THE EFFECTS OF FUNCTION-BASED ACADEMIC AND BEHAVIOR INTERVENTION ON PROBLEM BEHAVIORS AND READING PERFORMANCE FOR ENGLISH LANGUAGE LEARNERS IN A THAI ELEMENTARY SCHOOL

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This study investigated the effectiveness of function-based academic and behavior intervention on behavior and reading improvement for five English language learners who exhibited escape-maintained problem behaviors and academic reading difficulties. The study sought to document the effect of a function-based approach on students with highly diverse cultural backgrounds in an international school in Thailand. The intervention emphasized (a) the functional behavior assessment (FBA) strategies to identify the function of the target behavior, (b) evidence-based effective reading instructional approaches, and (c) responsiveness to cultural perspectives of teachers and students.

A combined single-subject research methodology documented a functional relationship between implementation of the function-based intervention and decreased problem behaviors. The findings revealed the potential to increase academic engagement and reading performance for the students by following a behavior support plan based on effective reading instruction and tasks modified to accommodate students' academic needs.

The study emphasized cultural responsiveness of the intervention plan and implementation. Despite several limitations, this experimental research incorporated culture into behavior and academic support as well as into the research designs. In future application, cultural responsiveness among professionals will be a key element to ensure that future intervention support will meaningfully change the lives of students and will be sustained over time.

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CHAPTER I

INTRODUCTION AND STATEMENT OF PURPOSE

The Problem and Its Significance

Problem behavior in schools poses a major social problem in most countries. Across cultures, problem behavior disrupts effective learning environments. Recurrent types of problems in classrooms range from substance abuse, weapons use, bullying and truancy, to aggressive, disruptive, and off-task behavior. Students engaged in problem behaviors are at higher risk than their peers for significant difficulties in academic achievement and social relationships (Crone & Horner, 2003; Walker, Colvin, & Ramsey, 1995). The U.S. Department of Education reported that approximately 4 of every 100 students who were enrolled in high school in October 2004 left school before October 2005 without completing a high school program. Their report did not identify the percentage of students who left high school early due to problem behaviors, but trends suggest that this percentage would be high. The National Center for Education Statistics (NCES) reported 57 instances of nonfatal crimes (e.g., theft and violence) per 1,000 students ages 12 to 18 in 2005, and indicated that some 4% of students ages 12 to 18 reported being victimized at school within the previous six months (NCES, 2007). In Japan, the rate of bullying was assessed at 1.6 incidents per 1,000 students in 2003

(Dussich & Maekoya, 2007). In a South African private school, 90% of students reported that they have been bullied (Dussich & Maekoya, 2007).

In Thailand, a national survey indicated that 38% of 3,037 students in 4th (*Pratomsuksa,* or primary school, Level 4) to 9th (*Mathayom,* or high school, Level 3) grades reported having been bullied two to three times within the previous two months (Tapanya, 2006). According to the study, Thai teachers reported that they acknowledged and had tried some means to prevent the bullying but could not prevent them. Tapanya (2006) also pointed out that more than 70% of 1,300 teachers who completed the survey perceived physical punishment (i.e., spanking) as an appropriate consequence for problem behaviors.

Substantial research shows that problem behavior not only threatens the overall school environment, but also highly predicts academic difficulties among students who engage in problem behaviors (Levy & Chard, 2001; McEvoy & Walker, 2000; McIntosh, Chard, Boland, & Horner, 2006; Nelson, Benner, Lane, & Smith, 2004; Tobin & Sugai, 1999; Walker & Shinn, 2002). The long-term outcomes of both antisocial behaviors and academic difficulties may include further social and academic failures (Walker, Ramsey, & Gresham, 2004).

McIntosh et al. (2006) found that students who engaged in problem behaviors as measured by office discipline referrals (ODRs) were likely to have a lower level of reading performance as measured by the *Dynamic Indicators of Basic Early Literacy Skills (DIBELS)* (Good & Kaminski, 2003). At the same time, the study indicated that

students who did not meet reading benchmarks in kindergarten were more likely to receive ODRs and need additional behavior supports when they reached higher grades.

A cross-sectional research (Nelson et al., 2004) conducted with K-12 students with emotional and behavioral disorders (EBD) found that students with externalizing types of behavior (i.e., attention-maintained, aggression, delinquency) experienced academic achievement deficits in all content areas, including reading, writing, and mathematics. In particular, academic difficulties in the area of reading were found to be highly associated with problem behaviors in classrooms (Barton-Arwood, Wehby, & Falk, 2005; Levy & Chard, 2001; Nelson et al., 2004; Wehby, Falk, Barton-Arwood, Lane, & Cooley, 2003). Nelson et al. (2004) noted that problem behaviors were likely to increase and resist to intervention efforts as students moved into higher grade levels. According to research, students with problem behaviors do not appear to improve academically over time (Nelson et al., 2004), and remediation of academic difficulties becomes increasingly difficult (Hinshaw, 1992; Torgesen, 1998; Torgesen, 2002). Given these findings, early intervening in antisocial behaviors and in academic deficits not only prevents further socially inappropriate behaviors for students, but also conserves time, energy, and resources for school personnel (McIntosh et al., 2006; Walker et al., 1995; Walker & Shinn, 2002).

Findings from congruent research suggested that problem behaviors and academic challenges were two main interrelated factors of student failure that often require concurrent intervention (McIntosh et al., 2006; Nelson et al., 2004). However, interventions often focus either on academic or behavior problems, leaving one or the

other concern unaddressed. Studies indicate that students who exhibit problem behaviors and who struggle with reading usually receive interventions that allocate excessive time to eliminating disruptive behavior while allocating insufficient time to address deficit reading skills (Barton-Arwood et al., 2005; Levy & Chard, 2001; Wehby et al., 2003). Conversely, effective academic interventions that lack knowledge of students' behaviors may increase inappropriate behaviors, further challenging effective academically help (Lee, Sugai, & Horner, 1999; McKenna, 2006). Such narrowly defined interventions were ineffective in addressing both academic skill deficits and behavior problems in the classroom, resulting in nonmeaningful curricula, ineffective teaching strategies, and nonfunction-based intervention (Foorman & Burke, 2007; Ingram, Lewis-Palmer, & Sugai, 2005; McKenna, 2006).

Given that academic and behavior challenges are too closely linked to approach independently and intervene separately (Hinshaw, 1992; McIntosh et al., 2006), recent studies documented comprehensive interventions that simultaneously target effective academic instruction and behavior supports. These studies designed traditional academic intervention which incorporated information on a purpose or a *function* of behavior (Barton-Arwood et al., 2005; Burke, Hagan-Burke, & Sugai, 2003; Hagan-Burke, Burke, & Sugai, 2007; Kern, Childs, Dunlap, Clarke, & Falk, 1994; Lee et al., 1999; McKenna, 2006; Preciado, 2006). The results produced positive changes in students' academic and behavior outcomes.

Reactive Approach to Behavior Intervention

Although schools have developed plans to manage problem behaviors, studies indicate that many educators still lack appropriate training to provide student behavior support (Gresham, 2004; Walker & Shinn, 2002). Behavior interventions most studied before 1990 relied commonly on reactive approaches or aversive consequences (e.g., detention, suspension, or expulsion from school) to punishing and deterring problem behaviors (Crone & Horner, 2003; Horner, Carr, Strain, Todd, & Reed, 2002). Too often, educators pay attention to problem behavior in a person and attempt to change the person as opposed to the purpose or function of the behavior (Crone & Horner, 2003; March & Horner, 2002; O'Neill, Horner, Albin, Sprague, Storey, & Newton, 1997; Umbreit, Ferro, Liaupsin, & Lane, 2007). Teachers who are lack appropriate knowledge and skill in delivering behavior interventions may inadvertently reinforce problem behaviors rather than minimize them. For example, a teacher who habitually attends to a student every time the student yells does not determine why the student yells. The teacher may inadvertently reinforce yelling behavior, although the behavior is actually the student's means to obtain something, such as attention, or to avoid something, such as undesirable tasks. Despite the intervention, the student still will conduct other types of problem behaviors in order to achieve desired results. Moreover, when the teacher targets a problem behavior but fails to consider its function, the teacher may repeat ineffective intervention.

The use of punishment or negative consequence impacts behaviors in the short run. However, such behaviors are likely to return and even get worse (Mayer, 1995). For

example, if a student engages in disruptive behaviors (e.g., talking out, poking others, or assuming inappropriate postures) to avoid participating in group work, the teacher's decision to punish such conduct by sending the student to the corner to cease the disruption would likely reinforce the problem. The student has learned that being disruptive effectively serves the goal of avoiding group work. The teacher's inattention to the function of the student's behavior may lead to more severe social and academic problems.

The Coercive Cycle

The coercive cycle (Figure 1) was initially termed by Patterson (1982) to explain the extent to which children increase problem behaviors such as aggression as a result of the interaction pattern with adults. In a classroom situation, sending a student to time-out every time he yells is ineffective because the student yells to avoid doing task and the behavior is rewarding (i.e., going to time-out and not having to do the task). Without the knowledge about the function of the behavior, the teacher inadvertently rewards the problem behavior. When the student engages in problem behaviors, he has less time to acquire academic skills, which in turn puts him at risk for academic failure. At the same time, during instructional activities in which the student finds his tasks aversive, he develops a variety of problem behaviors as a mean to escape from the difficult academic demands. When the student has fewer opportunities to receive positive reinforcement for on-task behavior or to acknowledge that his problem behavior results in incorrect

answers, any positive behavior may disappear or be replaced by a problem behavior (Durand & Carr, 1992; Lee et al., 1999).

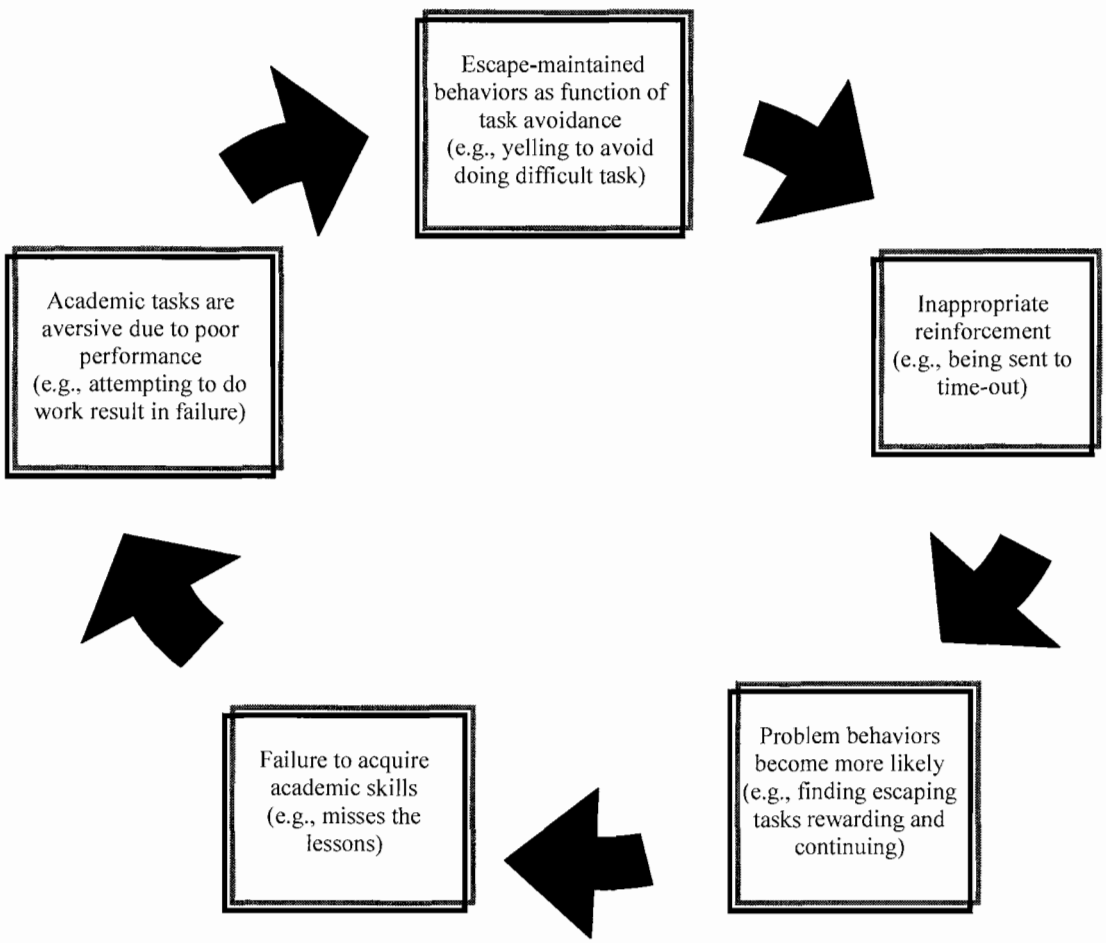


Figure 1. The coercive cycle of escape-maintained problem behavior and academic failure (adapted from Patterson, 1982).

This coercive cycle of escape-maintained problem behavior and academic failure presents elements that sustained themselves and lead to three negative outcomes: (a) likelihood that problem behavior will be increase, (b) likelihood that the student fail academically, and (c) likelihood that the teacher repeat ineffective intervention or

continue to exclude the student from classroom activities. Ultimately, this cycle interrupts classroom teaching and learning both for students who demonstrate problem behaviors and for those who do not (Lane, Wehby, & Barton-Arwood, 2005) and must be intervened.

The challenge is to plan an intervention that goes beyond matching a problem behavior with a selection of effective intervention options. Scientific-based academic intervention such as prompting and signaling or peer tutoring are relevant and appropriate; but focus on the behavioral function of academic problems enhances traditional academic interventions to improve students' academic engagement and academic success, and at the same time improve their social behaviors. Effective intervention has two primary goals: (a) to decrease problem behaviors and (b) to increase appropriate replacement behaviors (Crone & Horner, 2003). To achieve these goals, intervention must address the behavioral functions by (a) eliminating or altering the predictors that maintain problem behaviors, (b) providing appropriate replacement behaviors that serve the same function as the problem behaviors, and (c) removing the consequences that maintain the problem behaviors.

Proactive Approach to Behavior Intervention

Behavior occurs in contexts, not in people. For example, "Fredda is not a biter, rather, when presented with food she does not like, Fredda will bite her wrist until the undesired food is removed" (O'Neill et al., 1997, p. 5). To intervene the cycle of problem behavior and academic failure, effective intervention moves from a reactive approach

toward a preventive approach that changes the environments and contexts in which problem behavior occurs (Carr et al., 1999; Gresham, 2004; Koegel, Koegel, & Dunlap, 1996).

The proactive approach to intervention process emphasizes a change that examines how behaviors function in the environment. Horner and Carr (1997) note that "To a very great extent, effective behavior support is about engineering of settings (schools, homes, workplaces) so that problem behaviors become less likely" (p. 84). Positive behavior support has focused on the mechanisms by which individuals develop problem behaviors based on basic behavior principles (Mace, 1994). As a replacement of the undesired behaviors, positive behavior support puts emphasis on the teaching of socially appropriate behaviors (Sugai et al., 2000).

The Promising Cycle of Appropriate Behaviors and Academic Gain

One effective intervention based on information about antecedents and consequences that maintain a problem behavior is to replace the inappropriate behavior with a more appropriate one (i.e., staying on task). Moreover, when students receive necessary academic skills with well-planned instructional delivery, academic tasks become nonaversive and the consequences of problem behavior are no longer reinforcing. At the same time, research has shown that students are likely to engage in on-task behavior when the consequences are more positively reinforcing (e.g., attention, rewards, self-satisfaction) (Durand & Carr, 1992; Hagan-Burke et al., 2007; Lee et al., 1999). For example, a student receives sufficient skills to complete a reading task. The student

works on task to complete the work correctly. As a result, the teacher praises the student for being on task and completing the work properly. As the magnitude of positive reinforcement increases, problem behaviors can be ameliorated, while more on-task behaviors can be increased. The more time students spend in on-task behavior and the less time they spend in problem behavior, the more academic skills they will acquire in order to become successful academically (see Figure 2).

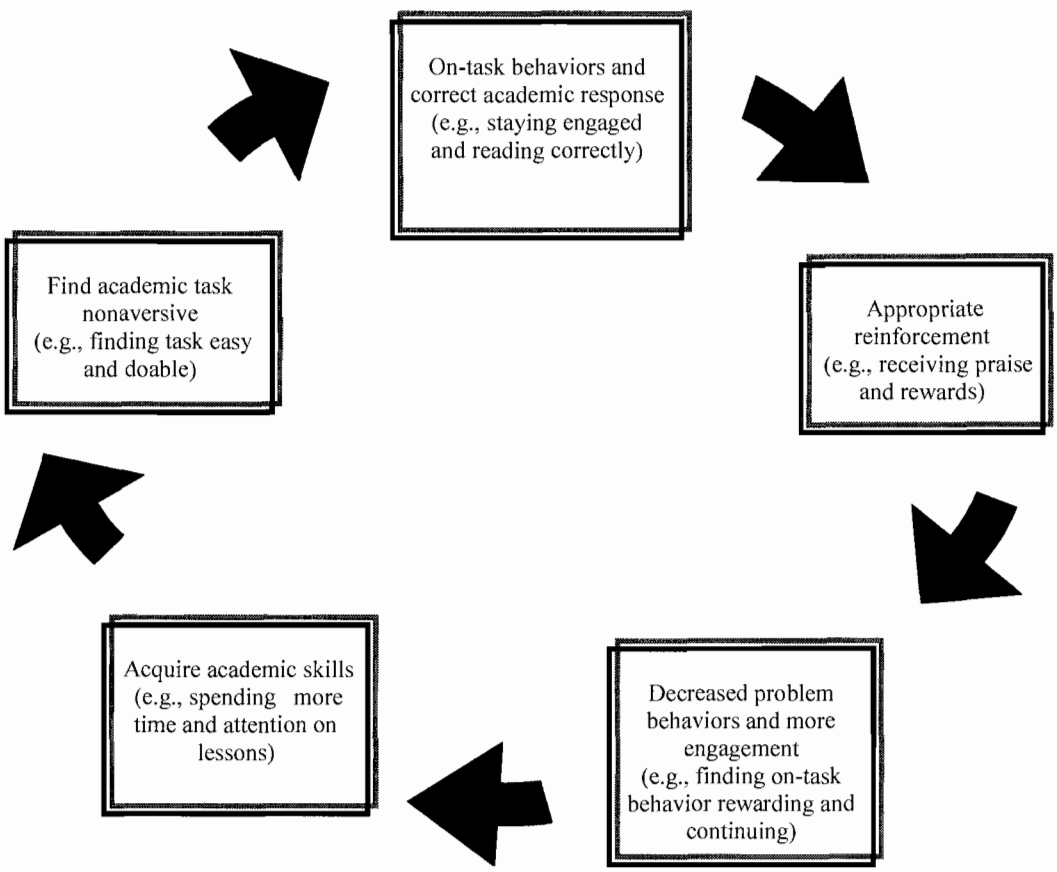


Figure 2. The promising cycle of appropriate behaviors and academic gain.

Cultural Perspective of Intervention

Academic and behavior support is necessary to help students to become successful. However, one serious challenge in planning support intervention for students is to incorporate the cultural variables, including the norms, traditions, values, and religious belief of students and teachers, into the intervention plan. A number of conceptual frameworks have been proposed to help understand the influence of culture on people and organizations among various societies. The well-known *Hofstede's Cultural Dimensions* framework defines culture as "the collective programming of the mind which distinguishes the members of one human group from another" (Hofstede, 1991, p. 21). The cultural context of academic and behavior intervention, however, primarily addresses what works for a particular group of students at a particular time and place, rather than providing a global approach (Gay, 2002; Kauffman, Conroy, Gardner, & Oswald, 2008)

Cultural context is especially relevant to academic and behavior support for students for whom English is a second language, who are English language learners (ELL). ELL students are at risk for mild to serious academic and behavior problems. Research has found that ELLs historically have lagged behind in academic achievement, especially in reading (Drucker, 2003). They are likely to receive a uniform academic intervention that does not match individual needs, experience academic difficulty, and feel trapped by a negative reinforcement cycle (Gersten & Geva, 2003). Moreover, academic difficulty is causally linked to problem behavior which seeks to avoid difficult academic demands (Burke et al., 2003; Preciado, 2006).

Function-Based Intervention

In behavior analysis literature, "function" refers to the way in which a behavior serves an individual's purpose (O'Neill et al., 1997). Behavioral function is maintained by negative or positive reinforcement (Crone & Horner, 2003; Ingram et al., 2005). Based on the fundamental principle that human behavior is functional, predictable, and changeable (Crone & Horner, 2003), the functional behavior assessment (FBA) approach places behavior in an environmental context. The intervention support plan involves teaching a functional equivalent and alternative behavior which makes the problem behavior irrelevant, inefficient, and ineffective. The process also attempts to identify factors that contribute to and maintain the problem behavior (Horner et al., 2002; Sugai et al., 2000). Function-based intervention develops behavior change strategies that are based on information gathered in the FBA and that are relevant to the purpose or function, which the behavior serves (Ingram et al., 2005; Umbreit et al., 2007). The resulting intervention specifically addresses the function of the behavior.

Statement of Purpose

Students who engage in problem behaviors are at high risk for academic failure. Both problem behaviors and academic difficulties are highly associated with future school dropout and other social problems. To help students to become more successful, effective academic intervention must focus on behavior support plans as well as address to contextual variations that may reinforce problem behavior.

The purpose of this study was to investigate the effects of a function-based intervention that was designed to decrease problem behaviors, increase academic engagement, and improve English-reading performance for elementary ELLs in Thailand. The comprehensive intervention was based on (a) functional behavior assessment (FBA) (Dunlap, White, Vera, Wilson, & Panacek, 1996; Ingram et al., 2005; Kern et al., 1994; Sugai et al., 2000; Walker et al., 1996), (b) effective early reading instruction and delivery (Carnine, Silbert, Kame'enui, & Tarvers, 2004; Linen-Thompson, Vaughn, Hickman-Davis, & Kouzekanani, 2002; National Reading Panel, 2000; Vaughn, Mathes, Linan-Thompson, & Francis, 2005), and (c) cultural responsiveness (Albin, Lucyshyn, Horner, & Flannery, 1996; Gay, 2002; Kaufman et al., 2008; Lynch & Hanson, 2004; Salantine & Horner, 2002; Wang, McCart, & Turnball, 2007).

Research Questions

The primary research question addressed in this study was:

1. Is there a functional relationship between a function-based academic and behavior intervention that (a) is based on behavioral function, (b) employs effective literacy instruction, and (c) is matched to the learners' culture, and a decrease in problem behaviors during English reading class for third and fourth grade ELLs in Thailand?

Secondary questions explored in the analysis were as follows:

2. Is there a functional relationship between a function-based academic and behavior intervention that (a) is based on behavioral function, (b) employs effective literacy instruction, and (c) is matched to the learners' culture, and an increase in engagement in academic performance for third and fourth grade ELLs in Thailand?
3. Is there a functional relationship between a function-based academic and behavior intervention that (a) is based on behavioral function, (b) employs effective literacy instruction, and (c) is matched to the learners' culture and an increase in English reading performance for third and fourth grade ELLs in Thailand?

CHAPTER II

LITERATURE REVIEW

Students with problem behaviors are at high risk of academic failure, according to research in special education and school psychology (Kehle, Bray, Theodore, Jenson, & Clark, 2000; Scruggs & Mastropieri, 1986; Shinn, Ramsey, Walker, Steiber, & O'Neill, 1987). Similarly, students who have academic difficulties are likely to demonstrate problem behaviors to avoid tasks (Carr, 1977; Horner, Day, Sprague, O'Brien, & Heathfield, 1991; Iwata, Dorsey, Slifer, Bauman, & Richman, 1994; McIntosh et al., 2006; Walker & Shinn, 2002). Function-based behavioral and academic intervention, therefore, emphasizes changing multiple components that affect student behavior through antecedent-based manipulations (Burke et al., 2003; Dunlap, Kern-Dunlap, Clarke, & Robbins, 1991; Hagan-Burke et al., 2007), and incorporating effective academic instruction and delivery (e.g., Carnine et al., 2004) to support student learning.

In school settings, instructional demands functionally affect the occurrence or nonoccurrence of problem behaviors (Horner et al., 1991; Kern et al., 1994; Lee et al., 1999). A motivation to escape or avoid the demands becomes an antecedent stimulus that determines occurrence of various types of problem behaviors in classrooms. Thus, appropriate interventions should address both escape-maintained behaviors and areas of academic difficulties to provide students with appropriate treatment.

Function-based academic and behavioral support provides a preventive approach to intervention (Walker et al., 1996). Figure 3 presents the three levels of prevention outcomes and the appropriate match between intervention intensity and severity of academic and behavioral problems.

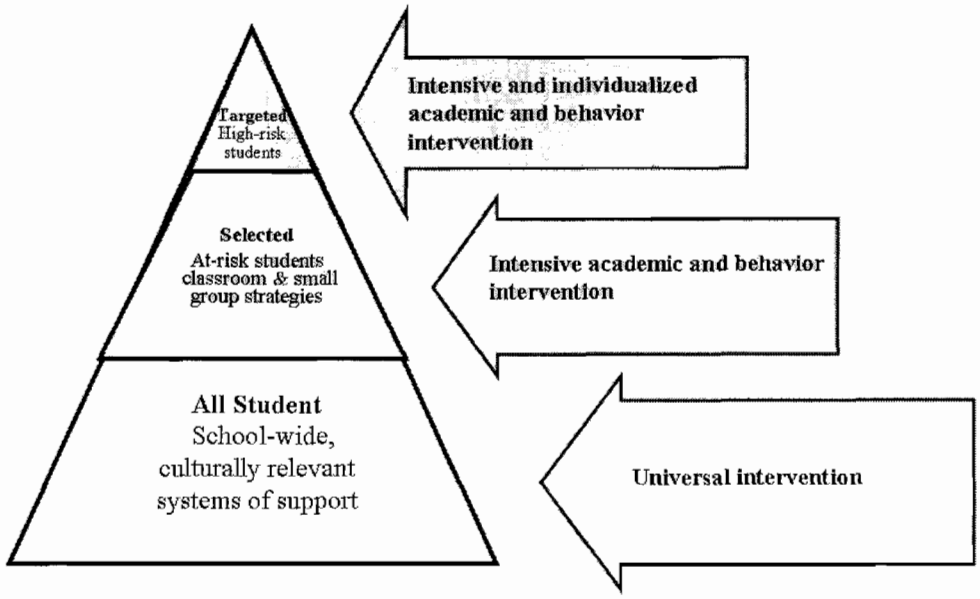


Figure 3. Three-tier response to intervention model of academic and behavior support (adapted from Walker et al., 1996).

A primary prevention includes the universal interventions delivered to all students (e.g., schoolwide positive behavior support, core reading programs). Secondary and tertiary preventions require more detailed information about individual students to design appropriate intervention support with increasing intensity and individualization of the support procedures. Increased individualization requires information about a student's

academic or social problem behaviors as well as detailed information about the behavioral stimulus conditions and the consequences of maintaining the problem behavior. Understanding the function of the behavior leads to comprehensive and effective interventions.

The purpose of this study is to employ the FBA technology, focusing on behavioral function to guide the design of an intervention that address both students' academic and behavior challenges. The FBA process has been successful across a wide variety of behavioral functions in classrooms, including (a) getting attention from adults and peers, (b) escaping from instructional demands, (c) gaining escape from social interaction, and (d) access to desired items or sensory stimulation. The process also has addressed a wide variety of relevant problem behaviors in the classroom ranging from off-task behavior (Lee et al., 1999) to aggressive behaviors (Marcus, Vollmer, Swanson, Roane, & Ringdahl, 2001), and self-injurious behaviors (Iwata et al., 1994).

