence of communication disorders vary according to the type of communication disorder, the age range under discussion, and the source of information. Vast inconsistencies in figures, which have been reported to range from 3% to 33.4%, are largely explained by differences in criteria, measures, and methodologies employed in the determination of estimates. However, in a methodologically rigorous study of Ottawa Kindergarten students, Beitchman, Nair, Clegg, and Patel (1986) found that the overall prevalence of speech and language disorders at the Kindergarten level was 19%. More recently, Winzer (1993) reported the overall rate of communication disorders to be lower, approximately 10% among the school-aged population. This discrepancy is attributable to the fact that some speech and language disorders are resolved through intervention, maturation, or both. Wiig and Semel (1984) stated that language disorders are evident in 40% to 60% of learning-disabled students and in 1.5% to 2% of all school-aged children. A recent study by OSLA (1996) cited approximately 75% to 80% of learning-disabled students and over 60% of behaviourally disordered students as having concomitant language difficulties.

Language disorders and delays typically comprise a majority of a school speech-language pathologist's caseload. The remainder of the caseload consists of less widespread communication difficulties such as articulation, fluency, and voice disorders. In CASLPA's 1988 demographic study, 79% of Canadian speech-language pathologists working in schools reported that their primary area of practice was language (CASLPA, 1990). Information gained via the CASLPA followup survey in 1990 indicated that Canadian school speech-language pathologists serve mainly students who exhibit predominantly language disorders (75%), followed by articulation disorders (18%), fluency disorders (4%), and other communication disorders (1%) (Rubin, 1990).

With the demand for speech and language services having far exceeded the supply, services have historically focussed on the provision of early intervention. The rationale has stemmed from research supporting the notion that communication disorders have a significant impact on psychosocial and academic development in the early school years (e.g., Cazden, 1988; Miller, 1989; Simon, 1985a, 1985b; Wallach & Butler, 1984). However, recent research has highlighted the needs of students with language-learning difficulties as they progress through the higher grades, when the intensity of peer interaction and the complexity of curriculum concepts become steadily more demanding of language skills (Boyce & Larson, 1983; Gruenewald & Pollack, 1984; New Brunswick Department of Health and Community Services, 1994; OSLA, 1996; Simon & Myrold-Gunyuz, 1990; Wiig & Semel, 1984).

Approaches to caseload management have varied considerably. The characteristics of a district's human resources and geographical setting have been the major determinants of optimum caseload size. Some school districts have advocated a maximum number of students served per speech-language pathologist, while others have specified the ratio of total students in the school district to speech-language pathologist or the ratio of total schools served to speech-language pathologist (New Brunswick Department of Health and Community Services, 1994). National guidelines on the issue are nonexistent; however, the

Newfoundland government has recommended that the maximum number of students to which a speech-language pathologist should provide direct intervention is 45 per annum (Newfoundland Department of Education, 1986). ASHA's recommended maximum caseload number is 40 for all types of service delivery. Acknowledging that work conditions may preclude application of this recommendation, ASHA has emphasized the weighing of variables that impinge upon time and ultimately affect caseload size. These variables are:

the severity of the communication disorder, the effect of the disorder on the student's ability to function in an academic setting; overall needs of the student, the number of locations in which services are provided, travel time between locations, and effect of year-round school schedules. (ASHA, 1993, pp. 34-35)

#### Purpose of the Study

According to a burgeoning body of literature, some speech-language pathologists are beginning to deliver services directly within classroom settings. Numerous articles provide evidence for successful classroom-based speech and language programs based on a philosophy of collaboration between speech-language pathologists and teachers. Several manuals that provide specific guidelines for analysis of classroom communication are now commercially available (e.g., Borsch & Oaks, 1993; Hagan, McDannold, & Meyer, 1990; Prelock, Miller, & Reed, 1993).

The general purpose of the study was to increase knowledge of collaboration between speech-language pathologists and teachers within the classroom setting by describing its present status in Canada. The specific purpose of the study was to answer the questions pertaining to classroom-based intervention services that are posed in the following section.

### Research Questions

Results of the study extend existing research by examining speech-language pathologists' practices, experiences, and judgements relating to classroom-based service delivery. The study was designed to answer the following general and subsidiary research questions related to use of seven specific service delivery approaches chosen for investigation. (For an itemization of the seven service delivery approaches, see Appendix A.)

1. Is use of the seven service delivery approaches for classroom-based intervention related to the following personal and professional characteristics of speech-language pathologists:
  - a) gender;
  - b) years of speech-language pathology experience in schools;
  - c) teaching experience;
  - d) possession of a Bachelor of Education or equivalent degree;
  - e) possession of a master's degree in speech-language pathology;
  - f) certification status?
2. Is use of the seven service delivery approaches for classroom-based intervention related to the following situational characteristics of speech-language pathologists:
  - a) caseload number;
  - b) grade levels served;
  - c) geographical work setting?
3. What percentages of speech-language pathologists are using the seven service delivery approaches for classroom-based intervention and which approaches are considered more successful?
  - a) What percentages of speech-language pathologists are using each of the service delivery approaches?

- b) Which of the service delivery approaches are considered the most and the least successful?
4. What are the major disorder types (i.e., language, articulation, fluency, and voice) of students served using the seven service delivery approaches for classroom-based intervention and which approaches are considered more successful?
- a) Which of the service delivery approaches are used with which disorder types?
  - b) Which of the service delivery approaches are considered the most and the least successful for each disorder type?
  - c) Which of the service delivery approaches are considered appropriate for each disorder type?
5. What are the grade level categories (i.e., Kindergarten to Grade 3, Grades 4 to 6, Grades 7 to 9, and Grades 10 to 12) of students served using the seven service delivery approaches for classroom-based intervention and which approaches are considered more successful?
- a) Which of the service delivery approaches are used with which grade level categories?
  - b) Which of the service delivery approaches are considered the most and the least successful for each grade level category?
  - c) Which of the service delivery approaches are considered appropriate for each grade level category?
6. What are the perceived advantages and disadvantages of the seven service delivery approaches for classroom-based intervention to the following groups:
- a) speech-language pathologists;
  - b) teachers;
  - c) caseload students;
  - d) non-caseload students?
7. What are the factors that are perceived to encourage and discourage use of the seven service delivery approaches for classroom-based intervention?



8. Do speech-language pathologists perceive a need for additional information for speech-language pathologists who use the seven service delivery approaches for classroom-based intervention?
- a) If so, what are the perceived areas of need for additional information?
  - b) If so, what are the preferred methods for additional information?
9. What differences, if any, exist between the views of speech-language pathologists who use and those who do not use the seven service delivery approaches for classroom-based intervention on the following issues:
- a) appropriateness of each of the service delivery approaches to:
    - 1) disorder types;
    - 2) grade level categories;
  - b) advantages and disadvantages of the service delivery approaches to:
    - 1) speech-language pathologists;
    - 2) teachers;
    - 3) caseload students;
    - 4) non-caseload students;
  - c) factors that encourage and discourage use of the service delivery approaches;
  - d) existence of a need for additional training of speech-language pathologists who use the service delivery approaches;
  - e) areas of need for additional information for speech-language pathologists who use the service delivery approaches;
  - f) preferred methods of obtaining additional information for speech-language pathologists who use the service delivery approaches?

#### Significance of the Study

A considerable number of articles have been published on collaboration between speech-language pathologists and classroom teachers in the United States. The majority of

published studies are anecdotal accounts of professional experiences. While reports from individuals in the field are valuable because they supply new ideas, there are few studies on the status of collaboration between speech-language pathologists and teachers.

This study constitutes a timely contribution to the professional competencies of speech-language pathologists working in schools by providing a status report on classroom collaboration and intervention. Research results are of practical relevance to speech-language pathologists, educators, and policymakers as they continue to improve upon service delivery while operating in times of increasing fiscal restraint. Outcomes of the study provide guidance for planning, implementation, and refinement of classroom-based intervention programs for speech- and language-impaired students by highlighting factors that influence service efficacy. Results are also of use to speech-language pathologists and other school team members in jointly developing inservices for regular teachers, special educators, and administrators responsible for facilitating a multidisciplinary approach. In addition, results will assist university training programs in designing courses to prepare speech-language pathologists to work in schools.

#### Limitations of the Study

Several factors imposed limitations on the generalizability of conclusions derived from the data.

First, although a sufficient response rate was achieved, non-response bias may nonetheless be present. The practices and beliefs of speech-language pathologists who opted not to respond may differ markedly from those who did respond.

Second, due to complex sampling procedures described in the Chapter Three, there were two sources of non-response for five provinces. As non-response from speech-language pathologists who work in schools and speech-language pathologists who work in other settings could not be determined separately, figures for these five provinces reflect only aggregate non-response rates.

Third, response bias may have affected the data. Respondents may have been averse to or incapable of answering some items on the questionnaire, resulting in inaccurate responses and the omission of items. The data are valid only if respondents are willing and able to provide accurate information.

Fourth, the sampling frame may have been underregistered, resulting in a biased sample. By selecting the sample from the populations of CASLPA members and provincial association members, school-based speech-language pathologists who were not members of these associations due to either ineligibility or choice were not part of the sample. Recently qualified speech-language pathologists who had not yet applied for membership and others whose applications were being processed were not included in the study. There may be a tendency for CASLPA members to differ from non-members in some major way. If this is the case, then the generalizability of the study's conclusions to the entire population of speech-language pathologists working in schools is circumscribed.

Fifth, the large number of analyses required to answer the research questions increased the likelihood of incurring Type I error. Therefore, individual cases of significance must be regarded with caution.

Sixth, the internal validity of the study was limited by its design. As this study involved use of descriptive research methods, cause could not be ascribed by analyzing the data. Therefore, results do not yield information on the many causal factors involved in speech-language pathologists' service delivery within classrooms.

#### Definition of Terms

A number of terms are commonly used throughout the description of this study. Definitions of some of these are provided in this section, based on Borden and Harris, 1980; CASLPA, n.d.b; Newfoundland Department of Education, 1986; and Nicolosi, Harryman, and Kresheck, 1989. Further definitions follow throughout the body of the study, as they pertain to the literature review and to the methodology.

**Articulation:** the pronunciation of sounds in words. Impairments of articulation include distortion of sounds (e.g., "ship" produced as "thip"), substitution of sounds ("red" produced as "wed"), and omission of sounds (e.g., "cat" produced as "ca").

**Communication disorder:** impairment in the ability to receive, process, or produce a linguistic symbol system. Impairment is observed in one or more of the following areas: hearing, language, articulation, fluency, or voice.

**Fluency:** smoothness with which sounds, syllables, words, and phrases are combined in speech. Impairment of fluency may result in repetitions of sounds, syllables, words, and phrases; prolongations of sounds; hesitations; and interjections (i.e., stuttering).

**Language:** communication system governed by rules for the formation of meaning. Language has two main components: receptive language, or the comprehension of language, and expressive language, or the production of language. Language may take the form of oral communication, written communication, pictures, symbols, or hand signs. Language acquisition normally follows a predetermined sequence. However, this sequence can be impaired by a language disorder, characterized by developmental gaps, or by a language delay, characterized by normally sequenced but slowed development.

**Speech:** a medium of oral communication employing meaningful sound that adheres to a linguistic code.

**Voice:** sound produced by the vocal cords. Impairments of the voice include loss of voice, pitch that is too high, too low, or interrupted by breaks; volume that is too loud or too quiet; or quality that is too hoarse or too strident.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

This chapter presents a comprehensive review of the literature on collaboration between speech-language pathologists and teachers. The review proceeds from the general to the specific, focussing first on collaboration in special services and second on collaboration between speech-language pathologists and teachers in schools. By initially providing a general literature review, a framework within which to fit subsequent sections of the review is built. Emphasis is placed on viewing speech and language programs within a broader context, as part of a unified approach to delivery of service to students with special needs.

#### Collaboration in Special Services

This section provides a conceptual frame of reference for collaboration by defining the term, describing the context within which a collaboration has gained momentum, and discussing applications of collaboration as exemplified by two common practices in special services, consultation and professional teaming.

#### Definitions

No universal definition of collaboration exists in the literature, despite extensive discussion of collaborative programs and their benefits. The term has been used inconsistently to denote both an overriding philosophy of service delivery and specific types of service delivery, such as consultation and teaming (Friend & Cook, 1991, 1992; Pryzwansky, 1977). For example, Idol et al. (1986) have combined the notions of collaboration and consultation to form the term "collaborative consultation", which they define as

... an interactive process that enables people with diverse expertise to generate creative solutions to mutually defined problems. The outcome is enhanced, altered,

and produces solutions that are different from those that the individual team members would produce independently. The major outcome of collaborative consultation is to provide comprehensive and effective programs for students with special needs within the most appropriate context, thereby enabling them to achieve maximum constructive interaction with their nonhandicapped peers. (p. 1)

This definition has been widely adopted in the literature on collaboration in both special education and speech-language pathology (e.g., Achilles, Yates, & Freese, 1991; Borsch & Oaks, 1992; Cooper, 1991; Coufal, 1993; Ferguson, 1992; Hoskins, 1990; Montgomery, 1992; Roller, Rodriguez, Warner, & Lindahl, 1992; West, Idol, & Cannon, 1989).

Although the term "collaboration" has also been used as synonymous with "consultation", several authors have postulated the existence of a dichotomy between collaboration and consultation (Coufal, 1993; Idol et al., 1986; Marvin, 1990; West et al., 1989). The stated distinction is that, whereas collaboration is a way of interacting in any one of a number of situations, consultation is an activity-based process. In this vein, Friend & Cook (1992) provided a precise definition of collaboration. "Interpersonal collaboration is a style for direct interaction between at least two coequal parties voluntarily engaged in shared decision making as they work toward a common goal." (p. 5) The major element that differentiates this definition from that of Idol et al. (1986) is use of the word "style" to describe a mode of interaction. Collaboration is not regarded as an end but rather as a means to an end. Thus, Friend and Cook (1992) viewed ways of interacting as separate from specific activities that could be accomplished through use of any one of a number of interpersonal styles.

According to Phillips and McCullough (1990), preconditions for the establishment of a collaborative climate are:

1. Joint responsibility for problems (i.e., all professionals share responsibility and concern for all students).
2. Joint accountability and recognition for problem resolution.

3. Belief that pooling talents and resources is mutually advantageous, with the following benefits:
  - a. Increased range of solutions generated;
  - b. Diversity of expertise and resources available to engage problems;
  - c. Superiority and originality of solutions generated.
4. Belief that teacher or student problem resolution merits expenditure of time, energy, and resources.
5. Belief that correlates of collaboration are important and desirable (i.e., group morale, group cohesion, increased knowledge of problem-solving processes and specific alternative classroom interventions). (p. 295)

Additional characteristics that are conducive to successful collaborative programs, as cited by Friend and Cook (1990, 1992), include voluntary participation, parity among participants, and shared resources. Although some degree of mutual trust and sense of community at the outset is advantageous, the ongoing use of a collaborative interactional style fosters growth in these areas (Friend & Cook, 1990, 1992).

Marvin (1990) regarded collaboration as existing at one end of "a continuum of reciprocal interactions among co-workers" (p. 41). Using general principles to refer specifically to relationships between speech-language pathologists and teachers, she identified four points on the continuum. The first point, co-activity, consists of parallel instructional activity with little, if any, interaction. The second point on the continuum, cooperation, is characterized by some mutual development of communication goals that are directed toward the class in general rather than toward individual students. Limited sharing of ideas or evaluative feedback occurs. The third point, coordination, involves discussion of specific students' needs and strategies to assist them in class. The speech-language pathologist and the teacher begin to develop trust and exchange ideas, which facilitates a willingness to accept one another's suggestions. Lines of responsibility remain clearly delineated, with each participant maintaining a separate professional role. The fourth point

on the continuum, collaboration, is defined by trust, respect, and a sharing of responsibility for all students. An attitude of "ownership" toward the classroom-based program means that the speech-language pathologist and teacher exchange roles as necessary to accomplish jointly established goals.

### The Context of Collaboration

Idol et al. (1986) couched the context of collaboration in historical, legislative, empirical, and ethical terms, providing an exhaustive review of the literature. Principles arising from American legislation, which has often had roots in litigation, have encouraged establishment of collaborative approaches in special education. These have included the right to education for all, the least restrictive environment, protection from discriminatory assessment practices, and implementation of individualized educational programs (IEPs). In Canada, these principles are generally espoused in policy and practice rather than through legislation.

The empirical context for collaboration has included research results that have led to criticism of the segregating structure traditionally found in special education. Will (1986), in her seminal report to the Secretary of the United States Department of Education, cited four major difficulties with special education practices.

First, the compartmentalization created by the designation of special programs means that some students who need services "fall through the cracks". In addition,

... the assistance the child needs in addressing his or her learning problem is, in many cases, predetermined by the availability of a particular program. Not enough attention is given to assessing individual learning needs and tailoring a specific program to meet those needs. This results in a failure to meet the child's unique learning needs to the greatest extent possible. (Will, 1986, p. 8)

Second, a dual system of regular and special education "contribute to a lack of coordination, raise questions about leadership, cloud areas of responsibility, and obscure lines of accountability within schools" (Will, 1986, p. 8). Programs for students with



special needs are most often administered at the district level but are delivered on-site, meaning that school administrators frequently do not take responsibility for programs or their objectives. Special programs are further marginalized by lack of communication between regular and special education teachers, resulting in an uncoordinated approach to instruction.

Third, stigmatization commonly results from labelling students and isolating them from peers. Stigmatization compounds the effects of learning difficulties by reinforcing "low expectation of success, failure to persist on tasks, the belief that failures are caused by personal inadequacies, and a continued failure to learn effectively" (Will, 1986, p. 9).

Fourth, rigid eligibility criteria for entry to special programs produce negative conflict between educational personnel and parents, who become adversaries during the placement process (Will, 1986).

Gersten and Woodward (1990) noted that segregated programs have become "dumping grounds" for students who are a challenge to teach, such as minority students and students from low income families. Pullout programs waste large amounts of instructional time when students are in transition to and from resource rooms. Most significantly, there is discontinuity between what is taught in special programs and in regular classrooms, with little attempt to integrate information disseminated in pullout programs with that provided in regular classrooms.

According to Will (1986), creating a new educational environment is less beneficial to students with special needs than working to meet their needs within regular classrooms. Regular classroom environments must be altered through the use of instruction and curriculum that has been adapted using insight gained from special programs. Will's (1986) specific proposals for change to assist special students within the regular classroom were greater time for instruction; increased support for regular teachers, including multidisciplinary teams and team teaching; site-based administration of special services; and innovative alternatives, such as curriculum-based assessment and cooperative learning. The

majority of these proposals, based on principles of empowerment and participatory decision-making, require a collaborative ethos to be effectively implemented.

### Applications of Collaboration in Special Services

The following discussion of collaboration in special services focusses on descriptions of consultation and teaming, two commonly used structures of service delivery in which a collaborative style is most often desirable (Friend & Cook, 1992).

Consultation. Friend and Cook (1992) summarized the many definitions offered for consultation as "a voluntary process in which one professional assists another to address a problem concerning a third party" (p. 17). According to Friend and Cook (1992), the nature of consultation is triadic, indirect, and voluntary. Typically, it involves a relationship between two professionals who are not on parity as one, the consultant, has more expertise than the other, the consultee. Participants in consultation share the problem-solving process, but differentiate responsibilities, with the consultee being accountable for any decisions made regarding the implementation of strategies.

Phillips and McCullough (1990), based on an extensive literature review, cited the following tenets of school-based consultation programs:

1. Indirect service (triadic model; consultant-consultee (mediator)-client.
2. Collaborative professional relationships (includes notion of coordinate status; ownership of problem and process).
3. Recognition of consultee rights (engagement is voluntary and confidential; consultee retains right to reject solutions).
4. Problem-solving orientation.
5. Attention to a two-fold goal:
  - a. Immediate problem resolution;
  - b. Increase in consultee skill/knowledge for independent resolution of similar problems in the future. (p. 293)

Pickering (1981) identified four models of consultation between speech-language pathologists and teachers. The models could be regarded as complementary and used simultaneously or one model could be adopted to the exclusion of others, depending upon circumstantial need. In the "consultant as instructor" model, the speech-language pathologist provides the teacher with information about speech and language disorders. This model does not specify active involvement of the teacher. The "consultant as specialist" model, the speech-language pathologist designs recommendations either alone or in conjunction with the teacher. The teacher implements the recommendations, which involve strategies for enhancing communication skills in the classroom. According to Pickering (1981), this model of consultation is time-consuming, as it involves generating written objectives for teachers and determining if objectives have been followed and are effective. In the "consultant as facilitator" model, the speech-language pathologist develops a comprehensive language development program to be carried out solely by the teacher. While this model proposes the teacher as the central figure in the student's school experience, many teachers feel that they do not possess adequate expertise to conduct a structured oral language program. The "communication-based consultation" model also acknowledges the teacher's powerful role, but attention is focussed on the student as communicator, with the teacher as facilitator of strategies that promote effective classroom communication. The communicative process is viewed primarily within the context of social and academic use, rather than as consisting only of discrete linguistic entities, such as vocabulary and grammar.

As previously mentioned, the terms "consultation" and "collaboration" have frequently been equated or combined. However, the term "consultation" was used independently until the late 1970's, when it became generally accepted that a facilitative and supportive approach to consultation was preferable to a directive approach. Thus, collaboration became associated with consultation, reflecting increased emphasis on collegial rather than prescriptive relationships between specialists and teachers (Friend &

Cook, 1992; Idol et al., 1986). A collaborative style can be used with any of a number of consultative models, including behavioural consultation, clinical consultation, and mental health consultation. As well, different interpersonal styles (e.g., directive, authoritarian) can be judiciously used with any model of consultation, depending upon the demands of a given circumstance (Friend & Cook, 1992).

**Professional teams.** Friend and Cook (1992) described a team as "a relatively small set of interdependent individuals who work and interact directly in a coordinated manner to achieve a common purpose" (p. 24). According to Friend and Cook (1992), it is not feasible to form and maintain a team, as distinguished from a loosely formed group, in the absence of a collaborative style of interaction.

Teams are characterized by collaborative relationships among members. Team members share parity, have a common goal, share responsibility for decision making, and share accountability for outcomes. Teams have common norms and shared beliefs and values, and team members trust one another. Collaboration's emergent characteristic of interdependence is a critical defining characteristic of a team. (p. 31)

Use of the word "team" in special education has most often referred to a multidisciplinary team, also termed interdisciplinary and transdisciplinary, with responsibility for planning and implementation of programs for mainstreamed special needs students. These teams, consisting of special and regular educators, specialists, and parents have provided a method of monitoring educational programs and managing related concerns (Winzer, 1993).

A relatively recent innovation in special education has been the use of cooperative teams for teaching. In co-teaching, also referred to as team teaching in the literature, the special education teacher teams with the regular teacher in the classroom. The rationale is that a combined effort will increase the effectiveness of instruction to learning disabled and other special needs students in an integrated setting. The advantages of this type of service

delivery, in which the special educator provides service to all students within the regular class, are increasingly recognized (e.g., Bauwens, Hourcade, & Friend, 1989; Friend & Cook, 1992).

Although regular and special educators are jointly responsible for the provision of instruction, a division of duties often exists. For example, regular teachers possess in-depth knowledge of curriculum content, appropriate levels and sequencing of instruction, and behavioural management of large groups of students. Special education teachers have knowledge of methods of program individualization including analysis of curricular requirements, identification and adaptation of areas of difficulty within the curriculum, and development of instructional modifications to assist students. In a cooperative teaching situation, regular and special education teachers' complementary skills are combined for the benefit of all students (Bauwens et al., 1989).

A variety of cooperative teaching arrangements have been described in the literature. These have not been presented as mutually exclusive, but rather as approaches that can be used sequentially or simultaneously within a classroom. Bauwens et al. (1989) classified cooperative instructional approaches into three broad categories: complementary instruction, team teaching, and supportive learning activities. Descriptions of these approaches were subsequently applied by Borsch and Oaks (1993) to cooperative relationships between speech-language pathologists and teachers.

In complementary instruction, the regular teacher assumes primary responsibility for instruction and the special education teacher assumes responsibility for the strategies and techniques necessary to master the material (e.g., taking notes, identifying main ideas) (Bauwens et al., 1989). When a speech-language pathologist rather than a special education teacher is involved, the speech-language pathologist concentrates on speech and language skills that are related to the lesson (e.g., sequencing the steps of a language-based math problem, identifying and phrasing the main ideas of a narrative). Although teaching

partners are together responsible for the design, delivery, evaluation, and adaptation of programs, they teach according to their specific area of expertise (Borsch & Oaks, 1993).

In team teaching, both educators plan and implement lessons, monitor students' progress, and modify the program as necessary, but the division of responsibilities is not dependent on background (Bauwens et al., 1989). When a speech-language pathologist and a teacher team teach, both individuals teach strategies and content, dividing teaching responsibilities in the way most appropriate to the subject matter. For example, both the speech-language pathologist and the teacher could teach the math curriculum, covering content while focussing on verbal reasoning skills such as inferencing and predicting (Borsch & Oaks, 1993).

Supportive learning activities entail joint design and delivery of lessons but, whereas the teacher delivers core curriculum content, the special education teacher supplements content with additional learning activities. The provision of supportive learning activities differs from complementary teaching in that activities and materials are more closely related to content areas than they are to strategies that promote acquisition of content (Bauwens et al., 1989). Activities developed collaboratively by a speech-language pathologist and a teacher involve the speech-language pathologist presenting material that both reinforces curriculum content and targets speech and language goals (Borsch & Oaks, 1993).

