FAMILY IMPLEMENTATION OF A CULTURALLY APPROPRIATE POSITIVE BEHAVIOR SUPPORT PLAN: AN EXPERIMENTAL AND DESCRIPTIVE ANALYSIS

by

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B.Sc. (Hons.), University of Alberta, 1999

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES
DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND SPECIAL EDUCATION

We accept this thesis as conforming to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA
October 2004

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Title of Thesis:  
Family Implementation of a Culturally Appropriate Positive Behavior Support Plan: An Experimental and Descriptive Analysis

Degree:  
Master of Arts

Year:  
2004

Department of  
Educational Psychology and Special Education

The University of British Columbia
Vancouver, BC  Canada
Problem behaviors are a major source of stress for families of children with developmental disabilities. Such stressors may include physical exhaustion, social isolation, and marital distress (Singer & Irvin, 1991). Studies on the efficacy of family-centered positive behavior support plans have empirically demonstrated that this approach can minimize problem behavior and enhance family quality of life. To date, however, none of the studies emerging from the positive behavior support literature have investigated the affect of culture on the development and implementation of a positive behavior support plan. The purpose of this study was to use an adapted cultural assessment tool in the design and implementation of a positive behavior support plan with one child of a family of a diverse cultural background who also demonstrated problem behavior in a valued, home-based routine. The study employed a single-subject withdrawal design. Both quantitative and qualitative measures were used to collect data across five phases: baseline, intervention, withdrawal, return to intervention and follow-up. Quantitative results indicated the presence of a clear functional relationship between the implementation of a culturally enhanced positive behavior support plan and improvements in a child's participation in a dinner routine and substantial reductions in problem behavior. Qualitative results yielded three themes relevant to providing effective behavior intervention services for families of a diverse cultural background. The results are discussed with reference to previous research, contributions, implications, limitations, and future directions for research with culturally diverse families.
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ACKNOWLEDGEMENTS

I would like to take this opportunity to thank a number of people who have given me tremendous support over the last two years. Emi, Ken, Mya, and Asano; you have been a wonderful family to work with. Thank you for opening up your home and hearts to me. Your patience and dedication throughout this process will not be forgotten. Joe; your wisdom and guidance have helped me learn and grow as a person. It has been a pleasure and honor to work with you. Pat and Laurie; thanks for taking the time to be on my committee; your comments and suggestions where both helpful and thought provoking. Lauren, my fellow research colleague; thanks for helping me with my data collection and analysis. More than anything, it was nice knowing that someone else was going through a similar experience as me. To my roommate Chelsea; thanks for putting up with the late night work sessions and the trials of paper that always littered my path. And last, but not least, I would like to thank my family and friends back home in Alberta. This journey had made it necessary to leave my childhood home, but you were always there in my thoughts.
CHAPTER ONE - INTRODUCTION

Children and youth with developmental disabilities often exhibit a wide range of problem behaviors. Behaviors such as aggression, noncompliance, self-injury, and property destruction can severely affect the quality of life for this group of individuals (Hunt, Johnson, Owen, Ormerod, & Babbitt, 1990; Vaughn & Horner, 1997). Impediments include limited learning environments, educational segregation, and diminished social relationships with family members and peers (Carr et al., 1999). While problem behaviors are not unique to children with developmental disabilities, deficits in cognitive, language, social, emotional, and sensory development can result in a continuation of maladaptive behaviors long after the toddler and preschool years (Dishion & Patterson, 1996; Hunt et al.; Lucyshyn, Horner, Dunlap, Albin, & Ben, 2002). Problem behaviors also pose a major source of stress for families. Such stressors may include physical exhaustion, social isolation and marital distress (Lucyshyn et al.; Singer & Irvin, 1991). Daily routines may be disrupted and community involvement may become sporadic or nonexistent (Turnbull & Ruef, 1997). These stressors are often experienced over long periods of time if problem behaviors remain unchecked.

Given the negative influence of problem behavior on families of children with developmental disabilities, there exists a tremendous need for effective behavior support services in the home (Turnbull & Ruef, 1996). In recent years, a new science of positive behavior support (PBS) has emerged as a collaborative, assessment-based approach to developing effective interventions for individuals with problem behavior (Koegel, Koegel, & Dunlap, 1996). Across home, school, and community settings, service providers of PBS strive to help parents and other family members make durable reductions in their child’s
problem behavior and improve the quality of life of their child and family as a whole. Service providers also emphasize the development of collaborative partnerships with family members and other key stakeholders in the support process (e.g., educators, psychologists, social workers) (Horner, Albin, Sprague, & Todd, 2000; Lucyshyn & Albin, 1993). This partnership helps to establish a respectful, trusting, and reciprocal relationship between service providers and family members (Turnbull & Turnbull, 2001). Proponents of PBS argue that, without collaboration, it is unlikely interventions will be experienced by families as effective, acceptable, feasible, and sustainable over time (Lucyshyn, Albin, & Nixon, 1997; Moes & Frea, 2000).

Although there is growing evidence for the effectiveness and acceptability of the positive behavior support approach in family contexts, there is no empirical work to date that focuses on one important aspect of family life in North America today: that is, the increasing cultural diversity of children and families in need of family-based behavioral support services (Chen, Downing, & Peckham-Hardin, 2002; Lucyshyn et al., 2002). Culture can have a profound effect on the interactions between families and service providers. A failure to acknowledge cultural diversity can make collaboration and service delivery difficult (Chen et al.; Degani, Wietlisbach, Poisson, Stein, & Royeen, 1994; Lynch & Hanson, 1998). For example, many Asian cultures stress the involvement of extended family members in the decision-making process. North American ideals, however, emphasize independence and freedom of thought during this process (Salisbury & Dunst, 1997). Such differences in philosophy may require specific adjustments in the process of family-based behavioral support services. Also, many families from another culture do not have English as their first language. This can lead to communication barriers between families and professionals.
during the development of behavior supports in the home. Cultural accommodations would need to be made in these situations in order to minimize any communication misunderstandings.

The need for culturally responsive approaches to the delivery of behavioral support services to children and families is particularly relevant in Canada. Canada is regarded internationally as a culturally diverse nation. Data from Statistics Canada show that Canada was home to about five million immigrants in 1996, a 14.5% increase since 1991 (Statistics Canada, 1997). This increase was slightly more than three times the growth rate (4%) of the Canadian-born population. Immigrants represented 17.4% of the population, the largest proportion in more than 50 years. The sources of immigration to Canada have also changed greatly. European-born citizens continued to account for the largest proportion of all immigrants living in Canada in 1996. But, for the first time this century, they accounted for less than half of the total immigrant population due to a growing influx from Asia and the Middle East.

In 1996, British Columbia had the second largest immigrant population after Ontario. It had 903,000 immigrants, a 25% increase since the previous census, highest among the provinces. Almost 217,000, or 21% of all recent immigrants to Canada, chose to settle in British Columbia, a higher proportion than BC's 13% share of Canada's total population. Immigrants accounted for over a third of Vancouver's population in 1996, making it the census metropolitan area with the second largest immigrant population. Nearly one in every five residents of Vancouver was an immigrant who arrived in Canada in the last 15 years.

The diversity of culture in this country and province poses significant challenges to the provision of adequate PBS services to families from a different culture. In this paper, I
describe a study that incorporated an assessment of family culture in the design and
implementation of a positive behavior support plan for a child and family of a diverse
cultural background. In this chapter, I will first review the origins and critical features of
PBS and then briefly summarize research that supports its efficacy. Second, I will review the
emergence of family-centered PBS, its central features, and provide a more in-depth review
of research that supports its efficacy. Third, I will review literature on culturally responsive
practices with families of children with a disability and relate this information to the
provision of PBS to families of a diverse culture. Also, I will review empirical research
investigating culture and families of children with a disability. Last, based on this literature
review, I will present my research question.

Positive Behavior Support

PBS is a collaborative, functional approach to behavior intervention that has gained
credibility and popularity over the last 15 years (Carr et al., 2002; Horner et al., 2000). It is a
comprehensive, research-based approach that is aimed at producing meaningful and lasting
change for persons who engage in problem behavior in home, school, or community settings.
Through the practice of functional assessment, practitioners take an in-depth look at the
message behind problem behavior and the contextual variables that are associated with its
occurrence. They then work with consumers such as teachers and families to develop PBS
interventions that aim to reduce problem behavior and improve the quality of life for all
those who are involved with the person who engages in problem behavior. Multiple
outcomes are sought including: (a) a generalized reduction in problem behavior; (b) an
increase in functional skills; (c) the development of positive and productive social
relationships; and (d) improvements in a person’s meaningful inclusion in home, school and
community life (Dunlap & Fox, 1996). Below, I provide an in-depth review of the theoretical and empirical foundations and critical features of the science of PBS. I conclude this section with a brief review of empirical support for the efficacy of this approach.

**Theoretical and Empirical Foundations of Positive Behavior Support**

Carr et al. (2002) outline three major contributors to the discipline of PBS: (a) applied behavior analysis, (b) the normalization/inclusion movement, and (c) person-centered values. Each of these areas are discussed below.

**Applied Behavior Analysis**

PBS is not a new approach; it has evolved from a long experimental history firmly grounded in applied behavior analysis (ABA) (Baer, Wolf, & Risley, 1987; Carr, Robinson, & Palumbo, 1990; Deitz, 1978; Holburn, 1997; Horner et al., 1990; Horner, 2000; Mace & Roberts, 1993). Applied behavior analysis encompasses over 35 years of research investigating the application of specific principles, methods, and procedures associated with the science of behavior change (Carr et al., 2002; Pierce & Epling, 1980). As outlined by Skinner (1953), applied behavior analysis involves the extension of experimental analysis to variables and contingencies that govern human behavior.

According to Lucyshyn et al. (2002), three developments in the science of applied behavior analysis have lead to the evolution and growth of the PBS approach. First, applied behavior analysis has developed a technology of functional assessment that is an essential tool in the design of behavior support plans (Horner & Carr, 1997; O’Neill et al., 1997). Second, applied behavior analysis has been instrumental in providing a greater understanding of the variables that influence behavior. During the 1960’s and 1970’s, applied behavior analysis concentrated on operant conditioning principles and the
development of consequence-based interventions (Holburn, 1997). This focus has now been expanded to include research on the influences of ecological events and immediate antecedent events on behavior, which is resulting in the development of more comprehensive interventions based on these variables (Horner, Vaughn, Day, & Ard, 1996; Kennedy & Itoken, 1993; Repp & Horner, 1999; Smith & Iwata, 1997). Third, applied behavior analysis has produced a wealth of behavioral and educational strategies that have been shown to be effective in controlled research settings. Methods such as shaping, fading, chaining, prompting, and reinforcement have all emerged from the science of applied behavior analysis (Carr et al., 2002). The current movement is to bridge the gap between research and practice by using these empirically-based technologies with real people in real situations (Carr et al., 2002; Dunlap & Kern, 1997). Increasingly, research is being conducted in natural settings with the needs of the consumer held paramount (Carr et al., 1999). Collaboration between the researcher and consumer is also promoted in the design and implementation of a behavior support plan. The emphasis is in designing PBS plans that are both technically sound and a good contextual-fit with the person it is designed to help as well as with those who will be implementing it (Lucyshyn et al., 1997; Vaughn, Dunlap, Fox, Clarke, & Bucy, 1997). The concept of contextually-appropriate behavior support will be discussed in more detail further on in this chapter.

Normalization/Inclusion Movements

The normalization and inclusion movements emphasize that individuals with disabilities should have the same opportunities in life as any other average person who does not have a disability (Turnbull & Turnbull, 2001; Wolfensberger, 1972). This means having access to the same opportunities as others in life in terms of housing, education, work,
recreation, and the development of social relationships (Carr et al., 2002). Therefore, an emphasis is placed on including individuals with a disability in general education classrooms and supported living arrangements as well as providing them with opportunities to be part of regular community events (e.g., religious groups, gyms, clubs).

**Person-Centered Values**

Person-centered values promote the development of personal dignity and choice in individuals with a disability. The values considered important to informing empiricism are outlined in three processes: (a) person-centered planning, (b) self-determination, and (c) wraparound services (Carr et al., 2002). Person-centered planning is a collaborative process for identifying goals in an intervention plan based upon a vision of an inclusive lifestyle (Kincaid, 1996; Vandercook, York, & Forrest, 1989). In this approach, the needs and desires of an individual with a disability provide the framework for an intervention plan that is also tailored to their unique strengths and characteristics. Self-determination involves the implementation of a person-centered plan by providing an individual with a disability the opportunity to make their own choices, problem solve, self-manage, and self-advocate (Wehmeyer, 1992). The overriding goal is to place the power of decision-making in the control of the person with a disability as much as possible. Wraparound services refer to a set of organizational practices that promotes communication, collaboration, and resource sharing between service providers (Clark & Hieneman, 1999). It is a model designed to overcome organizational and professional barriers that may get in the way of providing an individual and their family with comprehensive support. The aim of wraparound services is to make sure that the goals outlined during the person-centered planning process can be met
while empowering the individual and their family and enhancing overall quality of life for everyone involved.

**Critical Features of PBS**

PBS uses educational methods to enhance an individual's quality of life and to minimize problem behavior. (Horner et al., 2000; Koegel et al., 1996). The goals of this approach are two-fold (Carr et al., 2002). The primary goal is to enhance to the quality of life of the person receiving support and the people affected by problem behavior (e.g., families, teachers, employers, community members, peers). PBS focuses on understanding the child, the message behind problem behavior, and the context that surrounds the child's behavior (Rao & Kalyanpur, 2002). Secondly, PBS strives to make problem behavior irrelevant, inefficient, and ineffective, therefore reducing and eliminating problem behavior. This is accomplished via the development of sound intervention plans that are both practical and effective (Horner et al., 2000). An emphasis is placed on the use of environmental adaptations that reduce problem behaviors and replace them with alternative, more appropriate skills.

Over the last decade, numerous leaders in the field of PBS have highlighted a number of characteristics unique to the practice of positive behavior support (Carr et. al., 2002; Dunlap et al., 2000). The following section will look at the following eight key features: (a) comprehensive lifestyle change; (b) life span perspective; (c) ecological validity; (d) stakeholder participation; (e) functional assessment; (f) multicomponent support plans; (g) emphasis on prevention; and (h) flexibility and scientific practices.
Comprehensive Lifestyle Change

As previously indicated, one goal of PBS is the improvement in quality of life for those individuals receiving support as well as for those supporting them. Comprehensive lifestyle change involves addressing many dimensions of quality of life, including social relationships, personal satisfaction, employment, self-determination, recreation and leisure, community adjustment and integration (Horner et al, 1990; Hughes, Hwang, Kim, Eisenman, & Killian, 1995). The primary intervention strategies in a PBS plan focus on enhancing family and community interactions, not just reducing problem behavior (Turnbull & Ruef, 1997). This may include encouraging access to places, people, activities, and events in the community that previously had been limited.

Life Span Perspective

PBS acknowledges that comprehensive lifestyle change does not happen overnight. Rather, meaningful lifestyle change often occurs over an extended period of time, often over many years and decades. Therefore, a life span perspective is necessary in order to provide effective intervention over different transitions and challenges faced by an individual throughout their life (Turnbull & Turnbull, 2001).

Ecological Validity

Ecological validity is defined as the application of scientific research and practices to real-life contexts. This means conducting research in natural settings and including people who support individuals receiving intervention as the primary intervention agents. This differs from other scientific practices where research is conducted in a laboratory or clinic with the scientist acting as the intervention agent. This feature is important to the positive
behavior support philosophy because it promotes the normalization and inclusion of individuals with problem behavior in natural community contexts (Carr et al., 2002).

Stakeholder Participation

In positive behavior support, stakeholders (e.g., family members, teachers, neighbors, employers, friends) are viewed as active participants and collaborators in the design and implementation of behavior support plans. Often, stakeholders provide valuable information on the strengths, needs, and challenges of a person exhibiting problem behavior. Their participation also is vital in defining what enhanced quality of life would look like for all those involved in the behavior support process. This collaborative approach involves active listening to the perspectives of the stakeholders and incorporating these shared ideas and suggestions directly into the PBS plan (Rao & Kalyanpur, 2002).

Functional Assessment

A functional assessment is a tool used to analyze and understand human behavior. It involves a systematic process that strives to identify the events that predict and maintain problem behavior (O’Neill et al., 1997). Empirical literature has substantiated that problem behavior can serve a communicative purpose for individuals with a disability (Carr & Durand, 1985; Carr et al., 1999). The communicative function of problem behavior can be divided into four broad categories: (a) obtain social attention; (b) obtain access to a preferred item or activity; (c) escape or avoid a nonpreferred task or activity; and (d) obtain automatic reinforcement (O’Neill et al., 1997; Repp & Horner, 1999). It is important to understand the communicative function of problem behavior in order to understand the meaning behind it. A functional assessment generates hypotheses about the intent of specific problem
behaviors. These hypotheses then guide the development of a multicomponent behavior support plan (Carr et al., 1994).

The completion of a functional assessment plays an integral role in the development of a PBS plan. There are four distinct stages in this process: (a) conducting a functional assessment interview; (b) conducting direct observations; (c) developing a behavior support plan; and (d) implementing and monitoring the support plan. During the assessment process, information is collected from a number of different stakeholders, including family members and others who are affected by the behaviors in question. These stakeholders participate by providing information and insights about the child, the behaviors of concern, the perceived purpose of problem, and the contexts in which such behaviors occur (Rao & Kalyanpur, 2002).

**Multicomponent Support Plans**

Comprehensive PBS includes the application of multiple intervention components. These components include ecological, preventative, teaching, and consequence strategies that address ecological variables, immediate triggers, and functions of problem behavior. Each of these components is necessary to change the many facets of an individual’s living context that may be challenging (Horner & Carr, 1997). For example, changing the dosage of a particular medication, implementing a visual support system, providing multiple opportunities for choice-making, and the systematic instruction of relaxation techniques can all be combined into one intervention plan. Multicomponent interventions also allow for flexibility; components of a behavior plan can be revised in response to behavior change, context change, or new assessment information (Horner, 2000).
Emphasis on Prevention

At the crux of the PBS approach is the notion that the best time to intervene on problem behavior is when the behavior is not occurring (Horner et al., 1990; Carr et al., 2002). Therefore, many of the strategies outlined in a multicomponent behavior support plan focus on the prevention of problem behaviors. This is in contrast to traditional approaches, which place the emphasis on developing effective consequences after a problem behavior had occurred. Proactive strategies include skill building and environmental manipulations (Carr et al., 2002). Skill building strategies include enhancing and strengthening communication skills (Carr & Durand, 1985) as well as promoting self-management capabilities (Koegel, Koegel, Hurley, & Frea, 1992). Environmental manipulations encompass strategies such as enhancing opportunities for choice making (Dyer, Dunlap, & Winterling, 1990; Vaughn & Horner, 1997), modifying setting events (Horner, Day, & Day, 1997), or revising an individual’s school curriculum (Dunlap, Kern-Dunlap, Clarke, & Robbins, 1991).

Flexibility and Scientific Practices

As outlined above, the science of applied behavior analysis has played a major role in the growth and development of PBS. In the past, the influence of this discipline has resulted in sound research based upon carefully controlled experiments consisting of data collection via direct observations. However, this left little room for other research methodologies such as naturalistic observations, case studies, or correlational analyses (Risley, 1999). At present there is a growing concern that controlled, laboratory-based research does not provide information that can be easily adapted to the complexity of real-life community settings (Carr et al., 2002). PBS respects the need for socially-relevant information applicable to
naturally occurring events and situations. PBS research methodology encourages the use of flexibility in its practices by providing support for the use of correlational analyses, naturalistic observations and case studies, in addition to research that uses experimental designs. While data collection is still expected to be systematic, acceptable collection techniques include qualitative measures, ratings, interviews, and questionnaires.

*Research on Positive Behavior Support*

Researchers in the area of applied behavior analysis and PBS have contributed a growing empirical foundation for a wide range of positive behavior support interventions. These include: (a) ecological and setting event strategies such as minimizing or neutralizing aversive events in a person's life (Horner et al., 1997; Kennedy & Itkonen, 1993); (b) preventive strategies such as choice making or the use of visual supports (Clarke, Dunlap, & Vaughn, 1999; Dunlap et al., 1994); (c) teaching strategies such as self-monitoring and functional communication training (Durand, 1993; Todd, Horner, & Sugai, 1999); and (d) consequence strategies such as differential reinforcement and extinction (Horner et al., 2000; Vollmer, Iwata, Zarcone, Smith, & Mazaleski, 1993). Empirical support for the efficacy and acceptability of PBS can also be found in the research of Carr, Horner, and their colleagues (1999). This group completed a meta-analysis of the efficacy of PBS interventions across 109 single-subject intervention studies published between 1985 and 1996. These studies were focused on stimulus or reinforced-based interventions for individual's with developmental disabilities who demonstrated severe problem behaviors (e.g., aggression, self-injury, property destruction, tantrums). The analysis indicated that positive behavior interventions reduced problem behavior across a variety of participants,
settings, and interventionists. Effect sizes, signifying the magnitude of reduction in problem behaviors, often exceeded over 80% across the studies.

Family-Centered Positive Behavior Support

The field of PBS has evolved to include a family-centered perspective when designing behavior support plans for children in family settings. This is the second key development in relation to my research question. A family-centered approach is important for a number of reasons. Families differ with regard to their composition, cultural and ethnic backgrounds, personalities, strengths of each member, history, interaction patterns, values, and priorities as a family unit (Dunlap & Fox, 1996). Families also are experts in their own right when it comes to their child. Family members have an intimate knowledge of a child’s history, behavioral tendencies, idiosyncrasies, preferences, and special abilities. A child’s family also is the unifying unit across school, home, and community settings. The family unit provides a continuum of support and represents the most enduring resource over a child’s life span. The well being of this social unit is a prominent determinant in a child’s development.

Family-centered PBS recognizes the primary role that the family plays in a child’s life. It maintains that working collaboratively with families is the only sound way to ensure the success of an intervention program. In this approach, the needs of the child are described in the context of the needs of the family. The goal of the intervention process includes enriching the life of both the child and his or her entire family.

This next section will look at three areas relevant to family-centered PBS. The first sub-section will look at three theoretical and empirical foundations of family-centered PBS. The second sub-section will look at five features related to the practice of family-centered
PBS. The final sub-section will provide an in-depth review of research related to family-centered PBS.

*Theoretical Origins and Empirical Foundations for Family-Centered Positive Behavior Support*

In their chapter on positive behavior support with families, Lucyshyn et al. (2002) described three foundations for family-centered PBS: (a) behavioral family intervention; (b) the family support movement; and (c) ecocultural theory. These foundations are briefly discussed below.

*Behavioral Family Intervention*

Behavioral family intervention literature makes a number of contributions to the PBS philosophy (Lucyshyn et al., 2002; Singer, Goldberg-Hamblin, Peckham-Hardin, Barry, & Santarelli, 2002). First, behavioral family intervention is one of the best-researched approaches, offering a number of empirically validated strategies for behavioral parent training. These strategies include modeling and coaching in natural family settings, written instruction, and self-evaluation checklists (Sanders & Dadds, 1993). These strategies also have been found to be effective for different children, including those with developmental disabilities, conduct disorders, anxiety disorders, and sleep problems (Sanders, 1996).