Ample evidence from empirical research supports the use of FBA to guide academic intervention for students who demonstrate problem behaviors in classrooms (e.g., Burke et al., 2003; Dunlap et al., 1996; Ingram et al., 2005; Iwata, et al., 1994; Lee et al., 1999; McKenna, 2006; Preciado, 2006; Sanford, 2006). The FBA approach to behavioral intervention has been defined in numerous studies as the process that describes problem behaviors and identifies the variables that predict and maintain these problem behaviors prior to developing proper interventions (e.g., Horner & Carr, 1997; Iwata et al., 1994; Kennedy & Itkonen, 1993; Sprague & Thomas, 1997). Moreover, the 1997 amendments to the U.S. Individuals with Disabilities Education Act (IDEA)

stipulated that schools are expected to apply FBA to their behavioral support planning for all students.

Research has examined the effects of function-based intervention on students in special education and general classroom settings on students with attention- maintained and escape-maintained behaviors, and on students with disabilities and who are having emotional challenge. However, more study is needed to document how this intervention can be applied to ELL populations.

The FBA approach, however, reflects U.S. mainstream cultural values in many ways, including individualism and personal choice (Wang et al., 2007). This study proposed to replicate the effect of function-based intervention, using results from FBA strategies for effective early literacy instruction on problem behaviors and English reading performance for ELLs who exhibit problem behaviors during reading activities in a setting where cultural, environmental and linguistic contexts were different from those in U.S. schools, for both students and teachers. Figure 4 shows hypothetical relations of three important components in designing an effective intervention for ELLs who engage in problem behavior and reading difficulties. While information about individual behaviors, including contexts of how and when problem behaviors occur, is necessary, effective academic intervention is also required to help students acquire academic skills. To develop an effective intervention that addresses students' academic and behavior problems, the cultural backgrounds and perspectives of teachers and students also must be addressed.

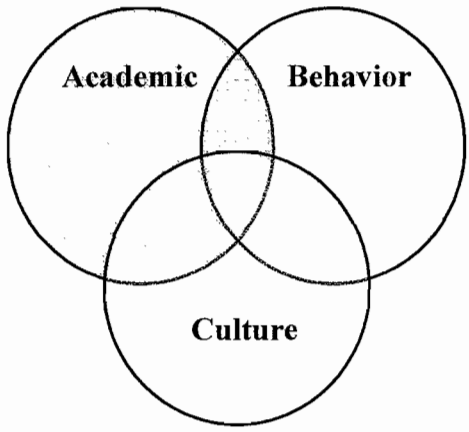


Figure 4. Function-based academic and behavior intervention addressing the three main components.

Most theories and academic instruction or behavioral support intervention emerged primarily from mainstream Western culture and middle-class samples (Dumas, Rollock, Prinz, Hops, & Blechman, 1999; Tucker & Herman, 2002; Wang et al., 2007). However, some behaviors deemed problematic or unacceptable to professionals from the mainstream culture may not be problematic to teachers of diverse cultural backgrounds (Wang et al., 2007).

Evidence of cultural responsiveness in academic and behavior intervention was challenging because the terms such as "cultural fit", "cultural responsiveness", "cultural sensitivity" or "cross-cultural competence" are not considered operational by behavioral science (Kaufman et al., 2008; Wang et al., 2007). The term "culture" itself depends on the context in which it is used (Holfstede, 1991). Some studies considered cultural responsiveness in the context of research (e.g., Tucker & Herman, 2002), while others emphasized the term for implementing intervention and educational practices (e.g.,

Benazzi, Horner, & Good, 2006; Gay, 2002; Kaufman et al., 2008; Shealey & Callins, 2007). Shealey and Callins (2007), for example, define culturally responsive teaching as "the extent to which educators use students' cultural contributions in transforming their lives and the lives of their families and communities by making education relevant and meaningful" (p. 195). Gay (2002) defines cultural responsive teaching for ethnically diverse students as "using their cultural orientations, background experiences, and ethnic identifies as conduits to facilitate their teaching and learning" (p. 614).

To demonstrate cross-cultural competence, Lynch and Hanson (2004) suggested that key components of each intervention include: (a) understanding one's own culture and heritage, (b) learning culture-specific information about individuals from other cultures, and (c) applying knowledge and skills to work effectively with the individuals and families. Educators guided by these ideas may be unable to identify "culturally responsive" practices because the terminology hasn't been well operatically and consistently defined.

Kauffman et al. (2008) reviewed literature related to three cultural dimensions—ethnicity, gender, and religion—to find evidence of responsiveness to behavioral interventions related to cultural identity. They found that an intervention developed with cultural sensitivity (a) is based on scientifically grounded approaches, (b) achieves socially valid behavioral objectives, and (c) has procedures that are acceptable to students, parents, and teachers.

The Function-Based Academic and Behavior Intervention

The function-based intervention is the process of developing behavior change strategies that matched the context and purpose (i.e., function) that the behavior serves (Ingram et al., 2005; Umbreit et al., 2007). Traditional interventions have been based on diagnostic labels. These have been useful, but current research suggests that the addition of detailed information about (a) the specific problem behavior, (b) the conditions in which the behavior is most and least likely, and (c) the consequences of the behavior can be used to build more effective and efficient multicomponent interventions.

The purpose of this study was to employ the FBA approach to identify antecedents and consequences that control problem behaviors during reading tasks. The assessment information precisely targeted the escape-maintained function of student behavior. Then, a multicomponent function-based intervention was developed to provide behavioral support and academic skills based on individual needs. Figure 5 shows a fundamental conceptual framework for the development of function-based intervention. Each element will be discussed below.

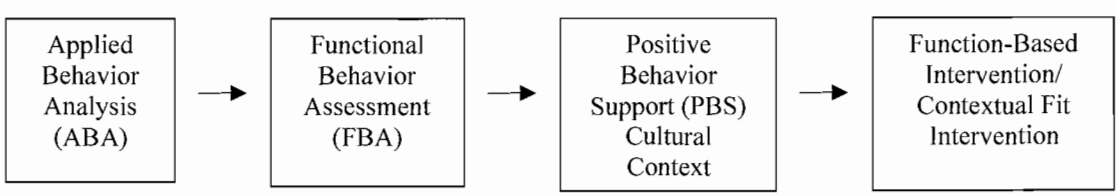


Figure 5. Fundamental conceptual framework for function-based intervention.

Applied Behavior Analysis

Applied Behavior Analysis (ABA) presents the mechanism of positive behavior in which operant psychology is applied in clinical and educational practices. Behavioral principles have emerged from scientific experiments of a complex interaction between genetic influence and environmental experience of organisms, including humans. Through behavioral experiments, researchers have identified basic principles that explain how certain behaviors are regulated in the environment. This process is known as an analysis of behavior (Pierce & Epling, 1995) in which experimenters control and change factors that affect the behavior of individuals. ABA extends of behavioral principles to socially important behavioral problems central to attention of experimental research in the human behavioral field, including education and school psychology, "Better applications, it is hoped, will lead to a better state of society, to whatever extent the behavior of its members can contribute to the goodness of a society" (Baer, Wolf, & Risley, 1968, p. 91).

Functional Behavior Assessment

Based on the fundamental principles that human behavior is functional, predictable, and changeable (Crone & Horner, 2003), the functional behavior assessment (FBA) approach puts behavior into an environmental context. Functional behavioral assessment is the process of operationally defining problem behaviors and identifying variables, conditions, or events that reliably predict and maintain the behaviors across time (Horner et al., 2002; Sugai et al., 2000). The process includes (a) identifying target

problem behaviors or classes of behaviors, (b) building a testable hypothesis or a summary statement about the events that reliably predict and maintain the identified problem behaviors, (c) validating the hypothesis via direct observation, and (d) designing an appropriate intervention. The emphasis on prevention of problem behaviors often includes procedures to teach new appropriate or alternative behaviors and to make problem behavior irrelevant, inefficient, and ineffective. The process attempts to identify factors that contribute to and maintain the problem behaviors (Horner et al., 2002; Sugai et al., 2000). For example, during physical education class, Matt sits at the corner of the gym and says "no" when his teacher asks everybody to do jumping jacks. The teacher calls him back and punishes him with a double set of jumping jacks. Matt's behavior is operationally defined as sitting at the corner of the gym and saying no to the teacher's request. The antecedent is the teacher's request that everybody do jumping jacks, and the consequence is the teacher's calling him back and punishing him with a double set of jumping jacks.

In behavior analysis literature, function refers to the extent to which a behavior serves an individual's purpose (O'Neill et al., 1997). Behavioral function is maintained by negative or positive reinforcement (Crone & Horner, 2003; Ingram et al, 2005). For example, Kenny talks out about his vacation break during group story reading to avoid his reading turn because he is embarrassed when he makes reading errors. Avoiding embarrassment serves as a behavioral (i.e., talking out) function. Madeline pokes her peers to obtain their attention. Obtaining attention serves as a behavioral (i.e., poking) function. Iwata et al. (1994) found that out of 152 functional analyses of problem

behaviors they studied, 138 (91%) resulted in data clearly indicating a behavioral function.

The FBA has been shown to be successful across a wide variety of behavioral functions in classrooms, including (a) getting attention from adults and peers, (b) escaping from instructional demands, (c) escaping from social interaction, and (d) gaining access to desired items or sensory stimulation. The process also has documented a wide variety of relevant problem behaviors in the classroom ranging from off-task behavior (Lee et al., 1999), to aggressive behaviors (Marcus et al., 2001), and self-injurious behaviors (Iwata et al., 1994).

Nonetheless, research found that the most common behavioral function that affects students' academic performance is escape-maintained behavior (e.g., Horner et al., 1991; Kern, et al., 1994; Lee et al., 1999; McComas, Hoch, Paone, & El-Roy, 2000). Escape motivation has been studied as an antecedent stimulus that determines occurrence of different types of problem behaviors in classrooms such as crying, throwing tantrums, or disrupting classroom activities (e.g., Alberto & Troutman, 2003; Burke et al., 2003; Horner et al., 1991; Iwata et al., 1994).

An effective behavioral intervention for escape-maintained problem behaviors, therefore, must address three primary goals: (a) reduce problem behavior, (b) increase appropriate behavior (e.g., on-task, engaging), and (c) increase academic skills. An effective FBA process addresses the first two primary goals—reducing problem behaviors and increasing appropriate behaviors—by documenting reliable information about (a) target problem behaviors, (b) the conditions under which behavior is predicted

to occur or not occur, and (c) function (i.e., purpose) of the behavior. Behavioral support plan then is developed based on this information. The process also includes identifying and teaching alternative and appropriate behaviors. In an academic setting, appropriate behaviors may be defined as on-task or engaged behaviors (e.g., keeping eyes on the teacher and on the tasks, keeping hands off others and to oneself, following direction and answering questions when asked).

In addition to the 1997 IDEA stipulated that schools are expected to apply an FBA to their behavioral support planning for a student who has been suspended for more than 10 school days in a school year and whose problem was caused by the student's disability, the 2004 reauthorization of IDEA, the Individuals with Disabilities Educational Improvement Act (IDEIA), restated that an FBA must be completed irrespective of whether the behavior is determined to be a manifestation of the child's disability (Umbreit et al., 2007).

Positive Behavior Support

Based on ABA, positive behavior support (PBS) applies functions of applied behavioral principles to school and classroom systems. According to Sugai et al. (2000), PBS is regarded as an integrated approach of behavioral science, intervention practices, sociocultural value, and system perspective. Founded on behavioral science theory, PBS posits that human behaviors are socially learned and can be changed by controlling environments in which behaviors occur.

Of greatest relevance for enhancing a technology of PBS is a wide range of socially important behaviors in a variety of students and contexts. Practical interventions involve behavioral intervention, including use of functional behavior assessments to develop behavior support plans, environmental and curriculum redesign, behavioral modification, and removal of rewards. A crucial aspect of interventions include implementing and sustaining research-based instructional strategies as tools for behavior change, in which data are collected and analyzed in a systematic manner. Sugai et al. (2000) emphasized that "a central PBS tenet is that behavior change needs to be socially significant" (p. 135). The system approach of PBS aims to enhance schoolwide capacity to design effective environments that improve the fit between behavioral research practices and the cultural contexts of the community of which students are members. Behavioral interventions must advance from individual students to the entire system in order to provide effective supports for implementing and sustaining effective behavioral practices for local schools (Carr et al., 1999).

Function-Based Intervention

Function-based intervention has been replicated in various studies as an effective means of reducing problem behavior and improving academic gains (e.g., Burke et al., 2003; Hagan-Burke et al., 2007; Kern et al., 1994; McComas, et al., 2000; Preciado, 2006). A primary goal for function-based intervention is to use the understanding of behavioral function to minimize problem behavior and increase appropriate behavior. Figure 6 illustrates the conceptual framework for designing FBA-based appropriate

intervention. First, problem behaviors must be operationally defined. For example, when presented with difficult reading tasks, Kimmy will cry, throw pencils, and put her face down on the table. Kimmy's behavior is operationally defined as: crying, throwing pencils and putting her face down on the table. Second, the FBA will be conducted using a teacher interview and direct observation to identify obtain events relevant to the behaviors (i.e., antecedents and consequences) and perceived function of the behaviors. According to the previous example, the antecedent may be Kimmy's being presented with difficult reading tasks, and the consequence may be that Kimmy is sent to time-out.

Based on information about antecedents and consequences that maintain problem behaviors, a summary statement is developed to include functions that the behaviors appear to serve (e.g., escaping a task, escaping social interaction, or obtaining attention). For example, Kimmy is likely to engage in problem behavior when she wants to avoid difficult reading tasks. The function-based intervention goals should include the following means: (a) decrease the need to engage in the problem behaviors (e.g., modify the reading task to be less aversive), (b) provide the student with an alternative behavior that serves the same function (e.g., teaching the student how to appropriately ask for a short break), and (c) change or eliminate the consequences of problem behaviors (e.g., eliminate time-out).

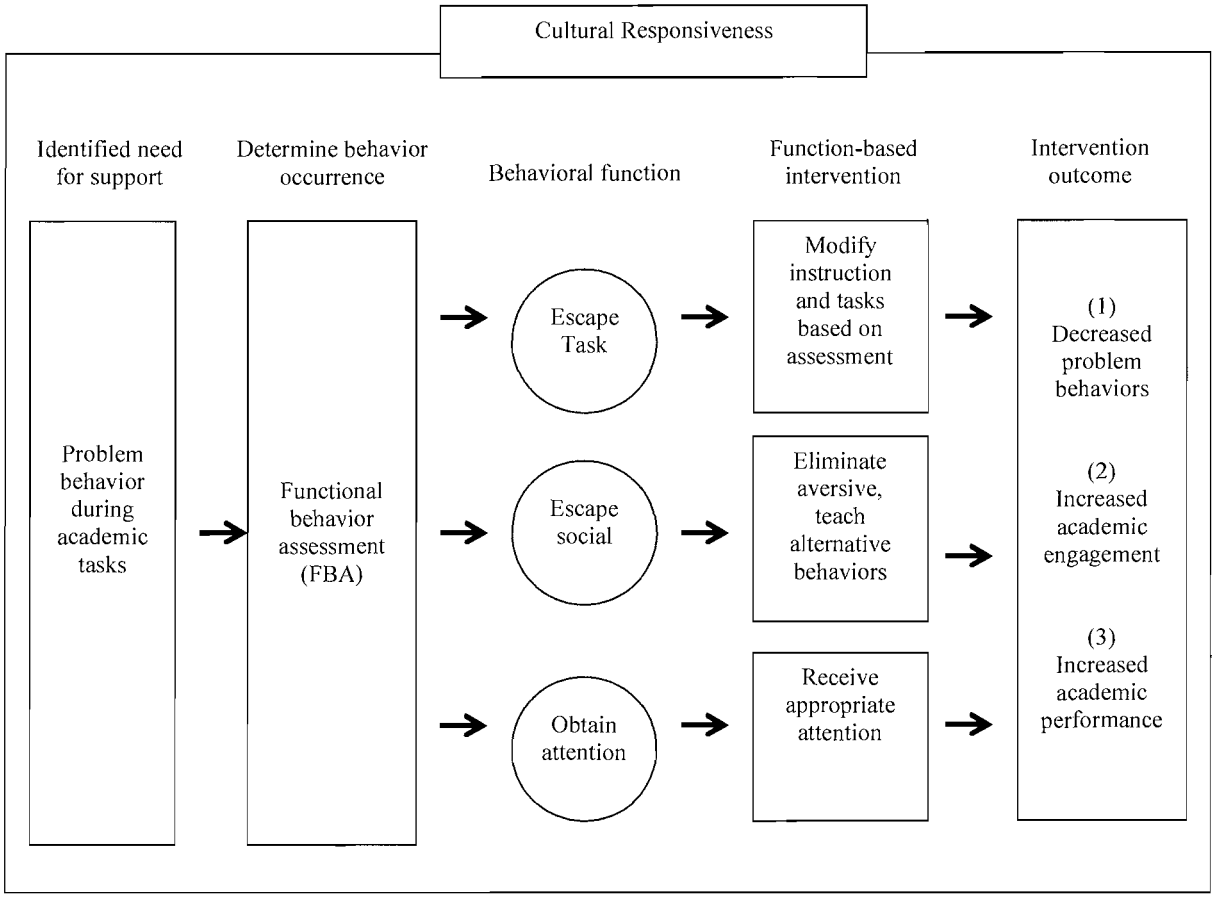


Figure 6. Conceptual framework for function-based intervention.

Carefully selected behavioral change strategies determine technically sound behavioral intervention, based on the FBA (i.e., behavioral hypothesis statement) and behavioral principals that make the problem irrelevant, inefficient, and ineffective (Crone & Horner, 2003; O'Neill et al., 1997). As noted above, Figure 6 provides a guideline for selecting intervention methods that match the behavioral function. For example, a student who gets out of the chair to escape a difficult reading task should be provided with different stimuli to reduce the likelihood of this behavior (e.g., modified reading tasks

that match the student's instructional level skills). Moreover, in order to make problem behavior inefficient, the student should be taught replacement skills (e.g., prerequisite reading skills). Reinforcement-based strategies should also be employed to make desired behavior more probable (e.g., a smiling face stamp for staying on task or for tasks completed correctly). Redirecting the student to the new alternative tasks or reminding the student that the problem behavior could result in loosing the desired reinforcers can make the problem behavior ineffective.

Instructional design and delivery also teach replacement behavior that makes the problem behavior inefficient and provides opportunities for the student's academic success (Sugai et al., 2000). Function-based intervention during academic tasks results in a decrease in problem behaviors, a gain in academic engagement, and an improved academic performance. Finally, the conceptual framework must include cultural responsiveness to ensure that all through the process of developing the function-based intervention, professionals acknowledge and eloquently address the cultural values of teachers and students. Wang et al. (2007) note "Certain situations and specific cultural values and beliefs determine whether a particular behavior is viewed as appropriate or problematic" (p. 38).

Nonfunction-Based Behavioral Support Intervention

As opposed to function-based intervention, a nonfunction-based intervention is identified an evidence-based classroom strategy but does not consider the mechanism of behavioral function, although it may respond to the need for minimizing certain

behaviors. Examples of nonfunction-based interventions include signaling to obtain the teacher's attention when the behavioral function is to escape difficult tasks, or teaching appropriate ways to ask for a break when the behavioral function is attention-maintained (McKenna, 2006). However, types of behavior problems and the way individuals respond to certain behavior interventions vary widely. Reinforcers selected for a behavioral problem may not reinforce or may not overcome the agent that reinforcing the behavior (Umbreit et al., 2007). An intervention that works for one child may not be effective for another with similar behavior (Crone & Horner, 2003). Barton-Arwood and colleagues (2003) studied students with problem behaviors who received a research-based reading intervention—a Direction Instruction program (Carnine et al, 2004) in combination with a Peer-Assisted Learning Strategy (PALS) (Fuchs et al., 2001). The result indicated that changes in inappropriate behavior were not directly related to the reading intervention. Instead, the researchers hypothesized that improvement in academic engagement resulted from specific teacher behaviors and the structure. Therefore, obtaining specific information about behavioral function of individual student provides more effective intervention strategies that are appropriate for the context of the behavior (Horner & Carr, 1997).

Congruent findings from research have shown that function-based intervention is more successful in decreasing problem behaviors and increasing academic engagement than nonfunction-based intervention during academic tasks (Ellingson, Miltenbergen, Sticker, Galensky, & Garlinghouse, 2000; McKenna, 2006; Ingram et al., 2005; Sanford, 2006). McKenna (2006) compared the impact of function-based and nonfunction-based

intervention conditions on behavioral problems and academic engagement among six students. For problem behaviors, compared to the baseline condition and the implementation of nonfunction-based intervention, the function-based intervention phase showed a lower level of problem behavior for all students and lower levels of variability for five students. For academic engagement, all students demonstrated the highest increased rate of academic engagement during the function-based intervention phase, and five students had more stable rates of engagement with minimal variability.

In a similar research finding, Ingram et al. (2005) compared the effect of behavioral intervention plans that followed function-based and nonfunction-based strategies on reducing problem behaviors. Using single subject ABCBC designs, the study showed a significant lower percentage of intervals with problem behaviors for the two middle grade student participants during function-based intervention phases compared to nonfunction-based phases. The findings point to the importance of incorporating the FBA process, both in assessment and intervention design, for students who engage in problem behaviors in general education classroom settings.

Embedded Cultural Values of Behavioral Intervention: Contextual Fit

To demonstrate cross-cultural competence (Lynch & Hanson, 2004), key components of each intervention included: (a) understanding one's own culture and heritage, (b) learning culture-specific information about individuals from other cultures, and (c) applying knowledge and skills to work effectively with the individuals and families. The "contextual fit" of plan procedures (Albin et al., 1996; Benazzi et al., 2006)

was employed to design the function-based academic and behavioral intervention. Across cultures, research has indicated that professionals working with children with behavioral problems (e.g., teachers, support providers) are influenced by their cultural background experiences (Lynch & Hanson, 2004; Mann, Ikeda, Mueller, Takahashi, Humris, & Chin, 1992; Mueller et al., 1995; Wang et al., 2007; Weisz, Chaiyasit, Weiss, Eastman, & Jackson, 1995).

A function-based academic and behavioral support intervention is most effective when it is implemented with "contextual fit" (Albin et al., 1996; Benazzi et al., 2006; Crone & Horner, 2003; O'Neill et al, 1997). The contextual fit refers to the extent to which the intervention plan incorporates the values, skills, resources, and administrative support of those who implement the plan (Benazzi et al., 2006; Crone & Horner, 2003; O'Neill et al., 1997). The degree of the contextual fit indicated the extent to which the intervention was implemented with cultural responsiveness.

In planning a behavior support plan, cultural variables that make up individual social life (e.g., norms, traditions, values, or religious beliefs) have a significant role in identifying problem behaviors, as well as antecedents and consequences associated with the behaviors. Cultural norms and values about child development and socialization have affected professionals' judgment as whether a particular child has shown a particular behavior or problem more than the average child in the same cultural norm or whether certain behavior has occurred more often than is appropriate for children of a particular age (Weisz et al., 1995). Wang et al. (2007) state that some behaviors that professionals

from the mainstream culture disapprove may be conventional and appropriate to families of diverse cultural backgrounds.

For example, consistent with core teachings of Thai Buddhism, to which 95% of the population subscribes (U.S. Library of Congress, 2007), Thai children are reared to be nonaggressive, obedient, attentive to their own expression that may disturb or inconvenience others, and respectful of others—particularly authority figures (e.g., teachers). Teachers are likely to expect students to show high levels of self-control and deference to authoritative adults. In most Thai school contexts, it is considered proper social conduct for a Thai student to conduct the *wai*—a respectful bow with hands pressed together in a prayerful position—when coming by his or her teacher. If the student intentionally disregards *wai*, the negligence may be considered a disrespectful and deviant behavior.

A teacher report study (Weisz, Suwanlert, Chaiyasit, Weiss, Walter, & Anderson, 1988) found that Thai primary school teachers rated their students as showing significantly more problem behaviors than their American counterparts when they observed the same behaviors at school. The research team, however, conducted another follow-up observational study (Weisz et al., 1995) and found that the observation data were significantly different from the finding of teachers' reports. Weisz et al. (1995) conducted a systematic observation of Thai and American students matched for age. The study showed twice as many problem behaviors among American students as among Thai students. This finding was a contradiction of the previous teachers' reports. According to these studies, the teachers may have expected a higher level of respectful behavior from

their Thai students than from their American students. Or, in the presence of American students who showed less respect, the Thais may have been unclear about what was now "appropriate" (e.g. confused to see one student reprimanded for behavior that was ignored when performed by another).

Traditional cultural values not only shape how people think about problem behaviors but also influence how they actually treat the behaviors. The similar problem of inappropriate reinforcement has also occurred in cultures other than the U.S. mainstream culture. Although a set of typical cultural values for one culture is complex and could not be described as a stereotype, there have been studies of described shared values of Asian culture that reflect people's perceptions towards problem behaviors (Chan & Lee, 2004; Lee et al., 1997; Wang et al., 2007; Weisz et al., 1995). For most Asian cultures, punishment is a very common discipline. The Asian way to deal with behavioral problems involves reprimand and scolding. In many cases, physical punishment (e.g., spanking) is still considered acceptable (Ho, 1990; Tapanya, 2006; Wang et al., 2007).

Comparable research findings about traditional Chinese and Thai cultures indicated that in both cultures, social harmony is a value of highest importance (Holfstede, 1991; Wang et al., 2007; Weisz et al., 1988). Holfstede (1991) found that Thai culture highly regards social relationships and group harmony as opposed to individualism and assertiveness, values that are esteemed in the U.S. mainstream culture. Weisz et al. (1988) noted that in Thailand and Indonesia, respect, deference, and avoidance of inappropriate behaviors towards persons in authority are social norms. Wang et al. (2007) also described similar values in Chinese culture in which individuals

should avoid direct confrontation, maintain family, and social harmony conform to rules of propriety, and recognize others.

The FBA approach, however, has reflected the U.S. mainstream cultural values in many ways, including individualism and personal choice (Wang et al., 2007). Considering this scenario:

> Tippy does not like Jim. Every time they are in the same work group, they fight. A Thai teacher tries to solve this conflict by talking to the students about maintaining harmony and requiring them to make a formal apology. She praises them for doing the right thing. In fact, the teacher believes that the two students should spend more time together and work things out. Thus, she insists that they sit close to each other for all upcoming group projects. In the same scenario, however, an American teacher trained in the FBA approach would have given the students an option to change their work group, selecting their group mates, or teach them an appropriate way to request independent work. She praises them for making the right decision.

Cultural values are also evident in a child's behavior in school. A vignette about a Chinese student who participated in a positive behavior support plan describes:

> Meng's grandmother and parents expect Meng to always show respect and obedience to them. The family sets the rule that Meng should be in awe of her grandmother and parents and obey them, even if she disagrees. Meng has a behavior concern at night. She frequently wets the bed, which leads to a cycle of tearing off her clothes and crying for hours. This interrupts Meng's school day

dramatically because she is tired and upset due to the previous night's problem (Wang et al., 2007, p. 42).

Professionals from U.S. mainstream culture who work in a cross-cultural school context must be aware that such a contrast in cultural values may occur and can influence the way they develop a behavioral support plan for students.