Elksnin and Capilouto (1994b) adapted Friend's (1992) taxonomy of cooperative teaching approaches for use in a study of speech-language pathologists' perceptions of integrated service delivery. Their modified classification system encompassed seven approaches to the provision of speech and language services:

1. One teach, one observe: Either the speech-language pathologist or the classroom teacher observes, while the other assumes primary instructional responsibility.
2. One teach, one "drift": The speech-language pathologist or classroom teacher assumes primary instructional responsibility while the other assists students with their work, monitors behavior, corrects assignments, and the like.

3. Station teaching: The speech-language pathologist or classroom teacher divide instructional content into two parts (e.g., vocabulary and content, new concepts and review). Groups are switched so that all students receive instruction from each teacher.
4. Parallel teaching: The speech-language pathologist and classroom teacher each instructs half the group, each addressing the same instructional objectives.
5. Remedial teaching: The speech-language pathologist or classroom teacher instructs students who have mastered the material to be learned while the other reteaches those students who have not mastered the material.
6. Supplemental teaching: The speech-language pathologist or classroom teacher presents the lesson using a standard format. The other adapts the lesson for those students who cannot master the material.
7. Team teaching: Both the speech-language pathologist and classroom teacher present the lesson to all students. This may include shared lecturing or having one teacher begin the lesson while the other takes over when appropriate (p. 260).

A literature review on collaboration in schools indicates that a collaborative philosophy is increasingly influencing the provision of special services, including speech and language services. Advancement of knowledge about special school-aged populations has increased service delivery options. In addition, it has contributed toward more sharing and reliance among school professionals in determining and meeting students' needs (Cook & Friend, 1991; Gartner & Lipsky, 1987; Wiederholt, 1989).

#### **Collaboration Between Speech-Language Pathologists and Teachers**

This section presents an overview of traditional and classroom-based approaches to delivery of speech and language services, and describes characteristics of disorder types and student levels targetted through the use of classroom-based approaches. In addition, this

section discusses advantages and disadvantages and supports and barriers to classroom-based services prior to outlining training needs for speech-language pathologists who adopt these innovative approaches.

### Traditional Approaches

The speech-language pathologist's delivery of services to students with language-learning difficulties has mirrored special education pullout modes of service delivery. With roots in medicine, traditional practice has focussed on diagnosis and treatment with a view to curing a disorder. Assessment has consisted primarily of the administration of standardized tests in controlled environments. Because evaluation has been thus decontextualized, it has frequently produced information that is inapplicable to the student's daily milieu and experience (Cirrin & Penner, 1995; Gutkin, 1990; Nelson, 1989, 1990).

In the traditional pullout model, the speech-language pathologist provides services to a range of students with varying disorder types and degrees of severity. Students' placement may be in either regular or special education classrooms. Intervention services are provided to students individually or in small groups or both, most often in a room other than the classroom. The frequency and length of sessions and the duration of service provision varies according to the needs of the student (ASHA, 1993; Nelson, 1990).

The 1970's and 1980's produced a proliferation of research on child language development, beginning with the publication of Bloom's (1970) influential work on the semantics of early grammatical structures in children's language. Bates' (1976) study of pragmatics, or the use of language in context, underscored the inseparability of meaning and the environment in which it is derived. Despite accumulated knowledge of the way in which children learn language, delivery of services to students who experienced difficulty learning language remained largely unchanged (Miller, 1989).

Problems associated with traditional delivery of speech and language services have been widely documented. Nelson (1990) described major problems associated with pullout approaches as less time allotted to each student when caseload size increases, lack of time to



individualize instruction to speech- and language-impaired students, limited generalization of students' newly learned communication skills to classroom interactions, and minimal student progress despite provision of service on a long-term basis. Other negative aspects of traditional approaches include goals that are frequently irrelevant to students' social and academic needs; increased student responsibility for new information, in addition to regular work missed while in pullout sessions; a focus on remediation to the exclusion of prevention; and the requirement that speech and language services be provided solely by speech-language pathologists (Anderson & Nelson, 1988; Cirrin & Penner, 1995; Gutkin, 1990; Miller, 1989).

#### Classroom-Based Approaches

New approaches to delivery of speech and language services stem from research results that stress that language is most readily learned within meaningful contexts (Damico, 1987; Miller, 1989; Norris, 1989; Simon, 1987). These results, coupled with recognition of the central role that oral language plays in socialization, cognition, and academic achievement, have forced a reexamination of the speech-language pathologist's role.

The dominance of language in school settings is universally acknowledged (e.g., Cazden, 1988; Silliman & Wilkinson, L. C., 1991; Simon, 1985a, 1985b; Wallach & Butler, 1984; Wiig & Semel, 1984). Bush (1991) summarized the mediating function that language serves not only in reading and writing but in all subject areas.

Reading requires a structural, phonological, and semantic knowledge of the language. Math requires good comprehension (especially for story problems), sequencing, the following of directions, and problem-solving skills. Social studies and science require world knowledge, a developed vocabulary, and association and memory skills. Good communication skills are essential to all academic learning. (p. 1)

Extensive study on language requirements within classrooms has created a new view of the intimate relationship between language learning and academic success. This changed

perspective has provided impetus for movement away from treatment-oriented approaches toward classroom-based approaches, also referred to as collaborative, integrated, curriculum-based, transdisciplinary, interdisciplinary, or inclusive programming in the literature. The emphasis of classroom-based approaches is on the provision of direct services within the classroom by teaming with the regular or special education teacher. Students' communication needs are gauged by the demands of curriculum content and the multifaceted context in which it is taught and learned.

As applied to language related concerns, the phrase "curriculum-based language assessment and intervention" refers to the use of curriculum contexts and content for measuring a student's language intervention needs and progress. Such procedures allow evaluation to extend beyond identification of a student as language impaired, to include the identification of activities and skills that might help the student to acquire more effective communication skills (both oral and written). A curriculum-based approach directs the focus of intervention toward functional changes that are relevant to the child's communicative needs in the academic setting. (Nelson, 1989, p. 171)

The context includes both the physical classroom environment and the behaviours of teachers as factors that have an impact upon students' communication skills.

Consider the child with "wobbly" language competencies who is having difficulty comprehending what to do when faced with complex teacher language in a classroom full of "noise", that is not only acoustic, but also cognitive and social-emotional. Being relevant to the needs of such a child means assisting the child to acquire resources for comprehending language of the complexity heard in the classroom with all of the dysfluencies, distractions, and interruptions that such naturally produced language entails. (Nelson, 1990, p. 16)

Classrooms are governed by norms based on rules and expectations for appropriate participation. These norms constitute what Nelson (1989) termed "the school culture

curriculum" and "the hidden curriculum". Explicit and implicit rules for communicative interactions are manifested in the classroom and interpreted by students in ways that are specific to a given situation. For example, a teacher's system of cuing a shift in focus may be primarily verbal, through the use of spoken language, or nonverbal, through the use of intonation, gesture, or eye contact. Students who have difficulty learning language often are not cognizant of subtle verbal or nonverbal cues given by the teacher. Such students frequently experience confusion and frustration while also creating teacher frustration when they are not able to follow "the school script" (Creaghead, 1990). Although the expected outcome of teacher-class interaction may be identical, the level of communicative demand differs according to the circumstance, the teacher's interactive style, and the student's areas of communicative need (Silliman & Wilkinson, 1991).

Thus, in principle the extent of a student's impairment does not vary, but in practice environment determines the degree to which a student's communicative ability is taxed. The evaluation of communication skills therefore should not focus solely on determination of the student's communicative shortcomings. Specific questions to be asked when using a classroom-based approach are:

What communicative skills and strategies does the student need to be able to participate in the curriculum? . . . What processes and strategies does the student currently exhibit when communicating within important curricular contexts? . . . What new skills, strategies, or compensatory techniques might this child acquire with intervention to be able to participate in learning the curriculum better? . . . How might curricular expectations be modified, without disrupting general classroom flow, so that this student gets more opportunity participate successfully? (Nelson, 1990, pp. 21-22)

Examining the student's needs, designing objectives, and devising a plan to meet those needs are activities completed jointly by the speech-language pathologist and the teacher(s), with involvement of other specialists, administrators, support staff, and parents as

appropriate. Collaboration facilitates the assessment and intervention process in two major ways. First, the input of more than one professional enables the observation and analysis of a greater range of language-related skills. Second, when a collaborative team determines which of the sampled communicative behaviours are pivotal to classroom success, the authenticity or "ecological validity" of the information gained is increased (ASHA, 1991; Silliman, Wilkinson, & Hoffman, 1993; Pichora-Fuller & Gallagher, 1992).

Implementation of the plan and evaluation of progress are also completed in conjunction with the teacher. Specific functions that the speech-language pathologist can perform using a collaborative classroom-based approach are:

1. demonstrating the teaching of alternative instructional approaches
2. co-teaching lessons with the classroom teacher
3. adapting instructional material based on the classroom teacher's curricular objectives
4. recommending and providing supplemental materials to reinforce speech-language goals within course content
5. adapting and/or preparing test materials specific to the needs of the student
6. collecting data on students with communication disorders within the classroom
7. facilitating functional communication skills
8. facilitating socialization goals within the classroom
9. making recommendations to teaching/support regarding the integration of communication skills throughout the curriculum (ASHA, 1993, p. 36)

Simon and Myrold-Gunyuz (1990) summarized what they term the "old" and "new" roles of the speech-language pathologist in terms of a dichotomous list. However, others have advocated that speech and language services not be limited to the use of a particular approach (Dublinske, 1989; Nelson, 1989). Proponents of this more moderate stance, while acknowledging weaknesses inherent in traditional pullout approaches, caution against eliminating them. In fact, an ASHA document on speech and language services in

schools stressed that "service delivery is a dynamic concept, and should change as the needs of the students change. No one service delivery model need be used exclusively during treatment" (ASHA, 1993, p. 35). The student's communicative requirements, which will vary in differing environmental contexts and over time, must be the major determinants of the approach to be used (Hixson, 1993; Marvin, 1987; Nelson, 1990; Prelock, 1995; Sanger, Hux, & Griess, 1995; Taylor, 1992).

A 1992 study of 209 randomly sampled speech-language pathologists in Minnesota indicated that students requiring speech and language services were served through the use of several methods, selected according to students' individual needs (Cirrin & Penner, 1995). In addition, 13% of students were served through concurrent use of more than one mode of service delivery. Percentages of students served through the five methods investigated were as follows: direct intervention by the speech-language pathologist with individual students or small groups in a pullout room (64%); collaboration between the speech-language pathologist and the teacher to provide direct intervention in a general or special education classroom (24%); indirect consultation services by the speech-language pathologist to the general and/or special education teacher (12%); other, such as home- and community-based programs (8%); and direct intervention by the speech-language pathologist with individual students or small groups in a general or special education classroom (5%). Classroom-based intervention was used with approximately one-quarter of students and the traditional pullout approach was used with approximately two-thirds of students receiving the services of a speech-language pathologist.

Additional information on modes of service delivery was obtained from a survey of teachers', principals', and school psychologists' perceptions of speech-language pathology services in schools (Sanger et al., 1995). A total of 628 survey respondents from four states indicated that 37% of speech-language pathologists in their schools used solely a traditional pullout approach and 63% used a traditional pullout approach in conjunction with one or more other approaches, such as consultation, collaboration, or both.

### Speech and Language Intervention Services Targetted in Classrooms

The use of classroom-based services may be more appropriate to intervention with certain types of communication difficulties than others. Published accounts indicate that the majority of classroom-based services are provided to students who have language disorders or delays (Brandel, 1992; Christensen & Luckett, 1990; Farber, Denenberg, Klyman, & Lachman, 1992; Ferguson, 1992; Fujiki & Brinton, 1984; Gerber, 1987; Magnotta, 1991; Moore-Brown, 1992; Norris, 1989; Wilcox, Kouri, & Caswell, 1991). This indication is consistent with results of a survey 31 speech-language pathologists in a South Carolina school district, which revealed that all speech-language pathologists who adopted classroom-based approaches used these approaches for language disorders or delays (Elksnin & Capilouto, 1994b).

Fewer reports exist on the use of classroom-based service delivery for students with articulation, fluency, and voice difficulties. Most often, pullout sessions were used for intervention, with carryover to the classroom and ongoing monitoring of progress supported through the use of classroom-based services (Borsch & Oaks, 1992; Ferguson, 1992; Montgomery, 1992). One report indicated that students with mild to moderate articulation, fluency, and voice disorders received services within the classroom, but that moderate to severe difficulties were remediated in pullout sessions (Achilles et al., 1991). Another report described the use of combined approaches for articulation difficulties. Students received pullout services from an itinerant speech-language pathologist while simultaneously receiving support for generalization to the classroom from a second speech-language pathologist who was based in the classroom (Roller et al., 1992).

A report on an individual program for fluency intervention also detailed a combination of pullout and classroom approaches. While continuing to provide individual sessions, the speech-language pathologist observed a student in the classroom to monitor fluency during reading, class discussion, and response to teacher questions. Because many students demonstrated poor speaking skills, the speech-language pathologist designed

classroom activities with the primary goal of facilitating individual carryover and the secondary goal of promoting fluency of the entire class. Techniques that benefitted all students included the use of a slow rate of speech, an adequate volume of speech, and eye contact with the speaker or listener (Cooper, 1991). Using a similar rationale, a classroom program aimed at the prevention of fluency disorders was developed for general use by speech-language pathologists and teachers. Activities centred on increasing student awareness of affective, behavioural, and cognitive components of fluency (Cooper & Cooper, 1991).

The scant literature on the exclusive use of classroom-based services for intervention with articulation, fluency, and voice disorders indicates that speech-language pathologists use more traditional forms of service delivery for intervention with these disorders. This notion is partially reflected in results of Elksnin and Capilouto's (1994b) survey, which indicated that classroom approaches were used for fluency intervention by only 16.7% of respondents and for voice intervention by only 5.6% of respondents. Interestingly, 100% of respondents providing classroom-based services reported using them for articulation disorders, but only 61.1% considered classroom-based approaches appropriate for intervention with these disorders. It could be speculated that the adoption of classroom-based approaches to the exclusion of traditional approaches was unavoidable due either to district mandates or to caseload size.

#### Characteristics of Students Served in Classrooms

Classroom-based services may better suit the needs of students in lower grade levels than students in junior and senior secondary school. Most students served through use of classroom-based approaches fall between Kindergarten and Grades 2 or 3 (Achilles et al., 1991; Borsch & Oaks, 1992; Brandel, 1992; Christensen & Luckett, 1990; Cooper, 1991; Cooper & Cooper, 1991; Ellis, Schlaudecker, & Regimbal, 1995; Farber et al., 1992; Ferguson, 1992; Norris, 1989; Roller et al., 1992).

The importance of classroom-based service to junior and senior high school students has been underscored (Boyce & Larson, 1983; Despain & Simon, 1987; Gerber, 1987; Gruenwald & Pollack, 1984; Larson & McKinley, 1987; Larson, McKinley, & Boley, 1993; Simon & Myrold-Gunyuz, 1990). However, few anecdotal accounts exist of classroom-based intervention services to adolescents (Anderson & Nelson, 1988; Buttril, Nizawa, Biemer, Takashashi, & Hearn, 1989; Montgomery, 1992). The same phenomenon applies to discussion of classroom-based services to mentally challenged students. Although collaborative principles and programs have been presented in several articles (Nietupski, Scheutz, & Ockwood, 1980; O'Brien & O'Leary, 1988), reports of collaborative programs aimed at facilitating the language development of mentally challenged students are scarcer (Knox & Fifer, 1986).

Results of Elksnin and Capilouto's (1994b) survey support the notion that classroom-based services are less frequently offered to adolescents. Findings indicated that, of those speech-language pathologists who have adopted classroom-based approaches, 100% had used these approaches with students from Kindergarten to Grade 6. Only 33% and 22%, respectively, had used classroom-based approaches with junior and senior high school level students.

Lack of documented services to adolescents may be due to lack of service provision to junior and senior secondary students. Limited human resources frequently necessitate the imposition of constraints on the levels of students served, with the group targeted for services commonly consisting of students between Kindergarten and Grade 6. An alternate explanation lies in findings of several articles that have indicated that, as students mature, they feel stigmatized by receiving assistance in the presence of their classmates (ASHA, 1993; Jenkins & Heinen, 1989; Nelson, 1990).

#### Advantages and Disadvantages of Classroom-Based Approaches

There are numerous advantages of using classroom-based approaches, of which the most general is the alleviation of many of the concerns associated with the traditional pullout



model discussed earlier. However, the advantage that underlies all others is increased educational opportunity. By providing services that are synchronized with curriculum and instruction, the speech-language pathologist is able to teach skills directly within the student's natural school setting while manipulating situational variables to optimize student performance. Students with speech and language difficulties are thus afforded equal educational rights by receiving the additional assistance in class needed to reach their potential (Ford & Fitterman, 1994; Will, 1986).

Intervention within classrooms is meaning-based, as it originates in knowledge of "what students do in their classrooms, what their textbook requirements are, and what homework they are expected to perform" (Miller, 1989, p. 163). It promotes generalized use of targeted skills in the classroom environment by allowing for reinforcement by the speech-language pathologist, teacher, or peers. Natural and immediate feedback, coupled with the teaching of strategies relevant to the classroom, increases the probability that skills will be retained. Students will likely utilize newly acquired skills more frequently after noting the positive effects of communication strategies used in challenging academic and social situations (ASHA, 1991; Cirrin & Penner, 1995; Ford & Fitterman, 1994; Hoskins, 1990; Marvin, 1987; Miller, 1989; Prelock, Miller & Reed, 1995; Simon, 1987; Simon & Myrold-Gunyuz, 1990).

Classroom-based approaches may reduce the lag time between referral, evaluation, and program plan design. The assessment process is initiated once the concern is brought to the attention of the speech-language pathologist, thus eliminating lengthy testing and placement procedures while focussing on the establishment of an immediate plan for intervention. This is of benefit to both the student and the system, as human resources can be used more productively (Ford & Fitterman, 1994; Goodin & Mehollin, 1990).

Classroom-based service delivery provides opportunities for personal and professional development for school professionals. "Creating innovative programs for students with learning problems will change people's jobs and their work relationships.

They will spend more time working cooperatively, acquiring new knowledge, and learning more about one another's jobs" (Will, 1986, p. 20). Speech-language pathologists and teachers may experience personal and professional growth through collaborative endeavours, which necessitate joint problem-solving and peer coaching.

An additional advantage is the cost benefit realized by redirecting human resources toward a team effort. Combining forces to serve special students in the regular classroom may enable the speech-language pathologist and the teacher to serve a larger number of students within the same time frame by reducing the direct service caseload (Dublinske, 1989). As well, by augmenting the teacher's knowledge of speech and language development, preventative measures can be taken by restructuring classroom environments to meet the performance needs of at-risk students (ASHA, 1991; Cirrin & Penner, 1995; Ebert & Prelock, 1994; Ford & Fitterman, 1994; Gutkin, 1990; Marvin, 1987).

A distinct disadvantage of classroom-based service delivery is the additional planning time required (Elksnin & Capilouto, 1994b). This disadvantage can be ameliorated through administrative support that includes extra time for planning lessons, coordinating schedules, and obtaining materials, particularly in the initial stages of implementation (Brandel, 1992; Elksnin & Capilouto, 1994b; Lowe, 1993; Montgomery, 1992). The pivotal role that administrators play in the success of classroom-based approaches is discussed in the following section.

Speech-language pathologists may experience difficulty incorporating speech and language goals with individualized educational program goals (Elksnin & Capilouto, 1994b). A prerequisite to the harmonization of goals is knowledge of the curriculum and accompanying skills at each grade level, a large body of information with which to become familiar. This disadvantage can be addressed if goals are guided by results of curriculum-based language assessment and are developed in collaboration with the teacher (Lowe, 1993; Nelson, 1989, 1990).

By providing services in the classroom, the speech-language pathologist may be regarded as a tutor, particularly as language-impaired students often lack basic information that is expected to be part of their repertoire. However, speech-language pathologists should emphasize at the outset of program development that the immediate goal of classroom-based services is not mastery of curriculum content but rather mastery of strategies and skills necessary to acquire curriculum content (Lowe, 1993).

In the literature, cited advantages of classroom-based services far outnumber disadvantages. This is likely attributable both to the favourable bias of speech-language pathologists who have chosen to report on classroom-based approaches and to their creation of solutions to overcome disadvantages associated with use of these approaches. Disadvantages can be largely alleviated once classroom-based services are routinely adopted, evaluated, and modified (Lowe, 1993).

#### Supports and Barriers to Classroom-Based Approaches

District and school administrators may regard classroom-based approaches as inferior methods of delivery of speech and language services, expressing concern that their quantity and quality will be diminished with integration into classrooms. However, strong administrative support at all levels is essential to collaboration between speech-language pathologists and teachers for the provision of classroom services (Cooper, 1991; Goodin & Mehollin, 1990).

Several characteristics of principals increase the probability that classroom-based services will succeed. These include a belief in equal educational access for all students, including students with learning and/or behavioural problems; a knowledge of the curriculum and its impact; and a commitment to staff empowerment. It is beneficial if the principal has experience as a member of multidisciplinary teams and has participated in collaborative development of individualized educational programs (Blosser, 1990; Marvin, 1990; Miller, 1989; Montgomery, 1990).

Although the principal is the administrative key to success of collaborative efforts, the district administration must also provide leadership by actively supporting movement toward classroom-based services. The special services administrator must follow educational trends, favour innovation, and be sensitive toward staff attitudes to change. Depending upon district politics, agreement of the highest levels of management (e.g., the district superintendent and the school board) may also be required (Ferguson, 1991; Montgomery, 1990).

If administrators understand the positive ramifications of encouraging professionals to design and implement classroom-based approaches, they will likely recognize the importance of scheduling regular meeting times among team members. Although the teaming of professionals is considered an efficient use of human resources, it may necessitate administrative endorsement of reduction in speech-language pathologists' direct caseload and in schools receiving direct service. In addition, administrators must ascertain the availability of adequate materials and space for planning and implementation of collaborative programs (ASHA, 1991; Cooper, 1991; Dublinske, 1989; Gutkin, 1990; Miller, 1989).

Speech-language pathologists and teachers must agree with the notion that classroom-based services fill students' communicative requirements. But despite a mutual understanding of the benefits inherent in these approaches, speech-language pathologists and teachers may feel threatened by a vast departure from traditional practice. When using collaborative methods, responsibilities are jointly assumed. Team members pool their professional resources, which requires the abandonment of strict boundaries between disciplines. The requirement of sharing professional responsibilities by assuming greater flexibility of prescribed roles may be regarded negatively, creating resistance to use of classroom-based approaches (ASHA, 1991; Montgomery, 1992; Roller et al., 1992).

Considerable role ambiguity may be experienced by speech-language pathologists when spending the majority of time in classrooms rather than administering tests and

treating students in a one-on-one situation. Additionally, speech-language pathologists may feel ill equipped to teach a class due to lack of knowledge and experience related to instruction, curriculum, and classroom management (Achilles et al., 1991; Elksnin & Capilouto, 1994b; Farber et al, 1992; Montgomery, 1992; Roller et al., 1992).

Teachers may feel resentful of additional classroom demands, often perceived as requiring specialized knowledge. They may believe that the development of new skills, such as the ability to work collaboratively, is too challenging. They may feel uncomfortable having another professional observe their instructional methods. The uncertainty that accompanies so major a change may deter both speech-language pathologists and teachers from acquiring new roles (ASHA, 1991, Achilles et al., 1991; Ferguson, 1991; Gerber, 1987; Gutkin, 1990; Magnotta, 1991; Marvin, 1990; Montgomery, 1990).

#### Training Needs for Speech-Language Pathologists

There is a recognized need for additional training of speech-language pathologists who adopt classroom-based approaches to delivery of speech and language services. Despite the fact that 38% of Canadian speech-language pathologists worked in schools in 1988 (the latest year for which figures were available), most were trained in university programs that place little emphasis on options for delivery of speech and language services to school-aged children (CASLPA, 1990; OSLA, 1996).

University programs have concentrated on conveying knowledge of speech and language disorders and of recommended treatment for individual sessions (Lowe, 1993; Marvin, 1987; Miller, 1989). Consequently, few speech-language pathologists have academic preparation in the area of classroom linguistic requirements or in the content of language arts, math, science, and social studies curricula. In general, speech-language pathologists are not formally trained to enlarge upon customary language goals to make them relevant to the curriculum (Achilles et al., 1991; Farber et al., 1992).

Competence in use of collaborative skills should be a requirement of speech-language pathologists' university programs (Marvin, 1987). Many programs have

inadvertently created professional isolation by training speech-language pathologists to become "expert problem solvers" who must demonstrate mastery of specialized skills and the ability to complete tasks with minimal input from other professionals. In a typical internship, speech-language pathology students are gradually weaned of their supervisors to enable them to work independently upon completion their studies (Friend & Cook, 1990).

Few educational endeavours aimed at fostering a collaborative approach to classroom of speech and language services have been described. In one report, training sessions consisted of a series of inservices that were jointly developed and offered by speech-language pathologists and teachers for the benefit of both groups. Topics included literacy skill acquisition, instructional strategies, and classroom management (Achilles et al., 1991). More frequently, knowledge was gained through experience, by planning in conjunction with the teacher and working with students in the classroom. As speech-language pathologists and teachers collaborated to accomplish objectives related to classroom communication, they increased their familiarity with classroom demands on listening, speaking, reading, and writing skills (Farber et al., 1992; Magnotta, 1991).