Second, behavioral family intervention recognizes that different families have varying needs. This approach understands the importance of supplying other means of family focused support such as respite care, stress-reduction training, and marital counseling (Singer & Irvin, 1991). Third, behavioral family intervention stresses the importance of collaborative relationships and individualized services. The goal is to develop a supportive relationship
with parents and to promote effective parenting practices across different environments (Sanders & Dadds, 1993).

*Family Support Movement*

The community living and family support movements have had a huge impact on public policy and federal law in the United States over the last 40 years (Lucyshyn et al., 2002). The influence of parent and professional advocates for individuals with developmental disabilities has changed the way family support services view the role of the family. Previously, the family support model placed family members in a role of inactive observer, with the professional seen as the expert and having the majority of control over a child’s program. At present, however, the family support movement has redefined the role of the family, making family members central decision makers in their child’s life (Salisbury & Dunst, 1997). Dunst, Trivette, Gordon, and Starnes (1993) summarized six important features of the family support movement: (a) a sense of community; (b) the mobilization of resources and supports; (c) a consumer driven-responsibility shared by family and family support program; (d) the protection of family integrity; (e) a focus on strengthening family functioning; and (f) the use of proactive and preventative measures. These features have been incorporated into the family-centered PBS philosophy.

*Ecocultural Theory*

Ecocultural theory refers to information about family ecology as it pertains to families raising a child with a disability (Bailey & Wolery, 1992). It is a theory of child development derived from cross-cultural ethnographic studies of family life (Gallimore, Goldenberg, & Weisner, 1993; Gallimore, Weisner, Bernheimer, Guthrie, & Nihira, 1993). Brofenbrenner (1979) maintained that a family occupies a niche in all social systems by
providing for the sustenance and nurturance of its internal members while supplying the larger society with the reproduction of economic and social organization. Central to the ecocultural approach is the notion that a family is influenced by the environment in which they live, which in turn shapes and transforms basic daily living patterns and activity settings (i.e., daily routines). These daily routines are comprised of several elements: (a) time and place; (b) people present; (c) material resources; (d) goals and beliefs about family life; (e) tasks and how they are organized; (f) motives and feelings; and (g) patterns of interaction. Families proactively strive to construct routines that are meaningful, congruent with their children’s characteristics, and sustainable over time (Lucyshyn & Albin, 1993). In terms of providing effective support to families dealing with challenging behavior, ecocultural theory suggests that the family routine should be used as a unit of analysis for intervention. Embedding an intervention plan within a valued routine can lead to the development of a PBS plan that is more likely to be accepted and implemented by the family.

Features of Family-Centered Positive Behavior Support

There are a number of core features relevant to family-centered PBS approach. Five of these features are: (a) designing individualized services; (b) incorporating parent-professional collaborations; (c) emphasizing family strengths; (d) designing technically sound and contextually appropriate behavior support plans; and (e) using the activity setting as a unit of analysis. These features are discussed next.

Designing Individualized Services

Family systems theory and ecocultural theory highlight the fact that each family is a unique group composed of many different elements. Families can vary in composition, socioeconomic status, age, parenting experience, and cultural background (Lynch & Hanson,
The community surrounding a family also can vary widely according to the type of services and support they can offer to a family, including the quality of educational services, the availability of family support services, neighborhood safety, and economic opportunity (Lucyshyn et al., 2002). Turnbull & Turnbull (2001) emphasize that professionals need to be flexible in the manner in which they design intervention plans so that each plan can account for unique family interests and needs.

Incorporating Parent-Professional Collaborations

Collaborative partnerships between families and service providers are another feature of family-centered PBS (Lucyshyn & Albin, 1993; Lucyshyn et al., 2002; Vaughn, Dunlap et al., 1997). Collaboration implies establishing reciprocal relationships that are nonhierarchical and based on equality (Turnbull & Turnbull, 2001; Webster-Stratton & Hancock, 1998). Effective teams should promote creative problem solving amongst family members and other key stakeholders in a child's life. Family members can function as experts on specific issues concerning their child, family life, and community. Service providers, in turn, may provide their expertise on areas such as general family dynamics, behavior management principles, or a myriad of other issues that may be important for the formation and development of a PBS plan. This collaborative partnership should be fostered throughout the entire process of designing and implementing a behavior support plan.

Salisbury and Dunst (1997) claim that there are four elements to a cooperative learning partnership: (a) positive interdependence; (b) individual accountability; (c) collaborative skills; (d) and group processing. They also note that it is often not realistic to expect family members to know how to instinctively interact in such a collaborative manner. Often, service providers need to explain to families the importance of this type of
interaction; coaching and encouragement may be necessary in order to facilitate confidence in this process. In the end, active involvement of family members in the support process can lead to improved service utility and increase the likelihood that interventions will be implemented with fidelity (Turnbull & Turnbull, 2000). The development of collaborative relationships also can help the service provider create a climate of trust with the family. This fosters an environment in which family members feel safe exploring the nature of their child's behavior. An important goal of this process is to empower families by increasing their confidence in their parenting skills and by strengthening overall family functioning (Dunst et al., 1993). Research (Janis & Mann, 1977; Meichenbaum & Turk, 1987; Webster-Stratton & Hancock, 1998) has shown that collaborative relationships between parents and professionals can lead to reduced attrition rates, increased motivation and commitment, and an increase in situational generalization.

Emphasizing Family Strengths

Another important feature of family-centered PBS is the emphasis on strengthening the family system. All families have strengths. The stresses involved in raising a child with a disability, however, may cause some families to overlook them. The strengths a particular family may possess could be limitless (Dunst, Trivette, & Deal, 1988). Some examples include having a caring and loving attitude, being optimistic, being very knowledgeable about their child, maintaining a well-organized home, having a supportive spouse and extended family, and having a sense of humor about life. The identification of family strengths can have numerous benefits in the design and implementation of a PBS plan. As noted in the previous section, a focus on family strengths can lead to the development of cohesive and collaborative relationships between family members and service providers. A
plan based on a family’s best attributes may also have a better chance of being implemented effectively. A focus on strengths may also foster better problem solving for other family-related issues (Kaiser & Hemmeter, 1989). Having a child with a disability also can play a role in strengthening family ties, expanding social networks, and developing an attitude of tolerance and advocacy (Summers, Behr, & Turnbull, 1989).

Designing Technically Sound and Contextually Appropriate Behavior Plans

Positive behavior support plans designed to be used in family environments should be both technically sound and contextually appropriate. A technically sound behavior support plan is one in which behavior supports are: (a) logically linked to each feature of the problem behavior as identified by the functional assessment; (b) consistent with established principles of behavior change; and (c) render problem behaviors irrelevant, effective, and inefficient (Horner et al., 1997; O’Neill et al., 1997). Technically sound plans typically incorporate multiple components. These components include: (a) setting event strategies; (b) preventive strategies; (c) teaching strategies; (d) consequence strategies, and (e) emergency procedures.

Albin, Lucyshyn, Horner, and Flannery (1996) provide some insights into likely reasons why behavior support plans sometimes falter. They suggest that behavior plans may fail due to an incongruity between specific components of a behavior support plan and relevant individual and environment variables. These variables fall into one of three categories: (a) the characteristics of the child; (b) the characteristics of the people who will implement the plan (in this case, the family); and (c) the features of the environment where the support plan is to be carried out. For example, a plan that does not meet the specific needs of the individual it was meant to help, does not reflect the values and goals of the
plan's key implementers, and ignores important features of the environment where it will be implemented will most likely be unsuccessful. Plans that are technically sound but do not fit with a family's lifestyle may be rejected by a family, implemented inaccurately, or not maintained over time (Lucyshyn, Kayser, Irvin, & Blumberg, 2002). Thus, in addition to being technically sound, a plan also needs to be contextually appropriate. A contextually appropriate positive behavior support plan should: (a) reflect family goals and values; (b) build upon family skills and strengths; (c) utilize family resources and supports; and (d) be embedded in the daily routines of a family's life.

The steps involved in developing a technically sound and contextually-appropriate support plan include: (a) conducting a comprehensive assessment, including a functional assessment and a family ecology assessment; (b) developing a collaborative partnership with key stakeholders; (c) designing a behavior support plan; (d) providing support for plan implementation; and (e) providing for plan evaluation and follow-up support (Lucyshyn & Albin, 1993). The family assessment should include an identification of: (a) the characteristics, goals and values, resources, and activity settings of family members; and (b) the impact of the child's disability on family life (Gallimore, Weisner, Kaufman, & Bernheimer, 1989). This information on family characteristics and ecology provides the basis for designing support plans with good contextual fit. In the end, the overall goal is to provide a support plan that improves a child's behavior and lifestyle, enhances parenting and problem solving skills, and strengthens the family as a whole (Lucyshyn et al., 1997).

Activity Setting as Unit of Analysis

There is growing support in the professional literature for embedding intervention plans into family activity settings or daily routines. Bernheimer and Keogh (1995) maintain
that the feasibility of an early intervention plan may be related to how closely it is matched to the daily routines of the child’s family. They propose that “successful interventions are ones that can be woven back into the daily routine; they are the threads that provide professionals with the means to reinforce, rather than fray, the fabric of everyday life” (Bernheimer & Keogh, p. 430). They suggest that the daily routines of the family reflect personal goals and beliefs, as well as provide valuable information about the way families organize their lives, establish roles, and spend the majority of their time. Embedding home programming recommendations into existing family daily routines enables targeted skills to be taught in naturally occurring contexts with minimal inconvenience to family members (Rainforth & Salisbury, 1988). This approach is focused on making changes in real situations, which facilitates the generalization of intervention strategies across all aspects of family home life as well as encouraging a healthy parent-child relationship. In this respect, parents can maintain their role as the caregiver without having to become a therapist, which is required for teaching skills in more directive intervention plans.

Gallimore, Goldenberg et al. (1993) suggest that families organize their daily routines into 10 different accommodation domains (i.e., family subsistence, domestic workload, child care tasks, services, home/neighborhood safety and convenience, child peer groups, marital roles, instrumental/emotional support, father/spouse role, and parent information). These domains offer a means of gathering information and allow for the development of a detailed picture of a family’s daily life. It is important to remember, however, that assessment is a continual process; just as the daily routines and lives of the family fluctuate over time, so too must the intervention plan in order to ably address these
changes. Periodically monitoring for alterations in a family’s daily routines and adapting interventions accordingly would address any changes that do occur.

Research on Family-Centered Positive Behavior Support

There is an emerging set of empirical studies that support the efficacy of family-centered positive behavior support. Arndorfer, Miltenberger, Woster, Rortvedt, and Gaffaney (1994) conducted one of the first empirical studies that looked at using a functional assessment in a natural home setting. In this study, family members were trained to conduct functional analyses in their home to determine the function of the problem behavior demonstrated by their child with a developmental disability. The success of the behavior support strategies that were generated by these parent-directed analyses offered some of the first evidence of the efficacy of functional assessment-based intervention in natural family contexts.

In their longitudinal, multiple-baseline study, Lucyshyn et al. (1997) expanded the research on family-centered PBS by introducing two innovations: (a) the activity setting as a tool for measuring success in a PBS plan and (b) contextual fit as a guide in the design of a contextually appropriate behavior support plan. A teenager with multiple disabilities and severe problem behavior and her family members participated in this study. Following the development of a comprehensive multicomponent PBS plan designed in collaboration with the family, the teenager’s parents were taught to implement the plan in four valued family routines in both home and community settings. The authors also used a measure of contextual fit to ensure that the intervention plans were designed and implemented in a manner that fit with family goals and routines. Using a multiple-baseline probe design across settings, the authors were able to demonstrate that the introduction of the support plan led to
a reduction in problem behavior and improvements in routine participation across a 26 month period of baseline, intervention, and follow-up. Repeated measures of social validity and goodness of fit demonstrated the contextual fit of the behavior support plan to the lifestyle of the teenager and her family.

Vaughn and colleagues also conducted a number of studies that support the context of the activity setting and the promotion of parent-professional collaborations in the design and implementation of family-centered positive behavior support plans (Clarke, Dunlap, & Vaughn, 1999; Vaughn, Dunlap et al., 1997; Vaughn, Wilson, & Dunlap, 2002). In the study by Vaughn, Dunlap et al. (1997), a collaborative team, which included the participant’s mother, designed interventions that were implemented in three home and community settings. A quasi-experimental, single-subject design was used to demonstrate that the implementation of these supports by the participant’s mother resulted in a reduction of problem behavior and improvement in cooperative responses. In another study, Clarke et al. (1999) used a single-subject withdrawal design to demonstrate a reduction of problem behavior and an increase in on-task behavior during the implementation of a behavior support plan for an early morning routine. In one of their most recent studies, Vaughn et al. (2002) extended the literature on community-based applications of PBS with the parent as interventionist by using a single-subject, multiple-baseline design to demonstrate a reduction in disruptive behavior for a young boy with autism in the context of a fast-food restaurant. It should be noted that in this last study the participant and his family were of Nigerian descent. However, no mention of ethnic diversity or culture was presented.

Koegel, Steibel, and Koegel (1998) demonstrated how PBS plans designed with parent-professional collaboration could help families of young children with autism reduce
aggression towards infant siblings. Three families with preschool-aged children diagnosed with autism participated in this study. For each child, a functional assessment was conducted that addressed the multiple functions of their problem behavior. In collaboration with each child’s family members, an individualized, multicomponent positive behavior support plan was designed and implemented by each child’s parents in a home routine where aggression towards a sibling often occurred. Via a multiple-baseline design across the families, results indicated that there was a functional relationship between parent implementation of the multicomponent positive behavior support plan and reduction in each child’s aggression towards a sibling.

In one of the most comprehensive studies conducted so far, Carr et al. (1999) implemented a longitudinal, multiple-baseline study across three individuals with severe problem behavior. Positive behavior support plans were designed with numerous stakeholders, ranging from family members to teachers and community members, and implemented across a variety of home and community settings. Results indicated that problem behaviors were reduced while spontaneous communication and task engagement improved for each of the participants.

Moes and Frea (2000) provided the first empirical evidence demonstrating how contextual fit can influence aspects of behavior support plan design and implementation within family contexts. The authors compared child and family outcomes of a prescriptive intervention approach with outcomes of a contextualized intervention approach in one family raising a young child with autism. Upon completion of a functional assessment, a prescriptive approach was used involving the implementation of an evidence-based treatment package selected by the authors. The parents were trained to implement the
prescribed treatment package during a bedtime routine. The authors then introduced a contextualized approach that involved an assessment of family context and parent-professional collaboration in the design of a behavior support plan. The parents also were trained to implement the contextualized behavior support plan during the bedtime routine. Results indicated that the prescriptive approach showed initial improvements in problem behavior but little improvement in on-task behavior. The improvements in problem behavior also decreased over time and did not generalize to a second routine. The contextualized approach showed immediate and stable reductions in problem behavior and an increase in on-task behavior. The behavior change initiated by the contextualized approach also generalized to another nontrained routine and was sustained over a three month period.

In the final study to be reviewed, Moes and Frea (2002) addressed how the assessment of family ecology features can be used to increase the compatibility of teaching procedures utilized during important family routines. Specifically, the authors investigated how variables pertaining to family context (i.e., care giving demands, family support, patterns of social interaction) can be used to individualize behavior support plans designed to support the use of functional communication training (FCT) procedures during valued family routines. Three families raising preschool children with autism who exhibited problem behavior in a home setting participated in this study. A multiple baseline design across participants was used to track levels of problem behavior and functional communication across four phases: (a) baseline; (b) FCT; (c) contextualized FCT; and (d) follow-up. During the FCT phase, a functional assessment was used to guide the selection of a standardized FCT treatment package that was implemented by each family within a valued family routine. During the contextualized FCT phase, an effort was made to individualize
and modify the standardized FCT package by gathering information on each family regarding issues of family context. Results indicated that problem behaviors decreased and functional communication increased during both the FCT and contextualized FCT phases. However, parental ratings for the sustainability of the intervention packages were higher during the contextualized FCT phase. Also, the behavior change resulting from the contextualized FCT intervention generalized to routines where training did not occur. Overall, this study demonstrated that the contextualization of a FCT treatment package did not compromise the efficacy of a standardized intervention procedure and contributed to positive family perceptions of the treatment and to generalized outcomes.

Culturally Responsive Practices

*What is Culture?*

The third and final key development in relation to my research question is the importance of culturally responsive practices to the PBS process. Culture plays a significant role in shaping human behavior. It is influential in molding our attitudes, values, desires, and interactions (Chen et al., 2002), impacting our communities and social institutions. Historically, the influence of culture on human development has been recognized as far back as the classical Greek era (Dona, 1991). Even during psychology’s formative years, Wundt (1921) recognized the impact culture had on human learning patterns.

It is difficult to conceptualize culture in one brief, simple statement; there exists no universally accepted single definition of this framework. Culture can encompass external referents such as artifacts, buildings, or social institutions. It can also include internal referents such as ideologies, values, and belief systems (Hughes, Seidman, & Williams, 1993). As outlined by Loden and Rosener (1991), cultural characteristics can either be
primary or secondary. Primary characteristics are traits that are with us from birth and are immutable. This would include variables like age, race, gender, ethnicity, disability, or sexual orientation. Secondary characteristics are those that we adapt and acquire throughout our life span, such as language, geographic location, religion, family status, education, work experience, profession, and income (Chen et al., 2002). Hughes et al. maintain that all individuals develop within a cultural context that determines what and how we learn as we grow and mature. These ‘blueprints for learning’ can be transmitted from generation to generation through socialization patterns and interactions. It is a unique, individualized process that is constantly evolving and changing throughout our life spans (Lynch & Hanson, 1998).

It is important to differentiate culture from two other terms often used interchangeably with this concept: ethnicity and race (Betancourt & Lopez, 1993). Ethnicity refers to a group of individuals characterized by a common nationality or language. An individual’s cultural makeup often includes one’s ethnicity, but it is also made up of a number of other variables such as language, socioeconomic status, religion, and educational level. Race is typically defined in terms of certain physical characteristics in people, in particular, skin color, facial features, and hair type. There is much criticism for classifying individuals in groups according to race. It is argued that racial groupings are rather arbitrary and lack scientific validity (Jones, 1991). Instead of looking at race alone, researchers are encouraged to look at cultural variables as they relate to different social and biological factors (Betancourt & Lopez).
Canada is vibrant, dynamic society well known for its cultural diversity (Mandell & Duffy, 2000). This diversity is based on the ever-changing cultural composition of Canadian citizens. According to 1996 Census Data, Canada is home to approximately 5 million foreign born individuals. Immigrants account for approximately 17% of the country’s population, but these numbers increase substantially in the large metropolitan areas. Vancouver, for example, consists of 31.1% visible minorities.

Canadians, for the most part, have embraced immigration with grace, respect, and open-mindedness (Mandell & Duffy, 2000). There are, however, a number of social and psychological implications for those who have recently immigrated to this country. Culture shock is a process that many individuals new to Canada experience. Culture shock is described as a sense of discomfort and disorientation encountered by immigrants when basic values and beliefs that were once held in esteem in their home country are challenged with a set of new and different beliefs and behavior patterns. Often, problem solving, decision making, and interaction patterns are compromised in the new, foreign environment. This may lead to feelings of frustration, anger, depression, withdrawal, or illness. Families who arrive with a child with a disability are even more fragile and prone to this process.

The impact of culture shock differs from family to family. Families who live over time in a culture different from their own may begin to adapt and change due to the process of acculturation (Harry, 1992). Acculturation refers to the degree that a family from a diverse culture begins to identify and live within their new cultural context. The way a family learns to cope and survive within two different cultural frameworks may help determine how quickly a family can adapt to their new surroundings (Barnwell & Day, 2000).
Cultural Influences on Families

The behavioral patterns of individuals are shaped by a variety of sociocultural, psychological, and developmental forces. A family’s values and practices may be influenced by a variety of different variables including ethnicity, language, nationality, socioeconomic status, religion, education level and geographic level (Chen et al., 2002; Locke, 1992). In particular, families raising a child with a developmental disability are influenced by perspectives on child rearing practices, disability, family roles and structure, and communication processes. This next section will look at each of these four perspectives in greater detail.

Perspectives on Child-Rearing

Child-rearing practices are influenced by a number of different factors that may vary from culture to culture. Parents set expectations for their child based on developmental expectations (e.g., feeding, eating, sleeping), procedures for discipline, and the influence of extended family and community members (Harry, 1992). These goals are all based on skills that will help facilitate a child’s participation and acceptance in his or her cultural group (Norton, 1990). These expectations, however, are not universal. Some cultures, for example, may emphasize the development of independence and autonomy. Other cultures, however, may place more value on the development of interdependence and caring for others (Chen et al., 2002; Groce & Zola, 1993). These different expectations can then lead to conflicting opinions of what is deemed as acceptable or unacceptable behavior in a family’s home. Behavior’s that may appear unconventional or challenging to one family may be deemed as minuscule and nonconsequential to a family with a different cultural outlook. Conflicting notions of problem behavior may also be a barrier between a service provider and a family of
a diverse culture when trying to design and implement a positive behavior support plan. For example, some families may encourage physical interactions (e.g., roughhousing, wrestling) between siblings as a constructive way to develop self-esteem. A service provider, however, may interpret these type of interactions as being dangerous and a sign of aggression. Procedures for disciplining a child may also differ according to cultural beliefs and expectations. In some families corporal punishment may be deemed as a reliable and acceptable means for punishment. In other families, this method of discipline may be viewed as cruel and abusive (Chen et al., 2002).

**Perspectives on Disability**

The term *disability* can have conflicting connotations for families of different cultural backgrounds (Lynch & Hanson, 1998; Seligman & Darling, 1989). There are a number of diverse views related to disability and its causation. Some families may view a disability as a natural part of life and will not look to change or remedy the situation. Other families, however, may see a disability as a punishment for sins, perhaps misdeeds committed by the parents or the child in a former life (Groce & Zola, 1993). Still others may view it in terms of a spiritual cause, in this case the presence of evil spirits in the body or an imbalance between the body, mind and soul (Hanson et al., 1990). North American culture will often look to biological factors in terms of causation. These biological factors may include disease, brain injury, genetic disorders or chemical imbalances (Lynch & Hanson, 1998). Whatever the view on causation may be, it will strongly influence how families relate to their child regarding developmental and behavioral expectations. This, in turn, affects the type of treatment a family may seek as well as the degree in which they are willing to participate in the treatment process.
Perspectives on Family Structure

The concept of family may differ from culture to culture (Chen et al., 2002; Hanson et al., 1990). Family size and composition can vary from small nuclear families to larger extended and blended families. In some instances, extended family may include non-blood relatives such as neighbors and friends. The influence family members have on an individual can also vary across different cultures. Some cultures are taught to respect and obey the wishes of elder family members. Other cultures emphasize individual thought and freedom. Here in North America, the definition of family has seen many changes over the last 50 years (Lynch & Hanson, 1996). In the past, most families consisted of small nuclear families made up of two parents and one or more children. Today, a family may include extended or blended family members, a single parent, teen parents, and/or gay or lesbian parents.

It is important to note that the process of immigrating to a new country also can produce changes to family structure (Honig, Gardner, & Vesin, 1987). Often, immigrant families are forced to leave valuable members of their family behind in their homeland. The impact of this loss is often heightened by the stress of trying to adapt to the cultural practices of a new country. Over time, these families may develop new familial ties with different people in their new community.