Another way in which culture may affect the implementation of behavioral intervention relates to the selection of reinforcers (Kaufman et al., 2008). The definition of what behavior is considered "problematic" is, in fact, an expression of values that differ substantially across cultures, genders, religious beliefs, or ethnicities. A reinforcer that runs counter to the values of students may fail to change the behaviors. For example, in the U.S., giving the freedom to choose is viewed as a reward to the students, but for most Asian cultures where authority figures have strong influential power (Hofstede, 1991), giving freedom to choose may not be viewed as rewarding but as hostile. The students may be uncomfortable making choices but may view other types of reward more desirable (e.g., being allowed to work with favorite peers in search of harmony).

Behavioral support intervention must be carried out with cultural responsiveness. To demonstrate cross-cultural competence professionals who provide a behavioral intervention need to articulate their understanding of the embedded cultural value that affect how teachers from other cultures view problem behaviors which, in turn, influence how they treat the behavior in daily school practices.

Effective Reading Intervention for English Language Learners

Difficulty academic tasks can be aversive to students (Lee et al., 1999). Given that reading English requires high level of cognitive skills (Chard, Pikulski, & Templeton, 2000). English language learners (ELLs) who come to a reading class with significantly different cultural and linguistic backgrounds are at risk to experience academic difficulties, which, in turn, may set them for the coercive cycle of behavioral and academic problems.

Refining Education in a Global Context

In today's cross-cultural world, the expansion of information, media, communication, and transportation networks requires redefining quality education in a more global and consistent context. People worldwide with access to the internet can see the differences in schools across the globe. The expanded agenda for what constitutes quality education includes a system that prepares students to be: (a) lifelong learners, (b) communicators in both a native and an international language (e.g., English), (c) technologically skilled for workplace and daily living, (d) cognitively prepared for complex tasks, problem solving, and the creation of knowledge, and (e) socially, politically, and culturally responsible citizens (Hallinger, 1998). Taking into account the global meaning of "a good education", industrialized nations with advanced development in economics, trade, commerce, manufacturing, education, human rights, and political forces, such as the U.S., Canada, the U.K., and Australia, are situated at the leading edge of educational changes and technologies. The global standards of quality education,

therefore, seem to derive from research and literature developed within the school improvement context, innovations and technologies development and change frameworks of these English-speaking countries (Apichatabutra, 2007).

English Language

The expanded agenda for what constitutes quality education must include a system that prepares students to communicate in English, in order to access information and become part of the new educational revolution. Therefore, learning the English language has become increasingly important for new generations of students across cultures. In many countries where English is not an official first language, English instruction is placed in the mainstream compulsory education curriculum in a context of English as a foreign language (EFL) or English as an additional language (EAL).

Learning English Language in Thailand

The context of learning English language in Thailand is vastly different from learning English in the U.S., because students use their native language in everyday life, and English language is more likely considered a compulsory subject. However, in international schools or bilingual schools in Thailand, students are obliged to learn all skills in English (speaking, listening, reading, and writing) in order to learn other content areas (math, science, music, PE) and to communicate with teachers, friends, and staff. Nonetheless, the students are less likely to be exposed to outside environments where English is required (e.g. talking to neighbors, talking to sale persons, answering the

phone, and reading road signs, newspapers, banners, or advertisement). These opportunities, according to early reading research (Chard et al., 2000), are not sufficient for the learners to become fluent readers in the language. The students' opportunity to practice reading English depends largely on the English teachers and on assignment and tasks in their reading class.

Learning to Read English

Acquiring English-language skills requires complex cognitive skill development that may be challenging for nonnative speakers of English (Drucker, 2003). Reading, in particular, requires readers to be able to make connection between sounds or phonemes and print letters or graphemes, and to translate the print form into meaning (Chard et al., 2000). The process can be very complicated and problematic for children who are learning English as a second language, while also having to master their native language, especially when both languages are significantly different. For example, Thai language has an alphabetic system in which consonants and vowels are horizontally placed, left to right, with no intervening space to form syllables, words, and sentences. Vowels are written above, below, before, or after the consonant they modify.

The U.S. National Reading Panel (NRP) was convened in 1997 in response to national reading professional review of scientific literature to determine the most effective ways to teach young children to read. After reviewing 100,000 studies published since 1966 and 15,000 studies published before that time, the NRP (2000) suggested five essential components of effective reading instruction including teaching students to (a)

recognize and manipulate sounds in words—for example, how to break sounds in the word "think" into 4 phonemes, /th/-/i/-/n/-/k/, and how to blend these phonemes to make the whole word, (b) identify how sounds are represented by alphabetic letters—for example, recognize that the word "think" is made up of five letters but four sounds, (c) develop speed and accuracy during oral reading of connected text, (d) apply reading comprehension strategies, and (e) improve vocabulary understanding (Carnine et al., 2004; NRP, 2000). To prevent reading difficulties, studies have found that reading instruction needs to emphasize learners' development of phonemic awareness, word recognition (phonics), fluency, comprehension, and vocabulary (Foorman, 2007; NRP, 2000; Torgesen, 2002). Achieving mastery level of these early literacy skills is highly correlated and predicts the ability to read well.

Torgesen (2002) identified significant conclusions about reading, reading growth, and reading failure. The first assumption is that the goal of reading instruction is to help children to acquire the skills that enable them to comprehend the written texts. Second, two general types of skill and knowledge are required for good reading comprehension: (a) general language comprehension skills, and (b) ability to accurately and fluently identify the individual words in print. In addition, a critical reading difficulty for most children involves early and continuing problems acquiring accuracy as characterized by their poor alphabetic understanding and letter-sounds correspondence and fluency, resulting in their slower than normal development of a sight vocabulary of words. Another crucial reading difficulty in children is their lack of phonemic awareness or an inability to identify and manipulate the individual sounds in words. Specifically, research

found correlations between phonemic awareness and the growth of early word reading skills (Torgesen, 2002). Torgesen (1998) suggested that an effective preventive program in reading should embrace the right kind and quality of instruction delivered with the right level of intensity and duration to the right children at the right time.

Several empirically-based reading intervention studies have been conducted on the effect of reading interventions on students' oral reading fluency (e.g., Daly, Martens, Hamler, Dool, & Eckert, 1999; Nelson, Alber, & Gordy; 2004; Staubitz, Cartledge, Yurick, & Lo, 2005; Tam, Heward, & Heng, 2006; Vaughn, Chard, Bryant, Coleman, Tyler, Linan-Thomson, & Kouzekanani, 2000). Oral reading fluency is sensitive to instructional changes (Daly et al., 1999) and has served as an indicator for the effects of reading interventions.

Effective Reading Intervention for English Language Learners

Limited research on effective interventions for teaching reading to young English learners (Gersten & Baker, 2003; Gersten & Geva; 2003; McCardle et al., 2005) maintained that no single program best teaches reading for non-English language speakers. However, studies related to teaching early literacy in the primary grades found similar skills required for young learners' reading development: phonemic awareness, decoding, fluency, vocabulary and comprehension (Gersten & Geva, 2003; Vaughn et al., 2006). An effective English reading instruction for ELLs, therefore, may be based substantially on identification, assessment, and intervention for learners in monolingual English-speaking students (McCardle et al., 2005; Vaughn et al., 2005). Literacy

instruction approaches for English language learners have usually combined multiple strategies to make the knowledge less symbolic and thereby make learning more accessible to the students. Without effective reading instruction, the students are at risk for failing in most English-based instruction areas. Furthermore, unsuccessfully reading English, students are more likely to exhibit escape-maintained behaviors to avoid the tasks and instruction that are related to their failure.

Research has shown that English reading instruction should be structured and explicit so that ELLs can acquire the skills necessary to understand what they read (Linan-Thompson et al., 2002). Consensus research (Foorman & Togesen, 2001; NRP, 2000) indicates that students who are at risk for reading difficulties benefit from reading instruction that emphasizes early reading components skills (Five Big Ideas of Reading) (NRP, 2000). Furthermore, students with reading difficulties need systematic and explicit instruction with more intense supports from their teachers (Chard, Vaughn, & Tyler, 2002; Gersten & Baker, 2003; Tam et al., 2006; Vaughn et al, 2006). Foorman and Torgesen (2001) emphasize that the primary difference between reading instruction appropriate for all children in the classroom and that required by children at risk for reading difficulties is related to how the instruction is actually delivered.

However, the linguistic and academic variables that compound the processes of reading for ELLs often require additional specific considerations and recommendations for instruction. The NRP (1999) indicates that hurrying young ELLs into reading in English without ensuring adequate preparation is counterproductive. A dearth of research on typical reading growth rates for elementary grade ELLs (Dominguez de Remirez &

Shapira, 2006; Fetler, 2008) showed significant slower rate of English reading growth of ELLs compared to their English-speaking peers.

Silberglitt and Hintze (2007) examined the reading growth rates of a large population of students in 2nd to 6th grades measured over one year and found significantly differences growth rates across students' initial levels of performance. The study suggested that reading growth rate considerations based on aggregated average student performance (e.g., Fuchs, Fuchs, Hamlett, Walz, & Germann, 1993; Hasbrouck & Tindal, 2006) may not be appropriate for making decision about the efficacy of intervention for underperforming students whose initial oral reading fluency performance were significantly lower than the represent sample students at the 50th percentile. Significant implication from this finding was that underperforming students such as ELLs may not benefit from ambitious reading growth goals targeted for typical English-speaker students in general education.

Baker, Baker, Katz, and Otterstedt (2008) found that compared to English-speaker students who are at high risk for reading difficulty—have low skills on key early reading measures— ELLs at risk performed lower reading improvement. Given this basis, two alternative recommendations may be more relevant to examine reading performance of ELLs who are at risk for reading difficulty: (a) using a criterion referenced goal of local normative norm (Howell & Nolet, 2000), and (b) using less ambitious growth rate estimates based on information about student's initial oral reading fluency scores (Silberglitt & Hintze, 2007).

Direct Instruction. Empirical-based research findings emphasized that effective reading interventions and instructions are systematic, explicit, and intense, especially in small groups or one to one setting (Linan-Thompson et al., 2002; Vaughn et al., 2005). Regarding instructional delivery, research has found that effective reading outcomes are associated with a mediated scaffolding of literacy skills, explicitly teaching skills, and lesson delivery, providing opportunities for student response, providing corrective feedbacks, and assessing progress in reading to gain information for improving the instruction (Linan-Thompson et al., 2002; NRP, 2000).

Consistent findings from research in reading instructions for ELLs have maintained that the students benefited from the same early literacy interventions (i.e., direct instruction, small group intervention) documented to be effective with native English speaker students (Kamps et al., 2007; Linan-Thompson et al., 2002; Vaughn et al., 2005).

Kamps et al. (2007) found that direct instruction interventions (Carnine et al., 2004) were highly effective with ELL elementary students including Spanish-speaking students and students speaking language such as Vietnamese, Somali, and Sudanese. Reading curricula based in this approach that have proven effective for ELL first and second graders include *Reading Mastery*, *Read Well*, *Early Intervention in Reading*, and *Read Naturally*. The Direct Instruction design principles embedded in these curricula include: (a) frequent questioning by the teacher, (b) enabling students to constantly interact and be engaged with the lesson, and (c) providing immediate corrective feedback. Direct Instruction approach has shown significant improvement with ELL population

(Kamps et al., 2007; Linan-Thompson et al., 2002; Vaughn et al., 2005) as well as with students with EBD (Barton-Arwood et al., 2005; Nelson et al., 2005; Wehby et al., 2003).

Academic Instruction and Culture

Academic reading intervention must take into account cultural factors that influence learning for ELLs (McCardle et al., 2005). According to Lenters (2004), teaching English as a second language requires that teachers address unique needs of the students that were influenced by their native language literacy practices. For example, the teachers should recognize particular error patterns that may be affected by the students' attempt to transfer reading skills in their native language to English reading.

Information on student cultural backgrounds help teachers understand which cultural variables contribute or avert the student learning success (McCardle et al., 2005). For example, certain cultural characteristics may fit with some intervention strategies, but at the same time they may serve as obstructions to other strategies. The curriculum in Asian countries often is designed for student learning through processing and memorization before generating questions and applying knowledge to its application (Pratt & Wong, 1999). Pratt and Wong indicated that Chinese learners perceived learning as a sequential four-stage process: memorizing, understanding, applying, and questioning or modifying. Contrary to most Western cultures, certain Asian cultures (e.g., Thai, Chinese, Korean, Japanese) do not emphasize questioning, generating ideas, or evaluating as primary modes of learning since such relatives may be considered as humiliating gestures toward authority figures (e.g., teachers, parents) (Tweed & Lehman, 2002).

However, studies showed misperceptions by Western instructors of Asian students as being passive and rote memory learners, and not being interested in deep understanding (Baker, Child, Gallois, Jones, & Callan, 1991; Biggs, 1996; Pratt & Wong, 1999; Samueloqiez, 1987).

In addition, while U.S. studies have emphasized personal choice and an effective strategy contributing to intrinsic motivation and appropriate behaviors, studies also suggested that these findings may not always generalize across cultures. Iyengar and Lepper (1999) found that personal choice enhanced learning motivation for American children; but for Asian American children, learning motivation was not observed when they freely chose their own activities. Rather, learning motivation occurred when activities were chosen for them by trusted peers or trusted authority figures.

One effective academic practice that generates learning motivation and may incorporate cultural values of students is instructional games (Klein & Freitag, 1991). Four elements of this strategy that may incorporate cultural responsiveness and enhance student motivation include: (a) visual representations and active participation to increase attention during tasks; (b) instruction made relevant to students when using materials that are responsive to individual needs, (c) elements of competition for students who motivated with a high need for achievement, and (d) ample opportunities for students to obtain positive reinforcement.

Academic interventions must to be individualized so that the student's potential for learning success will be achieved. Educators need to understand the role of affective and motivation factors in academic learning outcomes for students. Considering the case

of Asian students, for example, the use of an intervention strategy that requires criticizing or questioning others may serve as an aversive stimulus that maintains problem behaviors to avoid an embarrassing learning situation. In this case, providing opportunities to obtain positive reinforcement (e.g., praise, self-satisfaction, and self-confidence) may be more appropriate.

Despite a large number of studies to support the outcomes of intervention based on the FBA, function-based outcomes are still needed for academic and behavior support across different student populations, academic needs, grades, gender, race, and geographic settings. Findings of the present study were expected not only to support the use of function-based interventions in different population groups (e.g., a non-American population) and settings (e.g., a school in Thailand) but also to document the evidence-based interventions for individuals with various academic needs, such as English language learners who have been much less studied in the instructional settings where English is taught as a foreign language or as an additional language in non-English speaking countries.

Single Subject Research Methodology

A research design should be selected to uniquely address the research question(s) and context under analysis. As no research design fits all questions (Horner, Carr, Halle, McGee, Odom, & Wolery, 2005), the researcher must consider what design is needed to allow unambiguous demonstration of causal relationships. Single subject research methodology is uniquely appropriate for examining behavior change across time, and the

impact of individualized interventions (Horner et al., in press). The outcomes of research in single subject design are similar to those in group design in that they reveal a causal relationship through careful experimental control. A major difference is the use of visual analysis to define causal effects, rather than statistical analysis to confirm or reject the prediction of the phenomenon. The flexibility of single subject methods allows researchers to tailor the designs to control extraneous variables and to match the behavior patterns that can change. This method allows researchers not only to establish functional relationship between a planned intervention and target behaviors, but also to identify more questions, due to the day-to-day variability of the natural setting and human behaviors, and modify the research procedure and data collecting process accordingly (Kennedy, 2005).

CHAPTER III

METHODOLOGY

The present study investigates the effects of a function-based academic and behavioral intervention consisting of three components: (a) functional behavior assessment (FBA) data used to develop a behavioral support plan, (b) evidence-based literacy instruction for English language learners (ELLs), and (c) cultural responsiveness. A single-subject concurrent multiple baseline design across five participants examined the impact of the intervention on the problem behaviors and reading performance of elementary students in a Thai school who were at risk for English reading difficulties and who developed problem behaviors during English reading tasks. Due to ambiguous effects early in the study, the design was augmented to include ABAB reversal analysis for two of the participants.

Research Questions

The primary research question addressed in this study was:

1. Is there a functional relationship between a function-based academic and behavioral intervention that (a) is based on behavioral function, (b) employs effective literacy instruction, and (c) is matched to the learners' culture, and a

decrease in problem behaviors during English reading class for third and fourth grade ELLs in Thailand?

Secondary questions explored in the analysis were as follows:

2. Is there a functional relationship between a function-based academic and behavioral intervention that (a) is based on behavioral function, (b) employs effective literacy instruction, and (c) is matched to the learners' culture, and an increase in engagement in academic performance for third and fourth grade ELLs in Thailand?
3. Is there a functional relationship between a function-based academic and behavioral intervention that (a) is based on behavioral function, (b) employs effective literacy instruction, and (c) is matched to the learners' culture and an increase in English reading performance for third and fourth grade ELLs in Thailand?

Setting

The study was conducted during the academic year 2008-2009 in a 400-student private elementary school located in an urban area in Bangkok, Thailand. The school had a diverse range of students both ethnically (e.g., Thai, Chinese, Korean, Japanese, French) and with respect to socioeconomic status (SES). English was the primary language used for all instructions. Thai language was used only during Thai language classes. Classroom teachers and school administrators were native English speakers, but with diverse ethnicity.

All intervention procedures were implemented in a typical classroom setting by the students' English teachers. The students did not require any special arrangement for class routines. The school provided English language support for students whose first language is not English, through an English as an additional language (EAL) program.

The setting for the study was two classrooms—the 3rd grade (year 4) classroom and 4th grade (year 5) classroom—serving students who do not have English as their primary language and whose admission test score indicated a need for additional English support in small group program. Each class had a group of three students. During school enrollment, nonnative English students were given an entrance assessment, and the results of this were used to determine whether students required English language support. The assessment was based on the Cambridge language levels (Hunt & Brychta, 2008). The school EAL coordinator made a decision on the students' placement. The school, however, did not disclose screening criteria and procedures.

The school EAL support was divided into two main categories. The first category was an intensive support group that was intended for students with very little or no English language competence. In this category, in addition to group support, students received one-to-one sessions with an EAL teacher. If students had some English, but were still struggling with the demands of language-heavy subjects such as Literacy, Topics and Science, they were placed in a small group for some subjects and supported in class for other subjects.

Both classrooms were small with three students each. Although the school's reading curriculum (Hunt & Brychta, 2008) followed British national reading standards

guidelines, the school did not have a solid curriculum for the EAL program. With consent from the school's Primary Program Master and the coordinator, the teachers were allowed to use their judgment to select reading materials (i.e., program, reading story books, and exercises). Students who qualified for EAL support were called out of their regular classroom during Literacy periods to form a small instructional group, meeting for 50 minutes, four times per week.

Reading Curricula

Reading curricula in the focused classrooms varied in the degree of teacher and coordinator choice, and in the degree to which curriculum was guided and explicit. The teachers taught reading in the English language and followed the British National Curriculum Standard in literacy (UK Government, 2008). The National Curriculum is a framework used by British schools to ensure that teaching and learning are balanced and consistent. The framework for literacy recommends teaching reading by using phonics through a literacy program such as Jolly Phonics (Lloyd, 1994). Nonetheless, the guidelines did not specifically provide intervention for English language learners.

Positive Behavior Support

The school did not have established universal interventions that meet the criteria for schoolwide positive behavior support system (Sugai et al., 2000; Walker et al., 1996). However, the school had a list of behavior expectations, "The Golden Rules", which were developed by the students and displayed around the school as a reminder of the expected

behavior. Some of the rules included—be polite, helpful, friendly and honest to everyone, try to speak English at all times, and always try one best and support others to do their best. Students were motivated to follow the rules by a "House Points" system in every classroom. The students work to follow the rules and collect the Points towards the end school term.

Participants

Five students in 3rd and 4th grade were recruited to participate in this study. They were enrolled in regular classrooms based on the British National Curriculum Standard (UK Government, 2008). The participants did not have English as their first language and did not have a disability diagnosis. They were not selected on the basis of gender, ethnicity, or SES. The participation criteria were students who: (a) were English language learners (ELLs) enrolled in third or fourth grade regular classrooms, (b) were nominated by their teachers for participation in the study using the Teacher Nomination form (Appendix C), and (c) were in the "at risk" category for English reading performance. Nomination was based on students' engaging in problem behaviors and having reading difficulties during English reading class. Data from a functional assessment checklist for teachers and staff (FACTS) (Appendix F) and validating direct observations using the Functional Assessment Observation (FAO) (Appendix G) (O'Neill et al., 1997) indicated that the students' problem behavior was escape-maintained. Students' English reading performance fell into the "at risk" category (ORF < 53 by the beginning of 3rd grade; and ORF < 71 by the beginning of 4th grade) based on *the Dynamic Indicators of Basic Early*

Literacy Skills (DIBELS) *Oral Reading Fluency* (DORF) benchmark measure (Good & Kaminski, 2003), and showed a significant discrepancy to typical reading performance (i.e., reading more than two times below grade-level peers) to the typical reading performance of grade-level peers (Deno & Mirkin, 1977; Howell & Nolet, 2000). Parent consent letters were obtained for student participation.

Because oral reading fluency norms for students were not available, interpretation of reading performance criteria for participation in this study used a discrepancy ratio (Howell & Nolet, 2000) as a criterion reference. To determine the discrepancy ratio, grade-level peers were randomly selected from the student participants' classrooms to develop a range of typical classroom reading performance. No identifying information was collected on these students. They were not described as the research subjects but were referred to as "grade-level peers" who served as a comparison group to determine expectations for reading performance of the target students.

Following criteria (a) and (b) for student participation, the study initially recruited six students to participate. However, the FBA data and validation of direct observation indicated that one particular student's behavioral function was more likely to be attention-maintained behavior. In addition, the DORF benchmark test confirmed no risk for reading difficulty. This student's DORF score was 106 correct words per minute (WCPM), falling within the performance level of his 3rd grade peers. He was then withdrawn from this study. Table 1 presents the demographic information for the five participating students.

Table 1. Demographic and screening data for student participants.

Student	Gender	Age	Grade	Ethnicity	Target Behaviors	WCPM/ Errors	Norm Discrepancy
Kenso	M	9	4	Thai	Get out of seat, make excuses to leave class, play with materials, look away	43/7	2.5
Kwan	F	10	4	Thai	Look away, withdraw from tasks	58/19	1.8
Khun	M	9	4	Korean	Refuse to work, get out of seat, play with materials, look away	28/8	3.8
Salim	M	8	3	Bangladeshi	Wait for answer, look at peer's work, withdraw from tasks	54/4	2.2
Gus	M	8	3	Thai	Talk out, laugh, sing, make noises, look away	63/8	1.8

Kenso

Kenso was a 9-year-old Thai boy enrolled in 4th grade. Thai was his primary language, and he was described as playful, fun loving, and good at math, music, art, PE, and reading fiction books. He made lots of friends and enjoyed competitive activities and sports (e.g., soccer). He received reading instruction in a small group of three students. The instruction was conducted based on the Curriculum Standard for 2nd and 3rd grade. In addition to the small group support, Kenso received additional one-to-one reading sessions with his teacher for 30 minutes, twice a week. The 2nd and 3rd grade level reading materials were used for Kenso during one-to-one and small group sessions.

Kenso's 3rd grade DORF benchmark score was 43 WCPM with 7 errors. Compared with the performance of his 4th grade peers (108 WCPM), Kenso's performance was 2.5 times lower, indicating a significant ratio to identify reading difficulty (Howell & Nolet, 2000). His reading accuracy was 85%. The error patterns demonstrated Kenso's limited decoding skills. The majority of errors were words with affixes (e.g., captured, signed, messages), VCe pattern words (e.g., rake, celebrate), and vowel and consonant combinations (e.g., snuggle, would, needed, theme, though, plains). He showed no attempt at self-correction and no hesitation. His native language may have had interference effects on the production of sounds in English language such as /th/.

Kenso's problem behaviors included getting out of his seat, making excuses to leave the classroom, playing with materials, and looking out and away from tasks. The FACTS interview indicated that these behaviors most likely occurred during academic reading tasks that required comprehension and knowledge of vocabulary.

Information from the FACTS interview also indicated that Kenso's problem behaviors occurred during academic tasks where English reading skills were required. Both the classroom teacher and the English language teacher agreed that the problems occurred during independent academic tasks when the instruction was less structured. An identified setting event that may be related to his problem behavior was fatigue from playing football during recess. The informants rated their confidence that the summary of behavior was accurate with a score of 5 out of 6.

To validate and clarify summary statements based on the interview information, Kenso was observed during his activity routines when problem behaviors were most

likely to occur (i.e., reading activities). The author used the FAO (O'Neill et al., 1997) to record occurrence of setting event, antecedent, problem behavior, and the perceived function of the behavior. Kenso was observed engaging in problem behavior 27 times over the course of three 20-min observations. In 19 instances, difficult reading tasks occurred before the behavior and in 8 instances, teacher demands and requests to follow instruction occurred. In 18 of 27 instances, the perceived function was to escape from these tasks. In 6 of 27 instances, the perceived function of disruptive behavior (i.e., getting out of his seat to ask questions while teachers were helping other students) was to obtain teacher attention. A clear pattern of escape-maintained behavioral function was established, supporting the summary statement.

Setting Events & Predictors	Problem Behavior(s)	Maintaining Consequence(s)
Hard tasks/independent and unstructured work Inexplicit instruction Return from recess	Getting out of seat, making excuses to leave classroom and ask for break, looking out and away from task, playing with materials	Avoid tasks

Figure 7. FBA summary statement for Kenso.

Kwan

Kwan, a 10-year-old Thai girl, was transferred from a Thai school the previous year and was currently enrolled in the 4th grade classroom. She attended the same group with Kenso and Khun. Thai was her primary language, and her teachers described her as caring and having good social skills.

Third grade DORF benchmark for Kwan produced a score of 58 WCPM with 19 errors. Kwan's performance was determined to be 1.9 times lower than her grade-level peers (108 WCPM), indicating a significant reading difficulty (Howell & Nolet, 2000). Her reading accuracy rate was 75%. Her reading errors median was 19 errors, ranging from 14 to 36 errors across 9 probes. The high frequent errors indicated that she lacked decoding skills. Frequent error patterns were found on both high and low frequency words (e.g., that, an, of, so, encouraged, hatchery, whale), and clearly at individual sound level (e.g., /th/, /a/, /o/). By analyzing Kwan's error pattern, her native language may have had interference effects on the production of sounds in English language. For example, Kwan did not discriminate between the sounds of the letter "t" and "th", as the latter sound does not appear in the Thai language. The word "Olympics" appears in Thai language but is pronounced without /s/.

Her teachers reported that Kwan preferred using Thai to communicate with friends and was reluctant to communicate her needs or ask questions to teachers in English. Her problem behavior included looking out and away from her task, not responding to question, and withdrawing from activities. The FACTS interviews indicated that these behaviors were most likely during reading tasks that required comprehension and grammar rules, and activities that required an individual or group response (e.g. during the teacher's presentation of grammar rules). When the teacher asked questions that required comprehension, she did not give the answer. She looked out or kept silent. Her withdrawn behavior was perceived as escape maintained. The teachers scored 5 or 6 out of 6 for their confidence that the summary statements were accurate.

The validating direct observation results showed 19 instances of problem behaviors over the course of three 20-min observation in which 17 instances pointed to escaping from reading activities as a perceived function. No instance showed that the perceive function was to gain attention.

Setting Events & Predictors	Problem Behavior(s)	Maintaining Consequence(s)
Hard tasks/independent and unstructured work Inexplicit instruction	Looking out and away from task, not responding to question, withdrawing from activities	Avoid tasks

Figure 8. FBA summary statement for Kwan.