### Summary

A review of the literature indicates that resource room or pullout programs were until recently the most common modes of meeting the specific needs of students with mild or moderate learning disabilities. However, these programs have been subject to scrutiny as students' needs have been measured against social and educational outcomes such as self-esteem and academic achievement. The use of a fragmentary approach to delivery of special services has been increasingly questioned (e.g., Goodin & Mehollin, 1990; Nelson, 1990).

In this context, the view of the speech-language pathologist as a specialist who exclusively diagnoses and treats speech and language disorders in an isolated setting is no longer adequate. Rather, the speech-language pathologist is more appropriately regarded as a language and communication specialist who collaborates with teachers. The rationale for

this paradigm shift originates largely in the difficulty encountered with carryover of communication skills learned within the restrictive environment of traditional therapy (Marvin, 1987; Miller, 1989).

The use of a holistic approach to assessment and intervention of speech and language disorders involves consideration of both intrinsic and extrinsic factors in communicative interactions. The communication disorder frequently cannot be ameliorated and may continue to affect the student's learning. Therefore, the speech-language pathologist facilitates communication by adapting the classroom environment and/or assisting students in the development and use of compensatory strategies. Synthesis and generalization may be achieved more readily when new strategies and skills are practiced within a relevant context (Cirrin & Penner, 1995; Nelson, 1990).

According to the literature, speech-language pathologists use classroom-based intervention for younger students with language disorders or delays. A natural consequence of increased time in classrooms is to maximize opportunity for development of language skills by taking advantage of classroom listening, speaking, reading, and writing. Speech-language pathologists are less likely to adopt classroom-based approaches for intervention with articulation, fluency, and voice disorders, or when providing services to students in junior and senior secondary school.

Successful collaborative teaching arrangements between speech-language pathologists and teachers are dependent upon a commitment to equal educational access for all students. Shifting service priorities require flexibility in reshaping roles and relationships of speech-language pathologists and teachers, who must be willing to take risks while developing innovations to practice and instruction. Enduring change requires ongoing commitment. Thus, the adoption of classroom-based approaches is not a discrete event but a process that is accomplished over time. Ultimately, the success of classroom-based service delivery will be gauged by the degree to which students with language

difficulties can succeed academically and communicate effectively in their daily lives (Ferguson, 1992; Nelson, 1990; Nelson & Kinnucan-Welsch, 1992).

The recent development of classroom-based services for students with speech and language disorders and delays has created exciting new possibilities for research. The majority of published information in the area of collaboration between speech-language pathologists and teachers in classrooms consists of descriptions of individual speech-language pathologists' professional experiences. The sparse evaluative literature on the use of classroom-based service delivery approaches by speech-language pathologists attests to the particular need for study of this area. Larger-scale investigation into the use and perceived efficacy of classroom-based approaches is warranted.



## CHAPTER THREE

### METHODOLOGY

This chapter describes the research design and the methods used to collect and analyze the data.

#### Research Design

There is a need for broad descriptive information on speech-language pathologists' practices, experiences, and perceptions relating to classroom-based service delivery. As the research questions were designed to address this need, a descriptive research method was indicated.

There were nine general research questions to be answered, with up to six subsidiary questions each, as listed in Chapter One. Six general research questions (numbers 3, 4, 5, 6, 7, and 8) yielded information that comprised the descriptive portion of the study. Three general research questions (numbers 1, 2, and 9) yielded information that comprised the analytic portion of the study. Two of these questions (numbers 1 and 2) were designed to assess the relationship between speech-language pathologists' use of classroom-based approaches and a number of personal, professional, and situational variables. One of these questions (number 9) was designed to assess the relationship between speech-language pathologists' use of classroom-based approaches and their views on a number of issues pertaining to use of these approaches.

The source of data was information obtained via a cross-sectional survey administered to a sample of speech-language pathologists in Canada. Due to sample size and geographical dispersion, a mailed questionnaire was used for data collection.

### Survey Instrument

Development of the research questions and concomitant construction of the survey instrument were guided by a comprehensive review of the literature and an examination of surveys conducted in studies relevant to speech-language pathologists, thus providing a basis for the content validity of the instrument (Elksnin & Capilouto, 1994a, 1994b; Potter & Lagace, 1992, 1995; Sanger, Hux, & Griess, 1995). In particular, Elksnin and Capilouto's (1994a, 1994b) questionnaire and survey results provided ideas for the design of major portions of the questionnaire used in the present study.

The survey instrument was a 33-item questionnaire (see Appendix B) with three sections, each corresponding to a cluster of research questions. The first two general research questions (i.e., questions 1 and 2) sought information on the relationship between speech-language pathologists' use of classroom-based intervention approaches and a number of variables. Therefore, the first section gathered information on respondents' biographical characteristics (e.g., gender, education) and on features of existing speech and language services (e.g., caseload number, geographical work setting). It also requested the percentage of total assessment and intervention time spent in classrooms. The items in the first section were of three types: closed-ended and partially closed-ended with ordered response choices, closed-ended and partially closed-ended with unordered response choices, and open-ended. Items elicited factual information about respondents, requiring check marks in a choice of boxes (e.g., degrees earned) or a numerical response (e.g., years worked as a school speech-language pathologist, percentage of assessment time spent on assessment in classrooms).

The next three general research questions (i.e., questions 3 to 5) pertained to frequency of use of classroom-based intervention approaches, as well as their perceived effectiveness and appropriateness. To form the corresponding second section of the survey, Elksnin and Capilouto's (1994a) questionnaire items were rephrased and extended to elicit more detailed information on each of the seven classroom-based approaches outlined in

Appendix A. Questionnaire items requested information on the use, success, and appropriateness of each approach for four speech and language disorders and for students within each of four grade level categories. The items in the second section were closed-ended with ordered response choices. Items elicited information about respondents' practices, requiring a check mark in a choice of boxes (e.g., check "Yes" or "No" if you have used this approach).

The next three general research questions (i.e., questions 6 to 8) related to perceived advantages and disadvantages, and barriers and supports to classroom-based intervention approaches, as well as perceived training needs for speech-language pathologists. Part of the corresponding third section was formulated using responses to Elksnin and Capilouto's (1994a) open-ended survey items. Responses were categorized, compiled, and ranked according to number of citations by respondents. The three most frequently cited responses to each item were subsequently reworded and listed in varying permutations to form items 20 to 27. The remainder of the section, items 28 to 32, was developed based on information obtained both from the literature review and from Elksnin and Capilouto's (1994a) survey. Item types were closed-ended and partially closed-ended with unordered response choices, consisting primarily of forced choice rank-ordering items.

The last general research question (i.e., question 9) sought information on any existing differences between views of speech-language pathologists who use and those who do not use classroom-based intervention approaches. This question was answered using a combination of items in the second and third sections of the questionnaire.

The concluding item on the questionnaire was an open-ended question which invited respondents' clarification of responses and general comments on classroom-based service delivery. This information was solicited for three reasons: to allow respondents to freely state their opinions about classroom-based services, to collect qualitative data for possible analysis at a later date, and to gauge respondents' reaction to the survey.

Validity of the survey instrument was enhanced through extensive consultation with speech-language pathologists. The instrument was pilot-tested in the preliminary stages of development with five speech-language pathologists working in schools. Impressions of the letter of transmittal and the questionnaire were solicited during a two-hour group meeting. Questions that the pilot test aimed to address were:

1. Do the letter of transmittal and questionnaire create a positive impression that will motivate potential respondents to respond?
2. Is the format of the questionnaire easy to follow?
3. Are the instructions adequate?
4. Is the sequence of items logical?
5. Are all items interpreted similarly?
6. Are all words understood?
7. Do any items suggest bias on the part of the researcher? (adapted from Woodward & Chambers, 1980).

The preceding questions were read to the group prior to administration of the questionnaire. After questionnaire administration, candid verbal feedback was systematically solicited and recorded on paper by the researcher. Questionnaires were later examined by the researcher for difficult or ambiguous items as evidenced by omissions, contradictory responses, or comments in the margins. The survey instrument was subsequently revised on the basis of comments made by respondents during the testing session and by the thesis committee during a session to review the instrument. Modifications included the addition and deletion of questions and alterations to question form and content. Because revisions were substantial, a second pilot test was conducted with a group consisting of the same five and an additional two school speech-language pathologists. Procedures identical to the first pilot test were followed. Minor modifications to the survey instrument were made after the second pilot test.

### Population and Sample

The population was defined as Canadian speech-language pathologists who provided services in schools at the time of initiation of the study in February, 1996. Rubin's (1990) demographic study reported that 960 speech-language pathologists worked in Canadian schools. Based on that study and on information provided by the national association of speech-language pathologists (P. Flemington, personal communication, January, 1996), it was estimated that between 1200 and 1500 speech-language pathologists worked in schools at the outset of the study.

The population was identified through national and provincial<sup>2</sup> association membership lists. The national association list included speech-language pathologists who were employed in schools as well as those employed in other settings because a national list restricted to school-based members was nonexistent. The provincial association membership lists, when available, comprised superior sampling frames by yielding specific information about the numbers and workplaces of school speech-language pathologists for each province. Furthermore, the use of provincial membership lists was more economical, as fewer speech-language pathologists were sampled in provinces for which lists were available.

The sample size was set at 250 school speech-language pathologists, at least 17% of the estimated population. The number of school speech-language pathologists sampled and the percentage of the population represented in the sample fell well within the guidelines for sample size determination recommended in Alreck and Settle (1985), Borg and Gall (1989), and Gay (1992).

The study sample was selected using a stratified random sampling technique. Following consideration of possible variables and strata for which sufficient representation was desirable, the one stratification variable chosen was province. Because jurisdiction over

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<sup>2</sup> To avoid awkward syntax, the one term "province" (and its derivations) will be used throughout the remainder of the study to include both provinces and territories, unless otherwise specified.

speech-language pathology services to schools differs according to province, survey results based on stratification likely represented the population more accurately than results obtained via a simple random sample. Therefore, ten provincial associations and the one existing territorial association were contacted by telephone to request membership lists, with immediate follow-up by facsimile transmission to provide details of the study. Associations for the following provinces supplied lists: Newfoundland, Prince Edward Island, Ontario, Saskatchewan, and the territories. The association in Quebec did not release members' names; however, it provided names of school districts in which speech-language pathologists were employed and the number of speech-language pathologists employed in each district. The associations in Manitoba and British Columbia did not comply with the request, and the associations in Nova Scotia, New Brunswick, and Alberta did not respond to the request. Therefore, for the five provinces (including Quebec) that supplied membership lists and the territories, the sampling frame consisted of provincial associations' lists of members providing services to schools. For the remaining five provinces, the sampling frame consisted of the national association's list of speech-language pathologists who belonged to the national association and resided in those provinces.

A sample of 519 subjects was thus selected from two populations. The first population consisted of 646 speech-language pathologists working in schools who belonged to provincial speech-language pathologists' associations that provided membership lists. The second population consisted of 1330 speech-language pathologists who were members of the national association of speech-language pathologists. These speech-language pathologists were employed in various settings, including schools, hospitals, and private practice clinics. The total sample size was allocated to the strata on a disproportionate basis to guarantee that sample sizes for each province were sufficient to enable the production of estimates with an acceptable degree of precision. Therefore, the proportions of speech-language pathologists selected varied according to provincial

subpopulation. Sampling fractions ranged from 10% in provinces with larger subpopulations (Quebec and Ontario) to 100% in provinces with smaller subpopulations (Newfoundland, Prince Edward Island, Saskatchewan, and the territories). The proportion of speech-language pathologists sampled was additionally affected by the sampling frame for each subpopulation. If the sampling frame in a given province consisted of all speech-language pathologists (i.e., in Nova Scotia, New Brunswick, Manitoba, Saskatchewan, Alberta, and British Columbia) the fraction of the subpopulation sampled was roughly doubled to guarantee that the intended fraction of school speech-language pathologists was sampled. This decision was loosely based on figures presented in CASLPA's (1990) demographic study, which indicated that, nationally, 38% of speech-language pathologists worked in schools, with a provincial range of 33% to 65%. In provinces for which the sampling fraction was less than 100%, potential respondents were identified through a standard random sampling procedure as described in Babbie (1986).

Table 1 displays the initial sampling fraction and number of speech-language pathologists who received questionnaires ( $n$ ) in each province, as well as the percentage of speech-language pathologists who responded and the number of usable questionnaires returned by respondents in each province. Because of small sample sizes, the North West Territories and Yukon were grouped as "Territories" in the study.

Table 1

Number of Speech-Language Pathologists Receiving and Responding to Questionnaires by Province

Province	Sampling fraction	<i>n</i>	Response (%)	Number
Newfoundland	100 <sup>a</sup>	36	92	33
Nova Scotia	50 <sup>a</sup>	55	85	18
Prince Edward Island	100 <sup>a</sup>	9	78	7
New Brunswick	50 <sup>b</sup>	42	86	9
Quebec	10 <sup>a</sup>	24	71	17
Ontario	10 <sup>a</sup>	29	69	20
Manitoba	50 <sup>b</sup>	69	83	32
Saskatchewan	100 <sup>a</sup>	51	86	44
Alberta	20 <sup>b</sup>	90	88	32
British Columbia	20 <sup>b</sup>	108	73	36
Territories	100 <sup>a</sup>	6	83	5
Total		519	82	253

<sup>a</sup>Sample or census was from subpopulation of school speech-language pathologists who were members of the provincial association. <sup>b</sup>Sample or census was from subpopulation of all speech-language pathologists who were members of the national association and resided in the province.



To ensure that the sample did not overrepresent smaller provinces and provinces with higher return rates and underrepresent larger provinces and provinces with lower return rates, weighting procedures based on Jaeger (1984) and Satin and Shastry (1993) were followed. Both the probability of selection for respondents in each province and the return rate for each province were considered in determining weights applied to questionnaire information provided by respondents. For each province, the obtained sampling of speech-language pathologists working in schools was calculated by dividing the percentage of total responses (i.e., completed and uncompleted returned questionnaires) by the sampling fraction (i.e., the proportion of the subpopulation sampled). The sampling weight was the inverse of the obtained sampling. The weight thus derived for each province indicated the number of actual or estimated speech-language pathologists working in schools that were represented by each respondent working in schools in that province.

Weights assigned to individual cases were subsequently calculated by multiplying the sampling weight by the total number of questionnaires returned by speech-language pathologists working in schools divided by the estimated national population of speech-language pathologists working in schools. These precise weights were attached to each case in the data file prior to conducting statistical analyses. As a consequence of weight application, restricted portions of the sample could not be accurately described in terms of numbers of respondents and are therefore described only in percentage terms in the succeeding chapter on data results and analysis.

Standard approaches to determining reliability could not be applied to questionnaire responses. However, an indication of the confidence with which responses could be viewed was established. Items varied in format, some having up to four response choices and others having forced choice rank-ordering items, as described earlier in this chapter. A majority of items had only two response choices, which produced population estimates in the form of proportions (e.g., proportion of respondents who had worked as teachers, proportion of respondents who had used Approach One). As the largest confidence interval

occurred when a proportion was 50%, this figure was used to give an upper bound estimate. The weighted standard deviation for a proportion of 50% was 4.2%, which yielded a 95% confidence interval of plus or minus 8.2%, from 41.8% to 58.2%. The interval decreased to plus or minus 6.7% for a proportion of 20% (Jaeger, 1984).

#### Data Collection

To maximize the rate of returned questionnaires, the following steps were taken. During the week of March 11, 1996, two personalized ink-signed letters of transmittal (see Appendices C and D), a questionnaire, and a stamped return envelope were mailed to each potential respondent randomly selected from the national association membership list. The first letter, which was coded with an individual identification number, asked respondents to either indicate that they were not working in schools and return the letter, or to refer to the second letter if they were working in schools. The second letter described the study and requested potential respondents to return the coded questionnaire within three weeks of the date of mailing. Only the second letter of transmittal and a coded questionnaire were sent to each potential respondent randomly selected from the provincial association lists. Two weeks later, on March 25, 1996, a follow-up letter (see Appendices E and F) was sent as a reminder to the 362 potential respondents who had not returned the letter or the questionnaire. Six weeks later, on April 22, 1996, a second follow-up mailing was sent to the 195 potential respondents who had not returned the letter or the questionnaire. This mailing consisted of one or two letters of transmittal, as appropriate (see Appendices G and H), another copy of the questionnaire, and a stamped return envelope.

On June 3, 1996, 264 questionnaires had been received. None initially sent were returned due to inaccurate addresses. Eleven returned questionnaires were not used, nine because respondents did not complete large portions of the questionnaire and two because the respondents were no longer working as speech-language pathologists. Unusable questionnaires, which were not considered in the calculation of response rates, were received

from five provinces: Nova Scotia (2), Ontario (1), Saskatchewan (4), Alberta (1), and British Columbia (3). Therefore, the number of usable questionnaires was 253. Table 1 contains the percentage of speech-language pathologists who responded and the number of usable questionnaires returned by respondents in each of the provinces.

### Data Preparation

To reduce data entry errors, each questionnaire was examined by the researcher for items which were answered in such a way that a decision regarding data entry would be required. Note was made of discrepancies such as missing data (e.g., large parts of the questionnaire unanswered or individual items omitted), internally inconsistent data (e.g., mutually exclusive categories checked; percentages listed that did not total 100), or unusable data (e.g., percentage of assessment time spent on classroom assessment expressed in terms of hours per week). Discrepancies were discussed with the individual entering the data, a research computing specialist, and decisions regarding data entry were recorded on the questionnaire by the researcher.

Data were entered into a computer file before being "cleaned" through the examination of printouts for irregularities. Inaccuracies were rectified by altering values in the data file to be consistent with those present in the original data.

### Data Analysis

For each general and subsidiary research question, a list of corresponding questionnaire item numbers was prepared. Statistics appropriate for describing the data and answering the research questions were used. For descriptive analyses, percentages, means, standard deviations, and ranges were calculated. For relational analyses, chi-square tests and *t*-tests were conducted. Results and analyses are presented in the following chapter.

### Summary

The study was designed to gather broad descriptive information on the current status of classroom-based delivery of speech and language services in Canada. Therefore, Canadian speech-language pathologists were surveyed using a questionnaire.

Membership lists obtained from national and provincial associations of speech-language pathologists comprised the sampling frame. A weighted stratified random sampling technique was used to select subjects, with the one stratification variable being province.

The survey instrument was mailed during the week of March 11, 1996, to 519 speech-language pathologists representing all provinces. Of speech-language pathologists surveyed, 82% had responded by June 3, 1996. A total of 253 usable questionnaires were received from speech-language pathologists working in schools.

Appropriate weighting procedures were used. Descriptive and relational analyses that generated answers to the research questions were conducted.

## CHAPTER FOUR

### DATA RESULTS AND ANALYSIS

This chapter summarizes the data and describes the statistical procedures used in analysis. Following a biographical profile of respondents and a description of the speech and language services they provided, data are presented in the sequence of the research questions. As a result of weighting procedures described in the preceding chapter, only numbers of respondents in the total sample are reported. Where applicable, percentages of respondents are provided, weighted according to the sampling fractions and response rates for each of the provinces.

#### Biographical Profile of Survey Respondents

In the study, 253 speech-language pathologists working in Canadian school districts completed a mailed questionnaire. Five questionnaire items gathered biographical information.

##### Gender

Respondents were 93% female and 7% male. These figures are likely representative of the population and are in fact identical to proportions found in a survey of professional burnout among Canadian speech-language pathologists (Potter & Lagace, 1995). The percentages of females and males in each province were similar to the national percentages, falling within seven percentage points of the national percentages.

##### Experience as School Speech-Language Pathologists

All respondents were working as school speech-language pathologists. The mean number of years worked was 9.6. Table 2 contains the means, standard deviation, and range of years respondents had worked as school speech-language pathologists, as well as the percentages of respondents who had worked as teachers and the mean, standard deviation, and range of years worked as teachers. The provincial means for years worked as school

speech-language pathologists varied, ranging from 3.9 years in Newfoundland to 11.9 years in Nova Scotia.

#### Experience as Teachers

A total of 10% of respondents had worked as teachers (see Table 2). The percentages of respondents who had worked as teachers in each province were similar to the national percentage, falling within 10 percentage points of the national percentage. The mean number of years these respondents had worked as teachers was 4.1, although the mode number of years was one. These figures indicated that most speech-language pathologists were not teachers.

Table 2

#### Percentages and Years Worked as Speech-Language Pathologists (SLPs) and Teachers

Years worked	%	<i>M</i>	<i>SD</i>	Range
As SLP	100	9.6	5.9	.6 - 29.0
As teacher	10	4.1	4.5	1.0 - 18.0

#### Degrees Held

Of respondents, 80% held a master's degree. The provincial percentages of respondents who possessed a master's degree varied from 50% in Alberta to 100% in Nova Scotia, Prince Edward Island, New Brunswick, and Ontario. The discrepancy of 30 percentage points between the figures for Alberta and the national figures was likely a result of the fact that the University of Alberta has only relatively recently replaced its bachelor degree program with a master's degree program.

Less than 1% of respondents possessed a doctorate degree; therefore, the percentages in each province were consistent with the national percentage.

A total of 17% of respondents held a Bachelor of Education or equivalent degree. The provincial percentages varied, with no respondents from Prince Edward Island or New

Brunswick having an education degree, perhaps due in part to small sample sizes for these provinces. In Saskatchewan, 34% of respondents had a Bachelor of Education or equivalent degree. Figures for the remaining provinces were comparable to the national average, falling within six percentage points of the national figure.

### Certification Status

Of respondents, 80% were certified by the Canadian Association of Speech-Language Pathologists (CASLPA) or were members of the College of Audiologists and Speech-Language Pathologists of Ontario (CASLPO), the Ontario provincial equivalent. The provincial percentages of respondents who were certified by CASLPA or members of CASLPO were inconsistent, with figures for the provinces differing by up to 45 percentage points from the national proportion. The greatest difference was in Quebec, where only 35% of respondents were certified by CASLPA. This was likely a consequence of respondents' affiliation with the Quebec provincial association, which also sets standards for speech-language pathologists who practise in Quebec. In Nova Scotia, Alberta, British Columbia, and the territories, 100% of respondents were certified by CASLPA.

A total of 21% of respondents were certified by the American Speech-Language-Hearing Association (ASHA). Percentages of respondents varied among provinces, with several notable differences. No respondents from Prince Edward Island, Quebec, and the territories were ASHA-certified. However, 39% of respondents from Saskatchewan and 44% of respondents from Manitoba were certified by ASHA. This was possibly attributable to the lack of speech-language pathology programs in universities in these provinces. Due to proximity, many prospective speech-language pathologists seek training and complete internships in the United States, where ASHA certification is more readily obtainable than CASLPA certification.

The percentage of respondents who were not certified was 8%. Non-certified respondents were from four provinces: Newfoundland (12% uncertified), Prince Edward Island (14% uncertified), Saskatchewan (18% uncertified), and Quebec (35% uncertified).

The relatively high percentage of Quebec respondents who were not certified was again likely due to respondents' membership in the Quebec provincial association, which sets standards of practice for speech-language pathologists in Quebec.

### Description of Speech and Language Services

Seven questionnaire items pertained to speech and language services provided by respondents.

#### Services Provided

Both assessment and intervention services were provided by 97% of respondents, whereas solely assessment services were provided by 3% of respondents. Some respondents from three provinces, Ontario, Manitoba, and Saskatchewan, provided only assessment services, with 10% or fewer respondents in each of these provinces providing only assessment. In the other provinces, 100% of respondents provided both assessment and intervention services.

#### Classroom-Based Assessment

Of respondents, 84% spent time on classroom-based assessment in a typical year. For these respondents, the mean percentage of time spent on assessment in classrooms was 17.5%. Table 3 contains the percentage of respondents spending time on classroom assessment, and mean percentages, standard deviations, and ranges of percentages of assessment time spent in classrooms by those respondents.

The percentages of time spent on classroom assessment by respondents from Prince Edward Island and Quebec were lower than the national percentage, with 7.5% and 8.5%, respectively, of these respondents' time spent on classroom assessment. Manitoba and Ontario respondents spent higher percentages of time on classroom assessment, with 22.0% and 26.7% of time spent, respectively. Respondents from other provinces spent between 10.2% and 17.6% of assessment time in classrooms.



Table 3

Percentage of Speech-Language Pathologists Spending Time and Percentage of Time Spent on Classroom-Based Assessment and Intervention, and Administration

	Percentage spending time	Percentage of time spent		
		<i>M</i> (%)	<i>SD</i> (%)	Range (%)
Classroom-based assessment	84	17.5	20.8	1 - 100
Classroom-based intervention	73	22.1	22.7	1 - 100
Administration	100	23.0	11.8	1 - 85

Classroom-Based Intervention

A total of 73% of respondents spent time on intervention in classrooms during a typical year. The mean percentage of time spent on classroom-based intervention for these respondents was 22.1% (see Table 3). Prince Edward Island respondents spent a lower percentage of time on intervention in classrooms than the national mean, with 4.2% of time spent. This was possibly related to the fact that in Prince Edward Island, speech and language services to school-aged children are under the auspices of the Department of Health and Community Services. Ontario and Alberta respondents spent a higher percentage of time on classroom intervention, with 27.9% and 28.2% of time spent, respectively. Respondents from other provinces spent between 10.0% and 20.7% of intervention time in classrooms.

Administrative Duties

All respondents performed some administrative duties. The mean percentage of time spent on administration in a typical year was 23.0% (see Table 3). Provincial means were comparable to the national mean, falling within four percentage points of the national mean.