Perspectives on Communication Styles

Clear, understandable communication is vital in the establishment of collaborative partnerships between families and service providers. However, because language and culture are heavily intertwined, the process of communication between individuals from different cultures can become very complex (Lynch & Hanson, 1998). Often, differences in both verbal and nonverbal communication can lead to feelings of confusion and frustration.
between conversation partners. This problem becomes even more complicated when working with families who speak a different language from the dominant culture (e.g., North American). The next three sections will look at how verbal and nonverbal communication patterns can differ across cultures as well as the importance of interpreters when working with families who speak a different language.

**Nonverbal communication differences.** Nonverbal communication plays a very important role in how we gauge and interpret what a person is conveying when they speak. Nonverbal behaviors, however, can have various meanings according to different cultural influences (Chen et al., 2002; Lynch & Hanson, 1996). Eye contact is one area of nonverbal communication that differs according to cultural perspective. For example, in some cultures direct eye contact is considered disrespectful and shameful, especially with an authority figure (Chan, 1998). In other cultures, eye contact is viewed as a sign of trust and sincerity when speaking or listening to someone and is therefore encouraged (Asante & Davis, 1989). Proximity to a conversation partner is another area where nonverbal communication styles differ across cultures. Anglo-European Americans, for example, often prefer a distance of about 3 feet between familiar conversation partners (Lynch & Hanson, 1998). This distance is often greater for conversations with new acquaintances or strangers. Other cultural groups such as Latinos or Middle Easterners, however, often prefer a closer proximity to a conversation partner. Body language and gestures also can have a variety of meanings and interpretations. In some cultures, verbal dialogue is secondary to hand gestures and facial expressions in conveying the meaning of a message. Hand gestures, however, can often have many different connotations, depending on your frame of reference (Turnbull & Turnbull, 2001). The thumbs-up sign is a signal for readiness or praise in some circles. However, this
same gesture may be misconstrued as vulgar with Latino cultures. It is important to be
cognizant of differences regarding eye contact, physical proximity, body language and
gestures when conversing with families from a different culture.

*Verbal communication differences.* Verbal communication styles can differ according
to the directness in which one approaches a topic and the degree of formality in which
communication partners interact with each other (Barnwell & Day, 2000; Lynch & Hanson,
1998). With regards to directness, some cultures place an emphasis on getting information
across as quickly and directly as possible. In these cases, the overall goal is the efficient and
expedient distribution of knowledge. In other cultures, it is considered more appropriate to
approach a topic indirectly first, gradually making one’s way to the issue at hand. For
example, one might first discuss current events or general family issues before jumping into
a discussion on challenging behaviors when conducting a functional assessment interview.
Cultural background can also dictate the level of formality used in a conversation when
speaking to people of a different age, sex, and/or economic status. For example, some
cultures place a lot of importance on the manner in which individuals greet and acknowledge
their communication partner, especially when he or she is an authority figure. In other
cultural circles, it is deemed acceptable to interact with authority figures in a more casual
and informal manner.

*Working with interpreters.* When working with families from a different cultural
background, language differences may exist between the family and service provider. In
these instances, a translator or interpreter can be used to help facilitate cross-cultural
communication (Barnwell & Day, 2000; Lynch & Hanson, 1996). Ideally, an interpreter
would be proficient in a family’s language and dialect as well as be a trained professional in
the field of positive behavior support. However, given the shortage of professionally trained personnel in this field, it may not be realistic to find someone with this experience. It is important that an interpreter have some specific qualifications. Aside from being fluent in a family’s native language, it is also helpful if the interpreter has a strong sense of the cultural rules and beliefs that govern one’s interaction styles. Also, it is important that an interpreter has a basic understanding of the material he or she is trying to interpret (Lynch & Hanson, 1996). It is not recommended that family members or close friends be used as interpreters, since it may be difficult for these individuals to remain neutral and respect the rules of confidentiality with regard to the sensitive nature of the issues discussed (Barnwell & Day, 2000).

*Parent-Professional Collaboration with Families from a Diverse Culture*

As already discussed, the development of parent-professional partnerships between service providers and families is emphasized and encouraged in the field of family-centered PBS. However, it is important to note that families from a diverse culture may not readily understand or embrace the idea of being partners in the development of a PBS plan (Hanson et al., 1990; Rao & Kalyanpur, 2002). In some countries, participatory decision making is not an ideal that is commonly promoted or instilled, especially in the areas of special education or behavior support. Also, some cultures view a professional or service provider as someone who should be respected and revered; the notion of sharing ideas and debating with someone of this caliber may be deemed disrespectful and inappropriate. Even when a family is encouraged to become partners in the development of a behavior support plan, it may not be easy for them to freely and openly discuss intimate aspects of their family’s life.
Often, taking the time to really get to know and understand the family will help establish a relationship that can facilitate collaborative partnership and trust.

When working with families from a diverse cultural group, it is also important that service providers do not make assumptions about a family’s values and practices based on their cultural background or ethnicity. Stereotypes can lead to inaccurate, inappropriate, and even harmful generalizations and can seriously interfere with effective collaborations. As pointed out by Lynch and Hanson (1998), there are numerous other factors aside from cultural identity that can help shape and form an individual’s beliefs and practices. They include: socioeconomic status, region in which one lives (e.g., urban, suburban, rural), age, sex, amount and type of education, religious practice, and availability of family support systems. It is best if service providers look at each family as an individual system, which may be guided by cultural influences at varying degrees.

Relevance of Culturally-Responsive Practices to Positive Behavior Support

As outlined in the previous sections, culture can have a huge impact on the way a family defines itself. In order for PBS to be both effective and sustainable, it is important for service providers to be culturally aware and have a good understanding of the family with whom they are working (Chen et al., 2002). The implementation of culturally-responsive practices can be facilitated by the development and maintenance of cross-cultural competence. Cross-cultural competence involves being sensitive to the cultural differences as well as similarities that may exist between one’s self and a family being supported. It requires being open-minded to different perspectives and beliefs and, at times, practicing behaviors that may be new and unfamiliar (Lynch & Hanson, 1998). According to Chan (1990), there are three elements that are vital to the development of cross-cultural
competence: (a) self-awareness; (b) knowledge specific to the diverse culture that an individual will work with; and (c) skills to enable an individual to develop successful interactions. Each of these three areas will be discussed in more detail in the following three subsections.

Self-Awareness

Culture is a part of all of us; it helps shape our values, beliefs, and behaviors. However, we do not always acknowledge or recognize the impact cultural influences may have on our perspective. Lynch and Hanson (1998) outline a two-step process in the development of cultural self-awareness. The first step involves determining how our value system has been shaped by cultural beliefs and biases. There is no right or wrong belief system, but it is often easy for us to assume that everyone around us shares the same perspective on life. By being aware of how culture can shape our own belief system, we can more willingly acknowledge values and beliefs from a different culture. Being culturally self-aware is not necessarily an easy process (Kalyanpur & Harry, 1999; Turnbull & Turnbull, 2001). As Lynch and Hanson point out, it requires recognizing embedded values and beliefs that we have learned from childhood and grown accustomed to and then admitting to ourselves that these perceptions may, at times, be inaccurate or at least incomplete compared to the perceptions of those around us. The second step of cultural self-awareness entails learning more about our own cultural roots. This involves looking at issues such as the immigration patterns of our ancestors, when and why they immigrated to North America, the location of their early settlements, and the languages spoken during these periods. It also includes looking at their education level, economic status, political leanings, and the degree to which they identified with the beliefs and values of their country of origin.
This process of self-evaluation and investigation of ancestral history offers service providers a greater awareness of their own belief system, which in turn should enable them to further understand those from a different cultural background.

Knowledge of Different Cultures

The second element outlined by Chan (1990) in the development of cross-cultural competence involves obtaining culture-specific information pertaining to the family one is about to support. This type of information may be obtained in a variety of ways (e.g., reading, attending cultural events). Lynch and Hanson (1998) outline four effective strategies for learning about another culture: (a) learning through studying and reading about the culture (which may also include reading fictional literature from that cultural group); (b) meeting and talking with a variety of different individuals from that culture; (c) participating in daily life with someone from that culture; and (d) learning the language of the other culture. Also, it is helpful to investigate cultural views on certain important topics such as childrearing, causes of disability, health and healing, and the role of family (Hanson et al., 1990). Finding someone to act as a cultural mediator or guide also can help a service provider clarify feelings, practices, or beliefs that are common to a particular culture. However, as highlighted earlier, it is important not to over-generalize the information learned about a particular cultural group to everyone who’s given that cultural label. Cultural identity is made up of a variety of complex factors and influences people in varying degrees.

Strategies to Encourage Successful Interactions

The last step in the development of cross-cultural competence involves gathering everything one has learned about themselves and the elements of the diverse culture of the family one is about to support and applying it in a manner that will encourage collaborative
and effective partnerships. The ability in which a service provider can effectively communicate with a family will greatly affect how successful the service provider will be in supporting a family. The development of a PBS plan may require a family to share private and intimate details from their life. Therefore, it is important for a service provider to learn about a family’s preferred way of communicating and then tailor his or her own communication style to account for any cultural differences. Chen et al. (2002) suggest that service providers can gain information on a family’s preferred way of communicating by: (a) reflecting on previous interactions; (b) asking other service providers about their experiences in supporting the family; (c) discussing this with the family directly; and (d) consulting with a cultural mediator. The service provider needs to be able to work closely with family members and define the concerns, values and beliefs they view as important in order to address them in the design and implementation of a PBS plan. It is the family who ultimately decides what is or is not helpful; strategies need to be reflect these viewpoints in order to be deemed useful.

*Research on Culture and Families of Children with Disabilities*

The need for research on culture and families of children with disabilities has been documented by many professionals in this field (Cho, Singer, & Brenner, 2000; Danseco, 1997; Garcia, Mendez Perez, & Ortiz, 2000; Salend & Taylor, 2002). In the past, many of the studies published in this area have concentrated on middle and upper class mothers. However, the tendency to generalize these results to other populations is unwarranted (Turnbull & Turnbull, 2001). In the PBS literature, there have been a few studies that have referenced supporting a child from a diverse cultural background. Vaughn et al. (2002) developed a behavior support plan to resolve problem behavior associated with eating at fast
food restaurants for a young boy whose parents immigrated from Nigeria. Clarke, Worcester, Dunlap, Murray, and Bradley-Klug (2002) implemented a behavior support plan across various school settings for a female middle school student of Polish decent. Both of these studies, however, only briefly commented on the cultural background of the child’s family. Also, neither of these studies were conducted in the context of a home-based routine where cultural factors may have played a larger role in the successful implementation of the PBS plan. Currently, no studies have specifically looked at cultural elements in the design and implementation of a PBS plan. For the purpose of this literature review, it was necessary to expand the search outside of the area PBS to include the much broader field of families of children with disability. The following subsections look at empirical studies based on culture and families of children with a disability across three different areas: (a) parental beliefs; (b) parent-professional collaborations; and (c) cultural sensitivity in program delivery.

**Parental Beliefs**

Cho et al. (2000) conducted a qualitative study that compared the adaptation of Korean and Korean American parents to the child diagnosed with a developmental disability. A total of 32 parents participated in this study, with mothers being the principal informant in each of the groups. Sixteen Korean parents were recruited from two private preschool programs and one kindergarten class in Pusan, Korea. The sixteen Korean-Americans were recruited from three different parent support groups in the Los Angeles area. All of the parents in the study were similar in age and income level (around or above median) and all spoke Korean in their homes. The interview process involved three interview protocols. The first interview protocol gathered general information on parents’ experiences and concepts. These answers were then used in the design of the second interview protocol, which
consisted of 100 questions based on five major themes: (a) general history of the child and family; (b) stressful events and family responses; (c) family and community resources; (d) family coping and adaptation; and (e) social and cultural contexts. The third interview protocol was only conducted with five randomly selected Korean-American parents in order to validate previously obtained data. All of the interviews were conducted in the family’s home by the first author on two to three different occasions and were conducted in Korean. The results were analyzed using a content analysis technique to reveal patterns of similarities and differences across the two groups.

Both the Korean and Korean-American parents experienced a process of transformation with regard to their feelings for their child with a disability. However, there were differences in the reports of amount and types of psychological strain experienced as well as parental interpretations of disability across each of these groups. Korean parents reported negative public reaction and educational costs as being their biggest source of stress. They also viewed the cause of their child’s disability as linked to their own behavior, such as poor parenting. Korean-American parents, however, experienced some stress due to language and cultural differences with professionals. They attributed the cause of their child’s disability to a divine plan rather than to their own actions. These findings suggest that a parent’s adaptation to a child’s disability is based on the interplay of multiple factors which include the impact of environmental demands, perceptions of stress, social support, and cognitive coping strategies.

Garcia et al. (2000) explored the issues and concerns of Spanish-speaking mothers and their views about language and disability. Seven monolingual Spanish-speaking mothers of Mexican origin participated in this study. All of the mothers came from a low
socioeconomic background and had been living in the United States between 4 and 8 years. Also, they each had a child between the ages of 2 and 3 years of age who was diagnosed with a communication disability. All of the children had been participating between 3 and 18 months in an early intervention program. The mothers were interviewed in regards to two different areas: perceptions and beliefs about language acquisition and perceptions and beliefs about language disabilities. The results indicated that all of the mothers did not believe that their child had a communication disability. While the mothers did relate that their children demonstrated limited verbal skills, they also felt that their children would catch up as they grew older and eventually attend a bilingual program once in the school system. The results also suggested that barriers between the mothers and the professionals were encountered during collaborations over the children’s early intervention programs. All of the mothers indicted that the early interventionists did little to encourage language development with their child. Rather, they felt that the early interventionists mainly played with their children. This article offers some insight into how differing belief systems can interfere with collaborations between parents and professionals in the field of early intervention.

Parent-Professional Collaborations

Lynch and Stein (1987) examined how Hispanic parents participate in their child’s special education program. Sixty-three families of children receiving special education services in a San Diego school district were randomly selected to participate in this study. Each of the families participated in a 64 item interview, which included both open-ended and forced choice questions. The interview questions focused on four main areas: (a) attitudes towards the district’s special education personnel and processes; (b) participation in
the development of an IEP; (c) opportunities to participate in their child’s education program; and (d) barriers they encountered when attempting to interact with special education personnel. The families were interviewed in their own homes by an interviewer who was fluent in Spanish and who also had experience raising a child with a disability. The data from the interviews were then analyzed and coded by staff at the San Diego University’s Social Sciences Lab. These results were then compared to responses from Black and Anglo families obtained from an earlier investigation. Overall, the Hispanic parents were more likely to rate special education professionals as effective or very effective compared to the Black parents. They were also more positive than Black or Anglo parents about the manner in which the school systems identified their children’s special needs. However, both Hispanic and Black parents reported that they felt significantly less involved than Anglo parents during the assessment process and in IEP meetings. Hispanic and Black parents also knew significantly less than Anglo parents about the services their children received through the special education system. Overall, this was one of the first studies to demonstrate how parents from a diverse cultural background participate differently in their child’s special education program compared to parents from mainstream Anglo-American families.

In a similar study, Guerreiro (1987) investigated the effectiveness of home-school relations between Portuguese-speaking families and the special education system. Ten families, all having resided in the United States for approximately 13 years, were randomly selected from the Department of Special Services (there was no mention of which state these families resided). Each of these families had a child between the ages of 7 to 17 who was diagnosed with some type of physical, visual, and/or perceptual disability and who also
attended public school. A parent questionnaire, containing 59 open-ended questions, was administered to each of the families in their home. The questionnaire was developed by the author and written in Portuguese. In seven of the homes, both parents were present for the interview. In the other three homes only the mother was able to contribute. Overall, the findings revealed that the parents appeared satisfied with their child's special education program. However, there were some communication gaps reported by the parents, which may have contributed to a lack of parental participation in their child's educational process.

Harry (1992) examined the challenges of parent-professional participation for Puerto-Rican families of children with learning or developmental disabilities. Twelve Spanish-speaking, Puerto Rican-American families from low-income backgrounds participated in the study. These families were recruited by Hispanic community social workers who worked in a Hispanic neighborhood in a medium-sized city. Three data collection procedures were used: (a) unstructured interviews; (b) observations of parent-professional interactions; and (c) examination of school records. Over a period of 7 months, a minimum of three taped, unstructured interviews were conducted on parents' perceptions of their child's special education placement. During this time, numerous observations of formal meetings between parents and school personnel and one observation of a parent education workshop were also conducted. Taped interviews were also administered to nine school district professionals and three Hispanic social workers involved with local community agencies. The interviews and observations were analyzed using the constant comparative approach in which incidents, comments, and opinions were coded according to the type of information they revealed. The data analysis resulted in five main themes: (a) trust vs. deference; (b) written communication; (c) communication and meaning; (d) resignation/withdrawal; and (e)
pockets of excellence. Overall, the data revealed that the school’s reliance on communication methods (e.g., written communication) that were not easy to comprehend by the parents who participated often lead to feelings of mistrust and eventual withdrawal from the collaboration process. On a positive note, however, the authors also concluded that certain changes made in the conduct of IEP conferences by some school systems (e.g., provision of a family liaison worker or interpreter, consistent inclusion of parents during the IEP meeting) were beginning to have a beneficial effect on parent-professional interactions.

In one of the first longitudinal studies to focus on the evolution of a minority parents’ role in the early childhood education process, Harry, Allen, and McLaughlin (1995) tracked the participation of African-American parents in their child’s preschool special education program over a 3-year period. Families from three schools in a large urban school district were invited to participate in the study. In total, 24 families with a child registered in a special education program for children with mild disabilities participated. Twelve of these families participated the full 3 years of the study, six families participated only in the first year and six families participated for the second and third years. All of the parents who participated were from low to lower-middle income households. Similar to the method used by Harry (1992), data was collected through three different avenues: (a) semi-structured interviews with parents and professionals; (b) observations of professionals’ interactions with parents; and (c) examination of school documents. The interviews were administered yearly and taped for future analysis. Observation sessions took place during parent-teacher conferences. Data were analyzed using the constant comparative approach (Glaser & Strauss, 1967) and resulted in the emergence of three thematic categories: (a) initial expectations and growing disillusionment; (b) participation and advocacy; and (c) deterrents
to advocacy. The study highlighted that, for the most part, parents entered into the process of supporting their children in the special education system with a lot of hope and energy. As time went by, however, the parents became concerned about issues such as the labels being used to categorize their children, curriculum issues, and the classroom environment. This in turn led to a decrease in participation rates by the parents by year three of the study. The study also indicated that, while professionals recognized the importance of promoting parent participation, their actions often hindered the process. Some deterrents included the absence of communication during the assessment and placement process, inflexible scheduling of meetings, limited time for meetings, and an emphasis on documentation rather than collaboration.

*Cultural Sensitivity in Program Delivery*

DeGangi et al. (1994) endeavored to describe professionals’ perceptions of the effects of cultural diversity and the challenges that this had on family-professional collaboration. Twenty-six professionals from eight early intervention programs in the Northeast US volunteered to be interviewed on the IFSP process. Most of these professionals were special educators who served children with a variety of disabilities and families from diverse socioeconomic and cultural backgrounds. Twenty-two of the professionals were White, 3 were Black, and 1 was Hispanic. The majority of the professionals had over 10 years of experience and had been involved in the IFSP process for at least 1 year. Taped interviews were conducted on-site at each professional’s early intervention program. During these interviews, the professionals were asked to share their experiences and perceptions on how culture affected the IFSP approach. Qualitative analyses revealed that 24 of the 26 professionals saw cultural diversity playing an important role for the success of the IFSP
process. There was considerable variability, however, in how professionals perceived the impact of cultural diversity on parent-professional collaboration. Most of the professionals appeared to be sensitive to the importance of gaining information on cultural factors such as family customs, childrearing practices, and family routines. However, only half of the respondents actually incorporated this information into the IFSP goals. When asked what they would do if ever confronted by a family who viewed early intervention as unimportant, most of the professionals shared that they would spend the majority of their time educating the family on child development. Few of the professionals commented on trying to see child development from the family's perspective. This study concluded that professionals need to examine their own attitudes and beliefs about families from diverse cultures in order to promote more effective parent-professional collaborations.

Along a similar vein, Dennis and Giangreco (1996) examined the views of 14 professionals in the field of special education on culturally sensitive practices in family interviewing and in the development of individualized education plans. This study, however, differed from DeGangi et al. (1994) because each participant was a member of a minority cultural group in the United States. The 14 professionals were identified through a process of criterion sampling in which a possible participant had to be a member of a minority group, was relatively knowledgeable about cultural issues related to their particular heritage, and had a lot of expertise and experience around the education of students with severe disabilities. The professionals were each asked to critique an educational planning tool called COACH: Choosing Options and Accommodations for Children (Giangreco, Cloninger, & Iverson, 1993). COACH is a family-centered, team-oriented process designed to help guide and plan educational programs in inclusive settings for children with moderate
to severe disabilities. Each participant was asked to write a report critiquing the tool on a cross-cultural basis. These written reports were used to design interview questions that were posited to each of the professionals. The interviews were later transcribed and analyzed to reveal a number of key concepts and recommendations made by the professionals for the development of a culturally sensitive approach to working with families. These recommendations include: (a) appreciate the uniqueness of the family; (b) be aware of the influence of your role as a professional; (c) acknowledge your own cultural biases; (d) seek new understandings and knowledge of cultures; (e) develop an awareness of cultural norms; and (f) be willing to learn alongside families.

In a multi-site case study, Hanson et al. (1998) investigated how preschool programs from four university sites around the United States worked to acknowledge and adapt to the cultural preferences of participating children and families. This study was one of a series of studies conducted by the Early Childhood Research Institute on Inclusion (ECRII). The ECRII is a federally funded program with the purpose of identifying barriers as well as support strategies for the successful inclusion of preschool children with disabilities. Investigators from four university sites associated with the ECRII were each asked to select four preschool inclusion programs within their geographical area using a purposive sampling procedure. In total, 16 preschool programs were involved in the study. Within these 16 sites, participants were purposively sampled across four groups: (a) children attending preschool programs; (b) parents and caregivers of the identified children; (c) direct service providers to the identified children; and (d) administrators from the classrooms being studied. A total of 112 children and their families participated across the four different sites. Three measures were employed in this qualitative design: participant observations, open-ended interviews,
and document analysis (e.g., program mission statements, curriculum guides and IEPs).

Observations were conducted on children’s participation with peers and service providers as well the interaction between families and service providers. Interviews were conducted with service providers and with families. The family interviews were mostly centered on describing different aspects of their child with a disability, their child’s involvement in his or her preschool program, and relationships and interactions with service providers in the preschool. The constant comparative method was used to analyze the qualitative data collected. This analysis suggested that culture emerged as a central theme across many areas in the study. Cultural perspectives were reflected in the manner that both families and service providers gathered and exchanged information as well as the way children and families communicated with each other and those around them. Overall, this study demonstrated that the inclusion of young children with disabilities in preschools and in the community is influenced by the degree to which community members and preschool personnel support cultural diversity across all of its members.