Khun

Khun was a 9-year-old Korean boy enrolled in the 4th grade classroom with Kwan and Kenso. He entered the school one week after the term had started. His primary language was Korean, and his teachers reported that he was a polite boy. He came to class on time and was sociable during break time.

Khun's third grade DORF benchmark score was 28 WCPM with 8 errors. Khun's performance was determined to be a significant 3.9 times lower than his grade-level peers (108 WCPM). His reading accuracy was 75%. During the DORF test, he did not attempt to read the words he did not know; instead, he showed frustration (e.g., sighed, shook his head) and waited until the examiner told him the correct words. The error patterns were found on words with affixes (e.g., going, located, starred, tracker), vowel and consonant combinations (e.g., areas, these, though, theme), and multisyllables (e.g., constellation, languages). He showed frustration during the test.

During his first weeks, the teachers reported that Khun refused to work on reading tasks and was disengaged from tasks. The FACTS interview conducted with Khun's teacher indicated that his problem behavior included refusing to work on tasks, getting out of his seat, playing with materials, and looking out and away from tasks. The behavior was most likely when he displayed a confused look as an apparent lack of understanding of classroom activities and instructions, and when the tasks were difficult. Problem behavior occurred when the tasks required high-level skills in comprehension and grammar rules. An identified setting event that may be related to problem behavior was that Khun had just moved to the school this term. The informants rated their confidence that the summary of behavior was accurate with a score of 5 out of 6.

The FAO was used to validate his behavioral hypothesis summary. Khun engaged in problem behavior 20 times over the course of three 20-min observations. Of those 20 instances, the perceived function was to avoid doing the reading tasks 16 times. No instance showed that the perceived function was to gain attention. A clear pattern of escape-maintained behavioral function was established, supporting the summary statement.

Setting Events & Predictors	Problem Behavior(s)	Maintaining Consequence(s)
Difficulty adjusting to new school Hard tasks/independent and unstructured work Inexplicit instruction	Refusing to work on tasks, getting out of seat, playing with materials, and looking out and away from tasks	Avoid tasks

Figure 9. FBA summary statement for Khun.

Salim

Salim was an 8-year-old Bangladeshi boy enrolled in the same 3rd grade classroom as Gus. Salim's primary language was Bangladeshi. He got along well with peers and had a strong vocabulary skill.

His score on 3rd grade DORF benchmark probes was 54 WCPM with 4 errors. To compare his reading performance to the local norm expectation, seven of Salim's grade-level peers were randomly selected and administered the same first three passages. Of these seven students, the median performance was 117 WCPM. Compared to the performance of his grade-level peers, his reading performance was 2.2 times lower, which suggested his being at risk for reading difficulty (Howell & Nolet, 2000). His reading accuracy, however, was 93%. He missed multisyllable words (e.g., skyscrapers), and words with affixes (e.g., smartest, located).

The FACTS results suggested that Salim's behaviors were escape-maintained that most likely to occur when he was unsure of his answers during difficult reading tasks. Salim's problem behavior included waiting to be told what to do, not responding to questions and withdrawing from class activities, and looking at his peers' work. Relevant setting events may be that Salim's parents treated him like a young child. His teacher reported that his mother came to school from time to time because she was worried about how he was doing in school. This may explain Salim's dependence on adults or other peers. Both teachers rated their confidence that the hypothesis statement was accurate with a score of 6 out of 6.

The FAO was used to validate his hypothesis summary. Salim was engaged in problem behavior 20 times. Of those 20 instances over the course of three 20-min observations, the perceived function was to avoid doing the reading tasks 15 times and to obtain attention from peers 6 times. A pattern of escape-maintained behavioral function was established, supporting the summary statement.

Setting Events & Predictors	Problem Behavior(s)	Maintaining Consequence(s)
Family's treatment Hard tasks/independent and unstructured work Inexplicit instruction	waiting to be told what to do, not responding to question and withdrawing from class activities, looking at his peers' work	Avoid tasks, avoid making mistakes

Figure 10. FBA summary statement for Salim.

Gus

Gus was an 8-year-old Thai boy enrolled in the same 3rd grade classroom as Salim. Thai was his primary language, and he was referred to participate in this study due to his laughing, singing, and noise making during small group instruction. Gus was described as very sociable and well liked by friends. He was also good at competitions and games, and was competent in English verbal communication (e.g., understood instruction and asked questions relevant to the content).

Gus's 3rd grade DORF was 63 WCPM with 8 errors. Compared to the performance of his grade-level peers (117 WCPM), Gus's performance was 1.8 times lower than his grade-level peers, showing a significant ratio (Howell & Nolet, 2000). His reading accuracy was 89%. He read past the period and skipped a line. His error patterns

included words with affixes (e.g., suggested, wanted) and multisyllable words (e.g., Olympics, excellent, footprints). Similar to Kenso and Kwan, Gus's native Thai may have had interference effects on the production of sounds in English language.

The FACTS results indicated that Gus's behaviors were escape-maintained and occurred most likely when he was presented with difficult tasks. The behavior was most likely to occur during reading tasks for which Gus did not have confidence. The teacher reported that Gus was likely to rush through works and make a guess instead of thinking carefully through correct answers. His teachers rated their confidence that the behavioral summary statement was accurate with the score of 5 out of 6.

Based on the FAO information, Gus engaged in problem behavior 23 times over the course of three 20-min observations. Of 23 instances, 19 were related to escaping from his reading task as a perceived function, while 4 instances were related to obtaining peers' attention. An escape-maintain behavioral pattern was established.

Setting Events & Predictors	Problem Behavior(s)	Maintaining Consequence(s)
Hard tasks/independent and unstructured work	Talking to peers, laughing, singing and making noises, looking out and away from tasks	Avoid tasks

Figure 11. FBA summary statement for Gus.

Teacher Participants

The intervention procedures were implemented in a typical classroom setting by the participants' English teachers certified in teaching English as a Second Language. The study involved three female teachers and one male teacher who were native-English

speakers with different ethnic backgrounds (i.e., British, American, and Indian-Thai). The teachers had no experience in special education training and their teaching experiences were varied. The teachers were the behavior support team members.

Measurement Overview

Phase 1: Informed Consent Procedure

In May 2008, teacher informed consent forms (Appendix A) were obtained from 3rd and 4th grade teachers, the Head of the Primary Education Department, and the coordinator. They were asked to identify potential students for study participants and grade-level peers. Parents' informed consent letters (Appendix B) were then sent from the school to the parents of potential participants and grade-level peers. The teachers disclosed names of student participants who had met the criteria for initial screening measures using the teacher nomination form (Appendix C). Then, the parent/guardian informed consent letters (Appendix D) were sent to the students targeted for this study. After obtaining signed informed consent letters from the teachers and the parents, assent to participate was obtained from each student participant (Appendix E).

Phase 2: Screening

Problem Behavior. To identify the function of students' problem behaviors, a 30-min teachers' interview was conducted using the Functional Assessment Checklist for Teachers and staff (FACTS) (March et al., 2000; see Appendix F). The summary statement from the FACTS identified (a) problem behavior, (b) controlling antecedent

stimuli, and (c) maintaining consequences. To validate the FACTS summary statement, three sessions of 20-min classroom direct observation was conducted by the author using the Functional Assessment Observation (FAO) (Appendix G) (O'Neill et al., 1997). Based on data from the FBA and the FAO, hypothesis statement about antecedents and consequences that maintain the behaviors was developed and used as the basis to design a behavior intervention support plan.

Reading Performance. The students were given three sets of three 1-min reading passages (9 total passages) as DORF benchmark probes across three different days. The DORF benchmark test is a subtest of DIBELS standardized, validated, short-duration fluency measure of basic reading skills that requires a student to read grade-level reading passages for one minute each, and the number of words read correctly is counted. The measure was used to identify whether students were reading at risk based on the DORF criterion (Good & Kaminski, 2003).

Since no sample norm group exists for students who are reading English as an additional language in schools outside the United States, the participants' DORF benchmark scores were compared to the typical performance of their grade-level peers. The teachers and the author randomly selected seven students in the 3rd grade classroom and seven students in the 4th grade classroom to develop a range of what the typical students read in both grade levels. Three passages were administered and the median score for all random grade-level peers were identified as averaged WCPM. To determine the magnitude of reading difficulty, the discrepancy ratio was calculated by dividing the grade-level peers' median by the participants' median (Howell & Nolet, 2000). For

example, the peers' median was 108 and the participant's median was 38. According to the procedures, 108/38 = 2.84 discrepancy ratio, indicating that this participant reads 2.84 times below peers. If a student participant is reading approximately 2 times below peers, the discrepancy ratio is considered significant (Howell & Nolet, 2000).

Phase 3: Intervention

The behavior intervention support plan for five participants included function-based behavior and academic intervention in the form of multicomponent intervention. The intervention consisted of (a) behavior support intervention, (b) an effective reading instruction program for ELLs, (c) DORF progress monitoring, and (d) activity patterns and opportunities for preference that reflect cultural responsiveness of the intervention.

The participating students were given a supplementary reading support program called *Phonics for Reading* (Archer, Flood, Lapp, & Lungren, 2002), a research-based supplemental reading program that aligned with the recommendations of the National Reading Panel (2000). The program offered additional instruction in student reading deficit areas (i.e., phonological awareness and decoding) and was reviewed by the Oregon Reading First (2008) and the Florida Center for Reading Research (2008) as a strong supplemental reading program designed for struggling readers.

Phase 4: Evaluation

The teacher participants completed the *Contextual Fit Questionnaire* (Appendix H; Salantine & Horner, 2002) to evaluate the extent to which contextual fit and cultural

responsiveness were incorporated in the intervention. The Questionnaire was completed by each team member during the behavior support team meetings.

Social validity for this study was assessed using the *Teacher Consumer Satisfaction Survey* (Appendix I; Crone & Horner, 2003) to evaluate the extent to which the function-based behavior and academic intervention were perceived by teachers as (a) effective to reduce problem behaviors, increase student engagement, and improve reading performance, (b) efficient with time and local resources and capacity, (c) easy to implement, and (d) having contextual fit for the students and classroom settings. The survey was completed and recorded on a Likert-type scale with higher scores indicating the highest agreement by the teachers at the end of the study.

Measurement

Problem Behavior

The primary dependent variable was the percentage of observation intervals with a problem behavior. Problem behaviors in the classroom were identified as *aggressive* (e.g., hitting, poking, kicking, yelling, starting fights, destroying materials), *disruptive* (e.g., talking out, making noises, blurting out an answer, throwing objects), *disrespect* (e.g., using gestures, teasing, mocking, verbally abusing or threatening others), *noncompliant* (e.g., saying "no" to the teacher's instructional request, refusing to work or take out a book), and *off-task* (e.g., putting head down, watching others, looking out through the window).

Problem behavior was measured through direct observation using an interval record (Appendix J) by the observers who were trained to an 85% interobserver agreement during observation training sessions. Each observer independently rated the behavior during the observation period which was lasted from 15 to 20 minutes. Each period was divided into 10-s observation intervals. An interval was scored as including a problem behavior if any problem behaviors occurred during the 10-s interval (i.e., partial interval recording). The percentage of intervals in which the problem behavior occurred was reported.

Academic Engagement

A secondary dependent variable was occurrences of academic engagement, which was observed concurrently with the problem behavior variable (Appendix J). Academic engagement was measured through direct observation by the observers who were trained to an 85% interobserver agreement during observation training sessions. Each observer independently rated the behavior during the observation period which lasted from 15 to 20 minutes. Each period divided into 10-s observation intervals. An interval was scored as "on-task" if the students engaged in and completed tasks as assigned, followed teacher instructions, focused only on their own work, and raised their hand to request for assistance. An interval was scored as including on-task behaviors if the behaviors occurred at the end of the 10-s interval (i.e., momentary time sampling). The percentage of intervals in which on-task behavior occurred was reported.

Interobserver Agreement

The study employed seven observers who were blind to the study hypotheses. They were undergraduate students in the Special Education Department, the Faculty of Education, Chulalongkorn University, Bangkok, Thailand. Interobserver agreement (IOA) was gathered for problem behaviors and academic engagement for approximately 25% of the observations across participants, and across baseline and intervention conditions. The agreement data were collected through a second observer who independently scored the same participant at the same time period. The IOA was calculated by dividing the total number of intervals with agreement by the total number of intervals with agreement plus disagreement, and multiplying by 100 (Watkins & Pacheco, 2000). An acceptable criterion for IOA was 85% agreement.

Reading Performance

Student's reading fluency was measured via the Oral Reading Fluency (DORF) progress monitoring subtest of the *Dynamic Indicators of Basic Early Literacy Skills (DIBELS)* (Appendix K; Good & Kaminski, 2003). The DORF progress monitoring test measures accuracy and fluency with the code and connected text for students' ability to (a) identify letter-sound correspondences accurately and quickly, identify familiar spelling patterns to increase decoding efficiency, (b) blend isolated phonemes to make words, and (d) use alphabetic understanding to identify words in isolation and on context fluently. Students' performance was measured by having them read a passage aloud for one minute. Words omitted or substituted, and hesitations of more than three seconds

were scored as errors. Words self-corrected within three seconds were scored as accurate. The number of words read correctly per minute (WCPM) from the passage produced the oral reading fluency rate. For this measure, the students' WCPM rate was reported.

The DORF's reliability is .92. However, with four multiple probes, estimated reliability was .97. The DIBELS's general validity is the content-and criterion related validity. The content is directly consistent with scientific-based research in reading focusing on the basic reading skills—phonemic awareness, alphabetic understanding, fluency, and accuracy (NRP, 2000). Fluency on each subtest, in particular, is an essential skill to reading achievement in research literature. Each subtest was also documented as correlated with established reading measures. For example, the DORF subtest correlates .36 with the Reading Cluster of the Woodcock-Johnson Psychoeducational Battery (revised) and the Letter Naming Fluency subtest correlates .70 with the Readiness Cluster and .65 with the Reading Cluster of Woodcock-Johnson (Salvia & Ysseldyke, 2006).

The DORF passages were developed to be consistent in readability, reliability, and validity to the passages from the Test of Reading Fluency (TORF) (Children's Educational Services, 1987), which is a standardized set of passages and administration procedures designed to identify children who may need further intensive assessment and to measure growth in reading skills (Children's Educational Services, 1987).

The participants were timed for 1-min DORF Progress Monitoring probes by the author at the end of the lesson, approximately two times per week during baseline and intervention conditions. The author recorded scores as well as errors and types of errors (e.g., sound pronounced incorrectly, omitted words, word type decoding errors). During

intervention phases, the errors analysis was used as part of the intervention. The author provided error analysis evaluation as part of the intervention feedback to the teachers and discussed possible errors.

Cultural Responsiveness

The academic and behavioral support interventions were conducted with responsiveness to the cultural values of the students and the teachers. Kauffman et al. (2008) reviewed literature related to three cultural dimensions—ethnicity, gender, and religion—to find evidence of responsiveness to behavioral interventions related to cultural identity. They found that an intervention developed with cultural sensitivity (a) is based on scientifically grounded approaches, (b) achieves socially valid behavioral objectives, and (c) has procedures that are acceptable to students, parents, and teachers.

Since no reliable tool exists to measure cultural responsiveness in intervention practices, the evidence of cultural responsiveness in this study was collected using the "contextual fit" (Albin et al., 1996; Benazzi et al., 2006) of the intervention procedures with the behavioral context (i.e., environmental variables) which was influenced by the cultural values of students and teachers. Contextual fit refers to the extent to which the intervention plan incorporates the values, skills, resources, and administrative support of those who implement the plan (Benazzi et al., 2006; Crone & Horner, 2003; O'Neill et al., 1997). The degree of contextual fit indicated the extent to which the intervention was implemented with cultural responsiveness and sensitivity (Kauffman et al., 2008). Cultural considerations and individual academic needs of the students were also

incorporated into the team meeting agenda. This team discourse served as a measure to enhance cultural responsiveness of the intervention plans.

After the academic and behavioral support plan was developed for each student during the initial meeting, the behavioral support team—the author who served as a behavioral support consultant and the teachers—evaluated the contextual fit of the plan. The *Contextual Fit Questionnaire* (Salantine & Horner, 2002; Appendix H) was used to evaluate the extent to which the elements of the plan fit the contextual features of the classroom environment.

During the second team meeting, five students' information folders were provided to the team members. Each folder included: (a) a one-page summary of the student's background, DORF test results, an operational description of the student's problem behavior, and the summary from an FBA for the student, (b) reading intervention plan (Appendix L), and (c) behavioral support plans (Appendix N).

Each team member rated each student's intervention plan using a 16-item questionnaire. Each item was rated on a 6-point Likert-type scale, ranging from *strongly disagree* to *strongly agree*. The highest contextual fit score possible for each intervention plan was 96. The 16 items were categorized into the following eight categories with two questions per category: (a) knowledge of the elements of the plan, (b) skills needed to implement the plan, (c) values reflected in the plan, (d) resources available to implement the plan, (e) administrative support, (f) effectiveness of the plan, (g) whether the behavior support plan is in the best interest of the student, and (h) whether the behavior support plan would be efficient to implement.

The Contextual Fit Questionnaire was based on factor analysis results from Sandler, Albin, Horner, and Yanvanoff (2002) and from content validity results reported by Salantine and Horner (2002). Based on these results, statistically significant covariation occurred between contextual fit scores from the questionnaire and the likelihood that the team members would select an intervention for implementation (Benazzi et al., 2006). Benazzi et al. (2006) found that when the behavioral support team—including members with knowledge of the student, the setting and behavioral theory—evaluated the intervention plans, it was more likely that the plans were rated as having a strong contextual fit. Posthoc analysis from the same study also found that the intervention plans developed by behavioral specialists working alone were likely to receive lower contextual fit scores than the plans conducted collaboratively by the behavioral specialists and the team members who have knowledge about students and classroom settings. The team members who evaluated the plans found the plans conducted by behavioral specialists working alone to include intervention procedures that: (a) were less familiar to them, (b) did not match their personal values, (c) were less focused on the best interest of the student, and (d) were not perceived as efficient to implement.

Design and Procedures

Design

A single-subject concurrent multiple baseline design across participants was employed. During the intervention phases, however, a reversal design element was added

for two participants. The rationale for including two single-subject design elements, combined designs (Kennedy, 2005), was that (a) the initial demonstration of experimental control using the multiple baseline design produced ambiguous results, (b) the study explored multiple dependent variables (i.e., problem behavior and academic engagement) simultaneously, (c) a multicomponent feature of the independent variable (i.e., function-based academic and behavioral intervention) and extraneous variables in natural classroom settings (e.g., schedule change, canceled class, different teachers), made it difficult to control the experiment using only one design, and (e) combined designs demonstrated experimental control in multiple ways, yielding stronger demonstration of the effect (Kennedy, 2005).

Baseline Condition

During initial baseline, all five participants received their traditional EAL lessons. Both classrooms were in a small-group setting with no more than four students. Although the school's reading curriculum (Hunt & Brychta, 2008) followed British national reading standard and curriculum guidelines, the school did not have a solid curriculum for the EAL program. With consent from the school's Primary Program Master and the coordinator, the teachers were free to select their reading materials (i.e., program, reading story books, and exercises). The participants were called out from their regular classroom during literacy periods to form a small instructional group which met for 50 minutes, four times per week. Reading curricula in the focused classrooms varied by the degree of teacher and coordinator choice, and by the degree to which the curricula were guided and

explicit. The teachers taught reading in English and followed the British Curriculum Standard for a regular classroom. Examples of lesson focus during the baseline condition included: investigate and learn to use the spelling pattern –le (e.g., table, vegetable, middle), future tense, question marks, and pronouns to replace nouns to avoid repetition. During free reading time, the students picked their reading book from the library and took turns reading to the teacher. Neither classroom had any specific behavior expectation or support system. However, the school had a "House Point" system in which students were placed in different houses. Students collected House Points from the various classrooms to accumulate for their house team a big reward at the end of the term. Student participants had opportunities to earn House Points during English reading classes.

Functional Behavior Assessment Results. Results from the FBA process in this study were initially used to identify escape-maintained behavioral functions. Student participants were selected based on the purpose their problem behavior served as a result of an attempt to avoid engaging in academic reading tasks. The hypothesis was confirmed by structured interviews with the students' English teachers and classroom teachers using Functional Assessment Checklist for Teachers and Staff (FACTS), as well as by direct observation in the students' classes using the Functional Assessment Observation (FAO) form. Although a more systematic functional analysis is a powerful tool to confirm the functional relationship between independent variable and dependent variable (Iwata et al., 1994; O'Neill et al., 1997), the study did not include this method for three important reasons. First, functional analysis procedures may require that class instructional time and routines be changed or adjusted to meet the experimental conditions. Second, the

approach demands high levels of skill and supervision from experienced professionals so as to be conducted with precision. Finally, the use of teacher interviews and direct observation identified clear patterns of escape-maintained problem behaviors for all students.

Function-Based Academic and Behavior Intervention Condition

Based on results from the FBA, behavior support plans were developed. First, the function of the behavior was determined by the FBA as escape maintained. As part of the intervention, the students were taught alternative appropriate behaviors that allowed them to access the same desired reinforcement or consequences (e.g., time away from difficult tasks) as when the students engaged in the problem behaviors. For example, the students were taught to properly ask for a 1-min break during tasks. Changing curriculum to *Phonics for Reading* was also based on antecedent manipulation of the behavioral support plan since problem behaviors for all participants occurred when the tasks required high-level reading skills that the students had not mastered. Based on the participants' DORF benchmark scores, the reading materials were higher than their reading instructional level. The three main components of the function-based intervention included (a) a behavioral support plan, (b) an academic support plan, and (c) a cultural responsiveness plan.

The behavior support team met three times after the function-based interventions were implemented for all the participants to evaluate the effectiveness of the interventions. Due to time constraints, the team meeting agendas were combined into

three meetings for all five participants. The first meeting was conducted approximately two weeks after the interventions; the second meeting was at the end of the term, and the third meeting came after the school break, after the end of the study.

The evaluation procedures included (a) informal discussion about how the interventions could be modified and made more effective, (b) analysis of data from observations, and (c) the *Contextual Fit Questionnaire*. During the second and third meetings, the team completed the questionnaire (Salantine & Horner, 2002) to evaluate the extent to which contextual fit and cultural responsiveness were incorporated in the intervention. The questionnaire was completed by each teacher during the team meeting midpoint in the study and again at the end of the study. Table 2 provides a summary of information including grade level, gender, ethnicity, problem behaviors, antecedent context, behavioral function, cultural specific recommendations, and reading recommendation defined in each student's academic and behavioral support plan.

Behavior Support Intervention. Based on the hypothesis statement that was developed from the FACTS and validating observation, a behavior support plan was designed. Each student's behavior support plan was developed to (a) modify the predictors (i.e., setting events, antecedent) that set the occasion for the problem behavior (b) teach appropriate or alternative behaviors, and (c) modify consequences to minimize reinforcement of problem behavior, and increase reinforcement of desired behavior. The goal of the behavior support plan was to identify strategies that make the problem behaviors ineffective, inefficient, and irrelevant.

Table 2. Students' information summary.

Name	Grade	Gender	Ethnicity	Antecedent Context	Problem Behavior(s)	Behavioral Function	Academic Consideration	Cultural Consideration
Kenso	4	M	Thai	Hard, independent and unstructured tasks Return from recess	Get out of seat, make excuses to leave classroom, ask for break often , look out and away from tasks, play with materials	Avoid tasks	Reading accuracy at frustration level Native language interference Unstructured reading activities led to distraction	Authority figure Uncertainty avoidance Love to play and have fun
Kwan	4	F	Thai	Hard, independent and unstructured tasks Difficulty adjusting to new school environment	Look out and away from task, not respond to question, withdraw from activities	Avoid tasks	Reading accuracy at frustration level Lack decoding skills Native language interference	Authority figure Uncertainty avoidance
Khun	4	M	Korean	Hard, independent and unstructured tasks Difficulty adjusting to new school environment	Refuse to work on tasks, get out of seat, play with materials, look out and away from tasks	Avoid tasks	Reading accuracy at frustration level Lack motivation Unstructured reading activities led to distraction	Uncertainty avoidance
Salim	3	M	Bangladeshi	Family's treatment Hard, independent and unstructured tasks	Wait to be told what to do, not respond to question , withdraw from class activities, look at his peers' work	Avoid tasks Avoid making mistakes	Work depending on others Unstructured reading activities led to distraction	Overprotected parenting style Authority figure Uncertainty avoidance
Gus	3	M	Thai	Hard, independent and unstructured tasks	Talk to peers, laugh, sing, make noises, look out and away from tasks	Avoid tasks	Reading accuracy at frustration level Skip line reading Unstructured reading activities led to distraction	-

Kenso. The behavior support team, including the teachers and the author, developed a behavior support plan for Kenso based on the FBA information. Figure 12 shows the hypothesis statement and a competing behavior pathway analysis to identify alternative behavior, desired behavior, and consequence. The desired behavior outcome for Kenso was to stay on task—engaging in and completing tasks as assigned, following teacher instructions, focusing only on his own assigned work, and raising his hand to request assistance from the teacher. Alternative behaviors were identified as following academic and behavior rules according to the *Phonics for Reading* program, requesting one break time per session, and choosing to work in the group or in a pair. Kenso was taught behavior expectations in the classroom and during reading tasks including how to properly request for assistance from the teacher. A positive reinforcement system was established using smiley faces and stickers as primary reinforcers. Kenso's engagement in problem behavior may result in loosing the reinforcers (i.e., smiley faces, stickers).

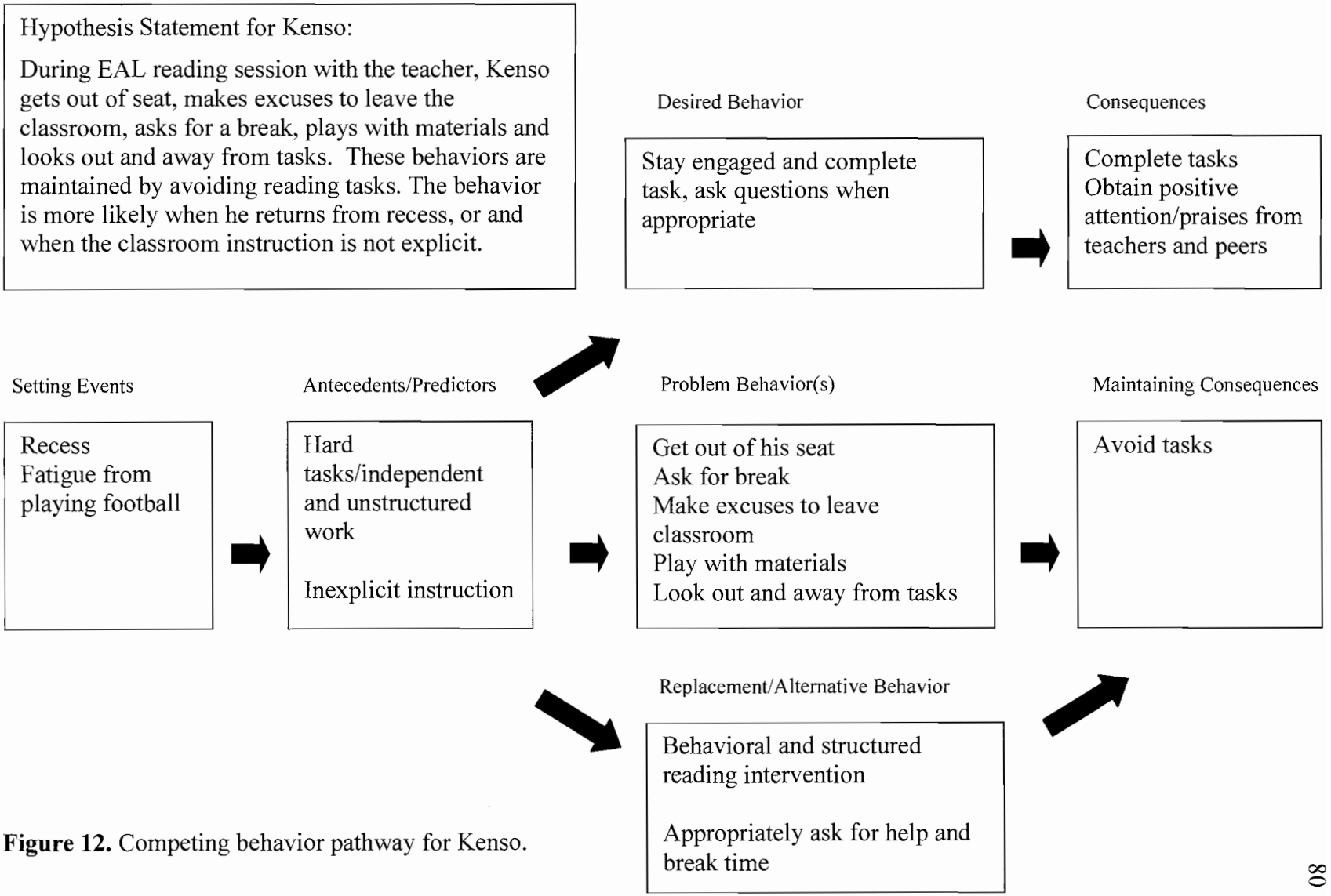


Figure 12. Competing behavior pathway for Kenso.