### Caseload Size

The mean caseload size of respondents was 95 students, with a median caseload size of 80 students. The large range of numbers reported, from 10 to 500, was likely attributable to differences in interpretation of the question. Some respondents provided several values for this item by listing, for example, direct caseload number and indirect (e.g., monitored students) caseload number. For those who provided only one value, it was difficult to ascertain whether the number was restricted to students who received direct ongoing services or included those students who were being monitored. Additionally, some districts employ communication assistants who provide direct speech and language services to students under the supervision of a speech-language pathologist. Caseload numbers given by speech-language pathologists who reported that they had communication assistants were notably higher.

Mean caseload sizes for provinces thus varied from the national mean, ranging from 31 students in the territories to 166 students in Saskatchewan, where communication assistants were frequently reported in margin notations. The broad range of numbers is not surprising given the numerous factors that influence caseload size (e.g., overall student population-to-speech-language pathologist ratio in a district, severity of student disorders, number of schools served, and travel time between schools).

### Grade Levels Currently Served

Four predetermined grade level categories were designed to correspond to the primary, elementary, junior secondary, and senior secondary school levels. Due to varying nomenclature among provinces, specific grade level designations of Kindergarten to Grade 3, Grades 4 to 6, Grades 7 to 9, and Grades 10 to 12 were used on the questionnaire to label the four major levels.

A large majority of respondents were providing services to students in Kindergarten to Grade 3 and Grades 4 to 6, 89% and 88%, respectively. A smaller majority of respondents, 63%, currently served students in Grades 7 to 9. A minority of respondents,

46%, currently provided services to Grades 10 to 12. These figures indicated that the majority of respondents provided services to students in more than one grade level category, primarily at the Kindergarten to Grade 6 level.

Of those respondents who currently provided services to students in each of the four grade-level categories, the largest mean percentage of time, 70.0%, was allocated to Kindergarten to Grade 3 students. A smaller mean percentage of time, 23.1%, was devoted to students in Grades 4 to 6. The smallest mean percentages of time were allotted to students in Grades 7 to 9 and Grades 10 to 12, with 9.4% and 6.5% of time spent, respectively. The distribution of time spent on services to the four grade-level categories is in part a reflection of the well-documented fact that many speech and language difficulties resolve in the early school years due to a combination of prompt intervention and student maturation. Table 4 contains percentages of respondents who currently spent time on services to grade level categories and mean percentages, standard deviations, and ranges of those respondents' time currently spent on services to grade level categories.

For the Kindergarten to Grade 3, Grades 4 to 6, and Grades 7 to 9 categories, provincial means for time allocation were similar to the national mean, falling within eight percentage points of the national mean. However, for the Grades 10 to 12 category, the percentage of Quebec respondents providing services was 15% higher than the national mean. In the other provinces, the mean percentages of time allotted to this grade level category were comparable to the national mean, falling within three percentage points of the national mean. The anomalous finding for Quebec may be partly explained by the fact that a number of Quebec respondents reported serving students with special needs in segregated classes at all grade levels.

Table 4

Percentage of Speech-Language Pathologists Spending Time and Percentage of Time Spent on Services to Grade Level Categories

Grade level category	Percentage spending time	Percentage of time spent		
		<i>M (%)</i> <sup>a</sup>	<i>SD (%)</i>	Range (%)
Kindergarten - Grade 3	89	70.0	18.0	0 - 100
Grades 4 - 6	88	23.1	15.9	0 - 80
Grades 7 - 9	63	9.4	9.7	0 - 60
Grades 10 - 12	46	6.5	7.2	0 - 40

<sup>a</sup>Total percentages exceed 100 because respondents were asked to indicate all grade level categories in which they provided services.

Geographical Work Setting

Of respondents, 70% worked in an exclusively urban setting, which was defined as having a population of more than 5000; 20% worked in an exclusively rural setting, which was defined as having a population of less than 4999; and 10% worked in a combination of urban and rural settings.

The percentages of respondents working in urban, rural, or both settings for the provinces varied from the national percentages, with only three provinces, Saskatchewan, Alberta, and British Columbia resembling the national percentages. For other provinces, the percentages of respondents working in urban settings ranged from none to 88%, the percentages working in rural settings ranged from none to 78%, and the percentages working in both settings ranged from none to 40%. Discrepancies among provinces mirror the vast regional disparities in size and distribution of the general Canadian population.

### Research Questions

The study was designed to answer research questions concerning use of seven specific service delivery approaches. A list of the approaches accompanies each relevant table in this chapter. There were nine general research questions with up to ten subsidiary questions each. It was noted that, despite the large sample, the number of independent analyses required to answer the questions posed an increased risk of Type I error. Instances of significance were therefore regarded cautiously.

#### Question One

Is use of the seven service delivery approaches for classroom-based intervention related to the following personal and professional characteristics of speech-language pathologists:

- a) gender;
- b) years of speech-language pathology experience in schools;
- c) teaching experience;
- d) possession of a Bachelor of Education or equivalent degree;
- e) possession of a master's degree in speech-language pathology;
- f) certification status?

To determine which, if any, of respondents' personal and professional characteristics were related to use of the classroom-based approaches for intervention, use or non-use of each of the approaches was related to each of the characteristics using a Chi-square analysis at the .05 level of significance.

**Gender.** Of the 253 respondents, 93% were female and 7% were male. Table 5 contains data on respondents' use of the approaches by gender.

Table 5

Use of Approaches by Gender

Approach % of respondents	Female (%) 93%	Male (%) 7%
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.		
Use	75	100
Non-use	25	0
$\chi^2(1, N = 253) = 5.67, p = .017$		
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.		
Use	64	47
Non-use	36	53
$\chi^2(1, N = 253) = 1.95, p = .163$		
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.		
Use	24	6
Non-use	76	94
$\chi^2(1, N = 253) = 3.00, p = .083$		
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.		
Use	26	41
Non-use	74	59
$\chi^2(1, N = 253) = 1.86, p = .169$		
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.		
Use	19	18
Non-use	81	82
$\chi^2(1, N = 253) = .02, p = .885$		
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.		
Use	31	18
Non-use	69	82
$\chi^2(1, N = 253) = 1.41, p = .235$		
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.		
Use	34	47
Non-use	67	53
$\chi^2(1, N = 253) = 1.30, p = .255$		

The relationship between the use of Approach One and gender was significant, with more males than females using this approach. The relationship between the use of Approach Three and gender approached significance, with more frequent use of this approach by males. All other relationships were not significant. As only one relationship was significant, there was no discernable pattern between use of the approaches and gender. It was noted that, in any case, the small sample of males did not allow clear interpretation of results. However, Approaches One and Two were used by more respondents. Percentages of use of the approaches are analyzed and presented in answer to Question Three.

Years of speech-language pathology experience in schools. Based on a frequency distribution, respondents were categorized by years of school speech-language pathology experience in intervals of five years ranging from less than five years to more than 14 years. Over half of respondents (59%) had less than 10 years of experience. Specifically, 17% had less than five years of experience, 42% had five to nine years of experience, 19% had 10 to 14 years of experience, and 22% had over 14 years of experience. Table 6 presents data on respondents' use of the approaches by years of school speech-language pathology experience.

A significant relationship was found between the use of Approaches Two and Three and years of experience as a speech-language pathologist in schools, with more speech-language pathologists with under 10 years' experience using Approach Two. Despite the significant finding for Approach Three, no pattern of use according to experience was apparent. The relationship between the use of Approach Six and years of school speech-language experience approached significance. The remaining relationships were not significant. No overall pattern existed between use of the approaches and years of speech-language experience in schools.

Table 6

Use of Approaches by Years of School Speech-Language Pathology Experience

Approach % of respondents	< 5 years (%) 17%	5 to 9 years (%) 42%	10 to 14 years (%) 19%	>14 years (%) 22%
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.				
Use	82	73	85	68
Non-use	18	27	15	32
$\chi^2 (3, N = 253) = 5.58, p = .134$				
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.				
Use	68	71	52	53
Non-use	32	29	48	47
$\chi^2 (3, N = 252) = 8.66, p = .034$				
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.				
Use	18	22	40	14
Non-use	82	78	60	86
$\chi^2 (3, N = 253) = 10.53, p = .015$				
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.				
Use	29	28	29	20
Non-use	71	72	71	80
$\chi^2 (3, N = 252) = 1.64, p = .650$				
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.				
Use	25	19	16	18
Non-use	75	81	84	82
$\chi^2 (3, N = 253) = 1.28, p = .735$				
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.				
Use	27	40	24	21
Non-use	73	60	76	79
$\chi^2 (3, N = 253) = 7.37, p = .061$				
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.				
Use	48	32	33	27
Non-use	52	68	67	73
$\chi^2 (3, N = 252) = 4.93, p = .177$				



Teaching experience. Only 10% of respondents reported having worked as teachers, with a mode number of years of one. The remaining 90% of respondents had no teaching experience. Therefore, respondents were divided into two groups based on whether or not they had teaching experience. Table 7 contains data on respondents' use of the approaches by teaching experience.

No significant relationship existed between use of the approaches and teaching experience. It was therefore concluded that teaching experience was not prerequisite to use of the approaches.

Possession of a B.Ed. or equivalent degree. Of respondents, 17% held a Bachelor of Education or equivalent degree. Table 8 shows data on respondents' use of the approaches by possession of an education degree.

Use of the approaches was not significantly related to possession of a Bachelor of Education or equivalent degree. It was thus concluded that possession of a Bachelor of Education or equivalent degree was not necessary to use of the approaches.

Possession of a master's degree. Of respondents, 81% possessed a master's degree in speech-language pathology. Only 1% of respondents held a doctorate degree. The remaining 18% of respondents possessed other qualifications, including bachelor degrees and qualifications obtained in non-North American countries (e.g., Great Britain and New Zealand). Therefore, those respondents having qualifications other than a master's degree in speech-language pathology were combined into one category titled "Other". Table 9 contains data on respondents' use of the approaches by possession of a master's degree in speech-language pathology.

A significant relationship existed between the use of Approach Four and possession of a master's degree in speech-language pathology, with significantly more respondents who held a master's degree reporting use of this approach. No other relationships were significant. Overall, there was no pattern between use of the approaches and possession of a master's degree in speech-language pathology.

Table 7

Use of Approaches by Teaching Experience

Approach % of respondents	Teaching experience (%) 10%	No teaching experience (%) 90%
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.		
Use	85	75
Non-use	15	25
$\chi^2(1, N = 253) = 1.32, p = .250$		
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.		
Use	59	63
Non-use	41	37
$\chi^2(1, N = 253) = .17, p = .683$		
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.		
Use	23	23
Non-use	77	77
$\chi^2(1, N = 252) = .00, p = .994$		
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.		
Use	26	27
Non-use	74	73
$\chi^2(1, N = 253) = .01, p = .906$		
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.		
Use	8	20
Non-use	92	80
$\chi^2(1, N = 252) = 2.42, p = .119$		
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.		
Use	41	29
Non-use	59	71
$\chi^2(1, N = 253) = 1.43, p = .232$		
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.		
Use	31	34
Non-use	69	66
$\chi^2(1, N = 252) = .15, p = .703$		

Table 8

Use of Approaches by Possession of a B.Ed. or Equivalent

Approach % of respondents	B.Ed. or equivalent(%) 17%	No B.Ed. (%) 83%
<b>One:</b> Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.		
Use	68	78
Non-use	32	22
$\chi^2 (1, N = 253) = 1.93, p = .164$		
<b>Two:</b> Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.		
Use	64	63
Non-use	36	37
$\chi^2 (1, N = 253) = .01, p = .905$		
<b>Three:</b> The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.		
Use	20	24
Non-use	80	76
$\chi^2 (1, N = 253) = .23, p = .632$		
<b>Four:</b> Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.		
Use	28	26
Non-use	72	74
$\chi^2 (1, N = 252) = .05, p = .830$		
<b>Five:</b> Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.		
Use	12	21
Non-use	88	79
$\chi^2 (1, N = 252) = 1.85, p = .174$		
<b>Six:</b> Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.		
Use	25	32
Non-use	75	68
$\chi^2 (1, N = 253) = .74, p = .389$		
<b>Seven:</b> Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.		
Use	39	33
Non-use	61	67
$\chi^2 (1, N = 253) = .51, p = .474$		

Table 9

Use of Approaches by Possession of a Master's Degree

Approach % of respondents	Master's (%) 81%	Other (%) 19%
<hr/> One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.		
Use	77	73
Non-use	23	27
$\chi^2(1, N = 253) = .30, p = .582$		
<hr/> Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.		
Use	61	71
Non-use	39	29
$\chi^2(1, N = 253) = 1.93, p = .164$		
<hr/> Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.		
Use	24	21
Non-use	76	79
$\chi^2(1, N = 253) = .16, p = .691$		
<hr/> Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.		
Use	30	16
Non-use	70	84
$\chi^2(1, N = 253) = 4.07, p = .044$		
<hr/> Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.		
Use	20	16
Non-use	80	80
$\chi^2(1, N = 253) = .49, p = .503$		
<hr/> Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.		
Use	29	36
Non-use	71	64
$\chi^2(1, N = 253) = 1.04, p = .307$		
<hr/> Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.		
Use	34	35
Non-use	67	65
$\chi^2(1, N = 253) = .05, p = .826$		

Certification status. A total of 92% of respondents were certified by CASLPA or ASHA, or were members of CASLPO. The remaining 8% were not certified by any of these three organizations, although some of these respondents reported holding foreign certification. Respondents with non-North American endorsements were classified in the “not certified” category due to difficulty establishing equivalency. Table 10 displays data on respondents’ use of the approaches by certification.

The use of Approach Three was significantly related to certification status, with more non-certified than certified respondents using this approach. The remaining relationships were not significant. A pattern of relationships between use of the approaches and certification status was not evident.

Summary of use of approaches and personal and professional characteristics. Of the 42 relationships among variables analyzed, four were significant at the .05 level and one was significant at the .01 level. It was noted that, because tests of significance at the .05 level were performed multiple times, the likelihood of incurring Type I error was increased. In addition, a visual inspection of significant relationships did not reveal a pattern of significant findings. That is, consistently significant relationships were not detected between any one approach and the set of characteristics or between any one characteristic and the approaches.

It was concluded that respondents’ use of the seven service delivery approaches is not related to the personal and professional characteristics selected for investigation in the study (i.e., gender, years of speech-language pathology experience in schools, teaching experience, possession of a Bachelor of Education or equivalent degree, possession of a master’s degree in speech-language pathology, and certification status).

Table 10

Use of Approaches by Certification Status

Approach % of respondents	Certified (%) 92%	Not certified (%) 8%
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.		
Use	77	67
Non-use	23	33
$\chi^2(1, N = 253) = 1.17, p = .280$		
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.		
Use	64	48
Non-use	36	52
$\chi^2(1, N = 253) = 2.27, p = .132$		
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.		
Use	75	100
Non-use	25	0
$\chi^2(1, N = 253) = 6.81, p = .009$		
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.		
Use	28	14
Non-use	72	86
$\chi^2(1, N = 253) = 6.81, p = .186$		
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.		
Use	19	14
Non-use	81	86
$\chi^2(1, N = 253) = .33, p = .567$		
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.		
Use	30	33
Non-use	70	67
$\chi^2(1, N = 253) = .09, p = .763$		
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.		
Use	34	29
Non-use	66	71
$\chi^2(1, N = 253) = .30, p = .584$		

## Question Two

Is use of the seven service delivery approaches for classroom-based intervention related to the following situational characteristics of speech-language pathologists:

- a) caseload size;
- b) grade levels served;
- c) geographical work setting?

To determine which, if any, of respondents' situational characteristics were related to use of the classroom-based intervention approaches, use or non-use of each of the approaches was related to each of the situational characteristics using a Chi-square analysis at the .05 level of significance.

Caseload size. Based on a frequency distribution, respondents were categorized by caseload size in intervals of 50 students, ranging from 50 or fewer students to more than 150 students. Over half of respondents (58%) had relatively small- to moderate-sized caseloads. Specifically, 21% had relatively small caseloads, 50 or fewer students; 37% had moderate-sized caseloads, 51 to 100 students; 17% had relatively large caseloads, 101 to 150 students; and 25% had very large caseloads, over 150 students. Table 11 contains data on respondents' use of the approaches by caseload size.

A significant relationship existed between the use of Approach One and caseload size. All other relationships were non-significant. Because only one significant relationship was observed, there was no recognizable pattern between use of the approaches and caseload size.

Table 11

Use of Approaches by Caseload Size

Approach % of respondents	≤ 50 students (%) 21%	51 to 100 (%) 37%	101 to 150 (%) 17%	>150 (%) 25%
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.				
Use	77	85	71	67
Non-use	23	15	29	33
$\chi^2 (3, N = 252) = 7.89, p = .048$				
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.				
Use	60	69	61	57
Non-use	40	31	39	43
$\chi^2 (3, N = 253) = 2.75, p = .431$				
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.				
Use	23	26	20	21
Non-use	77	74	80	79
$\chi^2 (3, N = 253) = .79, p = .851$				
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.				
Use	17	31	31	27
Non-use	83	69	69	73
$\chi^2 (3, N = 253) = 3.79, p = .285$				
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.				
Use	15	20	22	18
Non-use	85	80	78	82
$\chi^2 (3, N = 253) = .90, p = .826$				
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.				
Use	35	31	16	36
Non-use	65	69	84	64
$\chi^2 (3, N = 252) = 5.92, p = .116$				
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.				
Use	29	40	33	30
Non-use	71	60	67	70
$\chi^2 (3, N = 253) = 2.43, p = .489$				



Grade levels served. A majority of respondents provided services to students in more than one grade level category, with the greatest percentages of respondents working in Kindergarten to Grade 3 (89%) and Grades 4 to 6 (88%). Notably fewer respondents worked in Grades 7 to 9 (63%) and Grades 10 to 12 (46%). The greatest amount of overlap among grade levels served by respondents occurred in the Kindergarten to Grade 3 and Grades 4 to 6 categories. Therefore, these two categories were combined and the remaining two categories were combined to create two new mutually exclusive categories, Kindergarten to Grade 6 and Grades 7 to 12.

Of respondents, 29% provided services exclusively to students in Kindergarten to Grade 6 and 2% provided services exclusively to students in Grades 7 to 12. The remaining 69% of respondents provided services to students in both categories. The small percentage of respondents who provided services to the higher grade levels eliminated the possibility of analysis that would yield interpretable results. Therefore, statements regarding the relationship of respondents' use of the approaches to grade levels served cannot be made.

Geographical work setting. Based on the standard for urban and rural designations established by the Government of Newfoundland and Labrador, respondents were grouped according to their geographical work setting(s). Of respondents, 70% worked in an urban setting with a population of more than 5000; 20% worked in a rural setting with a population of less than 4999; and 10% worked in a combination of urban and rural settings. Table 12 presents data on respondents' use of the approaches by geographical work setting.

Table 12

Use of Approaches by Geographical Work Setting

Approach % of respondents	Urban 70%	Rural 20%	Urban and rural 10%
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.			
Use	77	69	81
Non-use	23	31	19
$\chi^2(2, N = 252) = 1.69, p = .429$			
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.			
Use	66	53	65
Non-use	34	47	35
$\chi^2(2, N = 252) = 2.63, p = .268$			
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.			
Use	24	22	18
Non-use	76	78	82
$\chi^2(2, N = 253) = .46, p = .793$			
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.			
Use	30	29	4
Non-use	70	71	96
$\chi^2(2, N = 253) = 8.30, p = .016$			
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.			
Use	24	10	0
Non-use	76	90	100
$\chi^2(2, N = 253) = 11.65, p = .003$			
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.			
Use	33	24	27
Non-use	67	76	73
$\chi^2(2, N = 252) = 1.62, p = .444$			
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.			
Use	39	12	38
Non-use	61	88	62
$\chi^2(2, N = 253) = 12.82, p = .002$			

Significant relationships existed between respondents' use of Approaches Four, Five, and Seven and geographical work setting, with the relationships between the use of Approaches Five and Seven and work setting being significant at the .01 level. All other relationships were not significant. Thus, use of three out of the seven approaches was significantly related to geographical work setting. A visual inspection of the data suggested the possibility that Approaches Five and Seven are used more by speech-language pathologists who work in urban settings than by those who work in rural or in combined urban and rural settings.

Summary of use of approaches and situational characteristics. Of the 14 relationships between variables analyzed, four significant relationships were found, two of which were significant at the .01 level. Three of the four significant relationships were between use of the approaches and geographical work setting, with the data suggesting that the greatest use of Approaches Five and Seven is by speech-language pathologists who work in urban settings. However, these results were regarded cautiously, as multiple tests of significance at the .05 level elevated the liability of incurring Type I error.

### Question Three

What percentages of speech-language pathologists are using the seven service delivery approaches for classroom-based intervention and which approaches are considered more successful?

- a) What percentages of speech-language pathologists are using each of the service delivery approaches?
- b) Which of the service delivery approaches are considered the most and the least successful?

General use of approaches. Respondents were asked to indicate whether they had used each of the seven service delivery approaches intervention within either the regular or special education classroom. Use of a given approach was determined by calculating the percentage of respondents who indicated they had used that approach for intervention with

at least one of four disorder types (i.e., language, articulation, fluency, voice). The use of approaches with specific disorder types is addressed in answer to Question Four. Table 13 displays percentages of respondents who have used each of the service delivery approaches.

Approach One was used by the largest percentage of respondents. Approach Two was used by the second largest percentage of respondents. These two approaches were used by a majority of respondents, 76% and 63%, respectively. A minority of respondents, 19% to 34%, had used the remaining five approaches.

General success of approaches. The success of each approach in general for all disorder types and for all grade levels was difficult to determine in such a way that interpretation was meaningful. This was due to the difficulty of obtaining representative success ratings by collapsing disorder type and grade level categories when few respondents had used the approaches in some categories (e.g., "Voice" in the disorders categories and "Grades 10 to 12" in the grade level categories). A more accurate indication of respondents' ratings of success in general would be obtained by profiling the success ratings of each approach with particular disorder types and grade levels. The specific success of the approaches is addressed in answer to Questions Four and Five.

#### Question Four

What are the major disorder types (i.e., language, articulation, fluency, and voice) of students served using the seven service delivery approaches for classroom-based intervention and which approaches are considered more successful?

- Which of the service delivery approaches are used with which disorder types?
- Which of the service delivery approaches are considered the most and the least successful for each disorder type?
- Which of the service delivery approaches are considered appropriate for each disorder type?

Table 13

General Use of Approaches

Approach	% (N = 253)
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.	
Use	76
Non-use	24
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.	
Use	63
Non-use	37
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.	
Use	23
Non-use	77
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.	
Use	27
Non-use	73
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.	
Use	19
Non-use	81
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.	
Use	31
Non-use	69
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.	
Use	34
Non-use	66

Use of approaches with disorder types. Respondents were asked to indicate whether they had used each of the seven service delivery approaches within either the regular or special education classroom for intervention with students having any of the four types of disorders. Use of each approach with each disorder was measured by calculating the percentage of respondents who indicated they had used that approach for a given disorder type. Table 14 shows the percentages of respondents who had used each of the service delivery approaches with each disorder type.

With language disorders, Approaches One and Two were used by the largest percentages respondents. A majority of respondents, 73% and 63%, respectively, had used these two approaches. The other five approaches were used by a minority of respondents, with a range of 19% to 34% of respondents having used these approaches with this disorder type.

A minority of respondents had used the approaches for intervention with articulation disorders. Approaches One and Two were most commonly used, with 41% and 28% of respondents having used these approaches, respectively. The range of respondents who had used the remaining five approaches with this disorder type was 9% to 11%.

For intervention with fluency disorders, all approaches were used by a minority of respondents. Approaches One and Two were used by the largest percentages of respondents, with 26% and 16% of respondents having used them, respectively. The other five approaches were used with this disorder type by a range of 3% to 5% of respondents.

A minority of respondents had used the approaches for voice intervention. Approaches One and Two were used by the largest percentages of respondents, with 19% and 13% of respondents having used them, respectively. The range of respondents who had used the remaining five approaches with this disorder type was 2% to 5%.

Table 14

Use of Approaches by Disorder Type

Approach	Language		Articulation		Fluency		Voice	
	N	%	N	%	N	%	N	%
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.								
Use	250	73	253	41	249	26	248	19
Non-use		27		59		74		81
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.								
Use	253	62	253	28	253	16	247	13
Non-use		38		72		84		87
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.								
Use	253	23	253	11	250	4	250	4
Non-use		77		89		96		96
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.								
Use	249	27	248	8	245	3	245	2
Non-use		73		92		97		98
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.								
Use	249	19	249	7	246	3	246	3
Non-use		81		93		97		97
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.								
Use	249	31	249	9	246	5	246	5
Non-use		69		91		95		95
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.								
Use	249	34	247	9	246	3	246	3
Non-use		66		91		97		97

In summary, the seven service delivery approaches were used with all of the major disorder types. The use of classroom-based approaches was most common with language disorders. The fact that percentages of respondents who had used the approaches for language disorders closely approximated percentages of respondents' general use of approaches (see Table 13) indicated that speech-language pathologists who had minimally used classroom-based approaches had used them chiefly for intervention with language disorders. Approaches were used to a lesser extent with articulation disorders. Most approaches were minimally used with fluency and voice disorders. Approaches One and Two were most often used with all disorders, with the use of Approaches Three to Seven notably less when compared to use of the first two approaches.

Success of approaches with disorder types. Respondents who indicated that they had used any of the seven classroom-based approaches with any disorder were asked to rate the success of those used for intervention with whichever of the four disorder types they had used them. The rating system was a three-point scale consisting of the terms "good", "fair", and "poor". The success of each approach with each disorder was gauged by determining the percentage of respondents who checked each of "good", "fair", and "poor". Table 15 presents respondents' ratings of success for each of the service delivery approaches with each disorder type.