Research Question

As this review demonstrates, culture has a tremendous impact on the child and family and may influence the design and implementation of a positive behavior support plan. Differences in cultural dimensions can often lead to conflicting views between families and service providers on issues such as child rearing practices, the interpretation of the label of developmental disability, and special education services (Harry, 1992; Sileo, Sileo, & Prater, 1996; Turnbull & Turnbull; 1996). When collaborating with culturally diverse families, service providers need to be aware of how their own cultural background has shaped their beliefs and values before they can be aware of and accommodate differing viewpoints.
However, as noted earlier, no research has been conducted on the efficacy of family-centered positive support practices of families from culturally diverse backgrounds. Based on this rationale, I conducted a single-subject research study with one child from a family of a diverse cultural background who also demonstrated problem behavior in a valued, home-based routine. A unique aspect of this study was the use a revised version of a cultural assessment tool developed by Chen et al. (2002) to help in the design and implementation of a positive behavior support plan. The study addressed three research questions: (a) Is there a functional relationship between a positive behavior support plan that has been designed to take into consideration cultural aspects of family life, and improvements in child behavior and participation during a valued home-based family routine?; (b) How do parents view the cultural fit of the positive behavior support plan with the family?; and (c) What are unique aspects of a process of developing and implementing a culturally-appropriate PBS plan with a family of a diverse linguistic and cultural background?
CHAPTER TWO - METHODOLOGY

Participants Characteristics

One family with a 5-year old boy with Autism Spectrum Disorder (ASD) participated in the study. The child, Ken, was diagnosed with ASD at the age of 4 years and 10 months. His family and support workers described Ken as a happy and energetic person who could also be quite affectionate once he gets to know you. Some of his favorite activities included playing in water, building puzzles, and playing in the backyard with his two dogs. He also enjoyed watching animated cartoons and Japanese children’s programs on the television. Ken’s means of communicating mainly consisted of contact gestures (e.g. leading others by the hand, bringing desired objects to the person) and the use of picture symbols. He also occasionally vocalized some basic words (e.g. more, hi, bye, done), but this means of communication was rarely spontaneous nor consistent. Receptively, Ken could follow familiar or simple one-step instructions fairly consistently. However, novel or multi-step instructions were best facilitated with picture symbols. Ken was toilet trained and could also wash his hands and dress himself with minimal assistance. Prior to this study, however, Ken did not consistently use eating utensils when consuming a meal.

Ken also had a history of engaging in problem behaviors. When Ken became upset at home, he would often engage in destructive behaviors such as pushing objects off shelves or tables or throwing items across the room. He also would cry and wail and take off all of his clothing. In the community, Ken would often cry and run away when placed in a new or unfamiliar setting.

At the beginning of the study, in addition to six months prior to it, Ken participated in an early intensive behavior intervention program based on the principles of applied
behavior analysis. Ken received approximately 15 to 20 hours per week of support from a behavior interventionist who focused on areas such as communication, socialization and play. These hours of intervention were reduced to approximately 10 to 12 hours per week of support 6 months into the study. Ken also attended preschool 5 days per week until the last month of the study, at which time he spent the majority of his time at home due to the termination of school for the summer.

Ken lived at home with his mother, Emi; father, Asano; and older sister, Mya, who was 7. The family lived in a condominium in a middle-class neighborhood across the street from an elementary school. Both Emi and Asano had been born and raised in Japan and had moved to Canada, independent of each other, in early adulthood. The family also had two small dogs that lived in their home. Emi was the primary collaborator throughout the research process. She stayed at home and worked as the primary caregiver to her family. She also helped manage and organize Ken’s behavior intervention program. Asano worked as a sushi chef in a Japanese restaurant 5 days a week. He was usually away from home most afternoons and evenings.

Ken and his family were referred for participation in the study by the behavior consultant who provided support to Ken’s behavior intervention program. After receiving the referral, the experimenter set up an initial meeting with the family. During this initial meeting, the experimenter explained the purpose of the study. She also determined that the family was English speaking and had Canadian citizenship, but also had close ties to their Japanese culture. The family expressed an interest in participating in the study and agreed to partake in an initial screening interview and home observations. During the interview, the experimenter briefly assessed whether problem behaviors were disruptive to valued home
and community routines. Two subsequent observations in the home confirmed the presence of problem behaviors. Upon the completion of these activities, the family agreed to participate in the study and signed informed consent forms (see Appendix A).

Setting

One routine was focused on in this study. Upon completion of a family routine assessment, the dinner meal routine was collaboratively chosen and defined by the experimenter and Emi. Both the assessment activities and training occurred in the dining area of the family home.

Measurement

The study used both quantitative and qualitative measures to collect data. The following sections will operationalize the different variables to be measured and explain how these measurements occurred.

Quantitative Measures

Microcomputer Direct Observation Data Collection

*Equipment and software.* Observation sessions during the dinner routine were videotaped using a digital video camera. The video feed was downloaded into a digital file. The digital file of the observation session was scored on an IBM compatible desktop computer and monitor. Data sheets and a tape recorder with prerecorded intervals were used to collect total percentages of interval data as well as to compute interobserver agreement.

*Observation sessions.* Observation sessions were conducted in accordance with a single-subject withdrawal design. Thus, observation sessions were conducted across baseline, intervention, and withdrawal phases. There also were observation sessions conducted across a follow-up phase. During baseline, three observation sessions were
conducted across a 2 week period of time. During the first intervention phase, four observation sessions occurred across a 3 week period. During the withdrawal phase, three observation sessions occurred over a 2 week period. During the second intervention phase (i.e., reintroduction of the intervention), observation sessions occurred four times over a 5 week period. Three weeks after the second intervention phase, two observations sessions occurred during a follow-up phase over a 1 week period.

Observations session procedures. Observation sessions were scheduled on days convenient to the family. Sessions occurred between the hours of 6:00 pm and 6:30 pm when the dinner meal was typically served. Originally, a trained observer was scheduled to videotape the routine. However, during the baseline phase, it was determined that the presence of the trained observer did not allow for an accurate representation of the problem behaviors to be displayed. Therefore, Emi was trained to operate the camera and videotape the dinner routine until it was completed or until a previously agreed upon criterion level of problem behavior was reached. A small remote control allowed Emi to operate the camera from the dining room area and still oversee the dinner routine.

Before an observation session, preparation tasks were completed by Emi and the experimenter. Emi reviewed the operational definition(s) of the envisioned routine and ensured that material resources necessary for the routine were present. An hour before the meal, the experimenter set up the camera on a tripod approximately 4 meters from the dining room table. A wide angle lens also was placed on the camera to maximize the view of the dining room area. The experimenter then left the family’s home and did not return until the dinner routine was completed. After preparing the meal, Emi initiated the routine by telling Ken it was dinner time. An observation session ended in one of three ways: (a) the pre-
determined criterion level of problem behavior occurred within the first 3 minutes of the observation session, in which Emi would continue videotaping the routine until the 3 minute period had passed and would then terminate the session; (b) the criterion level of problem behavior occurred sometime after the first 3 minutes of the observation session, at which time Emi would terminate the session; and (c) the criterion level of problem behavior was not met, and Emi continued to videotape until the routine was completed (Lucyshyn et al., 1997). Upon completion of the routine, the experimenter would return and dismantle the camera.

**Dependent Variables**

Five dependent variables were measured: (a) percentage of steps of the routine completed successfully; (b) the latency in minutes to the termination of the dinner routine because of problem behavior or to the successful completion of the routine; (c) percent intervals of problem behavior exhibited by Ken; (d) percentage of intervals of parent accurate use of behavior support plan strategies during the routine; and (e) average index of the support plan’s contextual/cultural fit with the family’s ecology. The dependent variables are defined below.

*Percentage of steps to successful completion.* Emi identified and described seven steps that she would like Ken to successfully complete during the dinner routine. The seven steps were defined as: (1) Ken is fully dressed before sitting down at the table; (2) Ken places his favorite toy or object in a designated area, (3) Ken sits at the table when requested; (4) Ken uses utensils to eat his meal; (5) Ken uses picture symbols to request more food or juice; (6) Ken signs or says ‘all done’ when finished eating his food; (7) Ken places his plate in the kitchen after finishing his meal. When viewing a videotaped
observation, the observer recorded the number of steps completed. Because Ken did not always take a favorite toy to the table nor did he always show an interest in requesting more food or juice at each meal, steps 2 and 5 were not always included in the calculation. Percentage of steps completed was calculated by dividing the number of steps completed by the total steps and then multiplying by 100.

*Latency in minutes to termination or to successful completion of the routine.* Latency in minutes to the termination of the routine due to a criterion level of problem behavior or the successful completion of the routine was measured. A criterion level of problem behavior for terminating the routine was defined in collaboration with Emi (See Table 1). This criterion was a balance between the families desire to have Ken participate during the dinner meal and the need to ensure the safety of Ken and his family members. During baseline, pilot observations determined that the type and intensity of Ken’s problem behaviors allowed for a minimum time period for taping to be set until the termination of the routine. By establishing a minimum time period for taping, a larger sample of Ken’s behavior was obtained during the baseline and withdrawal phases. This larger sample of behavior offered a better comparison with the data collected during the intervention phases of the study. Therefore, a minimum time period of 3 minutes for the latency to termination of the dinner routine from the initiation of the routine and an instance of either tolerated or untolerated problem behavior was established. If the criterion was reached for either tolerated or untolerated problem behavior before 3 minutes from the initiation of the routine, video taping continued until the 3 minute mark was reached. However, if at any time Emi felt that the level of problem behavior was extreme and at the point of causing harm to either herself or her family, she could make the decision to terminate taping of the routine before
Table 1.

Criterion Level of Problem Behaviors for Terminating Routine

Untolerated Behaviors

1. One instance of destructive behavior: defined as behaviors directed at an object that result in disruption to a task or activity or damage to the object. These behaviors include throwing objects and pushing objects off shelves or tables.

Tolerated Behaviors

1. Three instances of noncompliance: defined as disruptive behaviors aimed at physically leaving or resisting a task or activity. These behaviors include physically resisting his mom or leaving a designated area such as the table (walking more than 3 steps away).

2. Crying or wailing for 30 seconds.

3. Two instances of leaving the table with food. Leaving the table is defined as walking more than three steps away from his chair at the table.

4. Three instances of attempting to take his clothing off, which includes his shirt, pants or shorts, and underwear.

5. Three instances of eating food off his or another person’s plate or off the floor with his hands. This does not include food that has fallen from his plate on to the table or on to an article of clothing, after Ken had attempted to eat with his eating utensil.

6. Three instances of Ken insisting a that a favorite object stays on the table by his plate. A favorite object is defined as something not normally found on the kitchen table (e.g., belts, clothing, sticks). This does not include books or photos.

The 3 minute mark was reached. If the criterion for tolerated or untolerated behavior was reached after three minutes from the initiation of the routine, the routine was terminated at that point in time. Latency to successful completion of the routine was defined as the time it
took to complete all of the relevant steps in the routine without the occurrence of the criterion level of problem behavior.

The decision to terminate an observation session due to problem behavior was made by Emi. Before she initiated the dinner routine, she reviewed the criterion level of problem behavior for terminating the routine. If the routine was terminated due to problem behavior, Emi stopped video taping and called the experimenter, who was waiting outside the apartment door, to help de-escalate the situation. If Emi was not sure whether the criterion level of problem behavior was reached, she continued taping until she was certain. In this event, the experimenter determined when the criterion level of problem behavior was reached by viewing the video tape. If the criterion level of problem behavior did not occur, Emi continued video taping until Ken completed all of the steps in the dinner routine. The experimenter used the observation session’s data file to record the total time in seconds of the routine.

*Percent intervals of problem behavior.* The percent intervals of problem behavior exhibited by Ken were measured using the definition of problem behavior outlined in Table 2. The observation interval was 10 seconds in length. An occurrence was scored if any of the problem behaviors defined in Table 2 were witnessed during this time period. The percent intervals of problem behavior were calculated by dividing the number of intervals of problem behavior by the total number of intervals and then multiplying by 100.

*Parent accurate use of behavior support strategies.* To ensure treatment fidelity, parent accurate use of behavior support strategies was monitored during the dinner routine. Parent accurate use of the behavior support strategies was measured as the total percentage
Table 2.

Operational Definitions of Problem Behavior

1. *Destructive behaviors:* Engaging in behaviors directed at an object that results in the disruption of an activity or damage to the object. These behaviors include throwing, pushing, or knocking over objects off a table or shelf. Specific behaviors are defined below. These behaviors are scored if any of them occur within a 10 second observation interval.

   a. *Throwing:* Picking up and throwing an object in a clear trajectory away from him.

   b. *Pushing or knocking over an object:* Pushing or knocking over an object from the table or the shelf so that it falls to the floor.

2. *Disruptive behaviors:* Engaging in actions that disrupt an activity or task. These behaviors include physically resisting mom, leaving the table, crying or wailing, taking off clothing, eating food with hands, and keeping favorite objects on the table. Each of these behaviors is defined below. These behaviors are scored if any of them occur within a 10 second observation interval.

   a. *Physically resisting mom:* Walking or turning away from his mom as she is guiding him to complete a task (e.g., sit down at the table).

   b. *Leaving the table:* Taking more than three steps away from his chair at the table.

   c. *Crying or wailing:* Yelling in a high pitched voice or saying a wailing sound such as 'woo woo'.

   d. *Taking clothing off:* Taking off clothing such as shirt, pants, shorts, and/or underwear. This also includes attempts to take off these articles of clothing.

   e. *Eating food with hands:* Eating food with his hands off his plate, off another person's plate or off the floor. This does not include eating food with hands that had previously been on his spoon or fork but fell on to the table, his chair, or his clothing.

   f. *Keeping favorite object on the table:* Placing a favorite object on the table beside his plate, such as a belt, article of clothing, or stick. This does not include items such as photos or books.
intervals of the accurate and appropriate use of the six strategies outlined in the positive behavior support plan (see Table 3): (1) advanced warning; (2) visual strategies; (3) positive contingency statement; (4) proactive task prompt; (5) contingent praise; and (6) escape extinction procedure. The observation interval was 60 seconds in length. Thirty percent of the treatment sessions were scored for this measure. The percentage of intervals of parent accurate use of the behavior support strategies was calculated by dividing the number of intervals that Emi exhibited accurate use of the support strategies by the total number of intervals and then multiplying by 100.

*Contextual and cultural fit evaluation.* The family was asked to evaluate the contextual/cultural fit of the support plan with their ecology. An assessment instrument adapted from the one developed by Albin et al. (1996) was used. The instrument consisted of a 14 item questionnaire that utilized a 5-point Likert scale (e.g. 1 = little, 5 = a lot) for evaluating each item. The measure sampled areas relevant to contextual and cultural fit of the behavior support plan with the family’s cultural perceptions and practices. Emi completed the contextual fit measure twice; once during the first intervention phase and once during the second intervention phase. For each of the evaluations, an average across the 14 items was calculated and used as a formative index of contextual and cultural fit. Across the two evaluations of this measure, a grand average was computed and served as a summative index of contextual and cultural fit. During these calculations, ratings for items 9 and 12 were converted to reflect the same interpretation as the other 12 items (e.g., 1 = poor contextual/cultural fit and 5 = good contextual/cultural fit). The contextual and cultural fit evaluation is presented in Appendix B.
Table 3.

Operational Definitions of Positive Behavior Support Plan Procedures

1. **Advanced warning:** Advanced warnings were used to provide Ken with enough notification of when dinner would begin and when he would have to shut the TV off. There were two different ways in which Emi supplied Ken with these warnings. Twenty minutes before dinner, Emi would set a visual clock, called a Time Timer®, that would show Ken when he would have to shut the TV off. Between 5 and 10 minutes before dinner, Emi would point out the time left on the clock and provide a verbal warning of the approaching meal (e.g., “Five more minutes until dinner time.”). The use of advanced warnings is scored if they are given at the appropriate time before the dinner routine begins.

2. **Visual strategies:** There were three different types of visual strategies used in this study. Before coming to the table, Emi would turn off the television and place a ‘no TV’ symbol on the screen. She also used a picture schedule of the dinner routine to increase Ken’s understanding of his expectations during the routine. The picture schedule was reviewed when Ken sat down at the table. The picture schedule also clarified when Ken would be able to watch television again. Picture symbols were also made accessible to Ken at the dinner table to allow him to request more food or juice. If Ken did not independently use the symbols to make his request, Emi would prompt Ken to use the symbols before supplying him with more food or juice. The use of the ‘no TV’ symbol is scored if it is placed on the television set before the dinner routine begins. The use of the picture schedule is scored if it is reviewed with Ken within the first two minutes he is first seated at the dinner table. The use of the picture symbols was scored if Emi prompts Ken to use the symbols before receiving more food or juice.

3. **Positive contingency statement:** Emi tells Ken what behaviors he needs to do to complete the dinner routine, and the positive reinforcement he will get upon its completion. In most cases, the preferred reinforcement is being able to turn on the television set. However, sometimes food reinforcers (e.g., popsicle) or activity reinforcers (e.g., playing outside with the water hose) were also used. A positive contingency statement is only scored if the contingency statement is made before a problem behavior occurs.
   a. Example: “First eat your food, then you can watch TV.”
   b. Nonexample: “Eat your food because you’re a good boy.”

4. **Proactive task prompt:** A proactive task prompt promotes the correct response to relevant stimuli in a specific task or activity. These prompts are proactive because they occur before a performance error or problem behavior occurs. There are two types of prompts, stimulus and response prompt. A stimulus prompt tells or shows Ken what to look at while a response prompt tells or shows Ken what to do. Prompts may include a verbal or gestural cue or physical guidance. Most of the proactive
prompts used involve teaching Ken to eat with the proper eating utensil. A proactive task prompt is scored if Emi uses a verbal cue, gestural cue or physical guidance to complete a task before a performance error or problem behavior occurs.

a. Example: Emi places a fork in Ken's hand and tells him to eat his food as soon as he starts to eat his meal
b. Nonexample: Emi points to Ken's fork right after he places a handful of food in his mouth.

5. **Contingent praise:** Emi praises Ken on desirable behavior within 3 seconds of the behavior. There are three types of praise she can deliver: (a) she can offer Ken verbal praise in the form of a descriptive or evaluative comment; (b) she can provide Ken with physical feedback (i.e. a pat on his head or back); and (c) she can offer Ken some of his favorite food off her plate. Each independent phrase or action will be scored. This category is not scored, however, if the praise is delivered after Ken engages in problem behavior or makes a performance error. Also, this category is not scored if the verbal praise does not specifically define Ken's behavior or if Ken did not actually engage in the behavior he is being praised.

a. Example: "Good eating with your spoon Ken" as his mother pats him on the back.

b. Nonexample: "Good boy" after Ken successfully takes a bite from his fork (nonspecific) or "I like it when you use your fork" after Ken puts it on the table and uses his hands to eat from his plate.

6. **Escape extinction procedure:** If Ken engages is minor problem behavior (e.g., tries to leave the table, begins taking his clothes off), Emi will redirect him back to his task of finishing his meal. If Ken engages in major problem behavior (e.g., throwing objects, pushing objects off shelves), Emi will limit the amount of objects around him and wait until he calms down. She will then redirect him back to the table, show him what is left on his plate, and refer to the picture schedule to let him know when he can leave the table again.

**Inter-observer agreement.** Interobserver agreement was assessed in 30% of the sessions for the percentage of steps to successful completion, percent intervals of problem behavior, latency in minutes to termination or completion of the routine, and percentage of intervals of parent accurate use of the behavior support strategies. The experimenter provided another graduate student with approximately four hours of training on previously coded data from two pilot observation sessions. They coded the number of steps to
successful completion and the latency in minutes to termination or completion of the routine. They also reviewed definitions of child problem behavior and coded percentage of intervals of problem behavior. Training activities included a discussion of: (a) observations in the family home; (b) criteria for terminating an observation session; (c) use of the video monitor, cassette recorder, and scoring data sheets for data collection; and (d) child behavioral data coding. The scoring data sheets included operational definitions of problem behavior and steps in the routine, examples and nonexamples of child behavior, and a scoring protocol. Baseline data collection began after the observer achieved 85% interobserver agreement on the percentage of steps to completion, latency to termination or completion of the routine, and percentage of intervals of problem behavior.

Observer training for coding parent accurate use of the behavior support plan did not begin until the first intervention phase of the study. After the experimenter completed operational definitions of parent behavior support strategies, the observer received approximately two hours of training on a sample of probe sessions from the intervention phase. Parent accurate use data for the dinner routine was collected after the observer obtained 85% agreement for each intervention across two consecutive observations of probe sessions.

Interobserver agreement for percentage of steps to successful completion of the routine was calculated using the following formula: total number of agreements divided by the sum of agreements plus disagreements multiplied by 100. Two observers were given a list of the steps in the routine and asked to watch the same video tape of a probe session. While watching the tape, the observers were separated by a 1 meter barrier. The observers independently recorded which of the steps in the routine were completed. An agreement
occurred when the observers both scored that a given step on the list was completed.

Interobserver agreement checks for percentage of steps to successful completion occurred on 33% of the probe sessions balanced across phases. The average agreement for percentage of steps to successful completion was 98%.

Interobserver agreement for latency to termination of the dinner routine due to problem behavior was measured using a checklist that described the criterion level of untolerated and tolerated behavior that required the termination of the probe session. Interobserver agreement for the latency to successful completion of a routine was measured using a checklist that listed the steps of the routine and reserved a space to note the time that the last step of the routine was completed. Two independent observers, separated by a 1 meter barrier, simultaneously observed a video of a probe session. If a criterion behavior occurred, the behavior was noted on the checklist. If one untolerated behavior or two or three tolerated behaviors occurred within three minutes of the beginning of the observation, the behavior(s) and a time of 3 minutes was recorded on the checklist. If the criterion level of problem behavior occurred after three minutes into the observation, the behavior(s) and the time of termination were recorded on the checklist. If the criterion level of problem behavior did not occur, the observers noted the time that the routine was successfully completed. A margin of ± 5 seconds was used to assess the agreement between times noted by each observer. Occurrence agreement for the termination of a session due to problem behaviors was calculated by dividing the number of agreements of behavior(s) /time(s) to terminate a session by the number of occurrence agreements plus disagreements and multiplying by 100%.
Interobserver agreement for latency to successful completion of the dinner routine was calculated in two ways. Nonoccurrence agreement for the criterion level of problem behaviors (i.e., two observers independently agreed that the criterion level of behaviors did not occur) was calculated by dividing nonoccurrence agreement by nonoccurrence agreement plus disagreement and multiplying by 100%. Occurrence agreement on latency to successful completion of the dinner routine (i.e., all of the critical steps in the operationally defined routine were completed) was calculated by dividing agreement (i.e., the time the steps in the routine were completed) by agreement plus disagreement and multiplying by 100%.

Interobserver agreement for latency to termination or successful completion of the routine was completed with a second observer on 33% of probe sessions. Agreement checks were balanced across all phases. The average occurrence agreement across all latency to termination due to problem behaviors was 90%. The average nonoccurrence agreement across all latency to successful completion of routines was 100%. The average occurrence agreement across latency to successful completion of routines was 100%.