Kwan. The behavioral support team used information from the FBA to develop a behavior support plan for Kwan. Her desired behavior included staying on task—engaging in and completing tasks as assigned, following teacher instructions, focusing only on her own assigned work, and raising her hand to request assistance from the teacher. Acceptable alternative behavior for Kwan was to follow academic and behavior rules according to the *Phonics for Reading* program, to ask for a break or request assistance from the teacher, and to choose to work in the group or in a pair. Kwan was taught behavior expectations in the classroom and during reading tasks, including how to properly request for assistance from the teacher. The team also decided to change the seating arrangement so that Kwan sat facing the teacher and blackboard in the middle of the other two students. A positive reinforcement system was established using smiley faces and stickers as primary reinforcers. Kwan's engagement in problem behaviors may result in loosing the reinforcers. Figure 13 shows the hypothesis statement summary and a competing behavior pathway analysis to identify alternative behavior, desired behavior, and consequences for Kwan.

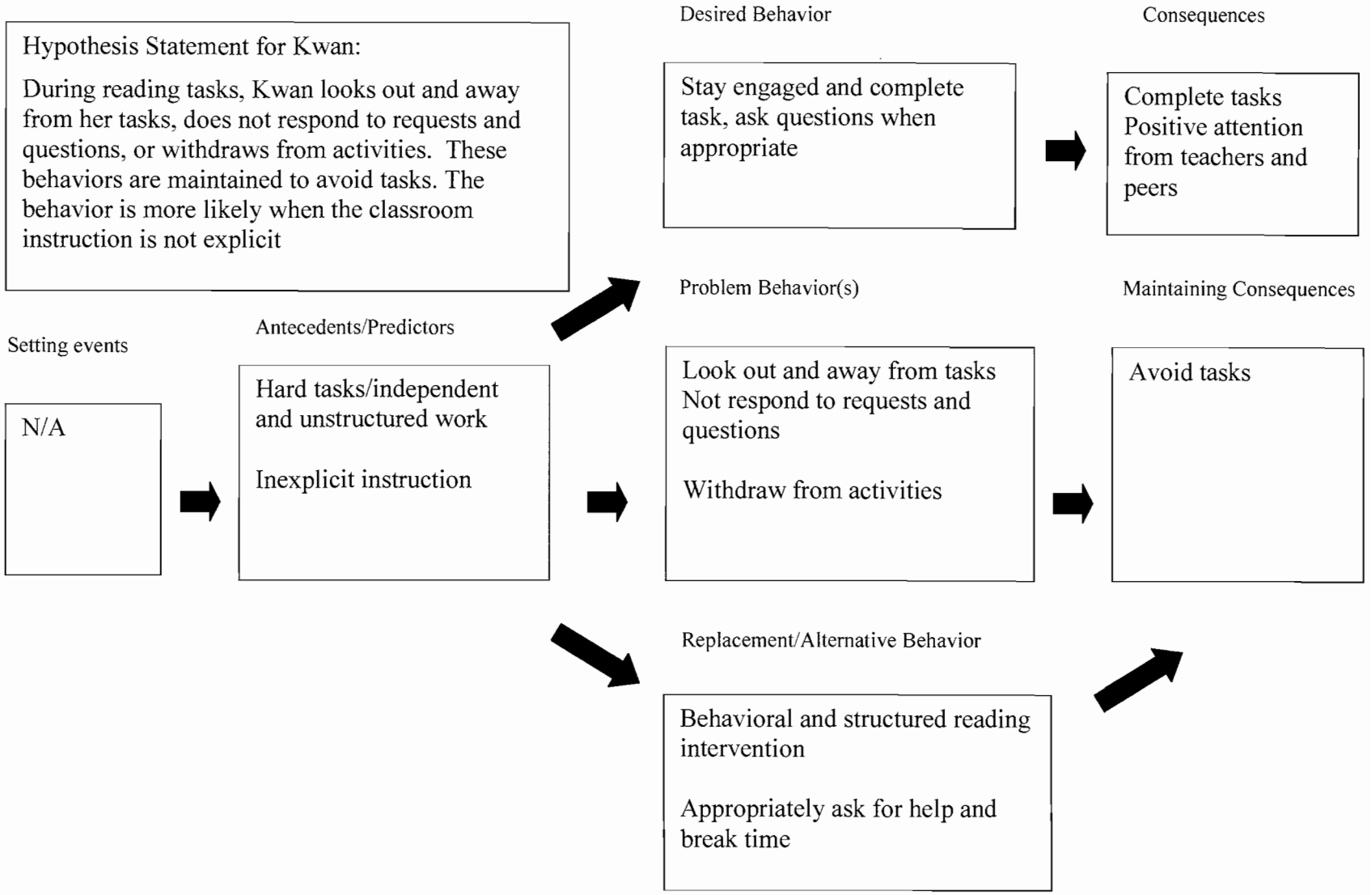


Figure 13. Competing behavior pathway for Kwan.

Khun. The behavior support team developed a behavioral support plan for Khun based on the informed FBA data. His desired behavior outcome was to stay on task—engaging in and completing tasks as assigned, following teacher instructions, focusing only on his own assigned work, and raising his hand to request assistance from the teacher. Alternative behaviors were identified as following academic and behavior rules according to the *Phonics for Reading* program: requesting one break time per session, and choosing to work in the group or in a pair. Khun was taught behavior expectations in the classroom and during reading tasks, including how to properly request assistance from the teacher. A positive reinforcement system was established using smiley faces and stickers as primary reinforcers. Khun's engagement in problem behavior may result in loosing the reinforcers.

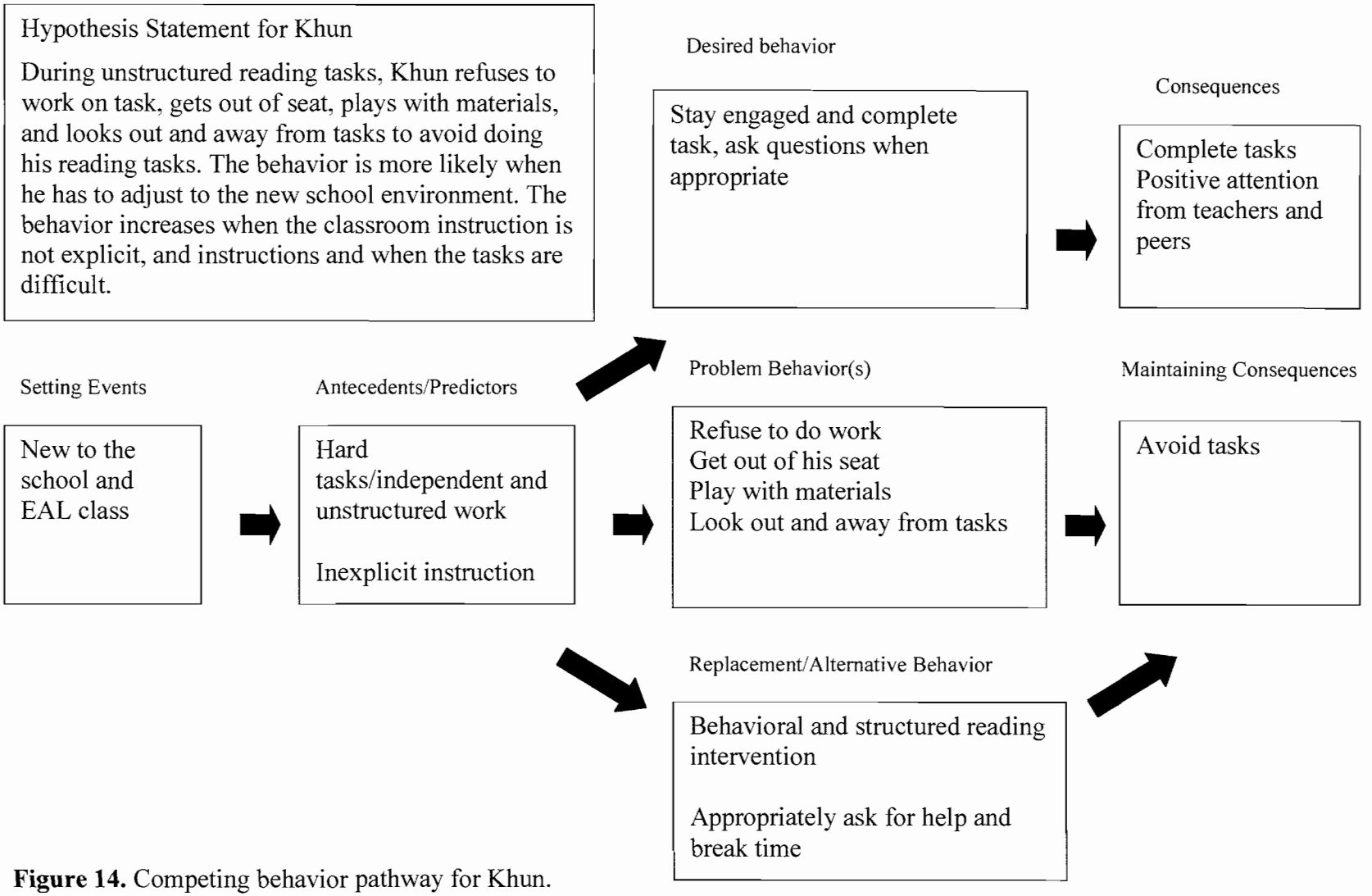


Figure 14. Competing behavior pathway for Khun.

Salim. The behavior support team developed a behavioral intervention plan for Salim based on the information obtained from the FBA procedures. The desired behavior for Salim was to work independently of others, to stay focused on the task, to listen and follow the teacher's advice and instructions, to practice phonics to improve his reading skills, and to ask questions when he did not understand the tasks. Acceptable alternative behaviors for Salim included following academic and behavior rules according to the *Phonics for Reading* program, appropriately asking for break time, and choosing to work in the group or in a pair. Salim was taught behavior expectations in the classroom and during reading tasks, including how to properly request assistance from the teacher instead of looking at peers' work. A positive reinforcement system was established using smiley faces and stickers as primary reinforcers. Salim's engagement in problem behavior may result in loosing the reinforcers. Figure 15 shows the hypothesis statement and a competing behavior pathway analysis to identify alternative behavior, desired behavior, and consequence for Salim.

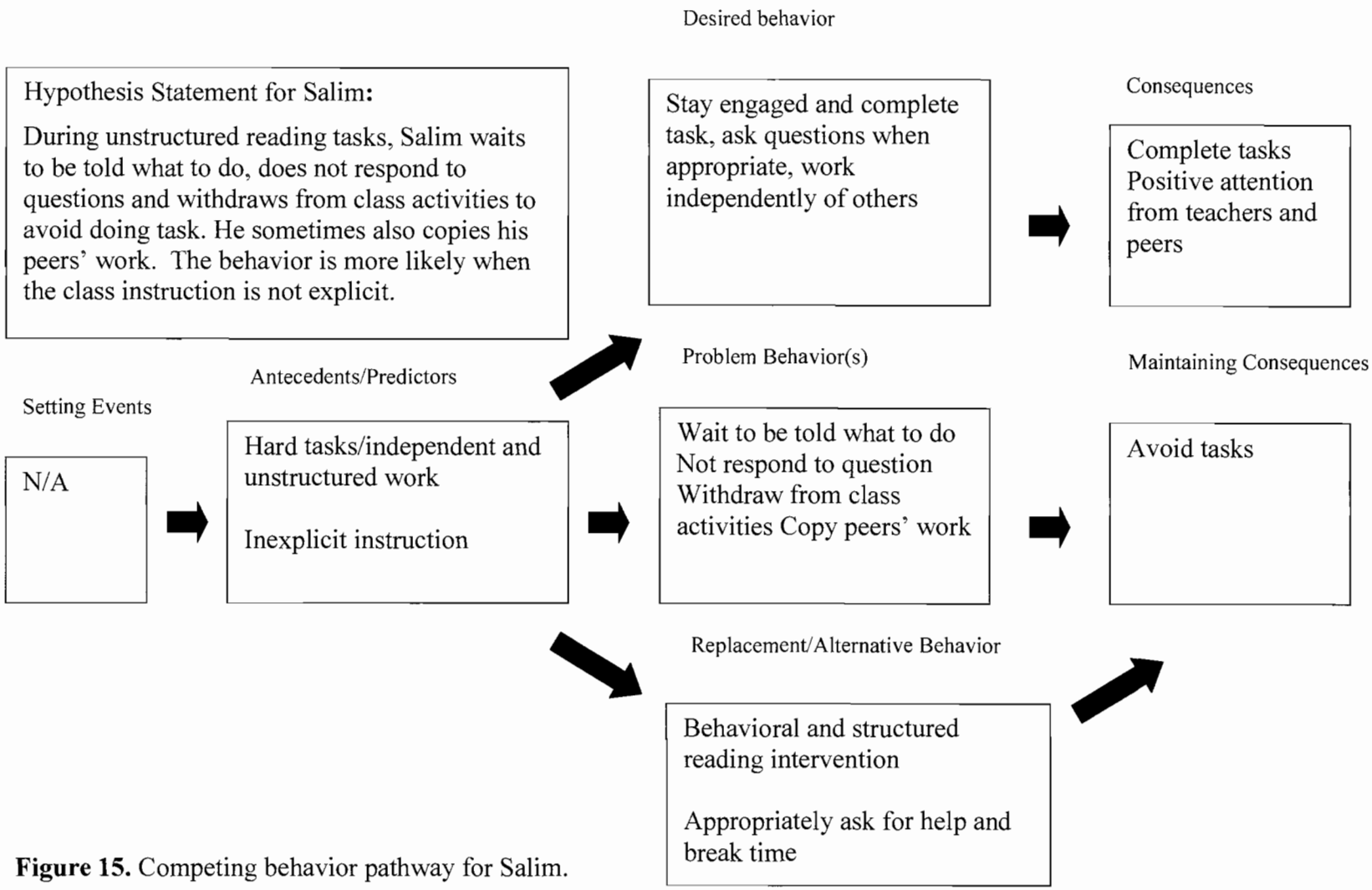


Figure 15. Competing behavior pathway for Salim.

Gus. The behavior support team developed a behavior intervention plan for Gus based on the information obtained from the FBA procedures. Figure 16 shows the hypothesis statement and a competing behavior pathway analysis to identify alternative behavior, desired behavior, and consequence for Gus. The desired behavior was to work on his tasks with carefulness, to stay focused on the task, to listen and follow the teacher's advice and instructions, to practice phonics to improve his reading skills, and to ask questions when he did not understand the tasks. Acceptable alternative behaviors for Gus included following academic and behavior rules according to the *Phonics for Reading* program, appropriately asking for break time, and choosing to work in the group or in a pair. Gus was taught behavior expectations in the classroom and during reading tasks including how to properly request assistance from the teacher. A positive reinforcement system was established using smiley faces and stickers as primary reinforcers. Gus's engagement in problem behavior may result in loosing the reinforcers.

Reading Intervention

The study used lessons from the *Phonics for Reading Levels 1 and 2* (Appendix L) to provide early reading skills (e.g., phonics, letter-sound association, and vocabulary) needed by students who are at risk for reading difficulty (Foorman & Torgesen, 2001; NRP, 2000). The direct instruction intervention approach (Carnine et al., 2004) embedded in this program is one of the most well-established systems in behavioral science (NRP, 2000). The program was selected as a reading intervention for this study not only to provide critical prerequisite reading skills for the participants who were

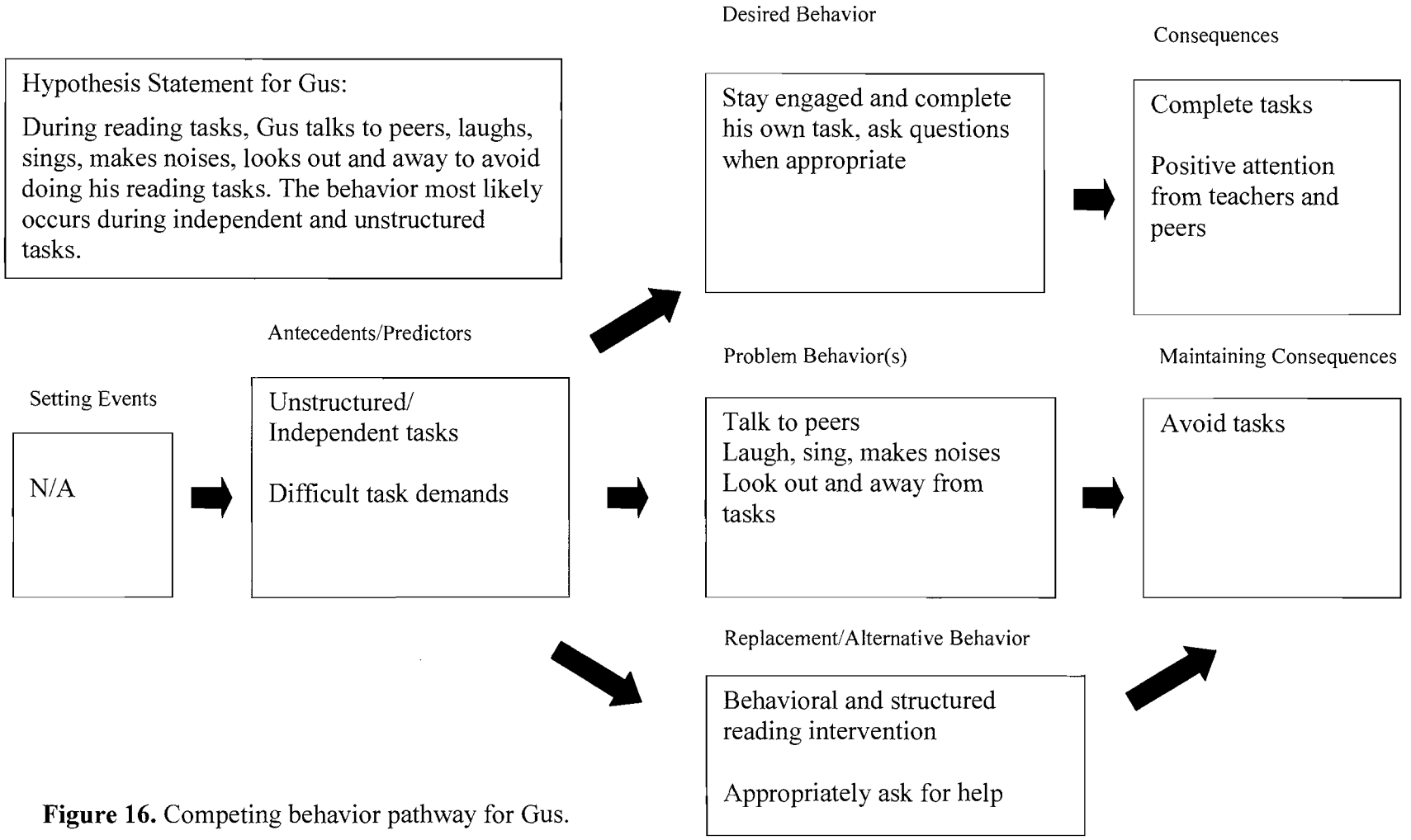


Figure 16. Competing behavior pathway for Gus.

English language learners and who demonstrated difficulties in reading, but also to deliver more systematic reading instruction than traditional EAL instruction. With well-developed teacher training and supervision, the students' goal for reading intervention was to help students to achieve academic reading success (e.g., increase academic engagement, complete reading tasks accurately, and increase reading fluency rate).

The reading interventions were implemented by four English language teachers who were trained by the author for a minimum of 30 minutes per day for two weeks. The teachers received training in a staff room or in their office during the break time or when they were available. Training consisted of approximately five hours per teacher. The teachers received supervision by the author on each component of the *Phonics for Reading* lessons. The intervention was conducted during the regularly scheduled 50-min EAL session, four days a week. The instructional plan for reading appears in Appendix J.

To document the fidelity of implementation for reading intervention, the author rated an implementation fidelity checklist designed for the *Phonics for Reading* program (Appendix M) (Harn & Chard, 2004). The author observed the reading intervention and rated it on a scale from 0 to 2, with 2 indicating a high level of implementation. The fidelity checklist completion accounted for 30% of all intervention sessions.

Reading Materials. The reading materials were drawn from *Phonics for Reading Levels 1 and 2* (Archer et al., 2002). Placement tests in the program were given to the student participants prior to the intervention to identify their reading instructional level for appropriate use of reading materials. Salim and Gus were given *Phonics for Reading* level 2 and Kenso, Kwan, and Khun were given with level 1.

Fidelity of Implementation

Because the intervention was multicomponent, the assessment of treatment fidelity was conducted to demonstrate that the three main components were implemented as originally designed to produce the desired outcome (Gresham, 1989). The three measures determined: (a) whether the intervention is function-based (e.g., follows the FBA procedures), (b) whether the intervention follows principal component of phonics for reading, and (c) whether the intervention demonstrates cultural responsiveness.

Behavior Support Intervention

To document the fidelity of implementation for behavioral support intervention, it is necessary that the behavior support plan development process develop by a behavior support team who can demonstrate knowledge about (a) the student and the student's behavior, (b) context in which support will be provided, and (c) components of behavior theory (Benazzi et al., 2006). This study gathered essential elements to document fidelity of implementation of behavioral support interventions for all participants.

First, the study documented a technical adequacy of the behavioral support plans (Appendix N). Two *expert behavior analysts* evaluated the plans for technical adequacy, using *the Behavior Support Plan Critical Scoring Guide* (Appendix O) based on the *Intensive Individualized Interventions Critical Features Checklist* (Appendix P) (Lewis-Palmer, Todd, Horner, Sugai, & Sampson, 2004). The expert behavioral analysts were individuals with professional expertise in function-based approach as evidenced by at

least 5 years of professional research in the area and three or more peer-reviewed publications on FBA and its use in creating behavior support plan (Benazzi et al., 2006).

Each behavior support plan received a score from 0 to 17 by each analyst, indicating how many of 17 essential elements the plan included. These elements included: an operational description of the problem behavior, the FBA summary statement, strategies for preventing the problem behavior, instructional strategies for teaching an alternative behavior, strategies for minimizing the reinforcement of problem behaviors, and a system for assessing the fidelity of implementation of the plan and the plan's effect on student behavior. To meet the technical adequacy criterion, each plan must obtain a score of 85% accuracy or better (Benazzi et al., 2006).

Second, the study documented contextual fit scores from the team members to evaluate whether the intervention demonstrated cultural responsiveness and fit individual needs of students and teachers. The contextual fit questions were presented twice during the study. The initial scoring was done by the behavior support team including three teachers and the author when the interventions were in place, during the middle of the study (i.e., in June). The school EAL coordinator was invited to play a role on the behavior support team and score the contextual fit form. However, due to school activities and time conflict, she could not fully participate in the development of academic and behavior support plans for the participants. She identified 5 out of 16 items on the *Contextual Fit Questionnaire* as "not applicable." Therefore, her scoring in the contextual fit may not be relevant to the study. The second scoring was done after the

school break. One teacher taught both groups (i.e., 3rd and 4th grades) and scored the questionnaire with the author.

Reading Intervention

During the intervention of the *Phonics for Reading* program, four teachers engaged in similar intervention implementation in terms of materials, amounts of time allocated to instruction, levels of supports, amounts of opportunities to respond, positive reinforcement, and teachers' wording and modeling. The variables of curriculum based on teachers' choices were compromised, due to the teachers' varied personal characteristics (e.g., enthusiasm, creativity, sense of humor) that may or may not have had an effect on the implementation.

To determine the effectiveness of reading intervention, the *Phonics for Reading Level 1-2 Integrity Checklist* (Appendix M) (Harn & Chard, 2004) was used. The checklist was based on the main components of the lesson. The author observed the intervention and rated the integrity on a scale of 0 to 2 (2 = high level of implementation, 0 = low level of implementation). The observations accounted for 30 % of all the intervention sessions across students and teachers who implemented the intervention.

Social Validity

Social validity is the extent to which a behavior-change intervention is directed to a problem of verifiable importance and the intervention is valued, satisfied, and used appropriately by designated target groups, listed by Schwartz and Baer (1991) as (a) direct consumers (e.g., students who received the intervention); (b) indirect consumers (e.g., parents of the child who is receiving intervention); (c) members of the immediate community (e.g., other children in the school); and (d) members of the extended community (e.g., people who are interested in the researchers' efforts). When the intervention has sufficient behavioral impact to substantially reduce the probability of the problems in these target populations, it could be considered socially valid.

Social validity was defined as the extent to which the intervention consumers (i.e., teachers, school personnel, and parents) value the intervention outcomes (Wolf, 1978) and the intervention contributes to socially significant behaviors (Gresham & Lopez, 1996).

Social validity for this study was assessed using the *Teacher Consumer Satisfaction Survey* (Crone & Horner, 2003) to evaluate the extent to which the function-based academic and behavior intervention was perceived by the teachers as (a) effective to reduce problem behaviors, increase student engagement, and improve reading performance, (b) efficient with time, local resources, and capacity, (c) easy to implement, and (d) having contextual fit for the students and classroom settings. The survey was recorded on a Likert-type scale (1-5) with 1 indicated highest satisfaction and 5 indicated lowest satisfaction.

CHAPTER IV

RESULTS

To answer the study research questions, this section summarizes five main components of the study results: (a) effects of function-based academic and behavior intervention on problem behavior, (b) effects of function-based academic and behavior intervention on academic engagement, (c) effects of function-based academic and behavior intervention on reading performance, (d) fidelity of intervention implementation, (e) interobserver agreement, and (f) social validity.

This study used single-subject design methodology to document the effects of function-based academic and behavior intervention on problem behavior and academic engagement. Evaluation of the study followed the traditional approach to analysis of single-subject research data (Horner et al., 2005; Parsonson & Baer, 1978). Displayed graphs were used as the primary tools for communicating the effects of intervention on problem behavior and academic engagement. The analysis procedures involved systematic visual interpretation of the level, trend, and variability of two scatter plot graphs showing students' percentage of problem behavior and academic engagement.