All the approaches were judged relatively successful with language intervention, with the percentages of respondents who provided "good" ratings ranging from 72% to 91%. Approach Seven was most frequently rated as "good" (91%), followed closely by Approaches Five and Six (88% each) and Approach Three (87%), although these three approaches were used by generally fewer respondents.

Few "poor" ratings were given by respondents who had used the approaches for language intervention. The range of percentages was 0% to 4%, making the approach considered least successful difficult to determine. Because of equally small or smaller ranges of "poor" judgements across disorder types, this argument applied to "poor"



ratings for intervention with all disorder types. Therefore, the approach considered least successful for each disorder type could not be specified.

For intervention with articulation disorders, respondents rated all approaches successful, with the percentages of "good" judgements by respondents ranging from 61% to 93%. As with language disorders, Approach Seven was rated "good" by the most respondents (93%). As with language disorders, the percentages of respondents rating Approaches Five and Six "good" only marginally lower, at 91% and 90%, respectively.

Each of the approaches was rated successful with fluency intervention, with the range of respondents who cited "good" success being 57% to 93%. It is worth noting, however, that five categories had few respondents. There were 10 or fewer respondents who had used each of Approaches Three to Seven with fluency disorders and who rated their success. Therefore, a statement regarding the approach judged most successful cannot accurately be made.

Respondents considered the success of all approaches with voice disorders "good", with percentages of respondents' "good" ratings ranging from 62% to 100%. As with fluency disorders, the fact that Approaches Three to Seven were rated by 11 or fewer respondents does not allow definitive statement of the approach considered most successful.

In summary, a majority of respondents who had used the classroom-based approaches judged them relatively successful for all disorders. This may be explained using the logic that respondents would not have used the approaches for intervention if they had not considered them successful. Due to the small numbers of respondents who had used the approaches for some disorder types, specification of the most and least successful approach for each disorder type was not possible. However, across approaches, there was general consensus among respondents on "good" success ratings, with Approaches Three, Five, Six, and Seven receiving the highest percentages of "good" ratings. The small percentages of respondents who judged the success of classroom-based intervention approaches as "poor" did not enable the determination of least successful approaches.

Table 15

Success of Approaches by Disorder Type

Approach	Language		Articulation		Fluency		Voice	
	N	%	N	%	N	%	N	%
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.								
Good	176	72	93	61	60	63	45	72
Fair		24		35		36		26
Poor		4		4		1		2
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.								
Good	148	80	70	75	40	57	32	62
Fair		16		24		42		37
Poor		4		1		1		1
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.								
Good	50	87	27	73	7	93	8	97
Fair		13		25		7		3
Poor		0		2		0		0
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.								
Good	62	77	19	70	6	60	5	65
Fair		21		30		40		35
Poor		2		0		0		0
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.								
Good	42	88	15	91	5	81	5	90
Fair		9		9		19		10
Poor		3		0		0		0
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.								
Good	67	88	21	90	10	93	11	100
Fair		9		10		7		0
Poor		3		0		0		0
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.								
Good	72	91	21	93	7	90	6	100
Fair		9		7		10		0
Poor		0		0		0		0

Appropriateness of approaches to disorder type. All respondents, regardless of whether they had used classroom-based intervention, were asked to judge the appropriateness of each of the approaches to each of the four disorder types. This was to allow respondents who had not used the approaches the opportunity to express their views. The rating system was dichotomous, consisting of "appropriate" or "not appropriate". The judged appropriateness of each approach to each disorder was measured by calculating the percentage of respondents who indicated "appropriate" or "not appropriate". Table 16 contains respondents' judgements of appropriateness of each of the service delivery approaches to each disorder type.

For intervention with language disorders, ratings of appropriateness of the approaches were relatively high. The percentages of respondents who judged the approaches appropriate ranged from 69% to 93%. Approach One was considered appropriate by the greatest percentage of respondents (93%), followed by Approaches Two and Six, at 87% each.

The approaches were considered markedly less appropriate to articulation intervention, with the range of respondents who judged them appropriate being 7% to 69%. Approaches One and Two were most frequently rated appropriate, with 69% and 68% of respondents, respectively, considering them appropriate to articulation disorders.

Generally, respondents judged the approaches to be still less appropriate to fluency disorders, with appropriate ratings ranging from 28% to 57%. As with articulation disorders, Approach One was considered the most appropriate approach, by 57% of respondents. Approach Two was considered only marginally less appropriate, by 54% of respondents.

Table 16

Appropriateness of Approaches by Disorder Type

Approach	Language		Articulation		Fluency		Voice	
	N	%	N	%	N	%	N	%
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.								
Appropriate	238	93	228	69	226	57	222	57
Not appropriate		7		31		43		43
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.								
Appropriate	235	87	222	68	217	54	220	56
Not appropriate		13		32		46		44
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.								
Appropriate	227	78	214	55	209	36	209	39
Not appropriate		22		45		64		61
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.								
Appropriate	230	69	208	42	205	28	205	32
Not appropriate		31		58		72		68
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.								
Appropriate	224	82	249	7	202	33	203	35
Not appropriate		18		93		67		65
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.								
Appropriate	233	87	215	54	210	36	207	35
Not appropriate		13		46		64		65
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.								
Appropriate	225	78	208	47	205	32	205	35
Not appropriate		22		53		68		65

Each of the approaches was also considered less appropriate with voice intervention. The range of respondents who regarded the approaches as appropriate, 32% to 57%, approximated that for fluency disorders. Again, Approaches One and Two were most often judged appropriate, with 57% and 56% of respondents, respectively, considering them appropriate.

In summary, across disorder types, a majority of respondents considered the classroom-based intervention approaches appropriate with language intervention. Fewer respondents judged the approaches appropriate with articulation intervention, and still fewer respondents judged them appropriate with fluency and voice intervention. In general, Approaches One and Two were most frequently rated appropriate by respondents, with reduced percentages of respondents considering the remaining five approaches appropriate.

#### Question Five

What are the grade level categories (i.e., Kindergarten to Grade 3, Grades 4 to 6, Grades 7 to 9, and Grades 10 to 12) of students served using the seven service delivery approaches for classroom-based intervention and which approaches are considered more successful?

- a) Which of the service delivery approaches are used with which grade level categories?
- b) Which of the service delivery approaches are considered the most and the least successful for each grade level category?
- c) Which of the service delivery approaches are considered appropriate for each grade level category?

Use of approaches with grade level categories. Respondents were asked to indicate whether they had used each of the seven service delivery approaches for intervention within either the regular or special education classroom with students in the four grade level categories. Use of each approach with each grade level category was determined by calculating the percentage of respondents who indicated they had used that approach for a

given grade level category. Table 17 presents the percentages of respondents who had used each of the service delivery approaches with each grade level category.

For intervention at the Kindergarten to Grade 3 level, Approach One was used by the largest percentage of respondents, with 73% of respondents having used this approach in this grade level category. Approach Two was used by the next largest percentage, with 60% of respondents having used this approach. The range of respondents who had used the remaining five approaches in this grade level category was 20% to 31%.

A minority of respondents had used the approaches for intervention with students in Grades 4 to 6. Approaches One and Two were most commonly used, with 47% and 37% of respondents having used them, respectively. The other five approaches were used in this grade level category by a range of 12% to 19% of respondents.

A minority of respondents had used the approaches for intervention with Grades 7 to 12. Approach One was used by the largest percentage of respondents, with 19% of respondents having used this approach in Grades 7 to 9 and 11% of respondents having used this approaches in Grades 10 to 12. The range of respondents who had used the remaining six approaches with these two grade level categories was 1% to 12%.

In summary, students in all grade level categories were served with the seven service delivery approaches. The most common use of the classroom-based approaches for intervention was with students in Kindergarten to Grade 3. The approaches were less commonly used in the Grade 4 to 6 category and were minimally used in the Grades 7 to 9 and Grades 10 to 12 categories. Consistent with preceding findings of the study, respondents most often cited use of Approaches One and Two.

Table 17

Use of Approaches by Grade Level Category

Approach	K to Grade 3		Grades 4 to 6		Grades 7 to 9		Grades 10 to 12	
	N	%	N	%	N	%	N	%
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.								
Use	250	73	241	47	239	19	234	11
Non-use		27		53		81		89
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.								
Use	250	60	240	37	243	12	242	6
Non-use		40		63		88		94
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.								
Use	250	22	244	12	244	3	244	2
Non-use		78		88		97		98
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.								
Use	242	25	239	17	241	4	241	3
Non-use		75		83		96		97
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.								
Use	242	20	240	13	241	5	241	3
Non-use		80		87		95		97
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.								
Use	243	30	241	19	242	9	242	5
Non-use		70		81		91		95
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.								
Use	246	31	241	18	242	4	241	1
Non-use		69		82		96		99

Success of approaches with grade level categories. Respondents who indicated that they had used any of the seven classroom-based approaches with any grade level were asked to rate the success of those approaches used for intervention with whichever of the grade level categories they had used them. The approaches were rated using a three-point scale consisting of the terms "good", "fair", and "poor". The success of each approach with each grade level category was determined by calculating the percentage of respondents who checked each of "good", "fair", and "poor". Table 18 contains respondents' ratings of success of each of the service delivery approaches with each grade level category.

Each of the seven approaches was considered relatively successful for intervention with students at the Kindergarten to Grade 3 level, with the percentages of respondents who judged their success "good" ranging from 73% to 90%. Approaches Four to Seven were judged the most successful, with "good" judgements given by 88% to 90% of respondents. The small percentage range of respondents who rated the success of approaches with Kindergarten to Grade 3 students as "poor" did not enable determination of the least successful approach.

The majority of respondents judged the success of all approaches with students in Grades 4 to 6 category as "good", although the range of "good" ratings, 65% to 95%, was broader than that of the Kindergarten to Grade 3 ratings. Approach Seven was most frequently cited by respondents as "good" (95%), followed closely by Approach Four (92%). "Poor" ratings ranged from 0% to 10%, with Approach Five receiving the largest percentage of "poor" ratings.



Table 18

Success of Approaches by Grade Level Category

Approach	K to Grade 3		Grades 4 to 6		Grades 7 to 9		Grades 10 to 12	
	N	%	N	%	N	%	N	%
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.								
Good	168	73	105	65	45	51	28	54
Fair		25		34		45		41
Poor		2		1		4		5
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.								
Good	128	75	80	71	27	54	15	57
Fair		22		29		45		41
Poor		3		0		1		2
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.								
Good	46	78	23	60	7	25	6	16
Fair		22		40		75		84
Poor		0		0		0		0
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.								
Good	46	90	32	92	9	61	7	55
Fair		10		8		39		45
Poor		0		0		0		0
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.								
Good	25	89	18	78	10	36	4	86
Fair		5		12		64		14
Poor		6		10		0		0
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.								
Good	51	88	35	80	18	51	8	94
Fair		8		15		39		6
Poor		4		5		10		0
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.								
Good	50	89	21	95	5	31	1	100
Fair		11		5		69		0
Poor		0		0		0		0

The approaches received mixed ratings for use with students in Grades 7 to 9, with 25% to 61% of respondents offering “good” success judgements. However, statements about the success of the approaches in this grade level category must be qualified by noting the small numbers of respondents in some categories. Of the seven approaches, four approaches were rated in this category by 10 or fewer respondents. Approach Four was most often rated as “good” (61%); however, only nine respondents judged the success of this approach with students in Grades 7 to 9. The range of respondents who considered the success of the approaches “poor” was 0% to 10%, with Approach Six receiving the largest percentage of “poor” ratings. Again, these ratings must be regarded with caution.

For intervention with students in Grades 10 to 12, “good” success ratings ranged from 16% to 100%. As with the Grade 7 to 9 category, the fact that eight or fewer respondents who had used Approaches Three to Seven judged their success does not permit statement of the most successful approach in this category. The range of “poor” ratings was 0% to 5%; however, the same argument used with the “good” ratings applies to the “poor” ratings. The small numbers of respondents in some cells do not allow for comment on the approach considered least successful.

In summary, respondents using the classroom-based intervention approaches considered them relatively successful with students in the Kindergarten to Grade 3 and Grades 4 to 6 categories. The approaches were less frequently rated “good” in the Grades 7 to 9 and Grades 10 to 12 categories, although small numbers of respondents in some categories did not enable definitive statements on success of the approaches with students in these categories.

There was variation of success ratings among approaches; however, Approaches Four, Six, and Seven received the largest percentages of “good” ratings. Due to small portions of respondents rating the success of classroom-based approaches “poor”, the least successful approach could not be determined.

Appropriateness of approaches to grade level categories. All respondents, regardless of whether they had used classroom-based intervention, were asked to judge the appropriateness of each of the approaches to students in each of the four grade level categories. The rating system was dichotomous, consisting of “appropriate” or “not appropriate”. The judged appropriateness of each approach to each grade level category was measured by determining the percentages of respondents who indicated “appropriate” or “not appropriate”. Table 19 displays respondents’ judgements of appropriateness of each of the service delivery approaches to each grade level category.

Appropriateness ratings for intervention with students in Kindergarten to Grade 3 were all relatively high, with percentages of respondents who judged the approaches appropriate ranging from 68% to 89%. Approach One was most frequently judged appropriate, by 89% of respondents. Approaches Six and Two were considered appropriate to these grade levels by 86% and 85% of respondents, respectively.

In the Grades 4 to 6 grade level category, the approaches were considered marginally less appropriate, the range of appropriate ratings being 62% to 83%. As with the Kindergarten to Grade 3 category, Approach One was considered appropriate by the largest percentage of respondents (83%). Approaches Six and Two were considered appropriate by the next largest percentages of respondents, 81% and 78% of respondents, respectively.

Respondents considered the approaches markedly less appropriate to students in Grades 7 to 9, with the range of respondents judging them appropriate being 45% to 64%. Approach Six was considered the most appropriate approach in this grade level category. Approach One was judged the next most appropriate approach, with 59% of respondents judging it appropriate.

For intervention with students in Grades 10 to 12, respondents’ ratings of appropriateness were still less frequent than for students in Grades 7 to 9. The range of respondents judging the approaches as appropriate was 41% to 59%. Approach Six was most often considered appropriate.

Table 19

Appropriateness of Approaches by Grade Level Category

Approach	K to Grade 3		Grades 4 to 6		Grades 7 to 9		Grades 10 to 12	
	N	%	N	%	N	%	N	%
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.								
Appropriate	232	89	222	83	219	59	214	52
Not appropriate		11		17		41		48
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.								
Appropriate	223	85	215	78	210	56	205	48
Not appropriate		15		22		44		52
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.								
Appropriate	218	79	208	73	209	49	197	44
Not appropriate		21		27		51		56
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.								
Appropriate	216	68	213	62	210	45	206	41
Not appropriate		32		38		55		59
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.								
Appropriate	212	81	208	74	208	54	204	51
Not appropriate		19		26		46		49
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.								
Appropriate	224	86	210	81	203	64	199	59
Not appropriate		14		19		36		41
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.								
Appropriate	222	77	215	74	206	55	205	52
Not appropriate		23		26		45		48

In summary, across grade level categories, a majority of respondents judged the classroom-based approaches appropriate to students in the Kindergarten to Grade 3 category. Fewer respondents considered these approaches appropriate to students in Grades 4 to 6. Respondents were more evenly divided on their judgements of appropriateness of the classroom-based approaches to students in Grades 7 to 12. Overall, Approaches One and Six were rated appropriate slightly more often than the other five approaches.

#### Question Six

What are the perceived advantages and disadvantages of the seven service delivery approaches for classroom-based intervention to the following groups:

- a) speech-language pathologists;
- b) teachers;
- c) caseload students;
- d) non-caseload students?

Respondents were asked to consider advantages and disadvantages of the seven classroom service delivery approaches in general, regardless of whether they had used the approaches. On the questionnaire, three predetermined advantages and three predetermined disadvantages were listed for each of four groups: speech-language pathologists, teachers, caseload students, and non-caseload students. The rationale for the selection of advantages and disadvantages is provided in Chapter Three. Respondents were requested to rank each of the three advantages and three disadvantages for each group of individuals using a three-point scale, with "1" indicating the greatest advantage or disadvantage, "2" indicating the next greatest advantage or disadvantage, and "3" indicating the next greatest advantage or disadvantage. The overall ranking of any given advantage or disadvantage was determined by calculating the mean ranking of that advantage or disadvantage. The lowest number of the three mean rankings specified the advantage or disadvantage that respondents most often ranked as the greatest advantage or disadvantage. Conversely, the highest number of the

three mean rankings specified the advantage or disadvantage that respondents most often ranked as the least of the advantages or disadvantages.

Nondirectional dependent samples *t*-tests were conducted to detect significant differences between the mean ranks of advantages or disadvantages listed for each given group of individuals. Because tests of difference between mean rankings were performed multiple times, the more conservative .01 level of significance was chosen to countervail the increased risk of incurring Type I error.

Advantages and disadvantages of approaches to speech-language pathologists.

Table 20 presents the comparisons of respondents' rankings of advantages and disadvantages of the approaches to speech-language pathologists. Comparisons of mean rankings of advantages of the approaches to speech-language pathologists revealed significant differences between the mean rankings of Advantages A and C and Advantages B and C. Differences between mean rankings of Advantages A and B were not significant at the prescribed .01 level, although they were significant at the .05 level. Promotion of carryover of speech and language skills to the classroom was perceived as the greatest advantage of classroom-based intervention to speech-language pathologists. The other two benefits, increasing the teacher's awareness of the speech-language pathologist's role and increasing the number of students served, were considered equally advantageous to speech-language pathologists.

Tests of difference between mean rankings of disadvantages of the approaches to speech-language pathologists showed significant differences between each pair of mean rankings. The requisite additional planning time was perceived as the greatest disadvantage of the classroom-based service delivery approaches. The requirement of behaviour management in the classroom was judged the next greatest disadvantage, and the incorporation of speech and language goals with instructional goals was judged the least of the disadvantages listed.

Table 20

Comparisons of Rankings of Advantages and Disadvantages of Approaches to Speech-Language Pathologists

Advantage ( <i>N</i> = 235)	<i>M</i> rank <sup>a</sup>	Comparisons of means			
		With B		With C	
		<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
A. Increases teacher's awareness of SLP's role	2.1	-2.16	.032	7.30	.000
B. Increases number of students served	2.3	—	—	11.12	.000
C. Promotes carryover of skills to classroom	1.5	—	—	—	—
Disadvantage ( <i>N</i> = 232)	<i>M</i> rank <sup>b</sup>	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
A. Requires additional planning time	1.3	-11.44	.000	-18.63	.000
B. Requires classroom behaviour management	2.1	—	—	-4.79	.000
C. Requires incorporation of speech-language goals and instructional goals	2.5	—	—	—	—

<sup>a</sup>"1" indicated the greatest advantage. <sup>b</sup>"1" indicated the greatest disadvantage.

Advantages and disadvantages of approaches to teachers. Table 21 shows the comparisons of respondents' rankings of advantages and disadvantages of the approaches to teachers. Tests of difference between mean rankings of advantages of the approaches to teachers revealed significant differences for all pairwise comparisons. The increase in knowledge of the relationship between language and the curriculum was the first-ranked advantage of the classroom-based intervention approaches. The promotion of carryover of speech and language skills to the classroom was the second-ranked advantage. The corresponding decrease in class interruptions was judged the least advantageous to the teacher.

Table 21

Comparisons of Rankings of Advantages and Disadvantages of Approaches to Teachers

Advantage ( <i>N</i> = 243)	<i>M</i> rank <sup>a</sup>	Comparisons of means			
		With B		With C	
		<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
A. Decreases class interruptions	2.9	22.65	.000	30.70	.000
B. Promotes carryover of skills to classroom	1.7	—	—	3.96	.000
C. Increases knowledge of relationship between language and curriculum	1.4	—	—	—	—
Disadvantage ( <i>N</i> = 231)	<i>M</i> rank <sup>b</sup>	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
A. Requires additional planning time	1.4	-13.34	.000	-9.70	.000
B. Decreases teacher's instructional time	2.4	—	—	2.41	.017
C. Requires sharing professional territory	2.2	—	—	—	—

<sup>a</sup>"1" indicated the greatest advantage. <sup>b</sup>"1" indicated the greatest disadvantage.

Differences between mean rankings of disadvantages of the approaches to teachers between Advantages A and B and Advantages A and C were significant. Differences between Advantages B and C were not significantly different at the .01 level, although they approached significance at this level. As with disadvantages to speech-language pathologists, the requirement of additional planning time was perceived as the greatest disadvantage to teachers. The requirement of sharing professional roles and the decrease in the teacher's instructional time were considered equal drawbacks of the classroom-based approaches to service delivery.

Advantages and disadvantages of approaches to caseload students. Table 22 displays the comparisons of respondents' rankings of advantages and disadvantages of the



approaches to caseload students. Comparisons of mean rankings of advantages of the approaches to caseload students revealed significant differences between all mean rankings of advantages. The integration of speech and language goals with instructional goals was considered the greatest advantage to caseload students. The promotion of carryover of speech and language skills to the classroom was perceived as the next greatest advantage of classroom-based intervention. The decrease in stigmatization was judged the least advantageous aspect for caseload students.

Table 22

Comparisons of Rankings of Advantages and Disadvantages of Approaches to Caseload Students

Advantage (N = 235)	M rank <sup>a</sup>	Comparisons of means			
		With B		With C	
		t	p	t	p
A. Integrates speech-language goals and instructional goals	1.4	-20.98	.000	-4.01	.000
B. Decreases stigmatization	2.8	—	—	21.56	.000
C. Promotes carryover of skills to classroom	1.7	—	—	—	—
Disadvantage (N = 220)	M rank <sup>b</sup>	t	p	t	p
A. Emphasizes caseload student's impairment	2.4	3.05	.003	11.47	.000
B. Requires tracking instructional goals	2.1	—	—	8.81	.000
C. Decreases individualization of programming	1.4	—	—	—	—

<sup>a</sup>"1" indicated the greatest advantage. <sup>b</sup>"1" indicated the greatest disadvantage.

Differences between mean rankings of disadvantages of the approaches to caseload students were all significant. The concomitant decrease in individualization of programming was ranked as the greatest disadvantage to caseload students. The requirement of tracking instructional goals was considered the next greatest disadvantage of the classroom-based service delivery approaches. The additional emphasis placed on the caseload student's impairments through the use of classroom-based intervention was perceived to be the least of the disadvantages listed.

Advantages and disadvantages of approaches to non-caseload students. Table 23 contains comparisons of respondents' rankings of advantages and disadvantages of the approaches to non-caseload students. Tests of difference between mean rankings of advantages of the approaches to non-caseload students revealed significant differences between mean rankings of all advantages listed. The increased exposure to language activities was judged the most advantageous feature of classroom-based intervention to non-caseload students. The provision of cooperative instruction was perceived as the next greatest advantage. The increased opportunity for non-caseload students to assume a leadership role was ranked as the least important of the three advantages to non-caseload students.

Comparisons of mean rankings of disadvantages of the classroom-based approaches to non-caseload students showed significant differences between mean rankings of all disadvantages. The decrease in the teacher's instructional time was judged the greatest disadvantage to non-caseload students. The increase in the level of boredom of high-functioning students was considered the next greatest disadvantage. The decreased level of expectation in the classroom was ranked as the third greatest disadvantage of the approaches to non-caseload students.

Table 23

Comparisons of Rankings of Advantages and Disadvantages of Approaches to Non-Caseload Students

Advantage ( <i>N</i> = 234)	<i>M</i> rank <sup>a</sup>	Comparisons of means			
		With B		With C	
		<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
A. Provides opportunity for leadership role	2.7	16.06	.000	15.39	.000
B. Increases exposure to language activities	1.5	—	—	-4.18	.000
C. Provides cooperative instruction	1.8	—	—	—	—
Disadvantage ( <i>N</i> = 208)	<i>M</i> rank <sup>b</sup>	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
A. Increases boredom level of high-functioning students	2.0	2.99	.003	-2.81	.005
B. Decreases teacher's instructional time	1.7	—	—	-6.44	.000
C. Decreases level of expectation in the classroom	2.3	—	—	—	—

<sup>a</sup>"1" indicated the greatest advantage. <sup>b</sup>"1" indicated the greatest disadvantage.

Summary of comparisons of rankings of advantages and disadvantages. Of 24 comparisons between mean rankings, 22 revealed significant differences at the .01 level. In general, respondents agreed on rankings of advantages and disadvantages of the classroom-based service delivery approaches to speech-language pathologists, teachers, and caseload and non-caseload students. Generally, the increased integration of speech and language goals with the curriculum and the generalization of speech and language skills to the classroom were perceived by respondents as the prime benefits of classroom-based service delivery to all groups concerned. The increased time required for planning and the decrease

in individualization of programming for students requiring speech and language services were considered the chief drawbacks of the classroom-based approaches to intervention.

#### Question Seven

What are the factors that are perceived to encourage and discourage use of the seven service delivery approaches for classroom-based intervention?

Respondents were requested to consider factors that encourage and discourage use of the seven classroom service delivery approaches in general, regardless of whether they had used the approaches. Three predetermined factors that encourage use and three predetermined factors that discourage use were listed as choices. Respondents were asked to rank each of the three encouraging and three discouraging factors using a three-point scale, with "1" designating the greatest encouraging or discouraging factor, "2" designating the next greatest encouraging or discouraging factor, and "3" designating the next greatest encouraging or discouraging factor. The overall ranking of any given factor was derived by computing the mean ranking of that factor. The lowest number of the three mean rankings indicated the factor that respondents most often ranked as either the greatest encouragement or the greatest discouragement. Conversely, the highest number of the three mean rankings indicated the factor that respondents most frequently ranked as the least encouraging or discouraging of the factors listed.