Interobserver agreement for percentage of intervals of problem behavior was calculated using the same formula listed above: total number of agreements divided by the sum of agreements plus disagreements multiplied by 100. Two observers were given a list of the problem behaviors and asked to watch the same video tape of a probe session. An agreement was considered when the two observers recorded an instant of problem behavior during the same 10-second interval of a probe session. Interobserver agreement checks for percentage of intervals of problem behavior occurred on 33% of the probe sessions balanced across phases. The average agreement for percentage of intervals of problem behavior was 94%.
Interobserver agreement for parent accurate use of behavior support strategies also was calculated using the formula: total number of agreements divided by the sum of agreements plus disagreements multiplied by 100. An agreement was considered when the two observers recorded the occurrence or nonoccurrence of a target behavior (i.e., parent accurate use of a behavior support strategy) during the same 60-second interval of a probe session. Interobserver checks for parent accurate use of behavior support strategies were completed on 25% of probe sessions during the two intervention phases and the follow-up phase. The average agreement across all support categories was 99%.

Qualitative Measures

Data Collection

Qualitative measurement occurred over an 11-month period by the experimenter. Prior to this study, the experimenter had served as a behavioral consultant to the family over a five month period and had therefore established rapport with Emi. The qualitative data collection coincided with the research phases of the withdrawal design. The specific measurement procedures used included a written journal kept by the experimenter and semi-structured interviews with Emi. These procedures are described in detail below.

Written journal. Throughout the entire span of the research study, the experimenter maintained a written journal where she recorded her thoughts and perceptions of collaborating with a family from a diverse cultural background. The experimenter’s reflective process was guided by a cultural assessment tool that was adapted from Chen et al. (2002) (See Appendix C). In total, 44 entries were made in the journal.

Qualitative interviews. Two semi-structured interviews relating to the cultural-fit piece of the behavioral support plan took place between Emi and the experimenter. The first
interview consisted of questions taken from the family assessment portion of the cultural assessment tool, which was conducted during the first intervention phase of the study. In general, this interview sought to gain information on the cultural background, values, and beliefs that shaped the experiences and perceptions of the family. The second interview consisted of a follow-up interview, which occurred three weeks after the second intervention phase had ended (See Appendix D). This interview focused on the positive behavior support strategies used during this study and how they fit with family’s cultural beliefs and lifestyle. Each interview took approximately 60 minutes to complete and was conducted in the family home. During the interviews, the experimenter wrote verbatim the responses made by Emi.

Data Analysis

All interviews and journal entries were coded by the experimenter as the study proceeded. Initially, an open coding approach (Strauss & Corbin, 1990) was used to determine the major categories (i.e., themes) represented in the data. Interview notes and journal entries were analyzed for preliminary descriptive and conceptual categories, which were noted in the margins of the data. Preliminary categories that were found to be repeated in the data were defined and used to guide the initial coding of the data. In total, eight categories emerged from this process. These categories were defined on cue cards, and the raw data was sorted according to these categories. The constant comparative method was used to develop new categories and merge existing categories (Strauss & Corbin, 1990). At this point axial coding was used to put the data back together in new ways by making connections between a category and its subcategories (Strauss & Corbin, 1990). These subcategories were the causal conditions for the category, the context of the category, the strategies that promoted or inhibited the category, and the consequences of the categories.
promotion or inhibition. Questions were asked of the data regarding: (a) the properties of the
categories; (b) what contexts or intervening conditions promoted or inhibited a category; and
(c) what were the consequences of a category's promotion or inhibition? Through an
inductive and deductive process, conditions and relationships for a category were connected
and three themes emerged upon final analysis.

Methodological Credibility

Several methods were used to enhance the methodological credibility of the
qualitative data (Merriam, 1988). First, triangulation across different methods and sources
was used to confirm findings. The interviews based on comments from Emi and journal
entries made by the experimenter offered different methods and sources from which the data
originated. Second, another qualitative researcher reviewed randomly selected samples from
each of the 3 themes to ensure the accurate application of category codes and refinement of
category descriptions. The qualitative researcher affirmed the experimenter's analysis of the
data. Third, member checks were done with Emi, which allowed for the confirmation of data
analysis from an original sources. Emi periodically evaluated the experimenter's
interpretations, generally affirming the experimenter's category codes and descriptions.

Research Design

The experimental procedure for this study was a single-subject research withdrawal
design (Richards, Taylor, Ramasamy, & Richards, 1999). The design had five phases: (a)
baseline, in which the implementation of an operationally defined envisioned routine
occurred; (b) intervention; in which Emi collaborated in the design of a positive behavior
support plan and was trained to implement the strategies in the dinner routine; (c)
withdrawal, in which a return to baseline conditions occurred; (d) re-implementation of the
intervention, in which Emi was asked to re-implement the behavior support strategies; and (e) follow-up, in which observation probes were re-initiated 3 weeks after the final intervention phase. This design is similar to the design used by Clarke et al. (1999) in their study of positive behavior intervention with a boy diagnosed with Asperger syndrome during a morning routine.

Procedures

Research procedures and clinical support procedures occurred throughout the course of the study. The general sequence of research and clinical support procedures was as follows: (a) preliminary screening assessment and identification of a target routine; (b) baseline; (c) intervention, during which comprehensive assessment and positive behavior support plan development occurred; (d) withdrawal; (e) return to intervention; and (e) follow-up.

Preliminary Screening Assessments and Identification of Target Routine

One family from a diverse cultural background was recruited through an agency providing early intensive behavior intervention to children diagnosed with autism. An agency representative distributed an introductory letter to prospective families that described the study. The family contacted the experimenter, who then invited the family to participate in a screening and participant selection process. Initial screening activities were scheduled after the family signed the consent form.

The family was invited to participate in three screening activities: (a) a preliminary functional assessment; (b) a routine assessment, and (c) behavioral observations to confirm problem behavior in the chosen routine. The preliminary functional assessment helped identify the behaviors of concern to the family and provided an initial understanding of the
controlling stimuli and consequences for the problem behavior. This assessment consisted of a short interview that occurred over one visit for a span of one hour.

The routine assessment consisted of a two-part interview protocol, with each part taking approximately one hour to administer. During the first part of the interview, Emi: (a) identified valued home and community routines in which Ken participated; (b) evaluated which routines and activities were associated with problem behavior; and (c) ranked the routines by preference for intervention. The first ranked routine, the dinner routine, was then selected as the setting for this study. The second part of the interview involved defining the content and structure of the dinner routine, which was achieved in collaboration with the experimenter. This process was guided by work done by Gallimore et al. (1989) and their concept of an activity setting. Emi was asked to describe five elements of a successful dinner routine: (a) the time and place of the routine; (b) the people present; (c) the material resources used; (d) the tasks that would be carried out and how they were organized; and (e) the family goals and values that would inform the routine. This process resulted in an operational definition of the dinner routine (see Table 4). A final preliminary activity was collaborating with Emi to define a criterion for termination of the routine due to problem behavior.

Following the preliminary functional assessment and routine assessment, four screening observations were completed in the target routine to verify the occurrence of problem behaviors. During the first two screening observations, Ken appeared to complete the routine with few difficulties. However, Emi commented that this was not the way he typically participated in the routine when only she and his older sister were present. The experimenter surmised that her previous role as the behavior consultant in the home
Table 4.

*Family Vision of a Successful Dinner Routine*

<table>
<thead>
<tr>
<th>Time/Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Between 6:30 and 6:45 pm. Routine lasts between 10 and 20 minutes.</td>
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</table>

<table>
<thead>
<tr>
<th>Persons Present</th>
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<tbody>
<tr>
<td>1. Ken, Emi, and his older sister Mya.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Material Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Preferred dinner foods.</td>
</tr>
<tr>
<td>2. Tableware (plates, cups, eating utensil, napkin).</td>
</tr>
<tr>
<td>3. Table and chairs.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Ken’s Tasks</th>
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</thead>
<tbody>
<tr>
<td>1. Be fully dressed before sitting at the table</td>
</tr>
<tr>
<td>2. Place favorite toy in a designated area, beside chair on the floor or on the chair next to him (if applicable).</td>
</tr>
<tr>
<td>3. Sit at the table when requested.</td>
</tr>
<tr>
<td>4. Use utensils to eat food off his plate (if not finger food) for 80% of his meal.</td>
</tr>
<tr>
<td>5. Use picture symbols to ask for more food or juice (if applicable).</td>
</tr>
<tr>
<td>6. Sign ‘all done’ when finished eating his food.</td>
</tr>
<tr>
<td>7. Place plate in the kitchen.</td>
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</table>

<table>
<thead>
<tr>
<th>Emi’s Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prepare dinner.</td>
</tr>
<tr>
<td>2. Place an appropriate amount of food on Ken’s plate.</td>
</tr>
<tr>
<td>3. Call Ken for dinner.</td>
</tr>
<tr>
<td>4. Ensure that Ken is fully dressed before sitting at the table.</td>
</tr>
<tr>
<td>5. Ensure that the television is off during dinner.</td>
</tr>
<tr>
<td>6. Have Ken place his favorite toy in a designated area (if applicable).</td>
</tr>
<tr>
<td>7. Direct, assist, and support Ken in the completion of his tasks (e.g., remain fully dressed, keep toy in a designated area, remain seated at the table, use picture symbols to ask for more food or juice, use utensils to eat his food).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goals, Values, and Beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ken will be able to successfully participate in a typical and valued family routine.</td>
</tr>
<tr>
<td>3. Ken will use eating utensils to eat food off his plate.</td>
</tr>
<tr>
<td>4. Ken will use picture symbols or sign language to communicate his needs during the meal.</td>
</tr>
</tbody>
</table>
attributed to Ken's change in behavior when in the experimenter's presence. Therefore, the last two screening observations were videotaped by Emi and verified the presence of problem behavior during the dinner routine. Each screening observation lasted approximately 7 minutes.

_Baseline_

During baseline, Emi was asked to perform the target routine according to the operational definition. Approximately 30 minutes before the dinner routine was to begin, the experimenter came in and set up the camera on a tripod. Emi was asked to read a one-page summary of the operational definition of the envisioned routine. She also reviewed the criterion level for problem behaviors for the termination of the routine. Three dependent variables were measured during the observation sessions: percentage of steps to successful completion of the routine, latency in minutes to termination of the target routine, and percent intervals of problem behavior. If a criterion level of problem behavior was reached before 3 minutes of the initiation of the routine, videotaping continued until the 3 minute mark was reached. If the criterion level of problem behavior was met after the first 3 minutes of the routine, videotaping was terminated. If the criterion level of problem behavior was not met, the routine continued until it was completed, or until a time limit for the routine was reached (approximately 20 minutes). Baseline observation sessions took place in 3 sessions over a span of 10 days.

_Intervention_

Once a stable rate of behavior was documented across baseline observation sessions, the intervention phase began. During this phase, in-depth assessments were conducted, a behavior support plan was designed, and Emi was taught to implement the components of
the intervention plan. Observation sessions were then conducted periodically during the intervention phase to assess changes in the behaviors targeted in the routine. This phase continued until Ken's behavior stabilized at a substantial level of improvement and the routine was completed successfully. The percentage of intervals of parent accurate use of behavior support strategies also was measured during intervention.

**Completion of Comprehensive Assessments**

Two assessments were conducted: (a) a cultural assessment and (b) a functional assessment. This information was used to develop a positive behavior support plan aimed to be both technically sound and a good cultural fit with the family. Each assessment is described below.

*Cultural assessment.* The cultural assessment was based on a cultural assessment tool developed by Chen et al. (2002) and consisted of questions intended to guide the experimenter in her interactions with the family. These questions were grouped into three areas: (a) planning; (b) family assessment; and (c) self-evaluation. During planning, the experimenter reflected on questions that helped plan for future interactions with the family. This process began during the preliminary screening process. This was to help ensure that the preliminary introduction to the family and set-up for the study was as culturally sensitive as possible. Throughout the planning period, the experimenter reflected on how family members interacted and communicated with each other, and in turn, how the experimenter could best communicate with the family. During family assessment, the experimenter gathered culturally relevant information through indirect observations and open-ended questions posed to Emi. These questions covered three different areas: family structure, resources, and family perceptions and attitudes. They were addressed to Emi in a short
interview that took place in the family home over a span of approximately 60 minutes. Throughout the interview, the experimenter took detailed notes on the responses Emi gave. During self-evaluation, the experimenter reflected on questions pertaining to the experimenter’s interaction style with the family in an effort to help guide and foster parent-professional collaboration. This was an ongoing process that began during the preliminary screening process and continued throughout the study.

A written journal was used to record the information gathered from each set of questions. The log book contained direct quotes from Emi as well as personal observations made by the experimenter. The journal also was a place where the experimenter could record her thoughts and perceptions about the behavior support process. The information collected in the journal was used in the development of the culturally sensitive behavior support plan. It also was analyzed for descriptive and conceptual categories as part of a qualitative analysis focused on the cultural aspects of the positive behavior support process. The journal contained 44 entries, which spanned a period of 11 months, from the time the consent forms were signed until the last follow-up data point was collected.

*Functional assessment.* The functional assessment consisted of interviews and observation sessions. This assessment extended from the brief functional assessment conducted during the initial screening process. The protocols used in this assessment are described by O’Neill et al. (1997). A functional assessment interview (FAI) took place in the family’s home over two sessions with Emi. The interview took approximately 2 hours to complete. The purpose of the interview was to identify Ken’s behaviors of concern and to develop hypotheses about the functions that maintain these behaviors and controlling antecedent variables. Following the interview, functional assessment observations (FAO) of
the behaviors were conducted to confirm hypotheses about the functions of Ken’s problem behavior. The videotaped observation sessions taken during baseline were used for data collection. A summary of the functional assessment is presented below.

The functional assessment indicated that Ken engaged in six categories of problem behaviors with his family during the dinner routine: (a) destructive behaviors such as throwing objects or pushing objects off shelves; (b) noncompliance such as physically resisting his mom or leaving a designated area like the table; (c) crying or wailing; (d) using his hands when eating off his plate; (e) taking his clothing off during the meal; and (f) insisting a favorite item such as a belt, article of clothing, or stick, remain on the table. Overall, the functional assessment confirmed the perception that persistent and serious problem behaviors occurred during the dinner routine.

During the dinner routine, there were some ecological conditions that appeared to contribute to Ken’s problem behavior. Throughout his day, Ken was given unlimited access to food, which led to an irregular appetite and less desire for food when requested to sit down for dinner. Therefore, when Ken was asked to sit and eat his meal, he would engage in problem behavior to escape the task. He also preferred to eat his food in front of the television set, which was rarely turned off. Anytime Emi attempted to turn the TV while Ken was at home, he would respond by crying, wailing, and taking his clothing off. If the television was not turned back on, problem behavior would escalate into destructive actions, such as throwing or pushing furniture or objects off shelves. Common family responses to problem behaviors appeared to strengthen the behaviors over time. For example, when Ken cried or engaged in destructive behavior due to the television being turned off during meal times, his mother turned the television back on and allowed him to eat in front of it.
Two hypotheses about the functions of Ken’s problem behavior emerged from the assessment: (a) Ken engaged in problem behavior (i.e., noncompliance, crying or wailing, taking his clothes off) to escape a demand such as sitting at the table when requested and (b) Ken engaged in problem behavior (i.e., destructive behavior, noncompliance, crying or wailing, eating with hands off plate, keeping a favorite item on the table) to gain access to a preferred activity such as watching television.

**Plan Design**

Upon completion of assessment activities, a multicomponent intervention package was developed in collaboration with Emi. The components designed for this intervention package were a direct reflection of the assessment results, including the specific elements (e.g., time, people, task) of the dinner routine, as identified during the initial screening process. The process had three steps, which are described below.

*Build a summary statement/competing behavior pathways diagram.* Functional assessment results were used to develop two summary statement/competing behavior pathway diagrams for problem behaviors in the dinner routine. The diagrams outlined the setting events, antecedent triggers, problem behaviors, and maintaining consequences (i.e., function) that were operating in the routine. The diagrams also identified desired behaviors for the routine and acceptable alternative replacement behaviors. The diagram guided the design of a technically sound plan that renders problem behaviors irrelevant, ineffective and inefficient at achieving their purpose (See Figure 1 and 2).

*Identify strategies logically linked to features of problem in the chosen routine.* For each feature of the problem in the pathways diagram for the dinner routine (e.g., setting events, antecedent triggers, problem behavior, maintaining consequences), a logically linked
- allowed unlimited access to food throughout the day
- difficulty with transitions from preferred to non-preferred activities

Setting Events

Ken is given a non-preferred demand such as 'come sit at the table'.

Antecedent Trigger

- Physically resists coming to the table
- Tries to leave the table
- Cries or wails
- Takes his clothes off

Problem Behavior

- use appropriate language (e.g. say 'all done') to delay the demand

Alternative Replacement Behavior

Desired Behavior

Ken will complete the demand or task cooperatively

Maintaining Consequence

- Emi praises Ken
- Ken receives access to a preferred activity

Maintaining Consequence

- Ken is allowed to leave the table and eat his meal elsewhere (Escape-Motivated)

Figure 1. Summary statement/competing behavior pathways diagram for escape-motivated behavior during the dinner routine.
Figure 2. Summary statement/competing behavior pathways diagram for obtaining access to a preferred item or activity during the dinner routine.
behavior support strategy was generated. Strategies were designed to make problem behaviors no longer functional and to make positive behavior highly functional. For the dinner routine, positive behavior support strategies were selected from four categories of empirically validated interventions: (a) setting event strategies; (b) antecedent strategies; (c) teaching strategies; and (d) consequence strategies. This process also involved choosing behavior support strategies in collaboration with Emi to ensure that the plan was both technically sound and a good cultural fit with the dinner routine. The information gathered from the cultural assessment tool was used to help facilitate this process. The competing behavior analysis framework for escape-motivated and tangible-motivated behaviors and logically linked support procedures proposed in the preliminary behavior support plan are presented in Figure 3 and Figure 4.

**Finalize strategies that are likely to be effective and culturally appropriate.** Emi and the experimenter engaged in two final steps to ensure that the plan was both simple and culturally appropriate. First, they reviewed the proposed strategies and retained only those that were necessary and sufficient. Second, they reviewed the cultural assessment information and adjusted the strategies as needed to better fit the routine and family. Three examples illustrated below demonstrate how information from the cultural assessment was used to enhance the behavior support plan.

First, Emi had shared with the experimenter the importance of instilling an understanding of the Japanese language and culture in her home. Since Ken was nonverbal, he also was learning other means of communicating aside from spoken words (i.e., sign language and picture exchange communication). Often, these alternate forms of
- Completes demand or task cooperatively
- Receives praise from mom

- allowed unlimited access to food throughout the day
- difficulty with transitions from preferred to non-preferred tasks

- Presented with a non-preferred demand such as 'Sit at the table'

- Physically resists mom
- Leaves the table
- Crys or wails
- Takes off clothing

- Uses appropriate language to delay the demand

- Escapes eating at the table

<table>
<thead>
<tr>
<th>Setting Event Manipulations</th>
<th>Antecedent Manipulations</th>
<th>Behavior Teaching</th>
<th>Consequence Manipulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Allow Ken no food to eat one hour before dinner time</td>
<td>- Place smaller amounts of food on Ken's plate when first implementing the routine to ensure success. Gradually increased amounts over time</td>
<td>- Teach Ken to sit at the table during the dinner meal</td>
<td>- Offer Ken praise contingent on his appropriate behavior (e.g., I like the way you're sitting at the table)</td>
</tr>
<tr>
<td>- Provide Ken with advanced warning of when the dinner routine would start (e.g., 10 more minutes until dinner)</td>
<td>- Use visual strategies to increase the predictability of the routine such as a picture sequence depicting the steps in the dinner routine</td>
<td>- Teach Ken to put his dish in the kitchen once finished his meal.</td>
<td>- If disruptive behavior (e.g., leaving the table, taking clothes off, crying or wailing, resisting mom) results, ignore and redirect to the task of eating all the food in the assigned area</td>
</tr>
</tbody>
</table>

- Teach Ken to sign or gesture 'all done' when he's finished with his meal

Figure 3. Competing behavior pathways diagram and the logically linked support procedures for the function of escape-motivated behavior during the dinner routine.
**Setting Event Manipulations**  
- A visual clock will be used with Ken to help him understand the time limits placed on TV watching  
- Ken will be encouraged to engage in other activities aside from watching television throughout his day

<table>
<thead>
<tr>
<th>Antecedent Manipulations</th>
<th>Behavior Teaching</th>
<th>Consequence Manipulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Use visual strategies to increase the predictability of the routine such as a visual contingency strip to indicate when the television would be turned back on. A 'no TV' symbol will be placed on the television while it was turned off</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Use positive contingency statements (e.g., first eat all your food, then TV)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Use proactive task prompts</td>
<td></td>
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<tr>
<td>- Teach Ken to use an eating utensil (spoon and fork) correctly and consistently</td>
<td></td>
<td></td>
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<tr>
<td>- Teach Ken to use his picture communication symbols when requesting more food or drink</td>
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<td></td>
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<tr>
<td>- Teach Ken to keep his favorite items in a designated spot (e.g., on the floor beside his chair)</td>
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<tr>
<td>- Offer Ken praise contingent on his appropriate behavior (e.g., I like the way you are eating with your spoon)</td>
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<td></td>
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<tr>
<td>- Offer Ken access to a preferred activity (e.g., TV) contingent on finishing his meal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- If disruptive (e.g., screaming or wailing, leaving the table, eating food with hands) results, ignore and redirect to the task of eating all the food in the assigned area with the proper eating utensil</td>
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<td></td>
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<tr>
<td>- If destructive behavior (e.g., throwing and pushing objects) results, limit the objects in the area, wait for Ken to calm down, then redirect him to the task of eating</td>
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**Figure 4.** Competing behavior pathways diagram and the logically linked support procedures for the function of access to a preferred activity during the dinner routine.
communicating were taught to Ken in conjunction with the English language. While Emi supported this strategy, she knew that Ken's father, Asano, conversed with her son primarily in Japanese. Therefore, it was important to use a combination of the English and Japanese languages in conjunction with the picture symbols and sign language used during the dinner routine to reflect the diversity of communication systems in the home. It was decided that Japanese was the language in which the dinner routine would be conducted, since this would be something with which both Emi and Asano would be comfortable. However, English would be used when requesting Ken to use sign language or picture communication symbols, since this was the manner in which he was taught to communicate with these alternate forms of communication. In cases where Ken knew both the Japanese and English terms for a particular sign or symbol (e.g., eat), English or Japanese were used interchangeably.

Second, the cultural assessment identified variations on appropriate table manners between Japanese and Canadian cultures. Emi shared that in her culture a sign of respect to family members and elders was the use of appropriate table manners during all meal time routines. This included using the appropriate eating utensil to eat all of one's food and speaking in an appropriate manner. However, she felt that some of these customs were too difficult for Ken to understand or implement and did not reflect the more relaxed manner in which people in the Canadian culture carried out the meal time routine. Therefore, it was established that a smaller set of manners would be taught throughout the routine such as: (a) the use of a fork or spoon to eat food off his plate; (b) the use of a napkin at the dinner table; (c) the ability to clean up after oneself after the completion of the routine (e.g., place plate in the kitchen area). However, Ken would not be expected to use chopsticks like the rest of his
family. He also would not be redirected from using his hands to eat finger foods or food that fell off of his plate and on to the table or his clothing while he was eating from his plate and using an appropriate utensil.