The displayed graph for reading performance presented the percentage of words read correct per minute (WCMP) from the DIBELS progress monitoring test and the errors that students made. These data were interpreted and analyzed using (a) mean and

mean change of WCPM and errors during baseline and intervention conditions, and (b) growth rate consideration for the students' grade level.

Effects of Function-Based Intervention on Problem Behavior

The first research question asked whether there was an established functional relationship between a function-based academic and behavior intervention that (a) is based on behavioral function, (b) employs effective literacy instruction, and (c) is matched to the learners' culture and a decrease in problem behaviors during English reading class for the 3rd and 4th grade participant students. This study initially employed a single-subject concurrent multiple baseline across five participants. During the intervention phases, however, a reversal design element was added for Salim and Gus. Figure16 displays the percentage of intervals with problem behavior, and fidelity of implementation.

During the baseline phase, the students were observed for 5 to 10 sessions to document a pattern of behavior. During the intervention phase, 17 to 23 observation sessions occurred. The effects were analyzed using level, trend, variability within phase data, percentage of data overlap, immediacy of effect, and similarity of data patterns across similar phases.

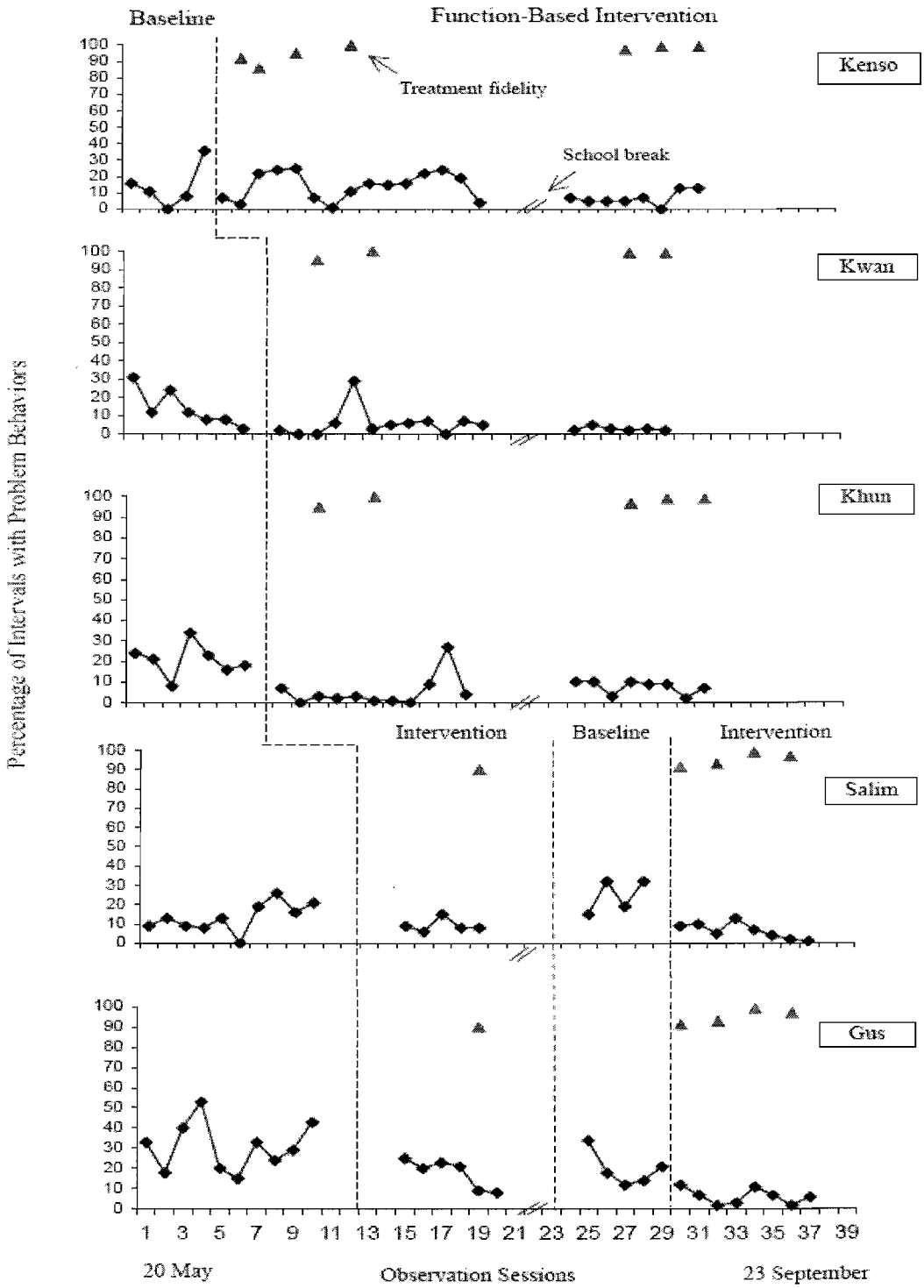


Figure 17. Effects of function-based academic and behavior intervention on problem behavior.

Multiple-Baseline Design

Baseline. Level refers to the average value of the data within each condition. Level of data was examined using means and the extent to which the average percentage of intervals with problem behavior changed from the baseline to the intervention condition. Table 3 illustrates the means for baseline and intervention phases for five participants' problem behavior. Across five participants, the average percentage of intervals with problem behaviors in the baseline condition was 18%, ranging from 0% to 53%.

Table 3. Means and change in means for problem behavior.

	Percentage Intervals with Problem Behavior					
	Baseline Phase		Intervention Phase		Overall	
Student	*M*	Range	*M*	Range	Change	% Overlap
Kenso	14%	0-36%	12%	0-25%	-2	100%
Kwan	14%	3-31%	5%	0-29%	-9	61%
Khun	21%	8-34%	6%	0-27%	-23	37%
Salim	17%	0-32%	7%	1-15%	-10	100%
Gus	27%	12-53%	11%	2-25%	-16	64%
Total	18%	0-53%	9%	0-29%	-9	

Trend refers to the rate of increase or decrease of the best-fit straight line that can be placed over the dependent variable (i.e., percentage of intervals with problem behavior) within a condition (i.e., slope and magnitude). During the baseline condition,

data for Kenso, Kwan, and Khun demonstrated a medium to low magnitude slope. Kenso displayed an increasing slope of a problem behavior pattern while Kwan and Khun showed a decreasing slope. During the initial baseline condition, Salim demonstrated an increasing trend in problem behavior. An increasing trend in problem behavior was also documented for Gus.

Variability refers to the degree to which data points fluctuated around the level and the trend in a condition (e.g., if the data points are very close to the best-fit straight line in the condition, the data pattern demonstrates a low variability). During the baseline condition, Kenso displayed a moderate variability of percentage of intervals with problem behavior (range 0-36%). Due to time constraints of the study and contextual fit of the EAL class schedule and teacher availability, Kenso's baseline condition could not be prolonged so as to develop a more stable data pattern. Low variability was observed for Kwan (range 3-31%). For Khun, a low to moderate variability of data pattern was displayed (range 8-34%). During the initial baseline condition, Salim displayed moderate variability of percentage of intervals with problem behavior (range 0-26%). High variability of data pattern was observed for Gus (range 15-53%).

Function-Based Intervention. During the intervention phase, the participants' mean was 9%, ranging from 0% to 29%, which was considered a 9% decrease. However, for Kenso, 100% of data points for the intervention condition overlapped with data for the baseline condition. A partial overlapping data pattern was observed for Kwan (61%) and Khun (37%). During the intervention condition for Kenso, a low magnitude slope suggested a restricted meaningful data pattern. The trend was not established for Kenso.

For Kwan and Kenso, a decreasing slope of a problem behavior pattern was displayed. During the initial intervention phase, Salim displayed a low magnitude slope. Gus displayed a medium magnitude slope with an increasing pattern of problem behavior. Low baseline levels of problem behavior for Kenso and decreasing baseline patterns for Kwan limit the study's ability to demonstrate a compelling effect. In response to this challenge the design was augmented to include ABAB reversal analyses for Salim and Gus (see Figure 16).

ABAB Design

Baseline. During the second baseline for Salim and Gus, all procedures of the function-based academic and behavior interventions were withheld and previous EAL supports were provided. The teacher reintroduced the intervention during the second intervention phase. Due to the ethical issue of withdrawing academic and behavior intervention as well as Salim's class absence, only four data points were collected for his second baseline condition and no trend was established. During the second baseline, the data demonstrated a moderate variability pattern for Salim (range 15-32%) and Gus (range 12-34%). The reversal design enhanced the replication of baseline behavioral patterns and the intervention effects. The data pattern for Salim showed 100% of overlapping data between the two baseline conditions and the two intervention conditions. Gus's data demonstrated 64% of overlapping data. During the second baseline, Gus displayed a decreasing trend.

Function-Based Intervention. The data pattern in the second intervention condition suggested decreasing trends in problem behavior for both Salim and Gus. For the initial intervention condition, Salim and Gus each demonstrated a low variability of data pattern (range 6-15% for Salim; 8-25% for Gus). A similar pattern was found during the second intervention condition for Salim and Gus, with a range of 1-13% and 2-12% respectively. However, the increasing trend during the second baseline for Gus presents a cautious effect during the second intervention condition.

Summary of Analysis

Table 4 depicts criteria for documenting a functional relationship between the function-based academic and behavior intervention and problem behavior (Horner et al., 2005). Horner et al. (2005) noted that a functional relationship may be compromised when (a) a long latency occurs between manipulation of the intervention and change in the dependent variable, (b) mean changes across conditions are small or the data in adjacent conditions share similar values, and (c) trends do not conform to those predicted following introduction or manipulation of the intervention. Based on the criteria, the multiple baseline across participant design did not produce a compelling effect in order to document a functional relationship between the function-based intervention and decreased problem behavior for the participants. The results indicated that the experimental control was established for a reversal design for Salim and Gus, with possible six demonstrations of the experimental effect at three different points in time

Table 4. Documentation of a functional relationship between the function-based intervention and problem behavior.

	Documentation of a Functional Relationship					
	Immediacy of effects		Significance of Mean Changes		Consistency of Data Pattern	
Student	Yes	No	Yes	No	Yes	No
Kenso		✓		✓		✓
Kwan		✓		✓		✓
Khun		✓		✓		✓
Salim	✓		✓		✓	
Gus	✓		✓		✓	
Total	2	3	2	3	2	3

Effects of Function-Based Intervention on Academic Engagement

The second research question in this study asked whether there was an established functional relationship between a function-based academic and behavior intervention and an increase in academic engagement for the participants. Figure18 displays the relationships between the two variables and the fidelity of implementation. Data for the participants' academic engagement during baseline and intervention conditions were collected concurrently with data for problem behaviors. During the baseline phase, the students were observed for 5 to10 sessions to document patterns of behavior. Students were observed 17 to 23 times during the intervention phase. Level, trend, and variability of data path were analyzed. Table 5 illustrates the means for baseline and intervention phases for five participants' academic engagement.

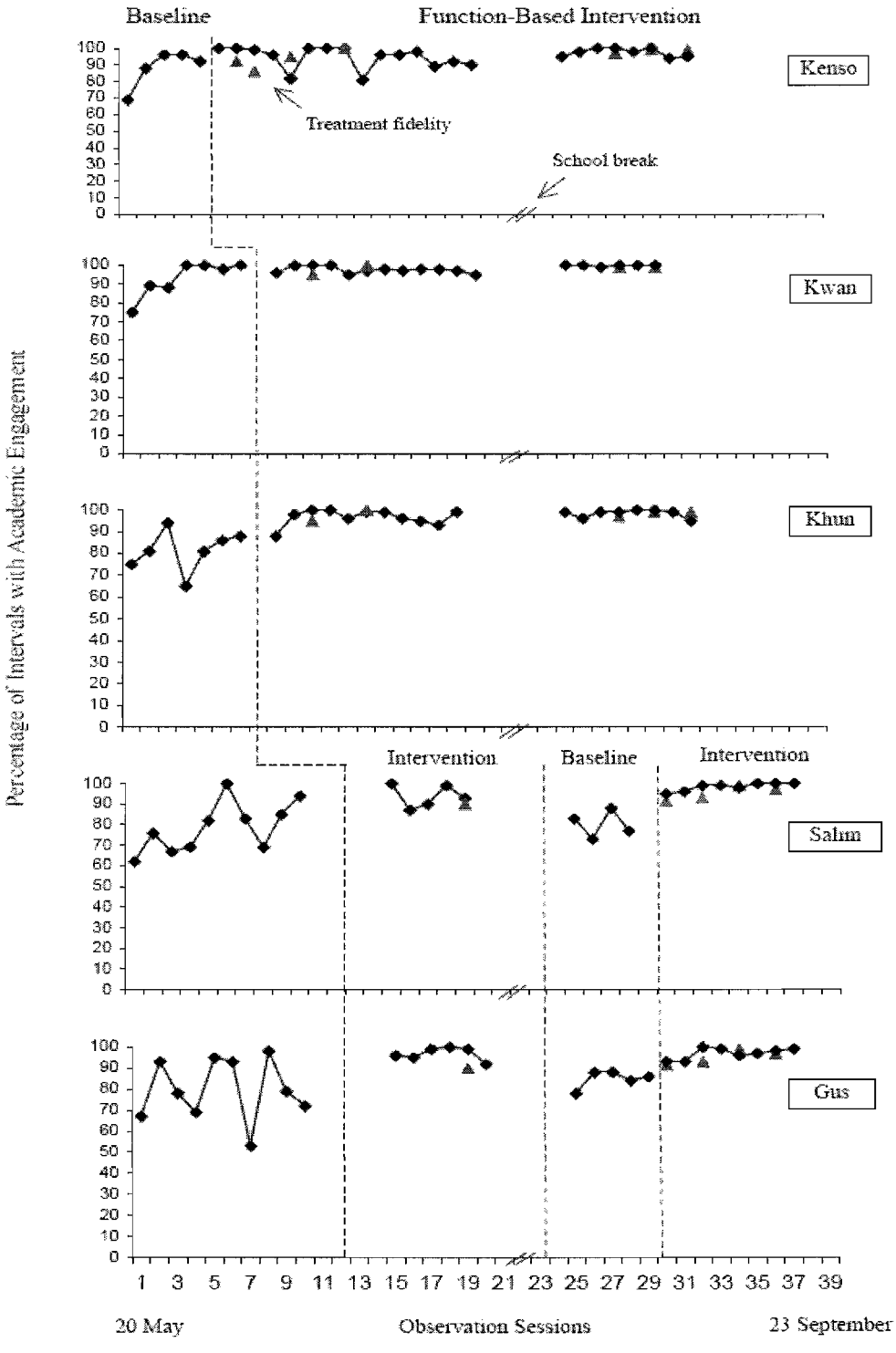


Figure 18. Effect of function-based academic and behavior intervention on academic engagement.

Table 5. Means and change in means for academic engagement.

	Percentage Intervals with Academic Engagement					
	Baseline Phase		Intervention Phase		Overall	
Student	*M*	Range	*M*	Range	Change	% Overlap
Kenso	88%	69-96%	96%	81-100%	+8	48%
Kwan	93%	75-100%	98%	95-100%	+5	100%
Khun	81%	65-94%	97%	88-100%	+15	10%
Salim	79%	62-100%	97%	87-100%	+18	100%
Gus	81%	53-98%	97%	92-100%	+16	57%
Total	85%	53-100%	97%	81-100%	+12	

Multiple-Baseline Design

Baseline. Across five participants, the average percentage of intervals with academic engagement in the baseline condition was 85%, ranging from 53% to 100%. During baseline condition, data patterns for Kenso, Kwan and Khun demonstrated medium magnitude slopes. Kenso and Kwan displayed increasing slopes of academic engagement. Khun's data revealed no trend during the baseline due to the high variability of the data pattern. During the initial baseline condition, Salim demonstrated a minimal increasing trend in academic engagement. The trend, however, was not established for Gus due to the variability of data during his initial baseline condition.

Variability of data pattern was significant for the development of functional relationships between the function-based academic and behavior intervention and academic engagement for the participants. During the baseline condition, both Kenso and

Kwan displayed a moderate variability of percentage of intervals with academic engagement (range 69-96% for Kenso and 75-100% for Kwan). For Khun, a moderate to high variability of data pattern was displayed (range 65-94%). During the initial baseline condition, Salim displayed a moderate to high variability of data pattern (range 62-100%). A high variability of data pattern was observed for Gus (range 53-98%), making it impractical to develop a trend.

Function-Based Intervention. During the intervention phase, the participants' academic engagement mean was 97%, ranging from 81% to 100%, a 12% increase. Kenso, Kwan, and Khun showed a low variability of data for academic engagement, ranging from 81 to 100%, 95 to 100%, and 88 to 100% respectively. However, for Kwan, 100% of data points for intervention condition overlapped with data points for the baseline condition. A partial overlapping data pattern was observed for Kenso (48%) and the data pattern for Khun displayed 10% of overlapping data. Trends in academic engagement during the intervention condition for Kenso, Kwan, and Khun revealed a similar pattern—a consistently low magnitude slope with a slightly upward trend. During the initial intervention condition, Salim and Gus displayed a low magnitude slope of a decreasing trend. During the initial intervention condition, Salim displayed a low variability of data pattern (range 87-100%). Gus's data also indicated a significantly low variability (range 95-100%).

ABAB Design

Baseline. During the second baseline, trends for both Salim and Gus were not established. The data demonstrated a low variability pattern for Salim (range 15-32%) and Gus (range 12-34%).The data pattern for Salim showed 100% of overlapping data between the two baseline conditions and the two intervention conditions. Gus's data displayed 57% of overlapping data.

Function-Based Intervention. During the second intervention condition, both Salim and Gus continued to display a low variability of data for academic engagement, with a range of 95 to 100% and 93 to 100%, respectively. The data pattern in the second intervention condition suggested increasing trends in academic engagement for both Salim and Gus.

Summary of Analysis

Table 6 depicts criteria for documenting a functional relationship between the function-based intervention and academic engagement (Horner et al., 2005). Due to the increasing trends during baseline conditions for most participants, the multiple baselines across participant design did not produce a compelling effect in order to document a functional relationship between the function-based intervention and increased academic engagement for the participants. The results indicated that the experimental control was established with possible five demonstrations of the experimental effect at three different points in time for Salim and Gus.

Table 6. Documentation of a functional relationship between the function-based intervention and academic engagement.

	Documentation of a Functional Relationship					
	Immediacy of Effects		Significance of Mean Changes		Consistency of Data Pattern	
Student	Yes	No	Yes	No	Yes	No
Kenso		✓		✓		✓
Kwan		✓		✓		✓
Khun		✓		✓		✓
Salim	✓			✓	✓	
Gus	✓		✓			✓
Total	2	3	1	4	1	4

Effects of Function-Based Intervention on Reading Performance

The third research question in this study asked whether there was an established functional relationship between a function-based academic and behavior intervention and an improvement in reading performance as measured by oral reading fluency for the participants. Figure19 displays the relationships between the two variables. Words read correctly per minute (WCPM) and errors were displayed as dependent variables.

During the baseline phase, the students received regular EAL support from their teachers. DORF progress monitoring probes were administered for 3 to 7 test sessions across students. During the intervention phase, the function-based academic and behavior intervention was in place and the DORF progress monitoring probes were administered for 10 to 15 test sessions.

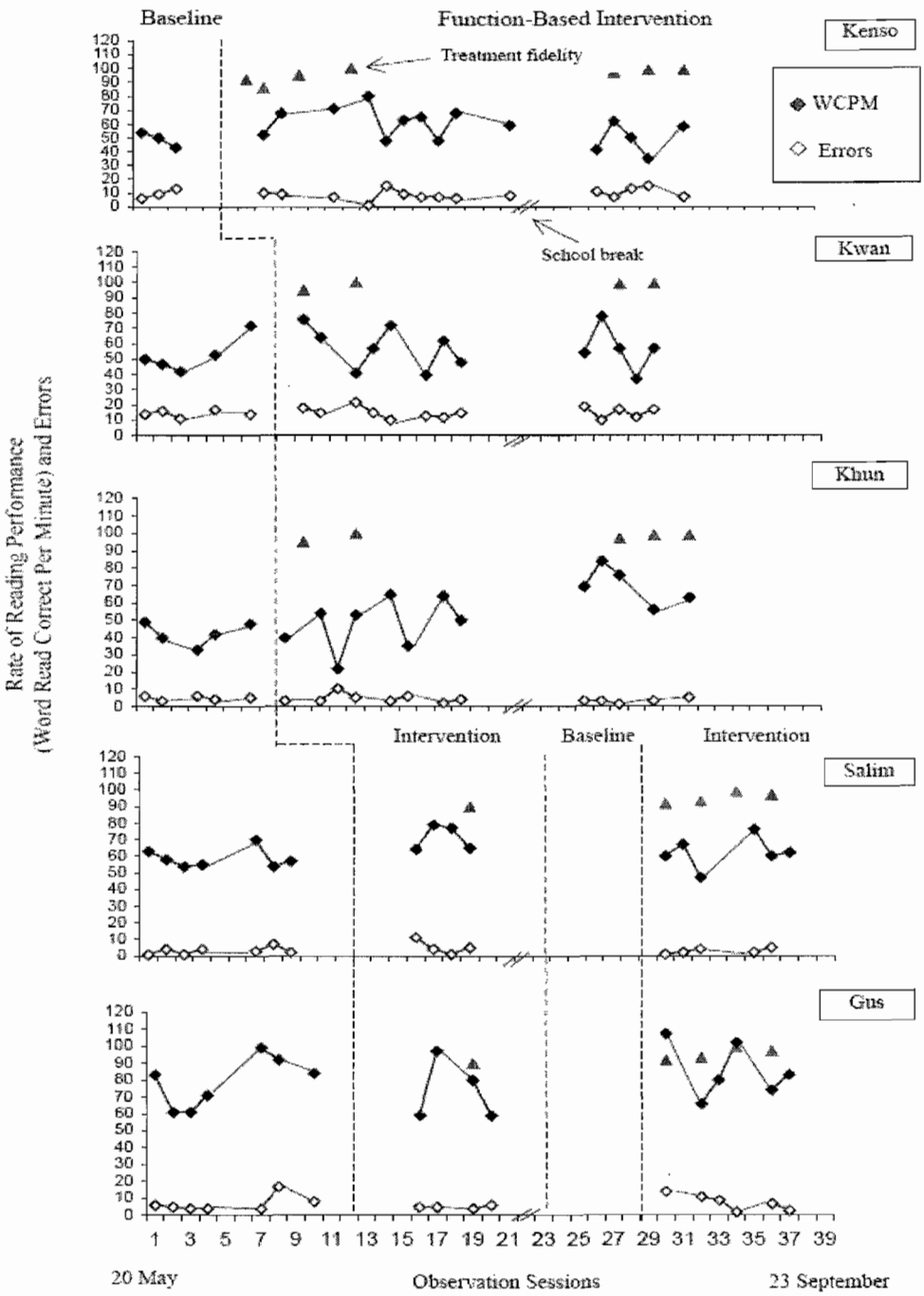


Figure 19. Effects of the function-based academic and behavior intervention on reading performance.

Outcomes for the WCPM and errors depicted in Figure 18 indicated no significant reading improvement for four participants. A medium increasing trend was established for Khun, with a mean change of WCPM from the baseline to the intervention condition of 42 to 56, making a gain of 14 words. All participants showed high variability in the range of scores during the baseline (range 33-99 WCPM) and the intervention condition (range 22-107 WCPM).

Means and Change in Means for WCPM and Errors

Table 7 illustrates the means and changes in means for the participants' WCPM and errors rate during baseline and intervention conditions. During the baseline condition, the mean WCPM for all students was 56 words (range 33-99 WCPM) with 8 errors (range 1-17 words). Kenso read 49 WCPM with 9 errors. Compared to his 4th grade level peers' reading performance (108 WCPM) on DORF benchmark probes, he read 2.2 times lower than his peers. Kwan read 53 WCPM with 14 errors. She read 2 times lower than her peers in 4th grade. Khun read 42 WCPM with 5 errors, or 2.6 times below his grade level. Salim read 59 WCPM with 3 errors, 2 times below his 3rd grade level peers (117 WCPM). Gus read 78 WCPM with 7 errors, 1.5 times below the performance of his 3rd grade peers.

Using Howell and Nolet's (2000) criteria for magnitude of discrepancy, the participants showed significant risk for reading their lesson materials at their current instructional level. During the intervention condition, the mean WCPM for all participants was 64 words (range 22-107 WCPM) with 7 errors (range 1-22 words). The

discrepancy ratios between oral reading fluency of the participants and their grade level peers decreased during the intervention condition (Kenso and Kwan = 1.8, Khun = 1.9, Salim = 1.8, and Gus = 1.4).

Table 7. Means and change in means for oral reading fluency.

	Words Read Correct Per Minute and Errors					
	Baseline Phase		Intervention Phase		Overall	
Student	*M*	Range	*M*	Range	Word/Errors Gains	Classroom Norm
Kenso						
WCPM	49	43-54	58	35-80	+9	108
Errors	9	6-13	9	1-15	+0	
Kwan						
WCPM	53	42-72	57	37-78	+4	108
Errors	14	14-17	15	10-22	+1	
Khun						
WCPM	42	33-49	56	22-84	+14	108
Errors	5	3-6	4	1-10	-1	
Salim						
WCPM	59	54-70	66	47-79	+7	117
Errors	3	1-7	4	1-11	+1	
Gus						
WCPM	78	61-99	81	59-107	+3	117
Errors	7	4-17	7	2-14	+0	
Total						
WCPM	56	33-99	64	22-107	+8	
Errors	8	1-17	7	1-22	-1	

The data were insufficient to document an effect on oral reading fluency for Kenso, Kwan, Salim, and Gus resulting from the function-based academic and behavior intervention. However, Khun made limited gains during the implementation of the function-based academic and behavior intervention, indicating that the functional relationship may be established for Khun.

Growth Rate Considerations

Another approach to analyze reading performance outcomes for the students in this study employs reading growth rate considerations from research (Fuchs et al., 1993). Given that the typical reading growth rates for ELLs were understudied (Baker & Good, 1995; Baker et al., 2008; Dominguez de Ramirez & Shapiro, 2006; Linan-Thompson et al., 2002; McCardle et al., 2005), available normative data average rates of progress using evaluation criteria from existing research on reading growth may be useful. Table 8 depicts criteria for determining the number of words per week growth at the goal level selected observed by Fuchs and colleagues (1993) with native English speaker students in general education. The growth goals were calculated using the formula: Baseline rate + (# increase per week) x (# weeks) = Goal.

Table 8. Criteria for determining the number of words per week growth (adapted from Fuchs, Fuchs, Hamlett, Walz, & Germann, 1993).

Expected Reading Growth Rates	
Grade Level	Increase
1	2-3 words per week
2	1.5 – 2 words per week
3	1 – 1.5 words per week
4	.85 – 1.1 words per week
5	.5 - .8 words per week
6	.3 to .65 words per week

Table 9 shows the number of word per week growths for each student during the intervention condition. Kenso received the intervention for seven weeks and he made progress from a score of 49 toward 58 WCPM, making a gain of 1.3 words per week. Kwan and Khun received the intervention for six weeks. Kwan made progress from 53 WCPM toward a score of 57, making a gain of 0.7 word per week. Khun made progress from 42 to 56 WCPM, making a gain of 2.3 words per week. Salim and Gus received the intervention for approximately five weeks due to the study's design purpose to answer the primary research question (i.e., no intervention during the second baseline condition) and the school schedule (e.g., no intervention during test week). Salim demonstrated an increase of 7 words over the five weeks of intervention, making a gain of 1.4 words per week. Gus showed an increase of 3 words over the five weeks of intervention, indicating a gain of 0.6 words per week.