Nondirectional dependent samples *t*-tests were conducted to determine significant differences between the mean rankings of factors that encourage and discourage use of the approaches. Because tests of difference between mean rankings were conducted multiple times, the stringent .01 level of significance was selected to counteract the elevated likelihood of incurring Type I error.

Factors that encourage and discourage use of approaches. Table 24 shows comparisons of respondents' rankings of factors that encourage and discourage use of the approaches. Differences in mean rankings of factors that encourage use of the approaches were significant for each pair of mean rankings. Teacher support was judged to be the

factor which most facilitates classroom-based service delivery. Flexibility of scheduling was ranked the next most important factor, followed by adequate material resources as the least important supporting factor.

Tests of difference between mean rankings of factors that discourage use of the approaches showed significant differences between mean rankings of Factors A and B and Factors B and C. The difference between mean rankings of Factors A and C was not significant. Lack of time was considered the major factor constraining classroom-based intervention. Lack of administrative support and lack of the speech-language pathologist's teaching background were judged to equally discourage use of the classroom-based approaches.

Table 24

Comparisons of Rankings of Factors Encouraging and Discouraging Use of Approaches

Encouraging factor ( <i>N</i> = 230)	<i>M</i> rank <sup>a</sup>	Comparisons of means			
		With B		With C	
		<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
A. Flexibility of scheduling	2.1	-7.81	.000	13.71	.000
B. Material resources	2.7	—	—	24.89	.000
C. Teacher support	1.2	—	—	—	—
Discouraging factor ( <i>N</i> = 233)	<i>M</i> rank <sup>b</sup>				
		<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
A. Lack of administrative support	2.2	7.09	.000	-1.29	.197
B. Lack of time	1.6	—	—	-8.55	.000
C. Lack of teaching background of SLP	2.3	—	—	—	—

<sup>a</sup>"1" indicated the greatest encouraging factor. <sup>b</sup>"1" indicated the greatest discouraging factor.

### Question Eight

Do speech-language pathologists perceive a need for additional information for speech-language pathologists who use the seven service delivery approaches for classroom-based intervention?

- a) If so, what are the perceived areas of need for additional information?
- b) If so, what are the preferred methods for obtaining additional information?

Existence of need for additional information for speech-language pathologists. A total of 89% of respondents perceived a need for additional information for speech-language pathologists who use the classroom-based service delivery approaches for intervention. The remaining 11% perceived no need for additional information. As a large majority of respondents deemed that a need for more information existed, answers to the two subsidiary questions to this research question were sought.

Respondents who perceived a need for more information for speech-language pathologists who adopt the classroom-based approaches were asked to complete questionnaire items pertaining to areas of perceived need for additional information and preferred methods of obtaining information. Three predetermined areas of need and preferred methods were listed. Respondents were asked to rank each of the three areas and three methods using a three-point scale, with "1" designating their first choice, "2" designating their second choice, and "3" designating their third choice. The overall ranking of any given area or method was arrived at by calculating the mean ranking of that area or method. The lowest number of the three mean rankings indicated the area of need or method of obtaining information that respondents most frequently ranked as the most beneficial. The highest number of the three mean rankings indicated the choice that respondents most often ranked as the least beneficial.

Nondirectional dependent samples *t*-tests were conducted to detect significant differences between the mean rankings of areas of need for additional information for speech-language pathologists who use the approaches for classroom-based intervention, as

well as for preferred methods of obtaining such information. Because tests of difference between mean rankings were performed multiple times, the .01 level of significance was selected to counteract the increased liability of effecting Type I error.

Areas of need for additional information for speech-language pathologists. Table 25 contains comparisons of respondents' rankings of areas of need for additional information for speech-language pathologists who use the approaches. Comparisons of mean rankings of areas of need for additional information revealed significant differences between each pair of mean rankings. Curriculum content was considered the area of greatest need for further information, followed by information on instructional techniques and classroom behaviour management, in that order.

Table 25

Comparisons of Rankings of Areas of Need for Additional Information for Speech-Language Pathologists

Area (N = 184)	M rank <sup>a</sup>	Comparisons of means			
		With B		With C	
		t	p	t	p
A. Curriculum content	1.5	-8.32	.000	-6.28	.000
B. Classroom behaviour management	2.4	—	—	2.95	.004
C. Instructional techniques	2.1	—	—	—	—

<sup>a</sup>1" indicated the area of greatest need.

Preferred methods of obtaining additional information for speech-language pathologists. Table 26 presents comparisons of respondents' rankings of preferred methods of obtaining additional information for speech-language pathologists who use the approaches. Tests of difference between mean rankings of methods of obtaining additional information showed highly significant differences for all comparisons. Inservices and

conferences were the preferred methods of procuring information. Journal articles were ranked the second choice of method, followed by commercial programs, which were considered the least desirable method of gaining information on the use of classroom-based approaches.

Table 26

Comparisons of Rankings of Preferred Methods of Obtaining Additional Information for Speech-Language Pathologists

Method ( <i>N</i> = 172)	<i>M</i> rank <sup>a</sup>	Comparisons of means			
		With B		With C	
		<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
A. Inservices/conferences	1.3	-9.72	.000	-14.29	.000
B. Journals	2.2	—	—	-4.65	.000
C. Commercial programs	2.6	—	—	—	—

<sup>a</sup>"1" indicated the most preferred method.

Question Nine

What differences, if any, exist between the views of speech-language pathologists who use and those who do not use the seven service delivery approaches for classroom-based intervention on the following issues:

a) appropriateness of each of the service delivery approaches to:

- 1) disorder types;
- 2) grade level categories;

b) advantages and disadvantages of the service delivery approaches to:

- 1) speech-language pathologists;
- 2) teachers;
- 3) caseload students;



- 4) non-caseload students;
- c) factors that encourage and discourage use of the service delivery approaches;
- d) existence of a need for additional information for speech-language pathologists who use the service delivery approaches;
- e) areas of need for additional information for speech-language pathologists who use the service delivery approaches;
- f) preferred methods of obtaining additional information for speech-language pathologists who use the service delivery approaches?

Appropriateness of approaches to disorder types according to use of approaches with disorder types. Judgements of appropriateness of each approach to each disorder type were examined in light of respondents' specific use or non-use of that approach with that disorder type. Chi-square analyses were conducted at the .05 level to test for significant differences in judgements of appropriateness of the approaches to intervention with disorder types.

Table 27 contains respondents' judgements of appropriateness of each of the service delivery approaches to intervention with language disorders according to whether respondents had used each of the approaches with this disorder type. For all approaches, significant relationships were found between judgements of the appropriateness of the approaches to language intervention and respondents' use of the approaches. Respondents who had used the classroom-based approaches with language disorders considered them more appropriate to language disorders than did respondents who had not used the approaches with this disorder type. Whereas 98% to 100% of respondents who had used the approaches judged them appropriate to language disorders, 57% to 80% of respondents who had not used the approaches judged them appropriate.

Table 27

Appropriateness of Approaches to Language Disorders by Use of Approaches

Approach	Use (%)	Non-use (%)
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.		
Appropriate	98	77
Not appropriate	2	23
$\chi^2 (1, N = 238) = 30.90, p = .000$		
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.		
Appropriate	99	67
Not appropriate	1	33
$\chi^2 (1, N = 235) = 52.47, p = .000$		
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.		
Appropriate	100	70
Not appropriate	0	30
$\chi^2 (1, N = 227) = 22.00, p = .000$		
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.		
Appropriate	99	57
Not appropriate	1	43
$\chi^2 (1, N = 231) = 37.91, p = .000$		
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.		
Appropriate	100	78
Not appropriate	0	22
$\chi^2 (1, N = 224) = 12.20, p = .000$		
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.		
Appropriate	100	80
Not appropriate	0	20
$\chi^2 (1, N = 233) = 16.97, p = .000$		
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.		
Appropriate	100	65
Not appropriate	0	35
$\chi^2 (1, N = 225) = 36.86, p = .000$		

Table 28 displays respondents' judgements of appropriateness of each of the service delivery approaches to intervention with articulation disorders according to whether respondents had used each of the service delivery approaches with this disorder type. Judgements of appropriateness of the approaches to articulation intervention were all significantly related to respondents' use of the approaches. Respondents who had used the approaches with articulation intervention judged them appropriate more often than respondents who had not used the approaches with articulation intervention. Between 92% and 100% of respondents who had used the classroom-based approaches considered them appropriate to intervention with articulation. Only 36% to 53% of respondents who had not used the approaches considered them appropriate to this type of intervention.

Table 29 contains respondents' judgements of appropriateness of each of the service delivery approaches to intervention with fluency disorders according to whether respondents had used each of the service delivery approaches with this disorder type. Significant relationships existed between all respondents' judgements of appropriateness of the approaches with fluency intervention and their use of the approaches with fluency intervention. Respondents who had used the classroom-based approaches with fluency disorders rated them more appropriate to this type of disorder than did respondents who had not used the approaches with fluency disorders. Of respondents who had used the approaches, 95% to 100% judged them appropriate to fluency intervention. In contrast, 25% to 45% of respondents who had not used the approaches judged them appropriate to intervention with fluency disorders.

Table 28

Appropriateness of Approaches of Articulation Disorders by Use of Approaches

Approach	Use (%)	Non-use (%)
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.		
Appropriate	92	52
Not appropriate	8	48
$\chi^2 (1, N = 227) = 41.57, p = .000$		
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.		
Appropriate	100	53
Not appropriate	0	47
$\chi^2 (1, N = 222) = 48.06, p = .000$		
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.		
Appropriate	97	49
Not appropriate	3	51
$\chi^2 (1, N = 214) = 23.26, p = .000$		
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.		
Appropriate	100	36
Not appropriate	0	64
$\chi^2 (1, N = 208) = 30.17, p = .000$		
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.		
Appropriate	100	49
Not appropriate	0	51
$\chi^2 (1, N = 207) = 15.29, p = .000$		
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.		
Appropriate	100	48
Not appropriate	0	52
$\chi^2 (1, N = 215) = 21.31, p = .000$		
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.		
Appropriate	100	41
Not appropriate	0	59
$\chi^2 (1, N = 209) = 27.32, p = .000$		

Table 29

Appropriateness of Approaches to Fluency Disorders by Use of Approaches

Approach	Use (%)	Non-use (%)
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.		
Appropriate	95	42
Not appropriate	5	58
$\chi^2(1, N = 226) = 51.92, p = .000$		
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.		
Appropriate	95	45
Not appropriate	5	55
$\chi^2(1, N = 217) = 32.10, p = .000$		
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.		
Appropriate	100	33
Not appropriate	0	67
$\chi^2(1, N = 209) = 16.80, p = .000$		
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.		
Appropriate	100	25
Not appropriate	0	75
$\chi^2(1, N = 205) = 18.82, p = .000$		
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.		
Appropriate	100	31
Not appropriate	0	69
$\chi^2(1, N = 203) = 14.39, p = .000$		
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.		
Appropriate	100	32
Not appropriate	0	68
$\chi^2(1, N = 210) = 22.91, p = .000$		
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.		
Appropriate	100	29
Not appropriate	0	71
$\chi^2(1, N = 205) = 19.82, p = .000$		

Table 30 presents respondents' judgements of appropriateness of each of the service delivery approaches to intervention with voice disorders according to whether respondents had used of each of the service delivery approaches with this disorder type. Judgements of appropriateness of the approaches to voice intervention were all significantly related to the use of the approaches with voice intervention. Respondents who had used the approaches with voice intervention rated them more appropriate than respondents who had not used the approaches with voice intervention. Between 97% and 100% of respondents who had used the classroom-based approaches with voice intervention considered them appropriate. Just 30% to 49% of respondents who had not used the approaches with voice intervention judged them appropriate to intervention with voice disorders.

In summary, for all 32 relationships under examination, significant relationships were found between respondents' judgements of appropriateness of each approach to each disorder type and respondents' use of each approach with each disorder type. All relationships were significant at the .01 level. Respondents who had used the classroom-based approaches considered them more appropriate with the four disorder types than did respondents who had not used the approaches. These findings provided evidence for the truism that speech-language pathologists who used the classroom-based intervention approaches considered them appropriate to intervention with given disorder types by dint of the fact that they used them for intervention with given disorder types. If speech-language pathologists did not consider the classroom-based approaches appropriate to intervention with disorder types, they were not predisposed to using them.

Appropriateness of approaches to grade level categories according to use of approaches with grade level categories. Judgements of appropriateness of each approach to each grade level category were considered in view of respondents' specific use or non-use of that approach with that grade level category. To identify significant differences in judgements of appropriateness of the approaches to intervention with grade level categories, chi-square analyses were conducted at the .05 level.

Table 30

Appropriateness of Approaches to Voice Disorders by Use of Approaches

Approach	Use (%)	Non-use (%)
<b>One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.</b>		
Appropriate	96	47
Not appropriate	4	53
$\chi^2(1, N = 222) = 33.91, p = .000$		
<b>Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.</b>		
Appropriate	97	49
Not appropriate	3	51
$\chi^2(1, N = 221) = 24.21, p = .000$		
<b>Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.</b>		
Appropriate	100	36
Not appropriate	0	64
$\chi^2(1, N = 210) = 18.12, p = .000$		
<b>Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.</b>		
Appropriate	100	30
Not appropriate	0	70
$\chi^2(1, N = 205) = 13.02, p = .000$		
<b>Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.</b>		
Appropriate	100	33
Not appropriate	0	67
$\chi^2(1, N = 202) = 11.41, p = .000$		
<b>Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.</b>		
Appropriate	100	32
Not appropriate	0	68
$\chi^2(1, N = 207) = 17.64, p = .000$		
<b>Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.</b>		
Appropriate	100	33
Not appropriate	0	67
$\chi^2(1, N = 206) = 15.16, p = .000$		

Table 31 displays respondents' judgements of appropriateness of each of the service delivery approaches to intervention with students in Kindergarten to Grade 3 according to whether respondents had used each of the service delivery approaches with this grade level category. Judgements of appropriateness of the approaches to students in Kindergarten to Grade 3 were all significantly related to use of the approaches with students in these grades. Respondents who had used the classroom-based approaches with Kindergarten to Grade 3 students rated them more appropriate than respondents who had not used them with these grade levels. Between 94% and 100% of respondents who had used the approaches considered them appropriate to Kindergarten to Grade 3, whereas 55% to 80% of respondents who had not used the approaches considered them appropriate to these grades.

Table 32 contains respondents' judgements of appropriateness of each of the service delivery approaches to intervention with students in Grades 4 to 6 according to whether respondents had used of each of the service delivery approaches with this grade level category. For all approaches, significant relationships were found between respondents' ratings of appropriateness of the approaches to intervention with students in Grades 4 to 6 and use of the approaches with these grade levels. More respondents who had used the classroom-based approaches with intervention in the Grade 4 to 6 category considered them appropriate to these grades. Of respondents who had used the approaches with students in Grades 4 to 6, 88% to 100% considered the approaches appropriate. In contrast, 56% to 75% of respondents who had not used the approaches considered them appropriate to students in these grades.



Table 31

Appropriateness of Approaches to Kindergarten to Grade 3 by Use of Approaches

Approach	Use (%)	Non-use (%)
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.		
Appropriate	98	65
Not appropriate	2	35
$\chi^2(1, N = 232) = 53.72, p = .000$		
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.		
Appropriate	99	64
Not appropriate	1	36
$\chi^2(1, N = 223) = 49.15, p = .000$		
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.		
Appropriate	100	72
Not appropriate	0	28
$\chi^2(1, N = 218) = 20.15, p = .000$		
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.		
Appropriate	100	55
Not appropriate	0	45
$\chi^2(1, N = 216) = 39.83, p = .000$		
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.		
Appropriate	94	77
Not appropriate	6	23
$\chi^2(1, N = 212) = 6.19, p = .000$		
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.		
Appropriate	100	80
Not appropriate	0	20
$\chi^2(1, N = 224) = 16.70, p = .000$		
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.		
Appropriate	100	65
Not appropriate	0	35
$\chi^2(1, N = 222) = 34.65, p = .000$		

Table 32

Appropriateness of Approaches to Grades 4 to 6 by Use of Approaches

Approach	Use (%)	Non-use (%)
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.		
Appropriate	97	70
Not appropriate	3	30
$\chi^2 (1, N = 222) = 29.19, p = .000$		
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.		
Appropriate	100	64
Not appropriate	0	36
$\chi^2 (1, N = 214) = 37.41, p = .000$		
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.		
Appropriate	100	68
Not appropriate	0	32
$\chi^2 (1, N = 207) = 12.82, p = .000$		
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.		
Appropriate	88	56
Not appropriate	12	44
$\chi^2 (1, N = 214) = 14.64, p = .000$		
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.		
Appropriate	97	70
Not appropriate	3	30
$\chi^2 (1, N = 208) = 10.10, p = .000$		
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.		
Appropriate	100	75
Not appropriate	0	25
$\chi^2 (1, N = 210) = 13.89, p = .000$		
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.		
Appropriate	100	67
Not appropriate	0	33
$\chi^2 (1, N = 216) = 19.81, p = .000$		

Table 33 displays respondents' judgements of appropriateness of each of the service delivery approaches to intervention with students in Grades 7 to 9 according to whether respondents had used each of the service delivery approaches with this grade level category. Significant relationships existed between respondents' judgements of appropriateness of the classroom-based approaches to students in Grades 7 to 9 and respondents' use of the approaches with students in these grades. All relationships but one, that between appropriateness judgements and use of Approach Three with this grade level category, were significant. The approaches were judged more appropriate to intervention with students in Grades 7 to 9 by respondents who had used the approaches than they were by respondents who had not used the approaches. Between 95% and 100% of respondents who had used the approaches with this grade level category rated them appropriate. Just 42% to 60% of respondents who had not used the approaches with Grades 7 to 9 students rated them appropriate to these students.

Table 34 contains respondents' judgements of appropriateness of each of the service delivery approaches to intervention with students in Grades 10 to 12 according to whether respondents had used each of the service delivery approaches with this grade level category. With the exception of two approaches, judgements of appropriateness of the approaches to intervention with students in Grades 10 to 12 were significantly related to use of the approaches with these students, and all but one of these were significantly related to use. Respondents' judgements of appropriateness of Approach Five to Grades 10 to 12 students was significantly related to respondents' use of this approach. Respondents' judgements of appropriateness of Approaches Three and Seven to intervention with these students were not significantly related to respondents' use of these approaches, although the relationship between judgement and use of Approach Seven approached significance. In general, respondents who had used the classroom-based intervention approaches with students in Grades 10 to 12 considered them more appropriate than respondents who had not used the approaches with this grade level category. Of respondents who had used the

approaches, 24% to 100% considered them appropriate for Grades 10 to 12 students. Only 6% to 57% of respondents who had not used the approaches considered them appropriate.

In summary, with two exceptions, significant relationships existed between respondents' judgements of appropriateness of the approaches to grade level categories and respondents' use of the approaches with grade level categories. Of the 26 significant relationships, 24 were significant at the .01 level.

Respondents who had used classroom-based approaches judged them more appropriate to the four grade level categories than did respondents who had not used the approaches. These findings paralleled findings of the previous section on the relationships between appropriateness judgements and use of the approaches with disorder types. They established additional support for the self-evident truth that the majority of speech-language pathologists who had used the classroom-based approaches for intervention with students in given grade levels considered them appropriate to the students with whom they had used them. Conversely, speech-language pathologists did not use these approaches with given grade levels if they did not deem them appropriate to students in these grades.

Advantages and disadvantages of approaches to speech-language pathologists according to use of approaches. Perceptions of advantages and disadvantages of the seven service delivery approaches in general were investigated in the context of respondents' general use of the approaches. Thus, for the purpose of analysis, respondents were classified into one of two groups. The "use" group, which comprised 85% of the sample, consisted of respondents who had used one or more of the seven classroom-based approaches with one or more disorder type. The "non-use" group, which comprised 15% of the sample, consisted of respondents who had used none of the approaches.

Table 33

Appropriateness of Approaches to Grades 7 to 9 by Use of Approaches

Approach	Use (%)	Non-use (%)
<b>One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.</b>		
Appropriate	98	48
Not appropriate	2	52
$\chi^2(1, N = 218) = 36.79, p = .000$		
<b>Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.</b>		
Appropriate	100	49
Not appropriate	0	51
$\chi^2(1, N = 209) = 26.48, p = .000$		
<b>Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.</b>		
Appropriate	100	48
Not appropriate	0	52
$\chi^2(1, N = 200) = 6.31, p = .012$		
<b>Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.</b>		
Appropriate	100	42
Not appropriate	0	58
$\chi^2(1, N = 210) = 12.96, p = .000$		
<b>Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.</b>		
Appropriate	100	51
Not appropriate	0	49
$\chi^2(1, N = 208) = 11.86, p = .001$		
<b>Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.</b>		
Appropriate	95	60
Not appropriate	5	40
$\chi^2(1, N = 203) = 9.90, p = .002$		
<b>Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.</b>		
Appropriate	100	53
Not appropriate	0	47
$\chi^2(1, N = 206) = 9.38, p = .002$		

Table 34

Appropriateness of Approaches to Grades 10 to 12 by Use of Approaches

Approach	Use (%)	Non-use (%)
One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.		
Appropriate	89	47
Not appropriate	11	53
$\chi^2 (1, N = 214) = 15.48, p = .000$		
Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.		
Appropriate	100	44
Not appropriate	0	56
$\chi^2 (1, N = 205) = 17.67, p = .000$		
Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.		
Appropriate	24	6
Not appropriate	76	94
$\chi^2 (1, N = 197) = .10, p = .750$		
Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.		
Appropriate	100	39
Not appropriate	0	61
$\chi^2 (1, N = 206) = 11.84, p = .000$		
Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.		
Appropriate	100	49
Not appropriate	0	51
$\chi^2 (1, N = 204) = 6.06, p = .014$		
Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.		
Appropriate	100	57
Not appropriate	0	43
$\chi^2 (1, N = 199) = 8.77, p = .003$		
Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.		
Appropriate	100	52
Not appropriate	0	48
$\chi^2 (1, N = 206) = 3.70, p = .054$		

For all subsequent subsidiary research questions except 9d), existence of a need for additional information, nondirectional independent samples *t*-tests were conducted to determine significant differences between the mean rankings of the three advantages and three disadvantages listed for each of speech-language pathologists, teachers, caseload students, and non-caseload students. Tests were conducted at the .05 level of significance.

Table 35 contains the comparisons of respondents' rankings of advantages and disadvantages of the service delivery approaches to speech-language pathologists according to whether respondents had used one or more of the approaches. Comparisons between mean rankings of advantages of the approaches to speech-language pathologists for the "use" and "non-use" groups showed no significant differences between the two groups. The groups of respondents were consistent in their rankings of advantages of the approaches to speech-language pathologists.

Tests of difference between mean rankings of disadvantages of the approaches to speech-language pathologists for the "use" and "non-use" groups revealed significant differences in mean rankings between the two groups for Disadvantages A and B, although the difference between groups for Disadvantage B only just attained significance. Speech-language pathologists in the "use" category viewed the additional time required to plan for classroom-based intervention as a greater disadvantage than did those in the "non-use" group. Speech-language pathologists in the "non-use" category regarded the requirement of classroom behaviour management as a greater disadvantage than did those in the "use" group.

Table 35

Comparisons of Rankings of Advantages and Disadvantages of Approaches to Speech-Language Pathologists by Use of Approaches

Advantage ( <i>N</i> = 237)	Use <i>M</i> rank <sup>a</sup>	Non-use <i>M</i> rank <sup>a</sup>	<i>t</i>	<i>p</i>
A. Increases teacher's awareness of SLP's role	2.1	2.1	-.59	.559
B. Increases number of students served	2.3	2.3	-.26	.796
C. Promotes carryover of skills to classroom	1.5	1.6	1.06	.290
Disadvantage ( <i>N</i> = 232)	<i>M</i> rank <sup>b</sup>	<i>M</i> rank <sup>b</sup>	<i>t</i>	<i>p</i>
A. Requires additional planning time	1.3	1.5	2.45	.015
B. Requires classroom behaviour management	2.2	1.9	- 2.03	.044
C. Requires incorporation of speech-language goals and instructional goals	2.5	2.6	.16	.870

<sup>a</sup>"1" indicated the greatest advantage. <sup>b</sup>"1" indicated the greatest disadvantage.

Advantages and disadvantages of approaches to teachers according to use of approaches. Table 36 displays the comparisons of respondents' rankings of advantages and disadvantages of the service delivery approaches to teachers according to whether respondents had used one or more of the approaches. The difference in mean rankings of advantages of the approaches to teachers as ranked by "use" and "non-use" groups of respondents were significant for groups' rankings of Advantage A, although the difference was only just significant. Speech-language pathologists in the "non-use" category judged the decrease in class interruptions to be a slightly greater advantage to teachers than did speech-language pathologists in the "use" category. Rankings of other advantages of the classroom-based approaches to teachers did not differ significantly from one group to the other.



Table 36

Comparisons of Rankings of Advantages and Disadvantages of Approaches to Teachers by Use of Approaches

Advantage ( <i>N</i> = 244)	Use <i>M</i> rank <sup>a</sup>	Non-use <i>M</i> rank <sup>a</sup>	<i>t</i>	<i>p</i>
A. Decreases class interruptions	2.9	2.8	- 2.06	.040
B. Promotes carryover of skills to classroom	1.7	1.8	1.16	.248
C. Increases knowledge of relationship between language and curriculum	1.4	1.4	.07	.942
Disadvantage ( <i>N</i> = 231)	<i>M</i> rank <sup>b</sup>	<i>M</i> rank <sup>b</sup>	<i>t</i>	<i>p</i>
A. Requires additional planning time	1.4	1.4	.07	.946
B. Decreases teacher's instructional time	2.4	2.3	-.95	.344
C. Requires sharing professional territory	2.2	2.3	.84	.404

<sup>a</sup>"1" indicated the greatest advantage. <sup>b</sup>"1" indicated the greatest disadvantage.