Third, the cultural assessment indicated that a major strength of Emi was the unconditional love she possessed for her children. While it was evident that she desired to teach and guide Ken in the appropriate behaviors necessary to complete the dinner routine, the experimenter observed that she did not readily use positive reinforcement strategies with her children to distinguish and encourage appropriate behavior. Therefore, the experimenter found it necessary to emphasize the use of particular reinforcement strategies during the dinner routine that included: (a) the use of praise contingent on an appropriate behavior; (b) the need for praise to be specific to the behavior being reinforced; and (c) the use of physical attention such as a pat on the back or head in conjunction with praise. These strategies were first discussed while finalizing the positive behavior support plan, and were revisited and adapted during the second intervention phase of the study.

After adjusting the plan to reflect the cultural assessment information, the experimenter met with Emi for 1 hour to finalize the changes made to the behavior support plan. During this meeting, the experimenter encouraged Emi to give her opinion of the proposed intervention procedures. She agreed with the changes made to the plan, and a finalized plan was later typed out and given to her (see Appendix E). A summary of the behavior support plan is presented in Table 5. Additionally, these strategies were condensed and simplified into a two-page implementation checklist that served to prompt Emi to carry out each procedure listed (See Appendix F). She was asked to review the checklist before
implementing the dinner routine and complete the self-evaluation portion of the checklist after the routine was completed.

*Implementation Support*

After the behavior support plan had been finalized, Emi was taught to implement each component of the intervention package. Training sessions occurred between 1 to 3 times per week (M = 1.7) in the family’s home during the dinner routine, lasting between 15 to 30 minutes in length (M = 22.1 minutes). During this phase of the study, a total of 11 training sessions occurred over a seven week period for a total of 4.6 hours. The training sessions consisted of direct training by the experimenter with Ken, modeling of the interventions for Emi, coaching her to use the interventions herself, and problem-solving discussions (Lucyshyn et al., 1997). These procedures are discussed in further detail below.

Before training sessions began, an assessment of the materials necessary to carry out the interventions were listed and either purchased or developed. A digital camera was brought in to take pictures of items in the family’s home that would dictate the sequence of events that take place in the completion of this routine (e.g., dining room table, chair, Ken sitting at the table, plate full of food, Ken eating food at the table, empty plate, kitchen counter, television). These photos were laminated and attached to a plastic strip with Velcro®. Picture symbols also were created using the Boardmaker® software system. These symbols consisted of messages Ken may need to communicate at the dinner table (e.g., more food, more juice). These symbols were placed on top of a small binder containing Velcro®. The binder was placed on the table during the meal so Ken could easily communicate a message. Finally a Time Timer®, a visual clock used to count down the number of minutes remaining in a one hour time period, was purchased. It was set 20
Table 5.

Summary of Positive Behavior Support Plan

Ecological Procedures
1. Limit the amount of food Ken eats one hour before dinner.
2. Provide Ken with a warning of when dinner will begin (e.g., 10 more minutes).
3. Encourage Ken to engage in other leisure activities aside from TV throughout his day.
4. Use a visual clock (Time Timer®) to establish limits on television watching

Antecedent Procedures
1. Limit the amount of food on Ken’s place when first implementing the routine.
2. Use visual strategies such as a picture schedule of steps in the routine, visual contingency strip, and ‘no TV’ symbol.
3. Use positive contingency statements.
4. Use proactive task prompts.

Teaching New Behaviors
1. Teach Ken to eat properly with a spoon and a fork.
2. Teach Ken to sit at the table with the television off during the dinner routine.
3. Teach Ken to place his dish in the kitchen once finished his meal.
4. Teach Ken to use picture symbols and sign language when communicating his needs.

Consequence Strategies
1. Offer praise and physical affection for appropriate behaviors at the table (e.g., sitting, using his utensils when eating).
2. Offer a preferred activity (e.g., TV) contingent on Ken finishing his meal at the table with the TV off.
3. If Ken engages in minor problem behavior, ignore and redirect him to his task of finishing his meal.
4. If Ken engages in major problem behavior, limit the amount of objects in his reach, until he calms down, then redirect him to his task of finishing his meal.

During the initial training sessions with Emi, the experimenter modeled the interventions in the plan with Ken. After approximately three sessions, Emi began to implement the interventions on her own while the experimenter observed and coached (e.g.,
provided instruction, modeling, and feedback) her in the accurate use of the procedures. During this time, the experimenter slowly faded herself from the dining room area until she was able to coach the routine from behind the living room coach. This was to ensure that Ken would complete the routine without the stimulus control of the presence of the experimenter. After each training session was completed, the experimenter and Emi discussed Ken’s progress, highlighted all instances of appropriate implementation procedures, and touched upon any implementation errors that occurred. Emi was also taught to fill out the implementation checklist. When both Emi and the experimenter felt that Emi could successfully complete 75% or more of the steps listed on the checklist, an observation session was scheduled. This occurred after the first six training sessions. During an observation session, no training took place. Once the experimenter evaluated the videotaped session, another training session was scheduled to build on progress made in Emi’s implementation of behavior support procedures and provide additional support to Emi for procedures that were previously implemented incorrectly or not at all. In most cases, one training session occurred between each subsequent observation session. This process continued across four observation sessions until a stable level of improvement was observed in Ken’s behavior and routine participation.

Approximately six weeks into the intervention phase, the experimenter also had Emi complete the contextual and cultural fit evaluation. This was given to her at the end of a training session and took approximately 10 minutes to complete.

Withdrawal

Once a stable rate of positive behavior change was evidenced during the first intervention phase, the withdrawal phase was introduced. During this phase, Emi was asked
to discontinue implementing the intervention plan and to return to preintervention conditions. This involved discontinuing the use of: (a) warning signals; (b) visual support systems (e.g., schedule, communication symbols, visual clock); (c) positive contingency statements; (d) proactive task prompts; and (e) contingent praise. This phase consisted of three observation sessions over a two week period.

*Return to Intervention*

After a clear regression in Ken’s behavior was observed, the behavior support plan was re-instituted by Emi. Across six training sessions, Emi was given time to practice using the intervention strategies again. Emi also was given more coaching to refine her use of proactive prompting and contingent praise. In particular, Emi worked on physically or verbally prompting Ken to use the proper eating utensil at the table before he had a chance to pick some food up with his hands. This was particularly important during the first five minutes of the meal. She also worked on using more praise, both verbal and nonverbal, contingent on the occurrence of appropriate behavior from Ken during the routine. Throughout this process, Emi worked on increasing the amount as well as the specificity of the praise she used. Training continued until Emi could successfully complete 75% or more of the steps listed on the implementation checklist. At this time, an observation session was scheduled. In total, four observation sessions were conducted during the return to intervention phase. The first two observation sessions were followed by one final training session. The final two observation sessions were scheduled within the following week. At this point, a stable level of positive behavior change was re-established. In total, seven training sessions occurred between 1 to 2 times per week ($M = 1.6$) for a length of 15 to 25
minutes (M = 18.29 minutes) over a span of 5 weeks. Approximately 2.1 hours of training occurred during this phase of the study.

During the last training session of this phase of the study, the contextual and cultural fit evaluation was given to Emi for the second and final time in this study. It was completed by her in approximately 10 minutes at the end of the training session.

Follow-Up

Follow-up began after Ken demonstrated the successful completion of all the steps in the dinner routine and stable levels of positive behavior were established. Two follow-up probes occurred three weeks after the last observation session in the second intervention phase. After the observation sessions were conducted, a follow-up interview was scheduled later in the week. During this interview, the experimenter first sought Emi’s feedback on how she viewed the behavior support process. Second, the experimenter broke down each section of the behavior support plan and asked Emi to comment on the effectiveness of the setting event strategies, antecedent strategies, teaching strategies, and consequence strategies used in the dinner time routine. Third, the experimenter asked Emi whether this routine would be acceptable if implemented in a Japanese home. The experimenter also asked Emi if any part of the plan conflicted with her family’s cultural values and beliefs. Last, the experimenter and Emi discussed the long-term maintenance of the dinner routine. Two obstacles to the long-term maintenance of the routine were examined: (a) variability in when and how the breakfast and lunch meals were carried out in the family home; and (b) the absence of training to Asano, and how this could affect Ken’s behavior during the dinner routine when Emi was away. Two solutions to these obstacles were generated: (a) ensuring that Ken ate all of his other meals at the dinner table; and (b) training Asano in how to
implement the dinner routine. The information obtained from this interview also was
analyzed for descriptive and conceptual categories as part of the qualitative analysis.
CHAPTER THREE - RESULTS

Overview

Both quantitative and qualitative measures were used to address the goals in this study. Direct observation data of child behavior were displayed in graph form and visually analyzed. Support approach outcome data for child behavior was analyzed for level, trend, and variability within and across baseline, intervention, withdrawal, return to intervention, and follow-up phases. The presence of a functional relationship between independent and dependent variables across the different phases of the withdrawal design was evaluated by looking for stable levels of improved behavior in the intervention and return to intervention phases as compared to the baseline and withdrawal phases. The perceived effectiveness and level of cultural-fit of the positive behavior support plan with the family was assessed by scores taken from the cultural evaluation. In addition, themes related to a culturally sensitive process of positive behavior support and perceived outcomes of this process were garnered from the qualitative analysis of the parent interviews and experimenter's journal. The results obtained from the quantitative and qualitative measures used in this study will be examined separately in the following sections.

Quantitative Results

Five dependent variables were used to evaluate the design and implementation of the culturally-appropriate positive behavior support plan: (1) percentage of steps completed in the routine; (2) latency in minutes to the termination or successful completion of the routine; (3) percent intervals of problem behavior exhibited by Ken; (4) percentage of intervals of parent accurate use of behavior support plan strategies; and (5) cultural-fit index. Each of these variables are summarized below.
Percentage of Steps Completed

Figure 5 shows the percentage of steps completed by Ken during the dinner routine. In baseline, Ken completed an average of 0% of the steps in the routine. During the first intervention phase there was an increase to an average of 78% of the steps in the routine completed. During the withdrawal phase, there was a reduction in the average number of steps completed to 40%. With the re-implementation of the behavior support plan, the average number of steps increased to 95%. During follow-up, Ken continued to improve and completed 100% of the steps during the dinner routine. Overall, these data indicate improvements in Ken’s ability to complete the steps in the routine during the two intervention phases as well as during follow-up.

Latency in Minutes

Figure 5 also presents the latency in minutes to termination of the dinner routine due to problem behavior or to successful completion. Overall, these data indicate improvements in latency during the intervention phases and follow-up. During baseline and withdrawal, Ken spent an average of 3.06 minutes in the dinner routine. All the sessions were terminated due to problem behavior and five out of six sessions were terminated at the 3 minute cut off point. During the two intervention phases and follow-up, latency improved to an average of 8.4 minutes (range 3 to 14.36 minutes). A summary of latency data by phase is presented below.

Baseline. During baseline, the data showed a short latency in minutes to termination of the dinner routine. Across all three observation sessions, the latency to termination criterion was reached before the 3 minute minimum cut off point.
Intervention. With the implementation of the culturally-appropriate positive behavior support plan, an improvement in latency data was evident. Average latency rose to 8.3 minutes (range 3 to 14.36 minutes). Across the four observations sessions, the routine was terminated only once within the three minute minimum cut off point. Improvements in latency showed an increasing trend across the last two observation sessions.

Withdrawal. During the withdrawal phase, a decrease in the latency data was evident. The average latency decreased to 3.13 minutes (range 3 to 3.4 minutes) across 3 observation sessions. All the observation sessions were terminated due to problem behavior and 2 of the 3 observation sessions were terminated at the 3 minute minimum cut off point.

Return to intervention. During the return to intervention phase, latency data increased to an average of 10.06 minutes (range 8.14 to 12.50 minutes) across four observation sessions. Only the first of the four observation sessions was terminated due to problem behavior at 12.5 minutes. These improvements in latency remained stable across the last three observation sessions.

Follow-up. During follow-up, improvements in latency were maintained over two observation sessions. The average latency in minutes was 6.8 minutes (range 6.0 to 7.52 minutes). Ken successfully completed the dinner routine in each of these sessions. The latency data remained stable across the two observation sessions.

Percentage of Intervals of Problem Behavior

Figure 6 shows the percentage of intervals of problem behavior exhibited by Ken during the dinner routine. In baseline, Ken exhibited an average of 87% of intervals with problem behavior. During the first intervention phase, there was a decrease to an average of 16.7% of intervals with problem behavior during the routine. During the withdrawal phase,
Figure 5. Percentage of steps completed during the routine (top graph) and latency in minutes to termination of the routine due to problem behavior or to successful completion of the dinner routine (bottom graph).
there was a moderate increase in problem behavior to 45.3% of intervals. With the re-implementation of the behavior support plan, the percentage of intervals of problem behavior decreased to 2.0%. This level of behavior change remained stable during follow-up at 2.3% intervals of problem behavior. Overall, this data indicates a decrease in problem behavior during the two intervention phases. These improvements were maintained during follow-up.

*Parent Use of Support Plan Procedures*

Parent treatment integrity data was gathered across three observation sessions during the two intervention phases and follow-up. These data showed an overall average level of treatment integrity of 55.7% (range 31.5 to 80% of intervals). There were two sources for this moderate level of treatment integrity. First, within each observation session, treatment integrity began being measured while Emi was still setting the table in preparation for the meal. During this period, she was not able to interact with Ken, which lowered the average level of treatment integrity. Second, Emi infrequently used contingent praise during the dinner routine. This was particularly evident during the first intervention phase, where Emi achieved a modest 31.5% treatment integrity. Emi used more praise as the study progressed (80% treatment integrity during the second intervention phase and 55.6% treatment integrity during follow-up), but these levels were still rather low. This source of variability may be explained by one aspect of Japanese culture. Among the Japanese people, praising a member of one’s group, such as a child or a spouse, is viewed as a means of indirectly praising oneself, which is considered taboo (McCarty, 1997). While Emi had expressed a desire to use praise a few times during the study, she may not have received much praise from her parents while growing up in Japan. In addition, she may have adapted this cultural
Figure 6. Percentage of intervals of problem behavior during the dinner routine.

perspective as part of her upbringing. This may explain why Emi had difficulty adopting this strategy with her own children. For the other five support strategies, Emi’s implementation fidelity averaged 72% of intervals (range 47 to 88.9 % of intervals).

Cultural Fit Ratings

An index of the cultural-fit of the behavior support plan was measured twice; once during the first intervention phase and once during the return to intervention phase. For Emi, the average cultural fit index was 4.75 (range 4.6 to 4.9), with 1 representing a poor fit and 5 representing a good fit with the family’s ecology. Overall, Emi believed that the behavior support plan was a good fit with the family’s cultural goals, expectations, beliefs and values.
Qualitative Results

Two data collection methods were used to gather data on the unique aspects of developing a culturally-appropriate behavior support plan with a family of a diverse cultural and linguistic background: parent interviews and a written journal kept by the experimenter. A qualitative data analysis of these data revealed three major themes: (a) building and maintaining rapport; (b) obtaining guidance from a cultural interpreter; and (c) recognizing and accommodating a cross-cultural belief system. The findings gleaned from these two methods and sources and a description of these themes are explained in further detail below.

Parent Interviews

Two different semi-structured interviews were administered to Emi during the study. The family assessment interview was conducted during the beginning of the first intervention phase to aid in the process of designing a culturally-appropriate positive behavior support plan. A follow-up interview was conducted during follow-up to gain Emi’s perspective on the family support process and how it related to the culture of her family. The findings from each of these interviews are shared below.

Family assessment interview. The family assessment interview provided information and feedback about three different areas; family structure, resources, and family perceptions and attitudes. In the area of family structure, Emi described herself as the key decision maker when it came to issues about her children. Her husband, Asano, tended to be more involved in other areas, such as issues related to finance. Emi tended to be the main disciplinarian in the home, but she commented that she wished for her husband to play a bigger role in this area. Emi found that Asano did not readily discipline the children and the responsibility often fell to her. Emi noted, “I have to do it, but I don’t always want to. It makes it hard for
me. We grew up different...I think he got treated different than me (by his parents), that can make us different now.” Regarding extended family, while Emi talked often to her parents in Japan, the family did not have any extended family in Canada. Emi also commented that men tended to have a higher status within the family in Japan, which differed from her experiences of family structure here in Canada.

In the area of resources, Emi commented that she tended to receive both emotional and financial support from her parents in Japan. She said that it was, “common for your family to help you if you need it, my parents will (also) help me if I need to talk.” With regard to Ken’s needs, Emi also received support from the interventionists who implemented his early intensive behavior intervention program as well as from the preschool that he attended five days per week. When Ken was in preschool or spending time with his interventionists, Emi was able to carry out some of her other household duties.

In the area of family perceptions and attitudes, Emi described several goals that were important for her and her family. One important goal was that both her children receive the best education possible. She felt that the education system in Canada would be able to give both of her children the academic skills they needed, without the pressures that existed in the Japanese education system. She stated, “Education is very important in Japan, there is a lot of status around this, going to the right school, it is not always good...I like it here, it [going to the right school] is not as important.” Another goal was for Ken to be an independent and successful member of society. Emi commented that Ken would receive better support and services for his disability compared to the services that were provided in Japan. Emi also believed he would be better accepted by people here and would be given the chance to receive an education in an inclusive environment. She commented, “We want Ken to go to
school, to be independent...It is good here, you have more choice. In Japan, there are less options, you don’t see the children (like Ken), they go to separate schools. I want Ken to go to school with other children.” Emi also was able to highlight some strengths of her family. She said that it was important to be close to her extended family, since they were able to provide both financial and emotional support to her while raising her family. She also felt that the decision to live in Canada helped both her children when it came to receiving a good education. Despite these strengths, there also were significant stressors experienced by this family. One of the biggest stressors was dealing with the financial burden of raising two children on one income. Given Ken’s disability, there were often extra costs associated with providing him with the support he needed. With her role as the primary care giver in the home, Emi also had to deal with stress related to providing her family with all their physical and emotional needs. Emi commented that she wished her husband was more involved with these duties to help reduce the workload.

*Follow-up interview.* During the follow-up interview, Emi shared her perspectives about the family support process. Information was gained on how effective she found each of the setting event, antecedent, teaching, and consequence strategies that were used. Emi also provided her perspective on how the plan fit with her family’s cultural values and beliefs.

Overall, Emi commented that she found the dinner routine that she now implemented with Ken to be a close fit with what she originally envisioned when she started the process. She commented “It is good, even when I am not sitting with him, he knows what to do.” Regarding the setting event strategies, Emi found that it was really important not to allow Ken to eat for at least one hour before dinner. She also found it important to give him a 5
minute warning signal before the meal was to start. Regarding the antecedent strategies, Emi commented that the use of natural positive contingencies helped encourage Ken to finish his meal. Regarding the teaching strategies, she said, "It is good that Ken can eat with a fork or spoon. Now he will use it any time, or at least try." Emi also noted that she was happy that Ken could successfully communicate his needs with his communication symbols. Regarding the consequence strategies, she said that it was important to re-direct him to the table if he got up during the meal. Emi noted, "When I started doing it by myself (implementing the routine) he didn't want to stay, but I made him and he knew."

When asked to comment on which strategies she would see herself using six months from now, Emi noted that she envisioned using the visual systems like the Time Timer® and picture communication symbols in the future. However, she found other visual aides such as the dinner meal picture sequence irrelevant now that Ken already knew what to do. Emi also said that she would continue to use praise to encourage good behavior from Ken.

Emi also was asked if any aspect of the plan conflicted with her family's cultural values or beliefs. She replied, "No. When I was little, the whole family would eat together. Now, I'm glad he joins in. It is nice." Emi also felt that the routine she currently implemented would be acceptable if implemented in a Japanese home today. In her final comments during this interview, Emi shared that she initially had a lot of reservations about implementing the routine. She was pleasantly surprised at how easy the process was. She said, "I thought at first it was going to be hard, but it became a natural thing. He acts like normal kids do. It was easier than I thought, so I can continue to do it."
Written Journal

A synopsis of the reflections made by the experimenter throughout the 11 month research process is given below. They are separated along three phases of the family support process: (a) planning and relationship development; (b) behavior support plan development; and (c) implementation support.

Planning and relationship development. Upon signing the consent forms with the family, the experimenter used the questions in the planning section of the cultural assessment to guide her interactions with the family. Since the experimenter had previously interacted with the family as a behavioral consultant, she had already started to develop a rapport with Emi before the study had begun. In her journal, the experimenter commented that this prior association made the family support process both quicker and easier to establish. From her interactions with the family, the experimenter knew that Emi was fluent in English, but that Japanese was the main language spoken at home. The experimenter also saw that the family tended to communicate with each other in a quiet, indirect manner. In her journal, the experimenter reflected that Emi had a “calm and gentle” manner with her children. The experimenter also witnessed few direct exchanges between Emi and Asano. From the onset of the study, the experimenter documented the importance of communicating in a “clear and concise” manner with Emi. This meant not overwhelming Emi with too many questions and being careful to limit the amount of jargon used in speech. The experimenter noted that this was not always easy to do and felt it was something she would need to monitor throughout the study. During this time, the experimenter also began reflecting on the importance of having a cultural guide to share experiences with and gain further insight into the Japanese culture. In her case, the cultural guide was her research advisor, who had
previously spent some time living in Japan and was also married to a Japanese woman. By the time the behavior support plan was ready to be developed, the experimenter noted that Emi was a “resilient and committed mother” who believed ensuring that both of her children received a good education was one of her most important priorities.

Behavior support plan development. During this phase of the family support process, the experimenter continued to document both her progress and setbacks when dealing with communication barriers. When conducting the functional assessment interview, the experimenter found it necessary to adapt some of the questions in order to reduce some of the jargon used and make the questions easier for Emi to understand. The experimenter also struggled with trying to make her communication with Emi a balanced and interactive experience. At times, the experimenter documented that she felt like she carried many of the conversations she had with Emi. She felt that Emi was used to dealing with an expert-driven model of collaboration, and that she needed to reinforce any attempts made to share new ideas or reservations. The experimenter also recognized how much she relied on reading nonverbal cues when conversing with people. This became evident in some of the conversations she had with Ken’s father. The experimenter noted that it was often difficult to tell how he was feeling when she shared some of the plans developed for Ken. Upon completing the family assessment interview, the experimenter commented on how the interview allowed her the means to gather insight into an aspect of the family that may not have otherwise been shared. With regard to this family’s belief system, the experimenter saw a lot of cross-over between Japanese and Canadian cultures. This was not surprising, since both Emi and Asano had been living in North America for over a decade. The experimenter also found that the behavior support plan needed to address 3 culture-based issues. First, it
was important that the behavior support plan incorporate aspects of both the Japanese and English languages into the routine. Second, the support plan needed to address the importance of proper eating etiquette in the Japanese culture. Third, the contingent praise, listed as an antecedent strategy, needed to be adapted to best fit Emi’s parenting style.