Table 9. Number of word per week growths for each student during the intervention

Student	Weeks of Intervention	Word Gains	Word Gains per Week
Kenso	7	+9	1.3
Kwan	6	+4	0.7
Khun	6	+14	2.3
Salim	5	+7	1.4
Gus	5	+3	0.6
Total	5.8	+8	1.4

For ELLs who were in the early stages of acquiring English reading skills and who demonstrated deficits in decoding skills, a less ambitious goal for reading growth rate was recommended—0.5 to 1 word per week for ELL student reading at the 3rd grade level (Dominguez de Ramirez & Shapiro, 2006; Silberglitt & Hintze, 2007). Based on this growth rate per week consideration, the reading performance of Kenso (1.3 words/week), Kwan (0.7 word/week), Khun (2.3 words/week), Salim (1.4 words/per week), and Gus (0.6 word/week) had increased at and above the designated rate.

Fidelity of Implementation

Behavior Support Intervention

The behavior support plan was developed by a behavior support team who can demonstrate knowledge about (a) the student and the student's behavior, (b) the context in which support would be provided, and (c) components of behavior theory (Benazzi et

al., 2006). The study gathered essentials elements including: (a) technical adequacy scores for five behavior support plans with a score of 85% or better, using the scoring criteria based on the *Intensive Individualized Interventions Critical Features Checklist* (Lewis-Palmer et al., 2004) and (b) contextual fit scores from the team members, using the *Contextual Fit Questionnaire* (Salantine & Horner, 2002). These elements were used to evaluate whether the intervention demonstrated cultural responsiveness and fit the individual needs of students and teachers.

Technical Adequacy Scores. Two expert behavioral analysts examined five behavior support plans for the participants, using *the Behavior Support Plan Critical Scoring Guide* (Appendix O) based on the *Intensive Individualized Interventions Critical Features Checklist* (Appendix P). Using this scoring guide, each behavior support plan received a score from 0 to 17 of essential elements required for effective behavior support plan (Lewis-Palmer et al., 2004). Scores were averaged between the two analysts so that each behavior support plan was awarded one technical adequacy score. To meet the criterion, each plan must obtain a score of 85% accuracy or better (Benazzi et al., 2006). Table 10 shows technical adequacy scores for five behavior support plans obtained from two behavior expert analysts. The mean score was 97% (range 94%-100%).

Table 10. Technical adequacy scores for five behavior support plans

Behavior Support Plan	Expert Analyst 1	Expert Analyst 2	Overall
1	94%	100%	97%
2	94%	100%	97%
3	94%	100%	97%
4	94%	100%	97%
5	94%	100%	97%
Total	94%	100%	97%

Contextual Fit Scores. The highest contextual fit score possible for each intervention plan was 96. The 16 items were categorized into 8 categories with two questions per category. The eight categories included: (a) knowledge of the elements of the plan, (b) skills needed to implement the plan, (c) values reflected in the plan, (d) resources available to implement the plan, (e) administrative support, (f) effectiveness of the plan, (g) whether the behavior support plan is in the best interest of the student, and (h) whether the behavior support plan would be efficient to implement.

The contextual fit scores were collected two times during the study. The mean contextual fit score for the initial rating was 84.75 (range 78-90). After the school break, the behavior support team reconvened for the second meeting and scored the *Contextual Fit Questionnaire*. The mean score was 88 (no range reported for scores obtained from two scorers). Table 11 illustrates the mean and mean percentage for contextual fit rating during the initial and second scoring, and comparative norm using results from an

empirical study of the effects of behavior support team composition on the contextual fit to behavior support plan conducted by Benazzi et al. (2006). Comparing the contextual fit rated by behavior support team comprised of individuals with knowledge about behavior theory, the student, and the setting (Benazzi et al., 2006), the results suggested that the behavior support plans for the participants were technically sound and responsive to the cultural backgrounds of teachers and students.

Table 11. Mean and mean percentage of contextual fit scores.

Mean and Mean Percentage of Contextual Fit Scores					
Initial Scoring		Second Scoring		Comparative Norm	
M	Percentage	*M*	Percentage	*M*	Percentage
84.75	88.50	88.00	92.00	86.68	90.29

Reading Intervention

To document the fidelity of implementation for the academic reading intervention, the author rated an implementation fidelity checklist designed for the *Phonics for Reading* program (Appendix M). The author rated the reading intervention on a 0 to 2 scale, with 2 indicating a high level of implementation. The fidelity checklist completion accounted for 30% of all intervention sessions. Overall, the mean for implementation fidelity based on the checklist across teachers and phases was 95%, ranging from 86% to 100% accuracy.

Interobserver Agreement

The study employed seven observers who were blind to the study hypotheses. They were undergraduate students in the Special Education Department, the Faculty of Education, Chulalongkorn University, Bangkok, Thailand. Interobserver agreement (IOA) was gathered for problem behavior and academic engagement for approximately 25% of the observations across participants, and across baseline and intervention conditions. The agreement data for each student were collected through a second observer who independently scored the same participant at the same time period. The IOA was calculated by dividing the total number of intervals with agreement by the total number of intervals with agreement plus disagreement, and multiplying by 100% (Watkins & Pacheco, 2000). An acceptable criterion for IOA was 85% agreement. The levels of overall IOA across variables and conditions ranged from 65% to100%, with a mean of 89%. For each variable type, a mean of 86% (range 65%-100%) IOA was assessed for the problem behavior measure, and 92% (range 71%-100%) for the academic engagement measure.

Social Validity

The final behavior support team meetings were informal. The author met with each teacher individually to follow up with the students' progress and the teacher's satisfaction with the results. During the final meetings, the teachers were asked to identify their levels of satisfaction with the effects of the function-based academic and behavior interventions for the students. The *Teacher Consumer Satisfaction Survey*

(Crone & Horner, 2003) was used to evaluate the extent to which the function-based academic and behavior intervention was perceived by the teachers as (a) effective in reducing problem behaviors, increasing student engagement, and improving reading performance, (b) efficient with time and local resources and capacity, (c) easy to implement, and (d) having contextual fit for the students and classroom settings. The survey was recorded on a 5-point Likert-like scale, with response options ranging from "strongly disagree" (5) to "strongly agree" (1) (Appendix I).

The surveys were collected from three teachers, for a return rate of 75%. When asked if the intervention addressed the teachers' concerns about their students' behavior and academic improvement, they rated "1" (i.e., highest) and "2" (i.e., high) levels of satisfaction. Two teachers agreed that the suggestions made by the team were helpful (i.e., rating "1" and "2"). One teacher rated "3" (i.e., medium) on the level of satisfaction for the team's suggestions. When asked if the suggestions made by the team were manageable to implement in their classrooms, two teachers rated "2". One teacher rated "3" and reported that she found an extraneous factor created by the presence of Sam, another student in her 3rd grade English small group classroom. She stated that this factor made it difficult to implement the intervention as suggested and agreed by the team. Moreover, the same effect interfered with how the teacher implemented the intervention consistently. The teacher noted, "some of these areas, 4, 5, 7, were affected by the presence of Sam in the classroom and when this student had not been present, I would have rated at least a 2." All teachers indicated that they had highest satisfaction for the improvement in their students' behaviors once the interventions were implemented. Two

teachers rated highest satisfaction for their students' academic progress. The 3rd grade EAL teacher rated "2" for her satisfaction for Gus's academic performance, and "3" for Salim's progress. She also commented that she would have rated "2" for Salim's academic improvement if Sam had not been present in the classroom.

At the end of the study, all teachers reported that they would continue to use the reading intervention and behavior support system created by the team. They also acknowledged the helpfulness of feedback and recommendations made by the author during the study via emails and informal meetings.

CHAPTER V

DISCUSSION

A well documented problem leading to negative academic outcomes involves problem behavior in the classroom that are maintained by escape from aversive academic tasks (Barton-Arwood et al., 2005; Burke et al., 2003; Crone & Horner, 2003; Kerns et al., 1994; McComas et al., 2000). These escape-maintained behaviors are less likely to happen when the students acquire the academic skills that make academic tasks reinforcing instead of aversive (Lee et al., 1999). Effective interventions must address environmental contexts to make the misbehaviors irrelevant, inefficient, and ineffective (Crone & Horner, 2003; O'Neill et al., 1997). However, school environments vary, as do the cultural backgrounds and perspectives of teachers and students, creating a challenge to effective intervention. Due to these differences, schools must make certain that any intervention is appropriate and meaningful to the lives of people it is meant for.

The purpose of this study was to investigate the effectiveness of function-based academic and behavior intervention on behavior and reading improvement for five English language learners who exhibited escape-maintained problem behaviors and academic reading difficulties. Moreover, the study sought to document the effect of a function-based approach on students with highly diverse cultural backgrounds in an international school in Thailand. The intervention emphasized (a) the functional behavior

assessment (FBA) strategies to identify the function of the target behavior, (b) evidence-based effective reading instructional approaches, and (c) responsiveness to cultural perspectives of teachers and students.

A behavior support team—consisting of the students' English teachers and the author who served as a behavior specialist—used functional behavioral assessment tools to identify antecedents and consequences that maintained the students' problem behaviors during reading tasks. In each case, students participating in the study were operating in a multilinguistic context, found the academic demands of English literacy instruction aversive, and were engaging in escape-maintained problem behavior. The team developed relevant behavioral strategies that addressed the students' behavioral function of avoiding difficult reading tasks. Because problem behavior was directly linked to reading difficulties, the behavior support plan required modifications in the academic instruction. Effective reading interventions were selected to maintain high expectations for learning while increasing student success with the reading curriculum. Moreover, cultural aspects of students' needs were taken into account during development of the interventions.

The primary research question in this study was: Is there a functional relationship between a function-based academic and behavior intervention that (a) is based on behavioral function, (b) employs effective literacy instruction, and (c) is matched to the learners' culture and a decrease in problem behaviors during English reading class for third and fourth grade ELLs in Thailand? The secondary research questions were: Is there a functional relationship between function-based academic and behavior intervention and

an increase in academic engagement for the participants? and Is there a functional relationship between function-based academic and behavior intervention and improvement in English reading performance for the participants? This study employed a single subject research design that integrated multiple baselines across participants and within participant reversal features.

The results suggest that function-based academic and behavior intervention is a promising tool to decrease problem behaviors of the participants during English reading tasks, to increase their engagement, and potentially to improve their reading. Nevertheless, several issues require further explanation. This chapter discusses (a) a summary of findings, (b) implications for educational practices, (c) study limitations, and (d) recommendations for future research.

Summary of Findings

The FBA procedures, including teacher interviews and direct observations, identified five participants who engaged in problem behaviors (e.g., getting out of their seat, looking away from their task, playing with materials, and talking out) that were maintained to escape from difficult reading tasks. During baseline conditions, academic and behavior supports for all participants were characterized as having a high variability in instructional elements including teaching style, amount of time, and level of support. Furthermore, the academic elements of the FBA information indicated that the tasks were too difficult for the participants (e.g., clearly higher than their instructional level) and that

the teachers did not incorporate specific behavior expectations and reinforcement systems in their instruction.

Effects of Function-Based Intervention on Problem Behavior Outcomes

The results revealed evidence that function-based intervention was effective in decreasing problem behaviors of three participants. Results for Khun, Salim, and Gus showed differential effects between the function-based support conditions and the traditional English as an Additional Language (EAL) support conditions. Lower problem behaviors were evident during the function-based support. Among the students, problem behavior decreased 17% on average (with a range of 10%-23%) from baseline to intervention condition. During the intervention condition, declining trends for the three participants and lower variability of data pattern suggested the effect of intervention.

Furthermore, an ABAB reversal design was employed for Salim and Gus due to ambiguous effects early in the multiple baseline components of the study. The reversal designs revealed that reduction in problem behavior was functionally linked to the use of instructional procedures that were selected based on their "fit" with the social culture and behavioral function presented by each child. This finding supports the study's initial hypothesis of a functional relationship between function-based academic and behavior intervention and reduction in participants' problem behaviors. Several factors led to these positive changes in the participants' behaviors.

First, the FBA procedures, including direct observation, generated a behavioral hypothesis and a behavior pathway for the individual participant. The hypothesis stated

that when participants received difficult reading tasks during unstructured time, they exhibited escape-maintained behaviors. Previous research comparing the effects of function-based and nonfunction-based instructional interventions (Ingram et al., 2005; McKenna, 2006) found that research-based academic practices that incorporated mechanism of behavioral function were more likely to be successful to reduce problem behaviors in classroom. By incorporating the FBA process into effective reading intervention, the practices became more complex, yet more appropriate for the context of the participants' behaviors.

Literature on teacher effectiveness emphasizes that to support a student with academic difficulty, "the way a teacher teaches may need to be adjusted according to the learning needs of his student" (Howell & Nolet, 2000, p. 72). Given that the participants lacked necessary reading skills such as decoding, independent reading tasks that required knowledge about vocabulary and comprehension were problematic to them. Therefore, the students engaged in problem behaviors to avoid the tasks. Function-based academic and behavior intervention provided students with initialized behavior support matched with the function of their behavior (i.e., escape from difficult reading tasks) and taught them antecedent interventions that offered instructional support (i.e., teaching decoding skills).

A high rate of off-task behaviors occurred during the baseline condition for participant reading tasks. During the intervention condition, when the teachers changed behaviors—setting clear behavior expectations and teaching appropriate behavior, providing sufficient instruction time on decoding skills, and closely monitoring the

students' work—students learned the skills, and their problem behaviors became irrelevant, inefficient, and ineffective.

Second, changes in the behaviors were attributed to behavior support strategies that matched the students' interests. Cultural considerations and students' individual academic needs were also incorporated into the team meeting agenda. The team discussed possible modifications of lesson plans, allowing students to practice words and sounds that they had not mastered. The team also brought up "what works" and "what doesn't" in the meeting. For example, the team considered providing more competition in the spelling lessons, which the students found enjoyable and rewarding with opportunities to earn motivating reinfocers during the lessons. The study employed *Phonics for Reading* (Archer et al., 2005), a Direct Instruction based program with an explicit and intense teacher-directed instructional approach. Numbers of study have found the approach effective in improving reading performance for ELLs (Linan-Thompson et al., 2002; Vaughn et al., 2005; Vaughn et al., 2006). The behavior support team reviewed individual reading error patterns during the lessons, and used examples that matched students' background knowledge and could be understood across cultures. For example, a teacher gave a word definition by drawing a picture. In addition, the team selected a reinforcement system already established in the school's House Point system that the students found motivating. The plan created several opportunities for the students to practice decoding skills and set them up to become successful.

Third, the function-based intervention practices were implemented with fidelity. Results of the fidelity of implementation outcomes for behavior support intervention,

using technical adequacy and contextual fit scores, indicated that the behavior support plans were implemented with strong technical adequacy and contextual fit. Adequate documentation suggested that both behavior and reading intervention supports were implemented with a high degree of fidelity when the teachers received training and took part in planning intervention, their anxiety about trying a new instructional approach was reduced. Ongoing supervision from the trainer ensured a high probability that the intervention was implemented with high fidelity.

Finally, a team-based approach allowed the teachers to express their interests and concerns. Team collaboration and communication of team enhanced the contextual fit and cultural responsiveness of the intervention plan and implementation. The interventions achieved a strong contextual fit score, meaning that the intervention plans incorporated the values, skills, resources, and administrative support of those who implemented the plan (Benazzi et al., 2006; Crone & Horner, 2003; O'Neill et al., 1997). The results reaffirmed the finding of Benazzi et al. (2006) that when the behavior support team—including members who knew the student, the setting, and behavioral theory—evaluated the intervention plans, the plans were more likely rated as having a strong contextual fit. Compared to the contextual fit scores rated by the behavior support team in Benazzi et al. (2006), the results suggested that the behavior support plans were technically sound and responsive to the cultural backgrounds of both teachers and students.

Effects of Function-Based Intervention on Academic Engagement Outcomes

Academic needs of students with problem behaviors who have academic difficulties are often compromised in order to remove problem behaviors (Wehby et al., 2003). Studies have shown that these students were likely to spend excessive amounts of time on independent worksheets (Barton-Arwood et al., 2005; Levy & Chard, 2001). Often a student who engages in disruptive behaviors is sent to an independent work area. This punishing consequence may cease the classroom disruption but it addresses neither the problem behavior nor the academic difficulty. Students whose problem behaviors are maintained by escaping from difficult tasks must receive intensive academic instructional supports modified to meet their deficits (Burke et al., 2003; Dunlap et al., 1991). Studies have shown that when teachers allocate higher amounts of time to academic content, they likely will achieve higher student engagement (Barton-Arwood et al., 2005; Levy & Chard, 2001). In fact, more research is needed to document the role of academic interventions on the social behavior of students with escape-maintained problem behaviors (Lee et al., 1999).

The findings suggested inconclusive evidence that function-based intervention increased the students' academic engagement. Findings from this outcome showed that the results were consistent the study's hypothesis. Academic engagement for Khun, Salim, and Gus improved during the intervention condition. Moreover, by the end of the study, all participants achieved high level of academic engagement. However, increasing initial baseline trends for the three students compromised a claim of functional effects of the function-based intervention on academic engagement. The second baseline for Salim

and Gus, however, showed the strongest support for the functional relations between the intervention and academic engagement. Compared to high variability of the data during the baseline condition, academic engagement for Khun, Salim, and Gus increased and became more stable during the implementation of the function-based intervention. Informal observation reaffirmed that Khun more confidently answered questions and responded more to teachers when he received the function-based academic and behavior intervention.

The function-based intervention sought to provide students with necessary reading skills. According to the Promising Cycle of Appropriate Behaviors and Academic Gains (see chapter 1, Figure 2), when students receive necessary skills with well-planned instructional delivery, academic tasks become nonaversive (Durand & Carr, 1992; Lee et al., 1999). When the intervention included plans to increase the magnitude of positive reinforcements for engagement behaviors, the problem behaviors become less efficient than the opportunities to experience success and receive positive reinforcement.

The study results were consistent with the evidence of a growing body of research on cultural responsiveness, mostly conducted with African American students: when instructional strategies reflect values, learning styles, traits, and socialization of their cultures, students' academic engagement outcomes can be significantly improved (Gay, 2002). A cultural responsive approach holds a high potential to effectively increase academic engagement for ELL participants in a highly diverse instructional environment.

Changes in the academic engagement of three participants may be attributed to behavior support strategies that matched cultural considerations and the students'

individual academic needs (Klein & Freitag, 1997). However, defining academic engagement behavior across çultures was problematic. Kwan's case illustrated how cultural variances in behavioral interpretation interfered with intervention support. Kwan's teachers referred her for participation in this study due to her withdrawal and disengaged behaviors (e.g., looking away, not responding to questions). The DIBELS oral reading fluency test scores reaffirmed that Kwan had significant reading difficulties. Her behavior affirmed the hypothesis that problem behaviors were maintained by avoiding difficult tasks. However, the outcome results from study observations yielded the opposite finding. During baseline and intervention conditions, Kwan was observed having low problem behavior occurrences and high academic engagement occurrences. One possible explanation is the difference in interpreting problem behavior and engagement across cultures. The student's reluctance to engage in class activities such as answering questions may be perceived by teachers of Western cultural background as a lack of interest or motivation, or an intention to withdraw from activities (Baker et al., 1991; Biggs, 1996; Pratt & Wong, 1999; Samueloqiez, 1987). In contrast, certain Asian cultures including Thai downplay questioning, generating one's own ideas, or evaluating as primary modes of learning, since such activities may be considered humiliating gestures toward authority figures such as teachers or parents (Hofstede, 1991; Tweed & Lehmana, 2002; Weisz et al., 1995). The expectation to generate and answer questions was not encouraged in the Thai culture. These differences may explain why the Thai observers tended not to view silence as problematic or off task. In classroom observations

where observers could not hear whether Kwan had responded to questions, the Thai observers tended to assume that she was fully engaged.

Effects of Function-Based Intervention on Reading Performance Outcomes

Reading improvement outcomes were inconclusive and unclear for most participants. A limited gain in words read correct per minute (WCPM) was documented for Khun, with a mean change of WCPM from the baseline 42 words to the intervention condition of 56 words, for a gain of 14 words. Given that there is no research on typical reading growth rates for ELLs (Dominguez de Remirez & Shapira, 2006; Fetler, 2008), benchmark for classroom norm was established to compare the participants' performance (Howell & Nolet, 2000). The results show that discrepancy ratios between oral reading fluency of the participants and their grade level peers decreased during the intervention condition. This finding suggests inconclusive evidence that the function-based academic and behavior intervention was effective to surmount the achievement gap between the participants and their grade-level peers.

Moreover, for ELLs who were in the early stages of acquiring English reading skills and who demonstrated deficits in decoding skills, a less ambitious goal for reading growth rate was recommended—0.5 to 1 word per week for ELL student reading at the 3rd grade level (Dominguez de Ramirez & Shapiro, 2006; Silberglitt & Hintze, 2007). Kenso received the intervention for seven weeks. Kwan and Khun received the intervention for six weeks. Gus and Salim received the intervention for approximately five weeks due to the study's design purpose to answer the primary research question

(i.e., no intervention during the second baseline condition) and the school schedule (e.g., no intervention during test week). Based on this growth rate per week recommendation, the reading performance of Kenso (1.3 words/week), Kwan (0.7 word/week), Khun (2.3 words/week), Salim (1.4 words/per week), and Gus (0.6 word/week) had increased at and above the designated rate.

Several variables in instructional delivery posed significant challenges for the English learners in this study. First and foremost, due to the fluctuations of the school schedule, the amount of time the students received reading intervention may not have been sufficient. One study on instruction development for students with academic difficulty (Harn, Linan-Thomson, & Roberts, 2008) suggested a significant effect of intensive instructional time on progress in oral reading fluency for at-risk first grade readers. Second, the students may have encountered the compounding challenges of learning a new language while mastering subject matter and coping with the unfamiliar cultural perspectives of the environment. Third, previous English reading competency for individual students could not be addressed. The students in the 4th grade EAL classroom had various backgrounds in English language learning. For one student, the background was unknown to the teachers. Differences in English language backgrounds may significantly affect how students take on the reading instruction. Therefore, the amount level of time spent on presenting the intervention to the students could not account for the different levels of performance for students in the same English reading group.

This study selected a direct instruction program to provide students with the foundational decoding skills that they lacked. However, the limited gain was not

sufficient to document a functional relationship between the intervention and reading improvement for the participants. The results were consistent with the finding of Barton-Arwood et al. (2005) that improved decoding may not be generalized to oral reading fluency. Moreover, the results were in alignment with studies showing that for students with academic and behavior problems (Strong, Wehby, Falk, & Lane, 2004; Wehby et al., 2003), slow reading growth and lack of transfer to fluency was the population's response to intervention, despite increased and intensive intervention time. Nonetheless, insufficient time for the *Phonics for Reading* Program and limited time to practice reading in a connected text may also have been a factor.

Another finding was the high response variability across weekly probe sessions that also have been pinpointed in other reading intervention studies conducted with students with problem behaviors (Barton-Arwood et al., 2005; Wehby et al., 2003). Wehby et al. (2003) found that the high variability was not uncommon, given that the students were acquiring new reading skills. Moreover, other factors such as fluctuating motivation, specific events in the classroom, and students' attitudes and perceptions toward the reading test may have influenced their response. For example, students may think of the one-minute timed test as a challenge game and try to read as fast as they can. This is also a possible explanation for the high rate of errors for most participants.

Finally, the use of the *Dynamic Indicators of Basic Early Literacy Skills (DIBELS)* (Good & Kaminski, 2003) oral reading fluency subtest proved challenging to make a decision on the students' reading performance in this study. Although the measure is appropriate for all students who are learning to read English, including ELLs

in U.S. schools (Kaminski et al., 2006), an exception may apply to ELLs in non-American culture schools outside the U.S. or to students who are learning English as an additional or foreign language (e.g., a Japanese student learning English in Japan). The cultural sensitivity of the passage contents of this measure seems questionable. For example, the students repeated the same errors in the vocabularies for which they had no cultural background experiences (e.g., words such as Lakota-Sioux, United States, Rhode Island, Olympics). Moreover, given that the intervention aimed to increase decoding skills rather than build fluency, other measures such as permanent product of work completion may more effectively document reading improvement for the participants in this study.

Social Validity

Teachers completed the *Consumer Satisfaction Questionnaire* (Crone & Horner, 2003). This social validity tool rated whether the intervention was (a) effective in reducing problem behaviors, increasing student engagement, and improving reading performance, (b) efficient with time and local resources and capacity, (c) easy to implement and (d) a good contextual fit for the students and classroom settings. The results indicated that the intervention provided behavioral impact to substantially create positive behavioral changes in targeted students. The intervention shows potential for use in other mixed-culture or high diversity school settings.

Implications for Educational Practice

This study provided several implications for research and practice discussed in three specific contexts: (a) academic and behavior supports in Thailand, (b) special education research and practices, and (c) exploration of the cultural context of intervention.

Implication for Academic and Behavior Support in Thailand

Although this study was conducted in an international school, it provides implications for the provision of academic and behavior supports in the context of a Thai school. The political, economic, social, and cultural institutions in Thailand have encountered the challenge of adapting to the educational standards of Western countries yet with far fewer resources. Educators in Thailand still lack appropriate training to provide students with effective academic and behavior supports. This lack of training was evident in a national survey that reported that a majority of Thai elementary teachers perceived physical punishment as the most appropriate consequence for problem behavior (Tapanya, 2006).

This study suggests implications for preventing problem behaviors in classrooms using positive behavior support. Early intervention in antisocial behaviors and in academic deficits not only prevents further socially inappropriate behaviors for students, but also provides teachers with effective and more sustained behavioral classroom management (McIntosh et al., 2006; Walker et al., 1995; Walker & Shinn, 2002). The FBA procedures and a team-based approach to developing a function-based intervention

may also fit in the high collectivist Thai culture, in which social harmony is constantly sought (Hofstede, 1991). The explicit and well-defined function-based procedures in this study may have the potential to be replicated in a Thai school, with the support of a high-quality translation.

One additional implication of the study is the use of effective English reading instruction to provide foundational reading skills such as phonemic awareness and decoding for ELLs. The context of learning English as an additional language or foreign language in Thailand is vastly different from the context in English-speaking countries, where students continue to use their native language in everyday life. English language is more likely considered a noncompulsory or selective subject. However, in an international school, students are obliged to become skilled in English in order to acquire knowledge in other content areas and communicate with teachers and peers. Students whose native language is not English and who do not receive an appropriate academic support may be at risk to fall behind in all content areas (Lenters, 2004; Linan-Thompson et al., 2002; Tam et al., 2006) Their ability to become fluent readers in English, therefore, depends largely on the quality of reading instruction.

Implication for Special Education Research and Practices

One of the goals of this study was to replicate limited evidence from empirical research that supported the effectiveness of function-based academic and behavior intervention (Burke et al., 2003; Dunlap et al., 1996; Ingram et al., 2005; Iwata, et al., 1994; Lee et al., 1999; McKenna, 2006; Preciado, 2006; Sanford, 2006). The single-

subject study examined the effectiveness of a function-based approach combined with effective academic reading intervention and cultural responsiveness of the intervention plan and implementation for ELLs who demonstrate behavior and academic problems. The findings and methodology of this study have implications for research and practices in special education as discussed in this section.