Mean rankings of disadvantages of the approaches to teachers were not significantly different for respondents in the "use" and "non-use" groups. Speech-language pathologists from each group made similar judgements of disadvantages of the classroom-based approaches to teachers.

Advantages and disadvantages of approaches to caseload students according to use of approaches. Table 37 presents the comparisons of respondents' rankings of advantages and disadvantages of the service delivery approaches to caseload students according to whether respondents had used at least one of the approaches. Tests of difference between mean rankings of advantages of the approaches to caseload students revealed significant differences in mean rankings of Advantages A and B by respondents in the "use" and "non-use" categories. The difference between groups for Advantage B was significant at

the .01 level. The difference in mean rankings of Advantage C did not differ significantly for the "use" and "non-use" groups. Speech-language pathologists who had used the classroom-based approaches considered the integration of speech and language goals and instructional goals to be a greater advantage to caseload students than did speech-language pathologists who had not used the approaches. Speech-language pathologists who had not used classroom-based intervention judged the decrease in stigmatization of caseload students a greater advantage than did those who had used the approaches.

Table 37

Comparisons of Rankings of Advantages and Disadvantages of Approaches to Caseload Students by Use of Approaches

Advantage ( <i>N</i> = 236)	Use <i>M</i> rank <sup>a</sup>	Non-use <i>M</i> rank <sup>a</sup>	<i>t</i>	<i>p</i>
A. Integrates speech-language goals and instructional goals	1.4	1.7	2.20	.029
B. Decreases stigmatization	2.9	2.5	-3.87	.000
C. Promotes carryover of skills to classroom	1.7	1.8	.68	.500
Disadvantage ( <i>N</i> = 222)	<i>M</i> rank <sup>b</sup>	<i>M</i> rank <sup>b</sup>	<i>t</i>	<i>p</i>
A. Emphasizes caseload student's impairment	2.4	2.3	-1.18	.241
B. Requires tracking instructional goals	2.1	2.4	1.87	.063
C. Decreases individualization of programming	1.4	1.4	-.45	.650

<sup>a</sup>"1" indicated the greatest advantage. <sup>b</sup>"1" indicated the greatest disadvantage.

Comparisons of difference between mean rankings of disadvantages of the approaches to caseload students revealed no significant differences between groups' mean rankings, although the differences between mean rankings of the "use" and "non-use" groups for Disadvantage B approached significance. Generally, speech-language pathologists in the "use" and "non-use" categories were consistent in their views of disadvantages of the classroom-based service delivery to caseload students.

Advantages and disadvantages of approaches to non-caseload students according to use of approaches. Table 38 contains the comparisons of respondents' rankings of advantages and disadvantages of the service delivery approaches to non-caseload students according to whether respondents had used one or more of the approaches. Mean rankings of advantages of the approaches to non-caseload students were not significantly different for respondents in the "use" and "non-use" categories. Speech-language pathologists who had used the classroom-based approaches for intervention and speech-language pathologists who had not used the approaches had similar views on advantages of the approaches to non-caseload students.

Tests of difference in mean rankings of disadvantages of the approaches to non-caseload students by respondents in the "use" and "non-use" groups revealed no significant differences in mean rankings between groups. Judgements of disadvantages to non-caseload students by speech-language pathologists were consistent, regardless of whether speech-language pathologists had used the classroom-based intervention approaches.

Table 38

Comparisons of Rankings of Advantages and Disadvantages of Approaches to Non-Caseload Students by Use of Approaches

Advantage (N = 235)	Use M rank <sup>a</sup>	Non-use M rank <sup>a</sup>	t	p
A. Provides opportunity for leadership role	2.7	2.8	.56	.573
B. Increases exposure to language activities	1.5	1.5	.01	.990
C. Provides cooperative instruction	1.8	1.8	-.56	.577
Disadvantage (N = 208)	M rank <sup>b</sup>	M rank <sup>b</sup>	t	p
A. Increases boredom level of high-functioning students	2.0	2.0	-.16	.871
B. Decreases teacher's instructional time	1.7	1.7	.27	.784
C. Decreases level of expectation in the classroom	2.3	2.3	-.10	.921

<sup>a</sup>"1" indicated the greatest advantage. <sup>b</sup>"1" indicated the greatest disadvantage.

Summary of advantages and disadvantages of approaches to non-caseload students according to use of approaches. Of 24 comparisons between mean rankings of advantages and disadvantages of the classroom-based service delivery approaches by respondents who had used and those who had not used the approaches, five pairs of mean rankings were significantly different. Of these, one difference was significant at the .01 level and two were significant at the .05 level. Significant findings did not contribute to a pattern. Overall, speech-language pathologists' relative judgements of advantages and disadvantages of the classroom-based approaches to speech-language pathologists, teachers, caseload students, and non-caseload students were independent of their use of the approaches.

Factors that encourage and discourage use of approaches according to use of approaches. Table 39 contains the comparisons of respondents' rankings of factors that

encourage and discourage use of the service delivery approaches according to whether respondents had used at least one of the approaches. Tests of difference in mean rankings of factors that encourage use of the approaches for respondents in the "use" and "non-use" groups revealed significant differences between the two groups' mean rankings of Factors A and C, although differences in mean rankings of Factor A only just attained significance. Mean rankings of Factor C were significant at the .01 level. Mean rankings of Factor B were not significantly different from one group to the other. Speech-language pathologists who had not used classroom-based approaches judged flexibility of scheduling as a greater support to use of the approaches than did speech-language pathologists who had used the approaches. On the other hand, speech-language pathologists who had used the approaches considered teacher support a greater encouragement to classroom-based service delivery. Having adequate material resources was viewed equally by the groups as a facilitating factor.

Comparisons of mean rankings of factors that discourage use of the approaches for the "use" and "non-use" groups showed significant differences between mean rankings of the groups for Factors A and C, with the difference in mean rankings of Factor A significant at the .01 level. The difference in mean rankings of Factor B was not significant. Lack of administrative support was considered a more major disincentive by speech-language pathologists who had used the classroom-based service delivery approaches. Lack of background in teaching on the part of speech-language pathologists was judged a greater deterrent to use of the approaches by speech-language pathologists who had not used the classroom-based intervention approaches. Lack of time was equally ranked by the groups as a factor that discourages use of the approaches.

In summary, four of six comparisons of mean rankings of factors that encourage and discourage use of the approaches revealed significant differences between speech-language pathologists who had used and those who had not used classroom-based approaches. There was no pattern of significant findings.

Table 39

Comparisons of Rankings of Factors Encouraging and Discouraging Use of Approaches by Use of Approaches

Encouraging factor ( <i>N</i> = 230)	Use <i>M</i> rank <sup>a</sup>	Non-use <i>M</i> rank <sup>a</sup>	<i>t</i>	<i>p</i>
A. Flexibility of scheduling	2.1	1.9	-2.03	.044
B. Material resources	2.7	2.6	-.26	.794
C. Teacher support	1.2	1.5	2.98	.003
Discouraging factor ( <i>N</i> = 233)	<i>M</i> rank <sup>b</sup>	<i>M</i> rank <sup>b</sup>	<i>t</i>	<i>p</i>
A. Lack of administrative support	2.1	2.5	2.69	.008
B. Lack of time	1.6	1.5	-.36	.716
C. Lack of teaching background of SLP	2.3	2.0	-2.36	.019

<sup>a</sup>"1" indicated the greatest encouraging factor. <sup>b</sup>"1" indicated the greatest discouraging factor.

Existence of need for additional information for speech-language pathologists according to use of approaches. A chi-square analysis was performed at the .05 level of significance to detect differences between speech-language pathologists who had used one or more classroom-based approaches with one or more disorder types and those who had not used classroom-based approaches for intervention.

Of respondents who had used at least one of the classroom-based approaches, 91% perceived a need for additional information for speech-language pathologists who use the service delivery approaches. Of respondents who had used none of the classroom-based approaches, 77% perceived a need for additional information. A significant relationship was found between use of one or more of the approaches and the perception of a need for additional information for speech-language pathologists who use the approaches, with more

speech-language pathologists who had used at least one of the approaches considering that a need for more information exists ( $\chi^2(1, N = 247) = 5.39, p = .020$ ). Respondents who perceived a need for more information for speech-language pathologists who use classroom-based intervention were asked to convey their views on areas of need for additional information and preferred methods of obtaining information.

Areas of need for additional information for speech-language pathologists according to use of approaches. Table 40 presents the comparisons of respondents' mean rankings of areas of need for additional information for speech-language pathologists who use the service delivery approaches according to whether respondents had used one or more of the approaches. Comparisons of mean rankings of areas of need for additional information for respondents in the "use" and "non-use" categories showed no significant differences in mean rankings of the two groups, although for Area A the difference in mean rankings of the groups approached significance. Generally, areas of need for additional information for speech-language pathologists who use classroom-based intervention were similarly ranked by speech-language pathologists who had used one or more and those who had used none of the service delivery approaches.

Table 40

Comparisons of Rankings of Areas of Need for Additional Information for Speech-Language Pathologists by Use of Approaches

Area (N = 185)	Use M rank <sup>a</sup>	Non-use M rank <sup>a</sup>	t	p
A. Curriculum content	1.5	1.8	1.73	.086
B. Classroom behaviour management	2.4	2.2	-1.28	.202
C. Instructional techniques	2.1	2.2	.30	.764

<sup>a</sup>"1" indicated the area of greatest need.

Preferred methods of obtaining additional information for speech-language pathologists according to use of approaches. Table 41 displays the comparisons of respondents' rankings of preferred methods of additional information for speech-language pathologists who use the service delivery approaches according to whether they had used at least one of the approaches. Differences in mean rankings of methods of obtaining additional information for speech-language pathologists who use the approaches by respondents in the "use" group and those in the "non-use" group were not significantly different, although the difference in mean rankings between groups approached significance for Method A. In general, speech-language pathologists who had used one or more of the classroom-based approaches for intervention and those who had not used the approaches agreed on preferred ways of obtaining additional information on use of classroom-based service delivery approaches.

Table 41

Comparisons of Rankings of Preferred Methods of Obtaining Additional Information for Speech-Language Pathologists by Use of Approaches

Method (N = 176)	Use M rank <sup>a</sup>	Non-use M rank <sup>a</sup>	t	p
A. Inservices and conferences	1.3	1.6	1.95	.053
B. Journals	2.2	2.0	-.91	.366
C. Commercial programs	2.6	2.4	-1.16	.246

"1" indicated the most preferred method.

In summary, more speech-language pathologists who had used one or more of the classroom-based approaches perceived a need for additional information on use of the approaches than did those speech-language pathologists who have not used any of the approaches. Of those respondents who perceived a need, comparisons between mean rankings of areas and methods of additional information revealed no significant differences



between mean rankings of respondents who had used one or more and respondents who had used none of the classroom service delivery approaches. Speech-language pathologists have similar notions of areas of need for additional information and ways of procuring that information.

### Summary

In reporting findings of the study, respondents' characteristics were profiled. A description of speech and language services they provided were presented. Percentages, means, standard deviations, and ranges were used. Of respondents, 84% spent time on classroom-based assessment in a typical year, with a mean of 17.5% of total time spent, and 72% of respondents spent time on classroom-based intervention, with a mean of 22.1% of total time spent.

The first two research questions pertained to respondents' use of the seven service delivery approaches for classroom-based intervention and respondents' personal and professional characteristics and situational characteristics. Results of chi-square analyses at the .05 level of significance revealed no pattern of significant relationships among variables.

The next three research questions related to respondents' use of the approaches generally, as well as use with disorder types and grade level categories. Additionally, these questions concerned the judged success and appropriateness of the approaches. Percentages of use and percentages of success and appropriateness ratings were calculated. Overall, Approaches One and Two were in most frequent use. The approaches were used by the largest percentages of respondents for language disorders, followed by articulation, fluency, and voice disorders, in that order. The approaches were used by the largest percentages of respondents for students in Kindergarten to Grade 3, followed by Grades 4 to 6, Grades 7 to 9, and Grades 10 to 12, in that order. The approaches were judged successful with all disorder types and all grade level categories by a majority of respondents who used them. Judgements of appropriateness of the approaches were most numerous for

language disorders, followed by articulation, fluency, and voice disorders, in that order. Judgements of appropriateness of the approaches were most numerous for students in Kindergarten to Grade 3, followed by Grades 4 to 6, Grades 7 to 9, and Grades 10 to 12, in that order.

The next two research questions pertained to advantages and disadvantages of the approaches to speech-language pathologists, teachers, and caseload and non-caseload students, and to factors that encourage and discourage use of the approaches. Nondirectional dependent samples *t*-tests were used, with the .01 level of significance as the criterion due to multiple tests. Respondents' rankings of advantages and disadvantages and of encouraging and discouraging factors were similar. The primary advantage to speech-language pathologists was the increased carryover of speech and language skills to the classroom, and the primary disadvantage was the additional planning time involved. The major advantage to teachers was the growth in knowledge of the relationship between language and the curriculum, and the major disadvantage, as it was to speech-language pathologists, was the required planning time. The prime advantage to caseload students was the enhanced integration of speech and language goals with the curriculum, and the prime disadvantage was the decrease in individualization of programming. The major advantage to non-caseload students was supplemental exposure to language activities, and the major disadvantage was the reduction in the teacher's instructional time. The most facilitating factor was teacher support. The major constraining factor was lack of time, consistent with the disadvantages for speech-language pathologists and teachers.

The following research question concerned needs for further information on use of the approaches and preferred methods of obtaining information. A large percentage of respondents perceived a need for more information; therefore, nondirectional dependent samples *t*-tests were used to determine areas of need and preferred methods, with the .01 level of significance as the criterion due to multiple tests. Respondents' rankings of areas of need and preferred methods were consistent.

The last research question pertained to differences between respondents who had used and those who had not used the approaches. To test for relationships between use and judgements of the approaches, chi-square analyses were used, with .05 as the level of significance. For all disorder types and grade level categories, the approaches were judged more appropriate by those respondents who had used them than they were by those respondents who had not used them.

Nondirectional independent samples *t*-tests were conducted at the .05 level of significance to test for differences between the views of the two groups on advantages and disadvantages of the approaches to speech-language pathologists, teachers, caseload and non-caseload students and on factors that encourage and discourage use of the approaches. The two groups' views on advantages and disadvantages to the four groups were similar, although their views on encouraging and discouraging factors differed.

A chi-square analysis revealed that more respondents who had used the approaches perceived a need for additional information. Of those respondents who perceived a need for further information, nondirectional independent samples *t*-tests conducted at the .05 significance level revealed that respondents in the two groups shared views on perceived areas of need and preferred methods of obtaining information.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter restates the research questions, summarizes the results in the context of related research, and presents conclusions and recommendations. The chapter concludes with suggestions for future research.

The study examined Canadian speech-language pathologists practices and views relating to classroom-based service delivery, focussing on seven specific intervention approaches (see Appendix A). The first two research questions pertained to the relationships between speech-language pathologists' use of the classroom-based approaches and a number of personal and professional, and situational variables. The following three questions concerned the frequency of use of the approaches and to their perceived effectiveness and appropriateness. The next three research questions related to perceived advantages and disadvantages, and barriers and supports to the approaches, as well as perceived training needs for speech-language pathologists who use the approaches. The last question sought information on any existing differences between views of speech-language pathologists who use and those who do not use the approaches.

#### Summary of Results

At least three-quarters of respondents provided some assessment and intervention services in classrooms. Respondents who did provide classroom-based services spent approximately 40% of their time on classroom-based assessment and intervention. These results were somewhat different from those obtained in a study by Sanger et al. (1995), which found that over one-third of speech-language pathologists used solely a pullout approach to service delivery. However, the Sanger et al. (1995) study was conducted three years prior to this study, a time interval during which there was increased support of and demand for classroom-based services. In addition, the Sanger et al. (1995) study gathered

information on speech-language pathology services via a large-scale survey of teachers, principals, and school psychologists, leading to potentially inaccurate accounts of actual services provided by speech-language pathologists.

Results pertaining to Questions One and Two showed that respondents' use of the seven service delivery approaches was not definitively related to the personal and professional characteristics (i.e., gender, years of speech-language pathology experience in schools, teaching experience, possession of a Bachelor of Education or equivalent degree, possession of a master's degree in speech-language pathology, and certification status) or to the situational characteristics (i.e., caseload size and geographical work setting) examined in the study. Significant relationships were found between use of three of the seven approaches and geographical work setting, suggesting that speech-language pathologists who work in urban settings use Approaches Four, Five, and Seven more frequently than those who work in rural or both urban and rural settings. This is stated with caution because tests of significance at the .05 level were performed multiple times, increasing the likelihood of incurring Type I error. No reported research has investigated relationships between the use of classroom-based intervention approaches and these characteristics, so these results cannot be compared to those of existing reports.

Findings related to Question Three were that Approaches One and Two were used by a majority of respondents, with Approach One in most frequent use. These results are somewhat consistent with those of Elksnin and Capilouto's (1994b) small-scale survey of 31 speech-language pathologists in a South Carolina school district, the only published quantitative or qualitative research on classroom-based speech and language services to date. Results of that study indicated that Approaches One and Two were among the three most frequently used approaches, with Approach Two the most frequently used.<sup>3</sup> Unlike results

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<sup>3</sup> Elksnin and Capilouto (1994b) used descriptive labels for the seven approaches. However, for easy comparison, the approaches are referred to by number throughout this discussion.

of the present study. Elksnin and Capilouto (1994b) found that Approach Seven was in common use.

In answer to Question Four, results indicated that respondents used the approaches with all major disorder types. The largest percentage of respondents used the approaches for language disorders, followed in order by articulation, fluency, and voice disorders. Findings in this area were consistent with the literature, which commonly describes the provision of services within classrooms to language-disordered students (e.g., Brandel, 1992; Christensen & Luckett, 1990; Farber et al., 1992; Ferguson, 1992; Gerber, 1987; Moore-Brown, 1992; Wilcox et al., 1991). There are many fewer accounts of classroom-based services to students with articulation, fluency, and voice disorders (Achilles et al., 1991; Cooper, 1991; Cooper & Cooper, 1991; Roller et al., 1992). Elksnin and Capilouto (1994b) found that all respondents used classroom-based approaches for both language and articulation disorders, but that only 16.7% and 5.6% of respondents used these approaches for fluency and voice disorders. The fact that all respondents reported using classroom-based approaches for language and articulation intervention may have been related to the use of a common approach adopted by the group of respondents, who worked for the same school district. It should be noted that, in contrast to the present study, Elksnin and Capilouto's (1994b) study was limited to 31 respondents and collapsed the seven service delivery approaches into one category when investigating their use with disorder types.

With all disorder types, the approaches were judged successful by a majority of respondents who had used them. Approaches Three, Five, Six, and Seven received the highest percentages of "good" ratings. Due to the small numbers of respondents who had used the approaches for some disorder types, it was impossible to determine the most and least successful approach for each disorder type. The finding that Approach Seven generally received the most endorsement is partially comparable to the general results of Elksnin and Capilouto (1994b), who found that Approach Seven was considered "most useful" by 61% of respondents. Respondents in the present study rated Approaches Five

and Six the two next best approaches across disorder types. In contrast, respondents in Elksnin and Capilouto's (1994b) study judged Approaches Two and Three the next most useful approaches across disorders.

A majority of respondents considered the approaches appropriate with language intervention. Smaller percentages of respondents judged the approaches appropriate with articulation intervention, and still smaller percentages of respondents judged them appropriate with fluency and voice intervention. For all disorder types, Approaches One and Two were most frequently rated appropriate by respondents. Reduced percentages of respondents considered the remaining five approaches appropriate. A similar pattern of findings emerged from Elksnin and Capilouto's (1994b) survey, in which respondents perceived classroom-based approaches most appropriate for language intervention. Appropriateness ratings for articulation, fluency, and voice intervention declined in that order.

Findings related to Question Five showed that students in all grade level categories were served using the approaches. Use of the approaches for intervention was most common with students in Kindergarten to Grade 3. The approaches were less commonly used in the Grade 4 to 6 category and were in general rarely used in the Grades 7 to 9 and Grades 10 to 12 categories. Results of this section of the study parallel reports in the literature on the use of classroom-based approaches. Many articles describe the use of classroom-based approaches with Kindergarten to Grade 3 students (e.g., Achilles et al., 1991; Borsch & Oaks, 1992; Ellis et al., 1995; Farber et al., 1992; Norris, 1989; Roller et al., 1992). Accounts of classroom service delivery to students in Grades 4 to 12 are scarce (Anderson & Nelson, 1988; Buttril et al., 1989; Montgomery, 1992). Findings of this survey also coincide with those of Elksnin and Capilouto (1994b), which indicated that classroom-based approaches were used predominantly with younger students. Whereas 100% of respondents in their study reported using classroom-based approaches with elementary school students, only 33% and 22%, respectively, reported using these

approaches with middle (junior high) and high school students. For the purposes of that investigation, the seven service delivery approaches were considered as a group rather than examined individually.

Respondents who had used the approaches considered them relatively successful with students in the Kindergarten to Grade 3 and Grades 4 to 6 categories. The approaches were considered less successful in the Grades 7 to 9 and Grades 10 to 12 categories, although the small numbers of respondents in some categories did not afford commentary on success of the approaches with students in these categories. Approaches Four, Six, and Seven received the largest percentages of "good" ratings. Again, due to small proportions of respondents who rated the success of some approaches with some grade level categories, the most and least successful approaches for grade level categories could not be accurately determined. Findings of this portion of the study agree in part with general results of Elksnin and Capilouto's (1994b) study, which showed that Approach Seven was judged "most useful" by a majority of respondents. Contrary to the present study, in which Approaches Four and Six were found to be the approaches that were next most frequently rated "good" across grade levels, Elksnin and Capilouto's (1994b) study found that Approaches Two and Three were the next "most useful" approaches.

A majority of respondents judged the approaches appropriate to students in the Kindergarten to Grade 3 and Grades 4 to 6 categories, with slightly fewer respondents considering these approaches appropriate to students in the latter category. Respondents were in less agreement on the appropriateness of the approaches to students in Grades 7 to 12. Overall, Approaches One and Six were rated appropriate slightly more frequently than the other five approaches. These results are consistent with findings from Elksnin and Capilouto's (1994b) survey, which showed that the use of classroom-based intervention approaches was perceived by respondents as most appropriate to students at the elementary school level, which corresponds to the Kindergarten to Grade 3 and Grades 4 to 6 categories in this study. Fewer respondents judged these approaches appropriate to



students at the middle and high school levels, roughly equivalent to the categories encompassing Grades 7 to 12 in this study.

In answer to Question Six, respondents had similar perceptions of advantages and disadvantages of the classroom-based service delivery approaches to speech-language pathologists, teachers, and caseload and non-caseload students. The increased harmonization of speech and language goals and curriculum goals, and the carryover of speech and language skills to the classroom were considered the chief benefits of classroom-based service delivery. The additional time required for planning and the de-emphasis on individualized programming for students requiring speech and language services were judged the prime drawbacks of classroom-based approaches. Results of this part of the study are in accord with themes that recur in the literature. The advantages of goal integration and increased carryover of targeted skills are cited frequently as the major gain in the implementation of classroom-based intervention. The disadvantage of classroom-based services most often mentioned in the literature is the disadvantage ranked first by respondents in this study, that of the increased time necessary for planning. With two exceptions (i.e., advantages to teachers and disadvantages to noncaseload students), the first ranked advantages and disadvantages for all four groups of individuals (i.e., speech-language pathologists, teachers, caseload students, and non-caseload students) coincide with the first rankings by respondents in Elksnin and Capilouto's (1994b) survey.

Results pertaining to Question Seven indicated that teacher support was perceived to be the largest factor facilitating the use of classroom-based intervention. The largest constraining factor was considered to be lack of time. As this study is the first investigation of speech-language pathologists' views on supports and barriers to classroom-based approaches, findings of this study cannot be compared to results of related research.

Findings related to Question Eight demonstrated that a large majority of respondents perceived that further information is needed for speech-language pathologists who use classroom-based approaches. The area of greatest need was judged to be

curriculum content. The preferred method of obtaining information was inservices or conferences. Although the Elksnin and Capilouto (1994b) study did not examine perceived areas of need for additional information, respondents also ranked attending inservices and conferences as their first choices. However, their respondents considered reading journals the least desirable of four preference choices, whereas in the current study, reading journals was ranked second.

In answer to Question Nine, respondents who had used the approaches considered them more appropriate with the four disorder types than did respondents who had not used them. Similarly, respondents who had used the approaches judged them more appropriate to the four grade level categories than did respondents who had not used them. These results concurred with those of Elksnin and Capilouto (1994b), in which respondents who had adopted classroom-based intervention approaches more frequently judged them appropriate than did those respondents who had not used such approaches.

The two groups of respondents corresponded in their perceptions of advantages and disadvantages of the classroom-based approaches to speech-language pathologists, teachers, caseload students, and non-caseload students. Thus, respondents' judgements in this area were independent of their use of the approaches.