Implementation support. By this point in the research study, the experimenter felt that she had finally established a more balanced and interactive dialogue with Emi. The experimenter commented that she found Emi “…very easy to coach. She[Emi] readily understood how to implement the plan quickly.” At times, the experimenter struggled with using the right balance of support strategies (e.g., modeling, role playing, coaching, written strategies) to help Emi implement the routine. In the end, she found that a combination of modeling, coaching (with simple, verbal feedback), role playing, and written feedback was the most fruitful. The experimenter also found it important to learn some key Japanese phrases spoken by Emi to the children. For example, “Jozu desu na” means ‘well done” and “ii ko” means “good child”. This was to monitor Emi’s ability to successfully implement the dinner routine. The process of learning some simple Japanese phrases also allowed the experimenter to better familiarize herself with and relate to the Japanese culture. Emi’s calm and quiet parenting style again became evident during this phase of the study. The experimenter noted in her journal how Emi took more ownership of the plan as the study progressed. For example, by the end of the return to intervention phase, Emi was independently changing the tangible reinforcers used to motivate Ken to finish the dinner meal. Overall, the experimenter found Emi to be very committed and dedicated to the family support process.
Themes

Three themes emerged from the analysis of the information obtained from the parent interviews and written journal. A summary of these themes are provided next.

Building and maintaining rapport. Throughout the study, the experimenter became increasingly aware of how important rapport building was in the process of developing and implementing a successful intervention plan. The experimenter found that there were many elements involved in the process of building and maintaining a rapport. One of these elements was understanding the importance of communication when interacting with the family. Early on in the study, the experimenter commented in her journal that it was “important to establish an interaction and communication style that works well with the family.” One of the first steps taken was to understand the communication barriers that existed between the experimenter and the family. The first barrier was that the experimenter did not understand or speak Japanese, which was predominantly spoken at home. This language barrier left the experimenter feeling isolated at times, especially when observing the family communicating amongst themselves. It also made it difficult to monitor the effectiveness of the behavior support plan. During the first intervention phase, the experimenter noted that it was “hard to get a complete sense of the successfulness of the routine when I can’t understand what’s going on at the table”. This language barrier also appeared to have an effect on Emi’s ability to communicate with the experimenter. While Emi understood and spoke English quite well, the experimenter thought it would have been easier for her to share her thoughts in Japanese. At times during the interviews, it seemed difficult for Emi to relate information in English. With some of the interview questions, she only provided a 3 or 4 word answer. During these times, the experimenter wrote in her
journal “I have to be watchful not to talk too much, to carry on and lead all of the conversation.” A second communication barrier was dealing with, in the experimenter’s view, a difference in non-verbal communication from Ken’s parents. In her early conversations with the family, in particular with Asano, the experimenter often felt unsure of how family member’s perceived her. The experimenter found it difficult to interpret their facial expressions and tone of voice. However, upon doing some reading on Japanese culture, the experimenter learned about the cultural concepts of tatemae and honne. Tatemae refers to public behavior, while honne refers to one’s real feelings (Hendry, 2003; Sugimoto, 2003). For the Japanese, communicating in public in a vague and ambiguous manner maintains a standard of politeness, which is deemed very important in their culture. One’s true feelings, honne, aren’t usually shared and, if shared, only expressed to members close to them. As the experimenter spent more time with the family, she became more comfortable with this style of communication.

After taking time to understand the communication barriers that existed between the experimenter and Emi, the experimenter evaluated and adapted her own communication style. She found that her best conversations with Emi occurred when she spoke in a clear and concise manner and limited the amount of questions that she asked. When collecting assessment information, the experimenter found it necessary to provide relevant, real-life examples for Emi to relate to. For example, when asked to describe the problem behaviors often exhibited by Ken, the experimenter found it difficult for Emi to give an answer to this question. However, after the experimenter examined each aspect of Ken’s day with Emi, Emi could relate and describe many examples of problem behavior. The experimenter also took time to learn some key Japanese phrases, in particular, words spoken during the dinner
routine. During the first intervention phase, the experimenter had Emi translate different phrases that she used at the dinner table. For example, “Gohan desu yo” means “Dinner time” and “Suwatte, ne” means “Sit down, ok”. The experimenter wrote these down and listened for them during her training sessions. During training sessions, the experimenter also wrote down any other language she didn’t understand and had Emi or the cultural interpreter translate it for her after at a later date. For example, the cultural interpreter translated phrases such as “Mo chotto, ne tabete” (Eat a little more, ok.) and “Zenbu tabetara, terebi, ne.” (After [you] eat all [of your food you can watch] television). This allowed the experimenter to feel more in tune with communication used at the dinner table and to assess how effective Emi was at implementing the behavior support plan.

During the parent training phase, the experimenter also adapted her teaching style to better reflect the needs of the family. When first teaching Emi different components of the behavior support plan, the experimenter found it useful to model the strategies for her over the first three to four sessions. This strategy was used frequently throughout the study to reinforce what Emi was doing well and also to demonstrate new ways to implement a teaching procedure. The experimenter also found it useful to give Emi written feedback after each of the observation sessions. This gave Emi an opportunity to reflect on the feedback once the experimenter left as well as prepare herself for the next observation session. In her journal, the experimenter commented that “it is important for consultants to give a lot of thought into what communication and teaching approach works best for the family they’re supporting...it’s necessary to find the best fit for each family.”

Another element important in the process of building and establishing a rapport with the family was taking time to understand how cultural factors affected their values and
beliefs. In her journal, the experimenter reflected “it is important that I get a sense of what is important to Emi.” By implementing the culture assessment, the experimenter was much more aware of Emi’s family structure, the resources she had available to her, and the perceptions she had regarding child rearing, education, and Ken’s disability. After completing the family assessment interview, the experimenter obtained six books about Japanese culture and researched information pertaining to child rearing, education, disability and family structure in Japan (Hendry, 1986, 2003; Lebra, 1984; Sakamoto & Naotsuka, 1982; Schwalb & Schwalb, 1996; Sugimoto, 2003). The information obtained in these readings allowed the experimenter to have a deeper understanding of values important to Emi, such as the importance Japanese mothers place on ensuring their children receive a good education (Lebra, 1984; Schwalb & Schwalb, 1996). The experimenter also found Emi’s strong connection with her extended family verified by Sugimoto (2003), who stated that approximately half the people 65 or older in Japan either live with one of their children or converse with their children on a daily basis. Sakamoto and Naotsuka (1982) offered insights that were consistent with Emi’s viewpoint about the importance of demonstrating proper social etiquette in Japanese society.

By the end of the study, the experimenter believed that taking the time to establish a good rapport with Emi, as well as being informed about Emi’s Japanese culture, translated into Emi having greater confidence in herself when it came to implementing the behavior support plan. In her journal, the experimenter reflected “it’s essential to take the time to get to know [the family], [otherwise] there’s no way that the plan could have been implemented so effectively and efficiently.” During the follow-up interview, when asked how she felt
implementing the behavior support plan, Emi commented “I thought at first it was going to be hard, but it became a natural thing. It was easier than I thought, so I continue to do it.”

*Obtaining guidance from a cultural interpreter.* One factor that helped the experimenter understand Ken and his family better was seeking the advice of a cultural interpreter; someone who had a good understanding and awareness of the Japanese culture. In the experimenter’s case, her cultural interpreter was her research advisor. Although he was born and raised in the United States, he had spent a number of years teaching in Japan and was also married to a Japanese woman. In her journal, the experimenter often reflected on her conversations with her research advisor. This helped her acquire a better understanding of Ken and his family. She wrote “it’s important to have someone to bounce off ideas or get a different perspective on how a family member may be reacting to a situation…I could more readily confirm and expand on some of my feelings and perceptions.” The experimenter found her adviser particularly helpful when learning about the concepts of *honne* and *tatemae*. He was also able to translate some of the key Japanese phrases used by Emi during the dinner routine as well as teach the experimenter some simple Japanese greetings, such as “Konnichi wa” which means “Good day” or “Waza waza arigatoo gozaimasu” which means “Thank you for going to so much trouble [on behalf of myself].”

*Recognizing and accommodating a cross-cultural belief system.* Since Emi had lived in North America over the last ten years, Japanese and North American cultures helped shaped her values, beliefs, and interactions with her children. The experimenter found it important to acknowledge both of these influences when attempting to understand Emi’s cultural background.
Through the process of completing the culture assessment, the experimenter found that there were many ways in which Emi’s Japanese upbringing shaped her thoughts and beliefs, especially when it came to raising her children. Emi was the primary care giver in the home and was responsible for attending to all of Ken’s and Mya’s needs. Asano played a much smaller role in the children’s lives. This, at times, caused added stress for Emi, particularly when it came to disciplining the children. This manner of raising children is common in Japanese culture, with the wife at home raising the family and the father working long hours and having limited involvement with his children (Sugimoto, 2003). Emi often talked about her desire to have her children, in particular Mya, be fluent in both English and Japanese. On a few occasions, Emi commented that Mya would be looked upon unfavorably if she ever returned to Japan and did not have good use of the Japanese language. Due to this concern, Emi provided Ken and Mya with a lot of exposure to the Japanese language. Both Emi and Asano spoke Japanese to the children at home and Emi also played video tapes featuring Japanese children’s programs on television. These tapes were often sent to Emi by her mother in Japan.

There also were many aspects of North American culture that informed Emi’s values and beliefs. Soon after the study began, the experimenter became aware of how important it was to Emi that her children receive a good education. Emi often noted that education was held in very high regard in Japan. However, Emi commented that she did not appreciate the elitist attitude and competitive nature upon which the pursuit of education in Japan was based. She also noted that most schools in Japan did not accept children like Ken who have a disability. Emi desired a more relaxed, inclusive approach to education, which she felt she received here in Canada. Emi also felt that Ken’s disability was misunderstood in Japan. In
Japanese, autism was referred to as the ‘closed within yourself’ disease. Emi researched the types of treatment available to Ken in Japan and found it to be much less extensive compared to what he received in Canada.

Due to the overlap in Japanese and North American belief systems, the experimenter found it important to incorporate elements reflecting both cultures in the behavior support plan. This became particularly relevant when it came to choosing a communication system and positive reinforcement strategies. With regards to communication, Emi and the experimenter decided that it was best to have Emi use Japanese around her children when implementing the routine. However, Emi decided to use English in conjunction with the picture symbols and gestures that Ken used at the table in order to remain consistent with the manner in which Ken was taught to use the symbols with his behavior interventionists and support staff at school. With regards to positive reinforcement, Emi expressed a desire to praise Ken during the dinner routine when he behaved appropriately. However, near the end of the first intervention phase, it became evident that Emi was not used to using this form of positive reinforcement with her children. As noted earlier, this may be due to notions of praise being a sign of self-gratification, and therefore inappropriate, in the Japanese culture. Upon collaboration between Emi and the experimenter, Emi decided to use praise as well as physical (patting on the head or back) and tangible (offering Ken a piece of her food) reinforcement. These broader range of choices seemed to help Emi incorporate more positive reinforcement into the routine during the second intervention phase and follow-up. These choices also seemed to better reflect the type of positive reinforcement that Emi used with her children outside of the dinner routine.
CHAPTER FOUR – DISCUSSION

Summary and Integration of Results

This study addressed three questions pertaining to the efficacy of adapting a family-centered positive behavior support approach for a family from a diverse cultural background: (a) Is there a functional relationship between a positive behavior support plan that has been designed to take into consideration cultural aspects of family life, and improvements in child behavior and participation during a valued home-based routine?; (b) How do parents view the cultural-fit of the positive behavior support plan with the family?; and (c) What are the unique aspects of a process of developing and implementing a culturally-appropriate PBS plan with a family of a diverse linguistic and cultural background? The quantitative and qualitative results provide answers to each of these questions.

Quantitative results indicate the presence of a clear functional relationship between the implementation of a culturally enhanced positive behavior support plan and improvements in Ken’s participation in the dinner routine and substantial reductions in his problem behavior. During the baseline phase of the study, the dinner routine was terminated after 3 minutes due to untolerated instances of problem behavior. Ken also completed few, if any, of the steps in the routine. During initial implementation of the culturally enhanced positive behavior support plan, Ken participated in the dinner routine for longer periods of time and engaged in substantially less problem behavior. Ken also was able to complete all, or most, of the steps in the routine. With the removal of the behavior support strategies, problem behaviors re-emerged, resulting in less time in the routine and fewer steps of the
routine completed. The re-implementation of the plan saw a reduction in Ken’s challenging behavior to zero or near-zero levels. He was again able to sit down at the table and eat his entire meal, completing all the steps in the routine. These behavioral improvements were maintained over a three-week period.

In addition, high parent treatment integrity data for 5 of the 6 support strategies suggested that the family support process was effective in empowering Emi to support Ken during the dinner time routine. The qualitative data obtained from the follow-up interview further supported this finding. Emi reported that she originally felt that learning how to implement the routine would be difficult. She was pleasantly surprised at how easy and natural it felt to implement the support strategies during the routine. She also reported that she would try using some of the strategies she learned, such as contingent praise and warning signals, in other routines with Ken.

The results of the cultural-fit index and follow-up interview suggest that Emi viewed the positive support plan and process in a positive light. There were high parent indices of cultural-fit between the support plan and the family’s cultural background. Emi also reported that the positive behavior support plan would be acceptable if implemented in her native country of Japan.

Qualitative results highlighted unique aspects in the design and implementation of a positive behavior support plan with a family of a diverse cultural background. The information obtained from the cultural assessment tool and the experiences outlined in the experimenter’s journal yielded three themes relevant to providing effective behavior intervention services for family’s of a diverse background. Building and maintaining rapport informed by cultural knowledge was a key element in establishing a successful collaborative
partnership between the experimenter and Emi. This effort to build rapport resulted in better communication exchanges between Emi and the experimenter. Emi also appeared to be more relaxed and confident with the experimenter after rapport had been established. The guidance of a cultural interpreter was important in enhancing the experimenter’s understanding of the Japanese culture. The interpreter was able to share his knowledge of Japanese culture in areas pertaining to communication, interaction styles, and values and perceptions related to child rearing. Taking the time to consider various aspects of the family’s cultural background also helped the experimenter design a positive behavior support plan that matched the family’s cultural values and beliefs. The experimenter found that a mixture of Japanese and North American ideals needed to be incorporated in Ken’s positive behavior support plan. For example, when first discussing the envisioned routine and later designing the behavior support plan, the experimenter found that Emi wanted Ken to communicate in both Japanese and English during the dinner meal. It was therefore decided that Emi would direct and praise Ken in Japanese, but would use English when Ray used gestures like ‘all done’ or communication symbols to request more food or drink.

Contributions to the Literature

This study adds to the growing body of literature supporting the use of a family-centered PBS approach in the treatment of children diagnosed with a developmental disability who engage in challenging behavior (Arndorger et al., 1994; Carr et al., 1999; Koegel et al., 1998; Lucyshyn et al., 1997; Moes & Frea, 2000, 2002; Vaughn, Dunlap et al., 1997; Vaughn et al., 2002). This research replicates the work of Clarke et al., (1999) in the use of a single subject withdrawal design to demonstrate a functional relationship between the implementation of a positive behavior support plan in a home-based routine and
improvements in child behavior and successful routine participation. The study also supports the use of the activity setting, in this case a dinner routine, as a unit of analysis and intervention within a positive behavior support approach (Buschbacher, Fox, & Clarke, 2004; Lucyshyn et al., 1997). The dinner routine allowed for the collection of multiple measures to document change in Ken’s behavior. After the implementation of the positive behavior support plan, Ken showed a reduction in problem behavior and an increase in functional skill use (e.g., use of an eating utensil, use of picture communication symbols). He also became an active participant in the dinner routine. The dinner routine also contributed to the design of a culturally appropriate behavior support plan. For example, Emi thought it was important that she spoke predominantly in Japanese when implementing the routine. The experimenter and Emi collaborated to ensure that certain strategies, such as the use of positive contingency statements or praise, were easy to present in the Japanese language. The maintenance of behavior change also was taken into consideration, albeit modestly so, with Ken showing stable rates of behavior change after a 3 week period following the final phase of intervention.

This study also corroborates the use of multiple methods to provide a more complete picture of the process of change within a positive behavior support approach (Vaughn, Dunlap, et al., 1997). The single subject research design allowed the experimenter to demonstrate a functional relationship between the implementation of the behavior support plan and positive changes in Ken’s behavior and routine participation. The cultural-fit evaluation allowed the experimenter to evaluate the cultural-fit of the positive behavior support plan in the light of Emi’s unique cultural values and beliefs. The qualitative methods and results provided insights into how a service provider can use cultural information about
a family of a diverse cultural background to develop a culturally-sensitive process of positive behavior support.

The study also contributes to the growing body of literature that recognizes the need for contextualized interventions that address the ecology, culture, and values of families, in addition to the variables that are associated with problem behavior (Lucyshyn et al., 1997; Moes & Frea, 2000, 2002). The study is the first of its kind to specifically look at aspects of a family's cultural background in the design and implementation of a positive behavior support plan. The experimenter's conversations with Emi regarding Emi's Japanese upbringing and experiences allowed the experimenter to better understand and communicate with Emi. Informed by this understanding, the experimenter and Emi were able to work collaboratively to develop a behavior support plan that reflected Emi's cultural values and beliefs. Given the increasing cultural diversity of children and families in need of family-based behavioral support services in North America, it is becoming more important to understand a family's cultural background when developing behavior interventions (Chen et al., 2002; Lucyshyn et al., 2002).

In addition, the study responded to the call for research on how cultural differences can affect support to families of children with disabilities (Cho et al., 2000; Danesco, 1997; Garcia et al., 2000; Salend & Taylor, 2002). Culture has been shown to affect various elements of service delivery to families, such as the ability to form effective parent-professional partnerships (Hanson et al., 1990; Rao & Kalyanpur, 2002). Researchers in the field of family support also have discussed the effect that differing communication styles can have on formulating collaborative partnerships (Lynch & Hanson, 1998). The use of parent-professional collaborations to develop effective interventions in real-life settings has been
demonstrated by other researchers (Clarke et al., 1999; Koegel et al., 1998; Vaughn, Dunlap et al., 1997; Vaughn et al., 2002). The study extends this body of work by demonstrating how a cultural assessment tool can enhance communicative interactions and, in turn, facilitate the development of collaborative parent-professional partnerships with a family of a diverse linguistic and cultural background. In this study, the process of communication was complicated by differences in language and culture. For example, the demonstration of *tatemae* by Ken's parents resulted in a communication style unfamiliar to the experimenter, which made some of her initial interactions with the family stilted. The cultural assessment tool helped the experimenter develop her cross-cultural competence (Chan, 1990), which in turn led to an ability to adapt her communication style and enhance the relationship between herself and Ken's mother. By establishing a solid parent-professional partnership, the experimenter was also able to better understand and chose behavior support strategies that were compatible with Emi's parenting style. For example, the experimenter found that verbal praise was not something that Emi commonly did with Ken. However, the experimenter did recognize that Emi would sometimes nod her head or pat Ken on the head or back when he performed a task well. The experimenter asked Emi to incorporate these types of praise into the dinner routine, which Emi did with some moderate success.

Researchers involved in studying the impact of cultural diversity on the delivery of family-centered support services have also recognized that an interpreter can be helpful in facilitating cross-cultural communication (Barnwell & Day, 2000; Lynch & Hanson, 1996). This study demonstrated how the involvement of a cultural interpreter helped guide the experimenter on issues involving verbal and nonverbal communication differences.
Researchers also recognize that an individual's cultural background is made up of many different elements (Chen et al., 2002; Hughes et al., 1993; Loden & Rosener, 1991) such as language, geographic location, and family status. This study highlights how the process of acculturation can influence one's cultural values and beliefs. Emi's Japanese upbringing influenced certain aspects of her character, such as the language she predominantly spoke with her children and the status she had in her family of being the primary care giver to her children. However, her many years of living in Canada shaped other aspects of her beliefs, such as her feelings on educating her children and the best treatment options for her son. It was important for the experimenter to understand how these different elements shaped her cultural beliefs in order to design an intervention plan that reflected both her Japanese and North American ideals.

Implication of Findings

A number of the findings outlined in this study can be used to enhance the delivery of effective behavior support services to family's from a diverse cultural background. The study examined how the application of a cultural assessment tool can: 1) guide rapport development; 2) help with plan design; and 3) direct an individual toward cultural education sources. First, the study provided descriptive evidence of how parent-professional collaborations can be enhanced through a process of building and maintaining a rapport with family members. The study described three elements of this rapport-building process: (a) recognizing and responding to communication barriers; (b) adapting one's communication style; and (c) evaluating what's important to family members. These three elements can be utilized by service providers to help develop and strengthen their relationship with the families whom they support. Second, the cultural assessment tool provides a framework for
gathering culturally specific information about family members. This information may help guide service providers when deciding upon which strategies to incorporate into a positive behavior support plan. In this study, the cultural assessment tool helped the experimenter understand Emi's desire to have both the Japanese and English languages integrated into the dinner routine. After further discussing this issue with Emi, the experimenter found that the best way to incorporate both of these desires was to have Emi implement the routine in Japanese, but use English in conjunction with Ken's gestures and picture symbols. Third, the cultural assessment tool encouraged the experimenter to seek other sources of information about the Japanese culture, such as input from a cultural interpreter and information from books about Japan. A cultural interpreter can be a valuable source of knowledge for a service provider. As well, books and journals can expand upon a service provider's knowledge and understanding of a variety of different cultures. It may be worthwhile for current service providers to identify the cultural education resources available to them within their community.

This study also provides some preliminary insight into two important considerations to make when supporting a family of Japanese background. First, the experimenter found that the communication style used by this family contained aspects, such as the demonstration of *tatemae*, unique to the Japanese culture. Understanding this difference allowed the experimenter to view her interactions with the family in a different light and further strengthen her relationship with the family. Second, Emi's role as a housewife and primary caregiver to her children is similar to the role many Japanese mothers fulfill (Lebra, 1984; Schwalb & Schwalb, 1996; Sugimoto, 2003). Acknowledging this may help service
providers understand and address some of the added sources of stress that these mothers may face.

Limitations of the Study

It is important to reflect upon the limitations of this study. First, the cultural assessment tool used in this study had not been empirically validated prior to the study. This was the first study of its kind to use this type of tool in the behavior support planning process. Also, the withdrawal design employed in this study offered no comparison between the effects of a behavior support plan enhanced by the cultural assessment tool and a behavior support plan without such an enhancement. Therefore, it is difficult to assess whether this tool contributed to the positive outcomes evidenced in the quantitative results. Further studies comparing culturally enhanced behavior support plans with non-enhanced behavior support plans would provide an opportunity to directly examine this relationship.

Second, given that only one child and family participated, the external validity of this study is limited. Therefore, it is difficult to draw conclusions about the potential impact of using a cultural assessment tool with other families from diverse cultural backgrounds. Given that this family had lived in North America for over 10 years, it is also difficult to generalize these finding to other Japanese families who have recently immigrated to Canada. Replication of this study with other families from a variety of cultural backgrounds, including Japan, is necessary to address the generalized relevance of the findings in this study. Other concerns for external validity also are warranted given that Emi was a highly committed parent who was very supportive of her son and daughter. It is difficult to say whether all families of a diverse cultural background raising a child with a developmental disability would have the same level of commitment.
Third, the study used several qualitative measures that have to be regarded with caution. Since the experimenter worked closely with Emi throughout this process, it is possible that the experimenter’s influence may have impacted the way Emi responded to the interviews. The reflections of the experimenter also were subjective and may have biased the manner in which she analyzed the qualitative data. However, member checks, triangulation, and peer review of categories were used to minimize these potential sources of bias (Merriam, 1984).