Based on their experience, speech-language pathologists who had adopted classroom-based intervention regarded teacher support as the major factor that encourages use of the approaches. This group considered lack of administrative support as the prime constraint on use of the approaches. Speech-language pathologists who had not used the classroom-based approaches for intervention viewed flexibility of scheduling as the major encouraging factor. For this group, lack of a teaching background was considered the chief obstacle to use of the classroom-based intervention approaches. Lack of time was regarded as a limiting factor by both speech-language pathologists who had used and those who had not used the approaches.

More speech-language pathologists who had used one or more of the classroom-based approaches perceived a need for additional information than speech-language pathologists who had not used any of the approaches. Respondents who perceived that a need existed had similar notions of areas of need for further information and ways of procuring that information, regardless of whether they had used the approaches.

### Conclusions

Classroom-based assessment and intervention are commonly used by speech-language pathologists. Speech-language pathologists' use of classroom-based intervention approaches is independent of gender, years of school speech-language pathology experience, teaching experience, possession of a Bachelor of Education or equivalent degree, possession of a master's degree in speech-language pathology, certification status, or caseload size. It is conceivable that speech-language pathologists who have a Bachelor of Education or equivalent degree and teaching experience are not in the classroom significantly more than those without an education background because they have chosen a second career in speech-language pathology as an alternative to being in the classroom. Lack of an education background deters some speech-language pathologists from using classroom-based approaches, yet neither of these characteristics is prerequisite to use of these approaches. Geographical work setting is a possible influence on the use of classroom-based approaches. Those speech-language pathologists who work in urban settings are more likely to use these approaches, possibly due to less time spent on travel between schools.

Speech-language pathologists most often use classroom-based approaches that require a lesser degree of collaboration with teachers, such as observation of students and assisting students with their work. Approaches One and Two in the study. They less often use approaches that require a greater degree of collaboration, such as station teaching, parallel teaching, remedial teaching, supplemental teaching, and team teaching. Approaches

Three to Seven in the study. Speech-language pathologists' focus on less collaborative approaches is likely related to the additional planning time required by speech-language pathologists and teachers who adopt highly collaborative approaches. This notion is supported by results of the survey, which indicated that increased time for planning was perceived as the major disadvantage of classroom-based approaches. Speech-language pathologists' expressed need for further information on the curriculum may be an added deterrent to use of approaches that require more collaboration.

Speech-language pathologists use classroom-based approaches primarily for language intervention with students at the early elementary level (i.e., Kindergarten to Grade 3), the disorder and grade level for which these approaches are judged to be most appropriate both by those who use them and those who do not. The predominance of oral and written language across the curriculum in the early elementary classroom simplifies the task of integrating language and curriculum objectives. Classroom listening, speaking, reading, writing, and thinking activities provide a natural milieu for targetting communication skills of language-disordered students. The focussed use of classroom-based approaches at the early elementary level may be partially attributable to a concentration of caseload students at this level. It may also be due to disinclination on the part of speech-language pathologists or secondary teachers to adopt these approaches with older students for such diverse reasons as role uncertainty, student stigmatization, curriculum diversity, or scheduling constraints.

Speech-language pathologists who use classroom-based approaches judge them generally successful for intervention with language, articulation, fluency, and voice disorders at the elementary level (i.e., Kindergarten to Grade 6). The more collaborative approaches, Approaches Three, Five, Six, and Seven, were considered most successful. Speech-language pathologists who use classroom-based approaches consider them generally more appropriate than those who do not use these approaches. Therefore, if speech-language pathologists use classroom-based intervention, they are more likely to regard this type of

intervention as appropriate. The converse interpretation may also be true: If speech-language pathologists consider classroom-based intervention approaches appropriate, they tend to use them. Due to the design of the study neither cause nor sequence of use and appropriateness judgements can be ascribed on the basis of these results.

The two least collaborative approaches, Approaches One and Two, were used by the largest percentages of respondents and were most frequently rated appropriate by all respondents regardless of use. However, the more collaborative approaches, Approaches Three to Seven, were most often judged successful by respondents who had used them. This finding indicates a discrepancy between classroom-based approaches that are most often used and those that are most often judged successful. It underscores the need for concerted effort by all educational team members to facilitate further collaboration between speech-language pathologists and teachers. Specific actions for increasing collaboration are recommended later in this chapter.

Speech-language pathologists view the overriding advantages of classroom-based intervention approaches as the incorporation of speech and language goals with instructional goals and the increased generalization of new skills to familiar environments. The main disadvantages of these approaches are the extra planning time required and the decreased individualization of students' programs. Increased time for planning is fundamental to the successful implementation of classroom-based approaches. Administrator and teacher support are also essential, as speech-language pathologists engaged in this type of service delivery acknowledge. The promoting factors of time and support, in addition to more flexible scheduling, should encourage speech-language pathologists who have not adopted classroom-based approaches to do so.

A need exists for further information, particularly in the area of curriculum content, for speech-language pathologists who adopt classroom-based approaches. Inservices and conferences are favoured methods of gaining information.

## Recommendations

The results and conclusions of the study and related literature lead to a number of recommendations. The list does not imply that recommended actions are not occurring in school districts. Rather, they are proffered as practical guidelines during a time of role transition for speech-language pathologists.

It is recommended that:

1. Speech-language pathologists, in collaboration with teachers and other educational team members, systematically monitor the effectiveness of service delivery approaches for individual students through evaluation of progress toward speech and language goals (for a discussion of intervention efficacy levels, see Fey & Cleave, 1990).
2. Speech-language pathologists continue to collaborate with teachers and seek further collaboration by recruiting the active support of teachers and administrators (for suggestions for enlisting teacher and administrative support, see Montgomery, 1990, and Prelock et al., 1995).
3. Speech-language pathologists continue to provide inservice training for teachers to increase knowledge of the relationship between overall academic success and language skills and to encourage use of strategies for facilitating receptive and expressive language development in the classroom.
4. Speech-language pathologists continue to broaden their knowledge through continuing education opportunities or self-training programs on topics related to classroom-based approaches.
5. District special services administrators and principals provide active support for classroom-based approaches by allowing additional planning time and increased flexibility of scheduling, particularly in districts where schools are geographically dispersed.

6. District special services administrators and principals provide active support for classroom-based approaches by facilitating speech-language pathologists' attendance at relevant conferences and inservices.
7. District special services administrators, in collaboration with speech-language pathologists, develop and regularly review policies on service delivery options, to include classroom-based service delivery (for recent discussions of service delivery options, see Cirrin & Penner, 1995, and OSLA, 1996).
8. District special services administrators, in collaboration with speech-language pathologists, formally disseminate information on classroom-based approaches to principals and parents.
9. Speech-language pathology training programs include more coursework on topics pertinent to classroom-based approaches, such as the language demands of school, typical and nontypical reading and writing development, curriculum content, learning disabilities, and collaborative methods.
10. Teacher training programs include more coursework on typical speech and language development, on nontypical speech and language development and its potential effects on academic performance, on classroom strategies to minimize the difficulties of students with communication disorders, and on the role of the speech-language pathologist in schools.

A caveat to these recommendations is that speech-language pathologists, in collaboration with teachers and other educational team members, must use individual students' communicative needs as the criteria for selection of service delivery approach(es), rather than adhering to generalized use of any prescribed approach(es) for all students.

#### Directions for Future Research

Classroom-based service delivery warrants further investigation due to contemporary trends in special education and the potential advantages of this type of

intervention. Because these data were gathered from the Canadian population of speech-language pathologists working in schools, the generalizability of conclusions is limited to Canada. The study can be replicated in the United States and the findings can be compared to current findings. Prevalence and patterns of use of classroom-based approaches were identified by the study. Frequency of use and percentages of students served through these approaches can be documented. Qualitative research can be conducted to seek causal factors in use of the approaches, as well as reasons that they are considered inappropriate or less than successful for some disorders and grade levels.

Future research can attempt through experimental or quasi-experimental studies to establish empirical evidence of the efficacy of classroom-based approaches. Longitudinal designs can follow students with language disorders over a three- to five-year period. To date, published empirical research consists of one three-month-long study of preschool children, which found that a combination of classroom-based approaches to lexical expansion in this age group was as effective as traditional pullout sessions (Wilcox, Kouri, & Caswell, 1991).

Finally, related areas for further research are teachers' and administrators' attitudes toward the collaborative process, students' perceptions of learning outcomes of classroom-based intervention, policies on classroom-based intervention in delivery of speech and language services, and cost-benefit analyses of classroom-based intervention approaches versus traditional intervention approaches.

This study sets a precedent in large-scale investigation of the use and perceived efficacy of classroom-based delivery of speech and language services. Findings reflect speech-language pathologists' current role shift from diagnosticians of speech and language disorders to speech, language, and communication specialists who collaborate with teachers in the provision of a unified approach to students' communication needs. Planning, implementing, and refining methods of service delivery to meet changing requirements is an ongoing process that demands commitment, creativity, and a willingness



to acquire new skills. As the role of speech-language pathologists in schools continues to evolve, the obvious merits of classroom-based approaches lie in helping students improve their communicative skills within the classroom and in having a positive effect on academic performance and social interaction.

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## APPENDICES

**APPENDIX A:**  
**SERVICE DELIVERY APPROACHES INVESTIGATED**

## SERVICE DELIVERY APPROACHES INVESTIGATED

**Approach One:** Within the classroom, either the speech-language pathologist (SLP) or the teacher observes, while the other assumes primary instructional responsibility.

**Approach Two:** Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.

**Approach Three:** The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.

**Approach Four:** Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.

**Approach Five:** Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.

**Approach Six:** Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.

**Approach Seven:** Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate (adapted from Elksnin and Capilouto, 1994b, as adapted from Friend, 1992, October).



**APPENDIX B:**  
**SURVEY INSTRUMENT**

## QUESTIONNAIRE ON SERVICE DELIVERY

1. Your gender:

Female..... ☐

Male..... ☐

2. Years you have worked in schools as a speech-language pathologist [SLP]: \_\_\_\_\_

3. Have you worked in schools as a teacher?

Yes..... ☐ If Yes, how many years? \_\_\_\_\_

No..... ☐

4. Degrees or diplomas you have earned (check all that apply):

B.Ed.or equivalent..... ☐

Other Bachelor's..... ☐

Master's..... ☐

Doctorate..... ☐

Any other (please specify) \_\_\_\_\_

5. Your certification status (check all that apply):

CASLPA certified..... ☐

ASHA certified..... ☐

Not certified..... ☐

6. Your approximate caseload number: \_\_\_\_\_

7. Grade levels you are mandated to serve (check all that apply):

Kindergarten(K)-Grade 3.... ☐ % of time you currently spend on services to K-3 \_\_\_\_\_

Grades 4-6..... ☐ % of time you currently spend on services to 4-6 \_\_\_\_\_

Grades 7-9..... ☐ % of time you currently spend on services to 7-9 \_\_\_\_\_

Grades 10-12..... ☐ % of time you currently spend on services to 10-12 \_\_\_\_\_

8. Your geographical work setting (check all that apply):

Urban (> 5000 population).. ☐

Rural (< 4999 population)... ☐

9. Do you provide both assessment and intervention services?

Yes..... ☐

No..... ☐

10. Over a typical year, what percentage of your total time do you spend on administration? This may include record keeping, report writing, etc.

Please specify \_\_\_\_\_

11. Over a typical year, what percentage of your total time spent on assessment do you spend on assessment in classrooms (regular or special) during the school day (e.g., 9 AM to 3 PM)?  
This may include classroom observation, curriculum-based assessment, etc.

None..... ☐

Other (please specify) \_\_\_\_\_

12. Over a typical year, what percentage of your total time spent on intervention do you spend on intervention in classrooms (regular or special) during the school day (e.g., 9 AM to 3 PM)?  
This may include supportive learning activities, team teaching, etc.

None..... ☐

Other (please specify) \_\_\_\_\_

### CLASSROOM-BASED INTERVENTION APPROACHES

This section asks about your use and rating of seven service delivery approaches for intervention within either the regular or special education classroom. It asks you if you have used each approach for intervention and with which disorders and grades, its level of success for disorders and grades, and its appropriateness for disorders and grades even if you have not used it. Even if you have not used the approach, please indicate in the far right column whether you would consider it appropriate for disorders and grades.

13. Approach One: Within the classroom, either the SLP or the teacher observes, while the other assumes primary instructional responsibility.

	Check if you have used this approach:		If yes, rate its success:			Whether or not used, is it appropriate?	
	Y yes	N no	G good	F fair	P poor	A appropriate	N not appropriate
<u>Disorder, Any Grade</u>							
Language.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Articulation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fluency.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voice.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Grade, Any Disorder</u>							
K-Grade 3.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 4-6.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 7-9.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 10-12.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. Approach Two: Within the classroom, the SLP or the teacher assumes primary instructional responsibility while the other assists students with their work, monitors behaviour, corrects assignments, etc.

	Check if you have used this approach:		If yes, rate its success:			Whether or not used, is it appropriate?	
	Y yes	N no	G good	F fair	P poor	A appropriate	N not appropriate
<u>Disorder, Any Grade</u>							
Language.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Articulation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fluency.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voice.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Grade, Any Disorder</u>							
K-Grade 3.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 4-6.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 7-9.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 10-12.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Approach Three: The SLP and the teacher divide instructional content into two parts. Within the classroom, groups are switched so that all students receive instruction from each individual.

	Check if you have used this approach:		If yes, rate its success:			Whether or not used, is it appropriate?	
	Y yes	N no	G good	F fair	P poor	A appropriate	N not appropriate
<u>Disorder, Any Grade</u>							
Language.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Articulation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fluency.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voice.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Grade, Any Disorder</u>							
K-Grade 3.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 4-6.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 7-9.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 10-12.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Approach Four: Within the classroom, the SLP and the teacher each instructs separate parts of the group, simultaneously addressing the same instructional objectives.

	Check if you have used this approach:		If yes, rate its success:			Whether or not used, is it appropriate?	
	Y yes	N no	G good	F fair	P poor	A appropriate	N not appropriate
<u>Disorder, Any Grade</u>							
Language.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Articulation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fluency.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voice.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Grade, Any Disorder</u>							
K-Grade 3.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 4-6.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 7-9.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 10-12.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Approach Five: Within the classroom, the SLP or the teacher instructs students who have mastered the material to be learned, while the other reteaches students who have not mastered the material.

	Check if you have used this approach:		If yes, rate its success:			Whether or not used, is it appropriate?	
	Y yes	N no	G good	F fair	P poor	A appropriate	N not appropriate
<u>Disorder, Any Grade</u>							
Language.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Articulation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fluency.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voice.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Grade, Any Disorder</u>							
K-Grade 3.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 4-6.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 7-9.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 10-12.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. Approach Six: Within the classroom, the SLP or the teacher presents the lesson using a standard format, while the other adapts the lesson for students who cannot master the material.

	Check if you have used this approach:		If yes, rate its success:			Whether or not used, is it appropriate?	
	Y yes	N no	G good	F fair	P poor	A appropriate	N not appropriate

Disorder, Any Grade

	Y	N	G	F	P	A	N
Language.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Articulation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fluency.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voice.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Grade, Any Disorder

	Y	N	G	F	P	A	N
K-Grade 3.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 4-6.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 7-9.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 10-12.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. Approach Seven: Within the classroom, both the SLP and the teacher present the lesson to all students. This may be through shared lecturing or having one begin the lesson while the other takes over when appropriate.

	Check if you have used this approach:		If yes, rate its success:			Whether or not used, is it appropriate?	
	Y yes	N no	G good	F fair	P poor	A appropriate	N not appropriate

Disorder, Any Grade

	Y	N	G	F	P	A	N
Language.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Articulation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fluency.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voice.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Grade, Any Disorder

	Y	N	G	F	P	A	N
K-Grade 3.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 4-6.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 7-9.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 10-12.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

This section asks you about the previous seven classroom service delivery approaches for intervention in general. Even if you have not used these approaches, please rank the choices listed from 1 to 3, with 1 indicating your highest rank.

For example, to indicate the greatest advantage of these approaches, put 1 in the blank provided. To indicate the next greatest advantage of these approaches, put 2 in the blank provided. To indicate the next greatest advantage of these approaches, put 3 in the blank provided.

20. Advantages of these approaches to the SLP (rank order):

- Increases teacher's awareness of SLP's role..... —
- Increases number of students served..... —
- Promotes carryover of skills to classroom..... —

21. Advantages of these approaches to the teacher (rank order):

- Decreases class interruptions..... —
- Promotes carryover of skills to classroom..... —
- Increases knowledge of relationship between language and curriculum..... —

22. Advantages of these approaches to caseload students (rank order):

- Integrates speech-language goals and instructional goals..... —
- Decreases stigmatization..... —
- Promotes carryover of skills to classroom..... —

23. Advantages of these approaches to non-caseload students (rank order):

- Provides opportunity for leadership role..... —
- Increases exposure to language activities..... —
- Provides cooperative instruction..... —

24. Disadvantages of these approaches to the SLP (rank order):

- Requires additional planning time..... —
- Requires classroom behaviour management..... —
- Requires incorporation of speech-language goals and instructional goals.... —

25. Disadvantages of these approaches to the teacher (rank order):

- Requires additional planning time..... —
- Decreases teacher's instructional time..... —
- Requires sharing professional territory..... —

26. Disadvantages of these approaches to caseload students (rank order):

- Emphasizes caseload student's impairment..... —
- Requires tracking instructional goals..... —
- Decreases individualization of programming..... —

27. Disadvantages of these approaches to non-caseload students (rank order):

Increases boredom level of high-functioning students..... —  
Decreases teacher's instructional time..... —  
Decreases level of expectation in the classroom..... —

28. Things that encourage use of these approaches (rank order):

Flexibility of scheduling..... —  
Material resources..... —  
Teacher support..... —

29. Things that discourage use of these approaches (rank order):

Lack of administrative support..... —  
Lack of time..... —  
Lack of teaching background of SLP..... —

30. Is there a need for more information for SLPs who adopt these approaches?

Yes..... ☐  
No..... ☐ **If No, please go to question 33 below.**

31. Areas of need for more information for SLPs who adopt these approaches (rank order):

Curriculum content..... —  
Classroom behaviour management... —  
Instructional techniques..... —  
Other (please specify).....

32. Your preferred ways of obtaining additional information on use of these approaches (rank order):

Inservices/conferences..... —  
Journals..... —  
Commercial programs..... —  
Other (please specify).....

- 33. Thank you for responding. If you would like to clarify a response or make a specific comment on service delivery to students within the classroom, use the space below. Please return the questionnaire in the enclosed envelope.**



**APPENDIX C:  
FIRST LETTER OF TRANSMITTAL  
TO ALL SPEECH-LANGUAGE PATHOLOGISTS**

105 Larkhall Street  
St. John's, NF  
A1B 2C5  
March 7, 1996

Dear Speech-Language Pathology Colleague:

As a speech-language pathologist working in schools while completing my Master of Education degree at Memorial University, I am seeking your help in conducting a national study of speech-language pathologists who work in schools. As I was unable to obtain addresses for only speech-language pathologists working in schools, both school and other speech-language pathologists are part of my carefully selected random sample. **If you are a speech-language pathologist who works in schools**, I would appreciate it if you would read the cover letter which follows on the next page and complete the questionnaire. **If you are not a speech-language pathologist who works in schools**, could you please indicate this in the box provided below, and return **this letter and the blank questionnaire** in the enclosed stamped envelope as soon as possible.

A high rate of return from all speech-language pathologists selected is essential to the validity of my study. Thank you very much for supporting me in this research endeavour.

I am not a speech-language pathologist who works in schools.....☐

Sincerely,

Margaret Dohan, M.Sc., S-LP(C)  
Speech-Language Pathologist

**APPENDIX D:**  
**FIRST LETTER OF TRANSMITTAL**  
**TO SPEECH-LANGUAGE PATHOLOGISTS WORKING IN SCHOOLS**

105 Larkhall Street  
St. John's, NF  
A1B 2C5  
March 7, 1996

Dear

As a speech-language pathologist working in schools while completing my Master of Education degree at Memorial University, I am conducting a national study of speech-language pathologists' service delivery to students within the classroom setting. You, as a colleague working in schools, are the best possible source of information on the delivery of speech and language services in classrooms, so I am seeking your valuable support in doing my research.

Please find enclosed a questionnaire. Questionnaires returned to me will be confidential. No information which will identify individuals or schools is requested, as I am interested in overall responses rather than individual responses. However, because I would like to know how representative my sample is, I have included a code on the survey and envelope which will be discarded when received.

I would be grateful if you would take approximately 15 minutes of your time to fill out the questionnaire and return it to me in the stamped envelope by March 29, 1996. I would appreciate it if you could answer all relevant questions; however, you are free to refrain from answering any question you prefer to omit. I feel that the information obtained from this survey will benefit those in our profession. I plan to share results of this study with you through an article in the Journal of Speech-Language Pathology and Audiology and/or a presentation at the annual CASLPA conference.

This study meets the ethics guidelines of the Faculty of Education and Memorial University. If you have any questions, please do not hesitate to contact my advisor, Dr. Henry Schulz, at (709) 737-3502. If you would like to speak to someone not associated with the study, please contact Dr. Stephen Norris, Associate Dean (Acting), Research and Development, at (709) 737-3402.

A high rate of return is essential to the validity of my study. Thank you very much for supporting me in this research endeavour.

Sincerely,

Margaret Dohan, M.Sc., S-LP(C)  
Speech-Language Pathologist

**APPENDIX E:**  
**SECOND LETTER OF TRANSMITTAL**  
**TO ALL SPEECH-LANGUAGE PATHOLOGISTS**

105 Larkhall Street  
St. John's, NF  
A1B 2C5  
March 27, 1996

Dear

A week or two ago you received my letter and questionnaire about speech and language service delivery to students within the classroom setting. As I mentioned, I am seeking your help in conducting a national study of speech-language pathologists who work in schools. I was unable to obtain addresses for only speech-language pathologists working in schools, so my carefully selected random sample contains both school and other speech-language pathologists. A high rate of return from all speech-language pathologists selected is essential to the validity of my study.

**If you are a speech-language pathologist working in schools**, your response will provide me with valuable information on classroom service delivery. I know that your time is precious, but you are one of the group that is most knowledgeable about delivery of speech and language services in schools. If you have not yet returned the questionnaire, I will be most grateful if you can take the time (about 15 minutes) to complete it. Thanks so much for your participation in this nation-wide study!

**If you are a not a speech-language pathologist who works in schools**, could you please indicate this in the box on the original cover letter and return it to me. Thanks so much for your response!

**If you have already mailed the questionnaire or letter**, I will be receiving it soon. Thanks very much for supporting my research endeavour!

Sincerely,

Margaret Dohan, M.Sc., S-LP(C)  
Speech-Language Pathologist

APPENDIX F:  
SECOND LETTER OF TRANSMITTAL  
TO SPEECH-LANGUAGE PATHOLOGISTS WORKING IN SCHOOLS

105 Larkhall Street  
St. John's, NF  
A1B 2C5  
March 27, 1996

Dear

A week or two ago you received my questionnaire on speech and language service delivery to students within the classroom setting. As I mentioned, you are part of a carefully selected random sample and I am seeking your help in conducting a national study of speech-language pathologists who work in schools. Your response will provide me with valuable information on classroom service delivery. A high rate of return from all speech-language pathologists selected is essential to the validity of my study.

I know that your time is precious, but you are one of the group that is most knowledgeable about delivery of speech and language services in schools. If you have not yet returned the questionnaire, I will be most grateful if you can take the time (about 15 minutes) to complete it. Thanks so much for your participation in this nation-wide study!

If you have already mailed the questionnaire, I will be receiving it soon. Thanks so much for supporting my research endeavour!

Sincerely,

Margaret Dohan, M.Sc., S-LP(C)  
Speech-Language Pathologist



**APPENDIX G:**  
**THIRD LETTER OF TRANSMITTAL**  
**TO ALL SPEECH-LANGUAGE PATHOLOGISTS**

105 Larkhall Street  
St. John's, NF  
A1B 2C5  
April 22, 1996

Dear

As I mentioned in the covering letter you received several weeks ago, I am a speech-language pathologist working in schools and I am seeking your help in conducting a national study of speech-language pathologists who work in schools. Both school and other speech-language pathologists are part of my carefully selected random sample. A high rate of return from all speech-language pathologists selected is essential to the validity of my study.

**If you are a speech-language pathologist who works in schools**, I would be very grateful if you would read the cover letter which follows on the next page and complete the questionnaire.

**If you are not a speech-language pathologist who works in schools**, I would appreciate it if you could indicate this in the box provided below, and return **this letter** in the enclosed stamped envelope as soon as possible. Thanks so much for your response!

I am not a speech-language pathologist who works in schools.....☐

Sincerely,

Margaret Dohan, M.Sc., S-LP(C)  
Speech-Language Pathologist

APPENDIX H:  
THIRD LETTER OF TRANSMITTAL  
TO SPEECH-LANGUAGE PATHOLOGISTS WORKING IN SCHOOLS

105 Larkhall Street  
St. John's, NF  
A1B 2C5  
April 22, 1996

Dear

Attached please find my questionnaire about speech and language service delivery to students within classrooms, in case you have misplaced the copy that I sent to you several weeks ago. As I mentioned in the previous covering letter, you are part of my carefully selected random sample and your response will provide me with very useful information on classroom service delivery. A high rate of return is essential to the validity of my study.

I know that your time is valuable, but this questionnaire is the best way of collecting information about delivery of speech and language services in schools. If you have already mailed your questionnaire, I will be receiving it soon. Thanks for responding!

If you have not yet returned the questionnaire, I will be most grateful if you can take the time to complete it. Thanks so much for your participation in this national study!

Sincerely,

Margaret Dohan, M.Sc., S-LP(C)  
Speech-Language Pathologist