Fourth, follow-up data were collected only three weeks after the last intervention phase had ended. In order to more effectively establish the maintenance of the dinner routine, follow-up data would need to be collected over months and years, not just weeks.

Fifth, only a moderate level of parent treatment integrity was documented in the study. The moderate level of parent treatment integrity was the result of the experimenter’s difficulty with effectively teaching Emi to praise Ken during the dinner routine. However, Emi did show gradual improvements in praising Ken as the study progressed. As well, the experimenter witnessed a lot of subtle interactions occurring between Emi and Ken, such as frequent instances of eye contact and Emi slightly nodding her head at Ken, which were not scored as contingent praise. However, these actions may have been serving the same purpose as a positive verbal statement or a pat on the head. It also was noted earlier that, in the Japanese culture, praise can be viewed negatively as a form of self-gratification (Hendry, 1986; McCarty, 1997). Traditionally, Japanese parents view their children as a reflection of their own self. Thus, praising one’s child is viewed as praising one’s self, which is seen as a sign of vanity. Instead, praising is left up to people outside of the home, such as grandparents or neighbors.
Sixth, the amount of time and effort taken to design and implement the culturally enhanced positive behavior support plan should also be considered. Once the first intervention phase began, the experimenter spent approximately 1.0 hour every week working closely with Emi in her home over a 5-month period. In total, the experimenter spent approximately 30 hours interacting with the family. While the experimenter felt that this commitment to the intervention process was important, it may not be realistic for all service providers to provide this type of involvement for an extended period of time. Lastly, there was a limited amount of family involvement in the study. Given Asano’s work schedule, it was difficult for him to play a more substantial role in the study. It is believed that Asano’s involvement in the study may have offered a richer understanding of how cultural diversity can affect the support plan process. It should be noted, however, that Asano’s rather limited involvement is not unusual for a Japanese father in regard to direct support of his children.

Future Directions

It is recommended that future research should focus on three areas. First, given that this was the first study of its kind to demonstrate how a cultural assessment tool can be used in the design and implementation of a culturally-enhanced behavior support plan, it is important that this process be replicated with other families of diverse cultural backgrounds. In order to get a true sense of how cultural differences influence the behavior support process, the replication of this study should occur across a variety of different cultures such as Chinese families, East Indian families, and First Nations families. Second, it is important to recognize that Ken’s family had lived in Canada for over 10 years. Through the process of acculturation, they had identified with and adapted many North American ideals. Replicating
this study with a family that recently immigrated to North America may offer different insights into incorporating aspects of culture into the behavior support process. Third, the experimenter collaborated with only one family member in the design and implementation of the culturally enhanced behavior support plan. Studies that include other family members (e.g., fathers, grandparents, siblings) of diverse cultural backgrounds as collaborative members in the positive behavior support process may offer more insight on how to best enhance family-professional partnerships.

Conclusion

The study examined three questions: (a) Is there a functional relationship between a positive behavior support plan that has been designed to take into consideration cultural aspects of family life, and improvements in child behavior and participation during a valued home-based family routine?; (b) How do parents view the cultural fit of the positive behavior support plan with the family?; and (c) What are unique aspects of a process of developing and implementing a culturally-appropriate PBS plan with a family of a diverse linguistic and cultural background?

Quantitative results indicated the presence of a clear functional relationship between the implementation of a culturally enhanced positive behavior support plan and improvements in Ken's participation in the dinner routine and substantial reductions in his problem behavior. In addition, the quantitative results also suggest that the family-centered training and support activities facilitated the mother's ability to implement five of the six strategies effectively. Finally, the quantitative results suggest that the behavior support plan was a good fit with the family's cultural goals, expectations, beliefs and values.
Qualitative data analysis of parent interviews and the written journal kept by the experimenter revealed three major themes: (a) the elements of building and maintaining rapport informed by cultural information; (b) the importance of obtaining guidance from a cultural interpreter; and (c) recognizing and accommodating a cross-cultural belief system.

The findings of this investigation made several contributions to the growing body of literature supporting the use of a family-centered PBS approach in the treatment of children diagnosed with a developmental disability who engage in challenging behavior. First, this research replicated the work of Clarke et al. (1999) in the use of a single subject withdrawal design to demonstrate a functional relationship between the implementation of a positive behavior support plan in a home-based routine and improvements in child behavior and successful routine participation. Second, the study supported the use of the activity setting, in this case a dinner routine, as a unit of analysis and intervention within a positive behavior support approach. Third, the study corroborated the use of multiple methods to provide a more complete picture of the process of change within a positive behavior support approach. Fourth, the study was the first of its kind to specifically look at aspects of a family’s cultural background in the design and implementation of a positive behavior support plan. The study demonstrated how the application of a cultural assessment tool could: 1) guide rapport development; 2) help with plan design; and 3) direct one’s self toward cultural education sources. Last, this study offered suggestions for future research with families of diverse linguistic and cultural backgrounds.
References


Horner, R. H., & Carr, E. (1997). Behavioral support for students with severe disabilities:


1. Preliminary assessment to define the home routine and verify problem behavior in the routine
2. Videotaped observations in the chosen routine to measure outcomes

Research and family support activities will occur over a 4-5 month period. During this time your child and family will be involved in activities for approximately 2-4 hours per week. The total time required for your participation will range from 40-80 hours. Research and family support activities are described below:

**Preliminary Assessment**  This will involve two interviews with you and other family members at a time and place that works best for you. These interviews will last 1-2 hours. The purpose of the interviews is to identify valued routines in your home and to develop a basic understanding of your child’s problem behavior. Following these interviews, we will conduct two or three pilot observations of the routine you chose to work on. The purpose of these observations will be to verify the occurrence and purpose of problem behavior. Each observation will last up to 15-20 minutes.

**Comprehensive Assessment**  First, a functional assessment interview will be completed. This will involve one meeting of 1-2 hours in length. This assessment will help us understand your child’s problem behavior within the chosen routine. Second, we will complete a family ecology assessment. This will involve one meeting of 1-2 hours in length. This will help us learn about your family’s strengths, resources, and goals for your child and family. Third, a culture assessment will be performed. This will involve one meeting of 1 hour in length. This assessment will help us learn more about your family’s cultural beliefs and values.

**Positive Behavior Support Plan Design**  Following assessment activities, we will collaborate with you to build a positive behavior support plan for the chosen routine. This will be done at one meeting that will last 1-2 hours. During this meeting, family members and the co-investigator will review assessment information and build a support plan that fits with the chosen routine.

**Implementation Support**  Training and support to help you and other family members implement the support plan in the chosen routine will occur approximately twice per week and involve 1-2 hours. During these meetings, the co-investigator may talk to you about some of the written instructions and practice the strategies with you. After you have succeeded in improving your child’s behavior in the chosen routine, you will be asked to stop using the strategies in the intervention plan and return to the way you did the routine with your child before the study started. This will only be for 3-4 days. Once your child has returned to the way he or she acted before the study started, you will be asked to re-implement the positive behavior support plan. Implementation support will be provided again as needed to help you succeed in improving your child’s behavior again.

**Videotaped Observations in a Valued Home-Based Routine**  Videotaped observations in the chosen routine will occur during four experimental phases: baseline, intervention, removal of intervention, and re-implementation of intervention. Observation sessions will not occur on the same day as an implementation support meeting. During observation sessions, an observer will videotape your child and family’s participation in the selected routine. Each observation session will last up to 30 minutes. During baseline, observation sessions will occur an average of once or twice per week over a period of 2-3 weeks. Approximately six to seven observations will be completed.
During the first intervention phase, observation sessions will occur an average of once or twice per week over a period of four weeks. Approximately 6 observations will be completed. During withdrawal, observation sessions will occur three to four times per week over a period of one week. Approximately 3 observations will be completed. During the re-implementation of intervention phase, observation sessions will occur an average of once or twice per week over a period of four weeks. Approximately 6 observations will be completed.

Assessment of Cultural Fit  You will also be asked to fill out a questionnaire about how the design and implementation of the positive behavior support plan ‘fits’ with the cultural beliefs of your family. This questionnaire will take approximately 30 minutes to complete.

POTENTIAL RISKS AND SAFEGUARDS

If you agree to participate and permit your child and family to participate, you will need to consider four potential risks: (1) physical; (2) psychological; (3) legal; and (4) loss of confidentiality.

1. **Physical Risk**  Because your child engages in problematic behavior, there is more than a minimal risk that you, your child, or another family member may experience physical injury during the study. Every precaution will be taken to minimize the risk:

   a. The research team have extensive experience working with children who engage in problem behavior in the home.
   b. Behavior support strategies will focus on preventing behavior problems and on teaching positive behaviors that are designed to replace problem behaviors.
   c. Observation sessions and training and support activities will be stopped if your child begins to engage in medium or high intensity problem behavior.
   d. As needed, the research team will be available to assist you, your child, and other family members during observation sessions, and during training and support activities.

2. **Psychological Risk**  Because your family will be observed in your home and will participate in training and support activities, you may experience some discomfort or stress during these activities. Several steps will be taken to guard against this risk:

   a. During observation sessions, the observer will be quiet and try not to disturb you
   b. Your or other family members can stop an observation session at any time.
   c. Interviews will be conducted at a time and place that works best for you and your family. Also, we will work with you to make sure your goals are met.

3. **Legal Risk**  A potential but minimal risk relates to the legal requirements around reporting abuse is it is witnessed. If members of the research team witness any abuse of your child by any person, they will have to report it to the appropriate provincial authorities. This risk will be guarded against in the following ways:
consent to you, your child with developmental disabilities and other family members (i.e. siblings) participation in the study. If you do not consent, it is not necessary for you to sign or return the form.

Sincerely,

Christy Cheremshynski, Graduate Students (Masters)
Co-investigator
Faculty of British Columbia
We want to learn how to help you and your family at home during [insert here the routine chosen by the family]. We know that sometimes it's hard to do things without getting upset. The things that you and your parents will learn will be pretty helpful. We will make sure that while you are working with us you are safe. We will do our best to make life happier for you and your family. Sometimes, a person will visit your home to videotape you and your parents and other family members (e.g., your brother and/or your sister). Later, we will look at the videotapes and learn if our help is working or not. We would like to help your family for about four to five months.

While we are helping you and your parents, if you want us to leave just tell us. You won’t get in trouble! Also, if you have any questions about what you will be doing, just ask us to explain. If you want to try, please sign your name on the line below. Your parent(s) have already told us that it is all right with them if you want to work with us. Remember, you don’t have to, and once you start you can rest or stop whenever you like.

Name of the participant: ________________________________

___________ YES, I agree to participate.

Signed: ______________________ Date:____________________

Witness: ______________________ Date:__________________
BROTHER OR SISTER ASSENT FORM

Family Implementation of a Culturally Appropriate Positive Behavior Support Plan: An Experimental and Descriptive Analysis

We are interested in learning how to help your parents support (name of focus child) at home during an important routine. We plan to do this by conducting a study. We know that sometimes it’s hard for ________________ to do things without getting upset. We would like to help him/her and your family with this. We would do this by teaching your parents ways to help ________________ stay calm and happy during an important routine in your home. We may also spend some time teaching ________________ ways to get what he/she wants by using words or pictures instead of problem behavior. The things that ________________ and your parents learn will be pretty positive.

We would also like to ask you to participate in the important routine at your home. If you agree to participate, we will ask you to do what you typically do during the routine; that is, listen to your parents and cooperatively do the routine. We will make sure that while you and your family are working with us, you and your family are safe. We will do our best to make ________________’s life more enjoyable for him or her. By doing so, we also hope to make your life and that of your family’s more enjoyable.

When we begin, a person will visit your home to videotape you, ________________ and your parents in an important home routine. The observer will videotape about once a week for approximately four months. He or she will do our best to stay out of the way. Later, we will look at the videotapes and learn if our help is working or not. We will make sure that only those people who need to see the videotapes have a chance to see them. We would like to help your family for approximately 4 to 5 months.

By agreeing to participate, we believe we can help your family make a happier life for ________________ and also your family. Your participation also will help us learn better ways to support other families. While we are helping your family or while a person is videotaping, if you do not want to participate, just tell us. You won’t get in any trouble. If you don’t want to participate at all, you don’t have to. Just say so. Also, if you have any questions about what you will be doing, or if you cannot decide, just ask us if there is anything you would like us to explain. If you want to try please sign your name on the line below. Your parents have already told us that it’s all right with them if you want to participate. Remember, you don’t have to, and once you start you can rest or stop whenever you like.

Name of Participant: ________________________________

____________ YES, I agree to participate

Signed: ________________________________ Date: ________________________________

Witness: ________________________________ Date: ________________________________
Appendix B

Cultural Fit Evaluation for Treatment Plan Used by Family

(Dinner Routine)

Date: _____________________

Family member completing evaluation: _____________________

Introduction: This survey is for use by families working with consultants to improve the behavior and lifestyle of their son or daughter. The survey is based on our experience that the success of a support plan depends a great deal on whether the plan “fits” with the cultural values and lifestyle of a family. Your responses will help us (a) improve the quality of the plan. (b) understand better how to build support plans that are most helpful. Below are fourteen questions about the plan and its prospects for success. Please answer each question by rating the number that most closely matches your current view. The rating is from 1 (little) to 5 (a lot). If you can’t tell or don’t know then circle the question mark (?).

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9 Does the plan for the dinner routine disrupt that time of day to the point that stress or hardship will be created?  

10) Does the plan recognize and build on your family's strengths, values and customs?  

11) Was the support plan respectful of your family's cultural background?  

12) All things considered, how difficult will it be for you to use this treatment plan for the dinner routine?  

13) Do you believe the treatment plan will be effective?  

14) If the plan is effective, do you believe you can keep using the strategies for a long time (e.g., over one year) even though Christy will not be available as much (little to no contact with Christy, some assistance by phone)?

Comments:
Appendix C

Culture Assessment Tool
Adapted from Chen et al. 2002

Planning

1. How do I learn about the family’s interactions and communication styles?

2. Does the family communicate with each other in a direct or indirect manner?

3. Does the family tend to interact in a quiet manner or a loud manner?

4. How do I ensure that the meaning of words I use are translated accurately from English into the family’s language?

5. How will I discuss differences with families when their practices conflict with the program or mainstream values?

6. What is the most efficient way for the family to collect data (e.g. writing, videotaping, audiotaping)?

Family Assessment

Family Structure:

1. Who are members of the family, including the extended family?

2. Who makes decisions in the family?

3. Is decision making individual or group orientated?

4. Who is the primary caregiver(s)?

5. Is there conflict between caregivers regarding appropriate practices?

6. What is the hierarchy within the family? Is status related to gender or age?

Resources:

1. To whom does the family turn for support, assistance, and information?

2. What are some sources of social support to the family (i.e., someone with whom to discuss problems and find solutions, someone with whom to do leisure activities)?
3. What community resources can I use to better serve this family (e.g., respite care, parent support groups, cultural support groups)?

**Family Perceptions and Attitudes:**

1. What does the family characterize as major strengths of the family?

2. What are some sources of stress to the family?

3. What are the family’s values and customs? Are there cultural or religious factors that would shape family perceptions?

4. What is considered respectful and disrespectful in the family?

5. What are the family’s childrearing practices (e.g. feeding and sleeping patterns), forms of discipline, and expectations of children?

6. What’s is the family’s approach to medical needs?

7. What are the family’s concerns and priorities related to their child with a disability?

8. To what/who/where does the family assign responsibility for their child’s disability?

9. How does the family view their role in intervening with their child?

**Self-Evaluation**

1. What information do I need to help this family?

2. Have I clarified what the family expects of me and other service providers?

3. Have I discussed the roles and responsibilities of family members and service providers in a process of PBS?

4. Have I provided information on the family’s legal rights regarding their child’s educational program?

5. Are there concerns about my interaction with the family that need to be discussed or clarified?
Appendix D

Follow-Up Interview for Study

Date: 
Participant(s): 
Interviewer: 

1. How do you feel with the meal time routine right now? Is the routine you are now implementing what you had originally envisioned?

2. Let's look at each aspect of the behavior support plan. How effective did you find the: 
   a) Setting Event strategies:
      i) 
   ii) Antecedent strategies: 
   iii) Teaching strategies: 
   iv) Consequence strategies: 
   b) Which strategy did you find most important?
   c) Which strategy did you find least important?
3. Do any aspects of this plan conflict with your cultural values or beliefs?

4. Would this routine be acceptable if you were to implement it in Japan?

5. Looking back, are there any changes you would make to this routine?

6. Pretend that you will never see me again, which of these strategies do you think you would continue to use? What about six months from now?

7. Are there any other comments that you'd like to make about this process?
Appendix E

RE Positive Behavior Support Plan
Dinner Routine
March 2004

Family Goals

Ken will successfully participate at dinnertime with his mom and sister. He will be fully dressed (in a shirt and pants or shorts) before sitting at the table, place his blanket and favorite toys in a designated location, independently sit at the table when requested and remain seated at the table with the television off, use his utensils appropriately, use picture symbols or sign language to ask for what he needs or wants, and sign 'all done' when finished eating his food. Value-based goals include teaching Ken to participate and behave independently in a valued family routine and encourage the use of an appropriate communication system during this routine.

Functional Assessment Summary

Behaviors of Concern Leaving assigned area (e.g. getting out of his seat and walking away from the table), destructive behavior (throwing or pushing objects around the room), noncompliance behavior (physically resisting mom, taking clothes off, whining or wailing), eating food without utensils, and keeping favorite items, such as a belt, article of clothing, or stick beside his plate on the kitchen table.

Purposes of Problem Behavior The functional assessment indicates that Ken’s behavior serves multiple functions. He engages in problem behavior to: (a) escape the demands and tasks of the dinner routine, and (b) gain access to a preferred object or activity.

Setting Events Contextual events that set the stage for problem behavior include having unlimited access to food and television throughout his day.

Triggers Antecedent events that trigger problem behavior include: (a) request to shut the television off and sit at the table, (b) requesting Ken to remain seated with his food at the table.

Behavior Support Plan

Setting Event Strategies:

1. Limit the amount of food Ken eats one hour before dinnertime to ensure he's hungry during this routine.

2. Provide Ken with enough warning of when the dinner routine will begin (e.g. '5 more minutes before dinner')
Antecedent Strategies:
3. Arrange meals with smaller amounts of food on the plate to start, allowing quicker access to the television. Over time, gradually increase the amount of food on Ken plate.

4. Use visual strategies to increase predictability and choice
   a. Use a picture sequence of the dinner routine. Include a picture of when Ken can have access to television again
   b. Use a visual aide to indicate that Ken can have the TV back on when he finishes all the food on his plate
   c. Place a visual on the television set to indicate if it's a time that he can watch TV
      Have a visual indicating appropriate behaviors at the table (e.g. sitting, keeping clothes on, eating with utensils) placed near Ken's plate

5. Use natural contingencies to motivate appropriate sitting at the table and use of eating utensils (e.g. 'Eat all your food, then you can watch television').

6. Have a desirable book or toy at the table to help occupy Ken while he completes his meal.

Teaching Strategies:
7. Teach Ken to use language (either signs or picture symbols) to communicate his wants and needs. Prompt use of language to:
   a. to request more food
   b. to leave the table
   c. access to television

8. Teach Ken to use his utensils properly when eating his food. Provide Ken with the necessary assistance to succeed (e.g. verbal prompt or reminder to eat with his utensil).
   Praise independent use of eating utensils; use descriptive and tactile praise to make sure Ken understands what you are praising.

9. Teach Ken to keep his favorite items in a designated area, such as on the floor beside his chair.

Consequence Strategies:
10. If Ken does cooperatively sit at the table to begin his meal and allow the television off, praise this behavior and let him know what's expected of him (he sits at the table, eats a predetermined amount of food, then has access to television). Continue to praise Ken for appropriate behaviors during the meal.

11. For minor problem behavior (e.g. trying to leave the table, taking clothes off)
   a. When taking clothes off, have Ken put clothing back on and redirect him back to eating his meal. Do not tell him 'not' to do what he's doing, instead, remind Ken of the appropriate table manners and refer to his visual.
b. If trying turn the television on during the meal, redirect Ken back to the table and show him how much time is left before the television is turned back on.

c. If trying to leave the table with food, keep the food at the table and remind Ken that he needs to sit at the table when eating his meal.

d. If Ken is trying to put his favorite item on the table, redirect him to place it on the floor beside his chair.

12. For major problem behavior (e.g. throwing and pushing objects)

   a. Limit the amount of objects that are can throw or push around him. Wait until he calms down, then redirect him back to the table. Let him know that he’s expected to eat a what’s on his plate and allow him access to the television only after he eats his food cooperatively.

**Evaluation**

Use the implementation checklist to track: (a) level of implementation of behavior support strategies; (b) child problem behavior; and (c) the plan’s acceptability and importance to the family (social validity).
Appendix F

**Daily Implementation Checklist for Dinner Routine**

**Date:**

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1. Ensure that Ken has not eaten an hour before dinner

2. Provide Ken with foods he highly enjoys
   (Start with finger food)

3. Set the time timer 20 minutes before dinner time

4. Use a five minute safety signal to let Ken know when dinner will begin

5. Tell Ken it is dinnertime. Shut the television off and place the 'no TV' symbol on it

6. Direct Ken to the table. Review with Ken his mealtime schedule

7. If Ken wants to take his belt or blanket to the table, direct him to place it on the floor beside him.

8. For the first minute after Ken sits down and starts eating, prompt and praise Ken to use his eating utensil.

9. Encourage Ken to use signs and gestures (more, juice) when requesting food at the table.

10. Encourage Ken to eat with utensils (e.g. fork, spoon)

11. When Ken engages in appropriate behavior at the table (e.g. uses utensils, sits appropriately, etc.), reinforce Ken for his behavior (e.g. I like the way you're eating with your spoon).

12. Use natural positive contingencies to encourage Ken to finish his meal (e.g. eat your food, then you get a popsicle).

13. When Ken is finished eating, direct him to take his plate to the sink.

14. Encourage Ken to request for more television with a picture symbol before turning the television on.
15. Ensure that Ken does not eat one hour after dinner. (Use the time timer) 1 2 3 4 5

16. If Ken attempts to take off his clothes, put them back on and redirect him to eat his meal. 1 2 3 4 5

17. If Ken does not want to sit and eat his meal, show what’s expected of him on the visual schedule and guide him to the table. 1 2 3 4 5

18. If Ken leaves the table during the meal, re-direct him back to the table and review the visual schedule. 1 2 3 4 5

**Problem Behaviors During Dinner**

1. Leaving the assigned area 0 1 2 3 4 5 or more
2. Taking his clothes off 0 1 2 3 4 5 or more
3. Eating with hands 0 1 2 3 4 5 or more
4. Destructive behavior (e.g. throwing objects) 0 1 2 3 4 5 or more

**Social Validity**

1. The goals of the dinner routine are acceptable and important 1 2 3 4 5 5
2. The strategies are useful and effective 1 2 3 4 5
3. The strategies are difficult to use 1 2 3 4 5
4. Ken is successfully participating in the routine 1 2 3 4 5
5. I believe the dinner routine is successful 1 2 3 4 5

Reinforcement List – Aim for 4x/session: (Examples: Saying ‘good job –’, ‘good boy –’, ‘I like the way you –’ (be specific), rubbing Ken’s back, patting his head)

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