Horner et al. (2005) suggested some ways in which single-subject research is an appropriate method in special education research. First, single-subject research keeps individual students as the unit of concern. Second, the research design allows practical procedures that can be used in real world settings, such as classrooms, by real world agents, such as teachers (e.g., as interventionists). In this way the single- subject research is uniquely appropriate for classroom situations where the natural occurrences of phenomena are complex, sometimes unpredictable, and constantly changing over time. Third, the research design is a cost-effective approach that can be used to guide high-stakes decision making. Fourth, in single-subject research, data are analyzed using tables and graphs to convey the experimental results to audiences. Single-subject research, when following a systematic procedure, provides sufficient detail in a transparent way so that other people can learn how the study was conducted, including data collection, participant selection, and analysis of findings, and can replicate the procedures.

Kaufman et al. (2008) also stated that compared to group designed research, single-subject research based on applied behavior analysis (ABA) is appropriate for the study of cultural differences and is culturally responsive in nature, given that the design

examines detailed information about cultural identities and individual needs of participants.

Another implication for special education is the potentially useful recommendation for developing interventions that address both academic and behavior problems for students who exhibit problem behaviors and who struggle with reading. The finding showed that in order to develop an effective intervention, behavioral function needs to be systematically identified and addressed. Consistent with research using function-based approach (Burke et al., 2003; Hagan-Burke et al., 2007; Ingram et al., 2005; Kern et al., 1994), the results showed that by applying behavioral principles (e.g., positive reinforcement) matched with behavioral functions, behavior problems could be diminished. Moreover, the participants had difficulties completing their tasks because they lacked basic skills in decoding which prevented them from comprehending the texts. Without sufficient skills in reading, no matter how much support the teachers provided, students still attempted to escape their tasks. The finding suggested that when teachers alter reading tasks to include effective reading instructional approaches such as explicit instruction, frequent opportunity to read and experience success, and increased positive feedback and support (Gersten & Geve, 2003; Linan-Thompson et al., 2002; Tam et al., 2006), ELL students who are at risk for reading difficulty will become more engaged in the tasks and will potentially read more effectively.

Overall, the function-based academic and behavior intervention in this study was effective first because the intervention took into account the mechanism of behavioral function based on data from the FBA procedures (i.e., teachers' interview and direction

observation of behavior). Second, systematic data collection using single-subject technology provided a close monitoring of progress for individual students in response to the intervention. Single-subject research methodology involves analysis of each participant's behavior so that the independent variable can be analyzed across individuals, and thus providing high internal validity. Third, the *Phonics for Reading* program was the reading intervention that proved effective for providing decoding skills for students who were struggling with reading including ELL. Fourth, collaboration among the behavior support team and the use of the contextual fit questionnaire helped understanding between the interventionists and the researcher. Through communicating what could be done in a specific time period, the team established the contextual fit of the intervention. Fifth, the behavior support plan was effective due to the team's knowledge of behavioral principles and knowledge of students and the classroom context.

Implication for Exploring the Cultural Context of Intervention

This study involved participants from widely different cultural backgrounds, and was conducted in an international school in Bangkok, Thailand. Teacher participants were native English speakers who came from various cultural backgrounds (e.g., Indian, British, and American). The students were Thai, Korean, and Bangladeshi. Trained observers were Thai college students who did not speak English in the course of every day. The primary researcher was Thai and trained in the U.S. graduate educational system. Unalterable variables included cultural backgrounds such as gender, ethnicity, religion, race, and personal preference. These variables are unique to the individual and

beyond the influence of effective research and instruction (Howell & Nolet, 2000). They are, therefore, personal qualities with which the researcher must work.

Contextual fit measures showed that teachers found the intervention appropriate and effective for students' learning. The teachers "most agreed" that students' behavior had improved, providing evidence that the function-based intervention designed in one setting and culture could be effective in another setting and culture. The key factor was collaboration and ongoing communication among the intervention team. To work effectively across cultures, the goal was to incorporate the differences with understanding.

This study carefully integrated cultural and contextual factors that affect how research methodology and implementation of function-based intervention were developed for the participants. Cultural and contextual fit must be designed for long-term results. If teachers and students find that the intervention does not bring the desired results, they likely will give up. The intervention may be too difficult, too long, too complicated, or too expensive, so that eventually it becomes modified or is terminated. An intervention that runs counter to the values of teachers and students may fail to change their behaviors. Several consensus studies in teaching reading, for example, have reported that effective reading intervention employs knowledge about how children learn to read and its implementation empirically validates positive outcomes in students' achievement (Denton, Vaughn, & Fletcher, 2003; NRP, 2000). Denton et al. (2003) proposed reasons why teachers do not implement research-based practices in reading. One reason was that teachers found that the research-based practices did not conform to their prevailing

beliefs and that new practices were not better than their traditional ones. Consequently, they lost interest in using new programs.

One controversial issue prevails; surrounding implementation of research-based practices invented in one culture and implemented in another culture, and may be of interest for future research. The question is whether to have internal validity over external validity, and whether to maintain high experimental control over the contextual fit. Complexities of local schools are different from culture to culture and modification is needed. High fidelity of implementation of an effective intervention may not occur when the teachers feel a need to modify the procedures. When the implication of a study is to explore the effectiveness of an intervention in a highly diverse educational setting, it may be more appropriate to expand the application of the practices, allow fidelity of implementation to vary, yet conduct exploratory research on those variations (Smith, Daunic, & Taylor, 2007).

Limitations

There are several limitations to the results of this study. Some threats to the internal validity of single-subject design included the length of baseline and intervention conditions for all participants, and the control for onsite extraneous variables. Although a clear pattern of data must be established during baseline conditions, due to time constraint and availability of data observers, the study could not prolong the baseline condition to obtain sufficient data. For example, it was impossible to continue a baseline for Kenzo, although the data showed high variability with an increasing trend of the last

data point. Kenso was assigned to the same classroom as Kwan and Khun, but had two additional one-hour one-to-one sessions per week with the teacher. The teacher and the small group were inconvenienced with Kenso starting the lessons ahead of his two peers. Possible extraneous variables that may compromise the effect of function-based intervention included changes of EAL teachers after the school break.

External validity is the extent to which the study results can be generated to a real world setting. Given that this study was conducted in a natural setting, all intervention procedures were implemented in a typical classroom setting by the students' teachers who were certified in English as an additional language (EAL), and experimenter bias was controlled. Nonetheless, one threat to external validity is that the participants were selected based on specific characteristics in order to fit the research questions. Since the study was conducted in Thailand, the researcher selected the school setting based on accessibility and availability of setting personnel. The participants may not be representative of the general population of ELL in schools in the United States or in the United Kingdom. It is also likely that the findings may not generalize to native-English speaker students who demonstrate escape-maintain problem behaviors and specific reading difficulties.

Lastly, it was unfortunate that this study could not address parents' involvement. The fact that this study was conducted in Thailand by the author without direct support from the local professional community made it difficult to incorporate parents and families of target participants. The families with cultural differences could have additional issues regarding cultural responsiveness of the intervention. Moreover, ELL

students often bring skills and abilities from reading in their first language (Lenters, 2004; McCardle et al., 2005). McCardle et al. (2005) emphasize the roles of affective and motivational factors in academic outcomes for ELLs "who bring linguistic and cultural heritages that different from those typically expected and accommodated within the educational setting" (p. 71). Obtaining information about the students' cultural and contextual factors—the interactions and interrelationships among student, family, and linguistic backgrounds—from the family could enhance cross-cultural communication between school and family which, in turn, improve the effectiveness of the intervention. Behavior support team, therefore, should engage the family in order to include more complete information about the students.

Future Research

Findings from this study support the effective use of the FBA approach to guide intervention design for students who engage in academic and behavior problems. Nonetheless, given the lack of consensus among experts in behavioral research as to what comprises an FBA and which components are necessary and most effective (Ingram et al., 2005), more research is required on FBA procedures and interventions implemented for different student populations.

Like most previously studied function-based intervention, the function-based academic and behavior intervention in this study was comprehensive in nature, given that academic and behavior problems are closely linked and must be intervened concurrently. Components that were built into the intervention were complex. It was not possible to

determine which components of the intervention may have been associated with specific improvement for the participants. Further research is needed to examine the efficacy of individual components in the intervention—behavioral support, reading intervention, and cultural based intervention—on behaviors of the target populations. A group design and an analysis using ANOVA may be an appropriate methodology to examine the effectiveness of these approaches individually and in combination.

Too often, teaching reading to ELLs depended on teaching effectiveness research to native English speakers (Vaughn et al., 2006). Previous research on reading proficiency of ELLs who struggle with reading suggested that immediate, corrective feedback to all errors helped improve word recognition and reading comprehension (Tam et al., 2006). It would be interesting to examine the effect of the reading intervention in this study on dependent variable outcomes of reading gains in the area of vocabulary and comprehension for ELLs. Follow up to this study could examine the effectiveness of academic intervention procedures for a sample of student representatives of a wide range of reading performance and cultural backgrounds. Conspicuously, more research is needed to document factors pertaining to effective reading instruction for ELLs in a context of English as an additional or foreign language.

Given that the time constraint was a major limitation of the present study, future research should replicate this study with a longitudinal experiment to determine the effectiveness of the function-based academic and behavior intervention on the reading performance for ELLs. In particular, future research is needed to measure the reading gains, measured by oral reading fluency, for the students throughout the academic year.

Most studies on cultural responsiveness were conducted using qualitative methodology (Gay, 2002). Development of culturally responsive education practices may require work in naturalistic contexts where exerting experimental control is difficult to achieve. Therefore, descriptive and exploratory research may be more appropriate to explain phenomena in a more culturally responsive way. Furthermore, Weisz et al. (1995) suggested that future research should involve observers trained to prepare for the mix of information between "actual child behavior" and "culturally conditioned of that behavior" (p. 414).

Consistent with Benazzi et al (2006), this study recommends that future research should investigate the effectiveness of a function-based intervention that developed by a behavior support team whose members are regular members of the school community and who share the cultural background of the students and their families. However, simply including a teacher with the same background is not enough. Beliefs, perspectives, and expectations may influence the way the teacher teaches. Future research questions, therefore, may include: Can the FBA procedures be expanded to collect in-depth information about how cultural experiences of teachers, students, and families influence the effectiveness of a function-based intervention? While researchers in the behavioral field have attempted to assess contextual fit defined by teachers (Albin et al., 1996; Benazzi et al., 2006; Salantine & Horner, 2002), it may have been vital to find a way to assess contextual fit for students. Although the concepts are beyond the grasp of young students, future research is needed to explore a way to address the sense of "appropriateness" that students find in function-based intervention procedures.

Social and cultural differences are becoming more significant issues in general education and special education in the U.S. and globally. Teacher education programs may need more systematic research examining how to incorporate multicultural educational thorough enough to make a significant difference in the quality of learning for students with diverse cultural backgrounds. The genuine answer to what "cultural responsiveness" has yet to come. There is an immediate need for more research in this area.

Conclusion

The results of this study reveal the potential to decrease students' problem behaviors and increase academic engagement by following a behavior support plan based on information from a systematically and carefully conducted functional behavior assessment (FBA) to improve English reading performance. This improvement occurs with instruction and tasks modified to accommodate students' academic needs. Through effective assessment and intervention, the students made progress toward their school's goals for academic achievement and behavioral expectations, and teachers were able to maintain a peaceful learning atmosphere for all students.

Despite several limitations, this experimental research has incorporated culture into behavior and academic support as well as into the research design itself. In working across cultures, respectful communication among professionals probably was the most important element to ensure that the intervention support will meaningfully change the lives of students and that the support will be sustained over time.

Whether consciously or not, professionals' beliefs about how academic and behavior intervention should be provided are always mediated by cultural influences. The goal is not to justify or make comparisons among cultures but to be aware that personal experiences, values, and beliefs exist. They influence the way we treat students as well as the way we work with professional colleagues. This realization is powerful. When professionals learn to appreciate and respect diverse behaviors, even when these are dissimilar to their customs and expectations, and use academic and behavior support practices that reflect students' cultural experiences and perspective, the quality of learning for students will be improved.

APPENDIX A

TEACHER INFORMED CONSENT FORM

TEACHER INFORMED CONSENT FORM

Dear teacher:

My name is Chanisa Apichatabutra. I am a doctoral student in the Department of Special Education and Clinical Sciences at the University of Oregon, U.S.A. I would like to invite you to be part of a study that will be conducted in partial fulfillment of my doctoral dissertation under a close supervision of Dr. Rob Horner, my advisor.

The purpose of this study is to provide an individualized behavioral and academic support for English as a second language (ESL) and English as an additional language (EAL) students who are having problem behaviors during English reading instruction, and who are having difficulties with reading tasks.

The result from this study is potentially helpful (1) to decrease the students' problem behaviors by following behavior support plan that is based on information from a systematically and carefully conducted behavioral assessment, the Functional Behavior Assessment (FBA) and (2) to improve English reading performance by modifying instruction and tasks to accommodate the students' academic needs. Through the effective assessment and intervention, the students will be able to make progress toward your school's goals for academic achievement and behavioral expectations and your school will be able to maintain a peaceful learning atmosphere. Your participation is completely voluntary. If you decide to participate in this study, I would like your collaboration in four phases of the study.

Phase (1) Inform Consent Procedure. I would like you to choose potential student participants and their grade-level peers for reading norm sample group in your classroom, and obtain parents consent letters. The initial nomination process for potential student participants involves using a teacher nomination form.

Phase (2) Screening. I will collect information about your student through an interview with you for about 30 minutes and I will conduct direct observations in your classroom to make sure that your student should be included in the study. Your student will be given 1-minute timing reading passages. The measure is used to identify that he/she is reading with difficulties. I would also like you to help select some students in your classroom to also read three of the same 1-minute timing reading passages to develop a range of what the typical student reads in 3rd and 4th grade classrooms.

Phase (3) Intervention. If your student is selected for the study, I will need your help to work with me to change his/her reading instruction to match with individual needs for academic and behavior supports. The intervention will be conducted in a 40-minute session, 5 times per week for approximately 6 weeks (total 30 sessions), in a one-on-one instruction or small groups of 2-3 students. The sessions will occur during school day at a time that we determine as least disruptive to the students' educational program. The intervention will include research-based reading instruction, behavioral support intervention, and oral reading fluency progress

monitoring. This will involve you and I meeting as a team to discuss a new reading curriculum for the student, and me training you on how to teach the reading program. We will need approximately 5 hours to talk about the reading program and plan for behavior support. We may also want to meet as you start teaching the new reading program so that I can answer any questions or concerns you may have. There will be observers visiting your class to observe if and how your student's behavior changes over time. We will also observe how certain parts of instruction change over time. Finally, we will ask your student to complete three 1-min readings about 3 times a week to measure how he/she is improving in reading.

Phase (4) Evaluation. To evaluate the extent to which the intervention fits with your student's cultural values and your classroom context, I would ask that you and I complete the Contextual Fit Questionnaire three times for each student—at the beginning, during the implementation and at the end of the implementation. We will make some changes to make sure that the intervention is cultural responsive to your student. At the end of the study, I would also like you to complete a Teacher Consumer Satisfaction Survey to evaluate the extent to which the intervention is perceived by teachers as effective method to help the students improve in reading achievement, academic engagement and appropriate behaviors in classroom.

The only potential risk associated with your participation in this study is the possibility that other people, including faculty and staff in your school, could discover your involvement. To minimize this risk, your name will not be recorded on any of the materials in this study. Instead, your identity will be recorded as the "teacher of <student's name code>". Student participants' names will also not be on the data forms. Name codes will be used in lieu of student participants' names.

Benefits to Teacher. Again, your participation is completely voluntary. You can stop the study at any time. If you agree to participate, here are the benefits for this participation: (1) potential improvements in your student's academic engagement and reading performance, (2) potential improvements in other student's academic engagement and reading performance, (3) learning research-based instructional strategies that maybe useful for your future teaching career, and (4) a thank you gift for your time and energy to support this study in the form of a $50 gift certificate from Emporium Department Store (equivalent to approximately 1,500 Bath).

If you have any questions, please feel free to contact me, Chanisa Apichatabutra, via my email address capichat@uoregon.edu, and my number at 081-921-2312, or my advisor, Dr. Rob Horner, at 1-541-346-2462. The faculty advisor has an office at Educational and Community Supports, 1761 Alder St., 1235 University of Oregon, Eugene, OR 97403-1235. If you have any questions regarding your rights as a research participant, contact Office for Protection of Human Subjects, 5237 University of Oregon, Eugene, OR 97403-5237, 1-541-346-2510.

Your signature below serves as your consent to participate in this study. You will be given a copy of this consent form for your records. Thank you.

Your Signature _____ Date_____

APPENDIX B

PARENT/GUARDIAN INFORMED CONSENT LETTER:

SCREENING AND GRADE LEVEL-PEERS

PARENT/GUARDIAN INFORMED CONSENT LETTER:
SCREENING AND GRADE LEVEL-PEERS

Dear Parents

In Term 3, the English as an additional language (EAL) department will be joined by a doctoral student from the Department of Special Education and Clinical Sciences at the University of Oregon, USA. Miss Chanisa Apichtabutra is involved in research focusing on students in year 3-5, who are learning within an English speaking school but who have EAL support needs. The purpose of the study is to improve children's English reading performance through academic and behaviour supports.

Miss Apichatabutra will be working alongside our teachers and EAL students from year 3-5. No disruption will be made to EAL timetables and in fact her involvement will enhance our EAL provision.

In order for her to gather effective and accurate information about her target group of EAL students, she needs to conduct a reading fluency test with a range of EAL and mainstream students from within each age group so that she can determine local expectations for English reading performance.

Your child has been selected as part of this sample group and we hope that you will give permission for them to take part. This short Oral Reading fluency Test will be given to our child within their normal Literacy sessions where your child will be asked to read three one-minute short English passages. No identification of your child will be made in this study.

We hope that you will agree to participation in this study and as that you sign the consent form attached and return it to your child's class teacher.

Thanks you for your support.

SCHOOL: _____

EAL Research Project
Miss Chanisa Apichatabutra
Term 3 2007-2008

Consent Form

Child's name: **Class:**

I give permission for my child to be involved in the EAL study project being conducted by Miss Chanisa Apichatabutra.

Yes No (please circle)

Parent's name:
Parent's signature:
Date:

APPENDIX C

TEACHER NOMINATION FORM

TEACHER NOMINATION FORM

Please identify 3-5 male students and 3-5 female students that, in your opinion, are ***at-risk for English reading difficulties***

Male	Female
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____

Please identify 3-5 male students and 3-5 female students that, in your opinion, are at-risk for ***problem behaviors**** **Some of these students may overlap or be the same students as those nominated for at-risk for reading difficulties**

*Problem behaviors in classroom are identified as **aggressive** (e.g., hitting, poking, kicking, yelling, starting fights, destroying materials), **disruptive** (e.g., behaviors that disrupt instruction such as talking out, making noises, blurting out an answer, throwing objects), **Disrespect** (e.g., using gesture, teasing, mocking, verbal abusing or treating others), **non-compliant** (e.g., saying 'no' to teacher's instructional request, refusing to work or take out a book), and **off-task** (e.g., looking out to window, watching others, not completing work)

Male	Female
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____

Thank you.

APPENDIX D

PARENT/GUARDIAN INFORMED CONSENT LETTER: INTERVENTION

PARENT/GUARDIAN INFORMED CONSENT LETTER:
STUDENT PARTICIPATION

Dear Parent of _____

Earlier, we sent home a letter asking your permission to find out if your child would be a good math for a research project conducted by Miss Chanisa Apichatabutra, a doctoral student from the Department of Special Education and Clinical Sciences at the University of Oregon, USA. during Term 3.

The research is focusing on students in year 3-5 who are learning within an English speaking school but who have EAL support needs. The primary purpose is to improve your child English reading performance through academic and behaviour supports

After watching your child's reading group and reading with your child, we would like to ask your child to be a part of the research because we think he could benefit from additional supports in paying better attention in classroom and to learn to read English better.

If you and your child decide to participate, no disruption will be made to EAL timetable. During the study, we will develop a support plan in which your child will be involved in the following activities:

- **Interviews** will be conducted with your child's EAL teacher and classroom teachers who have worked closely with your child. The purpose of these interviews is to gain information about variables contributing to academic and support behaviour support intervention plans.

- **Direct observation** of your child during EAL classes will be conducted. The purpose of these observations is to determine what social behaviours your child displays in different situations and to identify appropriate strategies that the teacher could use to better support your child's academic and social development. Direct observation will take place in your child's classroom about 3 times per week during term 3 and may continue until the middle of term 1, academic year 2008-2009.

- **Oral reading fluency test** will be given to your child to help us examine how your child is doing in learning important reading skills and to determine whether the reading intervention is effective to improve your child's reading performance. Your child will be given 3 reading tests per week. Each test takes only about one minute to do. The test will occur during term 3 and may continue until the middle of term 1, academic year 2008-2009.

- **Reading intervention** will be developed based on results of the teacher interviews and direct observations. It will be designed to match with your child's academic and social skill support needs. Your child's EAL teacher will deliver the reading instruction 5

days per week for 40-50 minutes. The test will occur during term 3 and may continue until the middle of term 1, academic year 2008-2009. The teacher will also use information from the reading test to help your child to read better.

Please be informed that this research will be conducted with highly responsiveness to student and family cultural values. The intervention will aim to best fit cultural and classroom context of your child. The study may, however, pose some potential risks to your child such as anxiety, confusion or embarrassment. We will put every effort to minimize the risks. At any time during the research participation, if your child feels bad, you or your child can ask to stop. We will also contact you immediately in case that we notice unusual circumstances as a result of your child participating in this research. Your child's classroom teacher, EAL teacher, Head of the Primary Education, EAL coordinator and Miss Apichatabutra are the only people who know that your child is in this study. No one else will know about your child's participation. Name code will be used in all documentation and keep in a locked file cabinet to protect confidentiality of your child's information.

The goal of this research is to help your child pay better attention in reading and to become a competent reader. Although we cannot promise that your child will achieve all these, we aim for your child to achieve this goal and our research plans and activities will be oriented toward this goal.

We hope that you will join the school in supporting this study which we believe will help our EAL team to be able to deliver even more effective support to your child. If you would like any information regarding this study, please feel free to contact Miss Apichatabutra, via her email address capichat@uoregon.edu, and phone number at 081-921-2312, or her advisor, Dr. Rob Horner, robh@uoregon.edu. or at 1-541-346-2462. The faculty advisor has an office at Educational and Community Supports, 1761 Alder St., 1235 University of Oregon, Eugene, OR 97403. If you have any questions regarding your rights as a research participant, contact the Office of Protection of Human Subjects, 5237 University of Oregon, Eugene, OR 97403.

Your signature indicates that (1) you have read this letter and provide consent for the school to proceed with the research procedures (2) you may withdraw at any time and discontinue participation without penalty, and (3) you will receive a copy of this consent form.

Thank you.

_____ _____

Name of Parent/Guardian (please print) Child's Name (please print)

_____ _____

Signature Date

APPENDIX E

STUDENT ASSENT FORM

ASSENT FORM FOR <Student's name >

Verbal Script to explain assent form to the student participant

"My name is Chanisa Apichatabutra. I am going to read this form to you so that you can choose if you want to participate in theses activities with me. If you agree to be a part of this study, I will ask you to sign this form"

Hi <Student's name >I want to learn more about how to help your teachers make classrooms better for students so they learn well. You can give us a big help. I would like you to let your teacher and me change some things in your classroom to see if it will help you learn more.

If you want to work with me for this study, there are some steps we will do and you can help.

1. I will talk to your teacher about what school is like for you. We will also ask your parent permission to have you work with us.
2. Other two people from Chulalongkorn University and I will come to your reading class about 3-5 times a week to see if the classroom environment is good for student learning
3. If your teachers and I decide that it will be more helpful for you to get some more help with your English reading, I will work with you about 3 times per week, for 35 minutes. We will go through some English activities and complete a timed reading. You will work with me for the about three months.

You can rest as much as you would like, and you can ask to stop whenever you want. You would not get into any trouble if you choose not to participate. Also, if you have any questions about what you'll be doing, or if you cannot decide whether to do it or not; just ask me if there is anything you would like me to explain. You can also ask your parents and teachers, if you are not sure about anything.

If you do want to try it, please sign your name on the line below. Your parent(s) have already told me that it is all right with them if you want to work with me for English reading activities. Remember, you don't have to, and once you start, you can rest or stop whenever you like.

Thank you.

Your Name: _____ Date: _____

APPENDIX F

FUNCTIONAL ASSESSMENT CHECKLIST FOR TEACHERS AND STAFF

(FACTS)

Functional Assessment Checklist for Teachers and Staff (FACTS-Part A)

Step 1 Student/ Grade: _____ Date: _____
Interviewer: _____ Respondent(s): _____

Step 2 **Student Profile:** Please identify at least three strengths or contributions the student brings to school.

_____
_____

Step 3 **Problem Behavior(s): Identify problem behaviors**

___ Tardy	___ Fight/physical Aggression	___ Disruptive	___ Theft
___ Unresponsive	___ Inappropriate Language	___ Insubordination	___ Vandalism
___ Withdrawn	___ Verbal Harassment	___ Work not done	___ Other _____
	___ Verbally Inappropriate	___ Self-injury	

Describe problem behavior: _____

Step 4 **Identifying Routines: Where, When and With Whom Problem Behaviors are Most Likely.**

Schedule (Times)	Activity	Likelihood of Problem Behavior	Specific Problem Behavior
		Low 1 2 3 4 5 6 High	
		1 2 3 4 5 6	
		1 2 3 4 5 6	
		1 2 3 4 5 6	
		1 2 3 4 5 6	
		1 2 3 4 5 6	
		1 2 3 4 5 6	
		1 2 3 4 5 6	
		1 2 3 4 5 6	
		1 2 3 4 5 6	

Step 5 **Select 1-3 Routines for further assessment: Select routines based on (a) similarity of activities (conditions) with ratings of 4, 5 or 6 and (b) similarity of problem behavior(s). Complete the FACTS-Part B for each routine identified.**

Functional Assessment Checklist for Teachers & Staff (FACTS-Part B)

Step 1

Student/ Grade: _____ Date: _____
Interviewer: _____ Respondent(s): _____

Step 2

Routine/Activities/Context: Which routine(only one) from the FACTS-Part A is assessed?

Routine/Activities/Context	Problem Behavior(s)

Step 3

Provide more detail about the problem behavior(s):

What does the problem behavior(s) look like?

How often does the problem behavior(s) occur?

How long does the problem behavior(s) last when it does occur?

What is the intensity/level of danger of the problem behavior(s)?

Step 4

What are the events that predict when the problem behavior(s) will occur? (Predictors)

Related Issues (setting events)		Environmental Features	
___ illness	Other: _____	___ reprimand/correction	___ structured activity
___ drug use	_____	___ physical demands	___ unstructured time
___ negative social	_____	___ socially isolated	___ tasks too boring
___ conflict at home	_____	___ with peers	___ activity too long
___ academic failure	_____	___ Other	___ tasks too difficult
		_____	

Step 5

What consequences appear most likely to maintain the problem behavior(s)?

Things that are Obtained		Things Avoided or Escaped From	
___ adult attention	Other: _____	___ hard tasks	Other: _____
___ peer attention	_____	___ reprimands	_____
___ preferred activity	_____	___ peer negatives	_____
___ money/things	_____	___ physical effort	_____
		___ adult attention	_____

Step 6

SUMMARY OF BEHAVIOR

Identify the summary that will be used to build a plan of behavior support.

Setting Events & Predictors	Problem Behavior(s)	Maintaining Consequence(s)

Step 7

How confident are you that the Summary of Behavior is accurate?

Not very confident					Very Confident
1	2	3	4	5	6

What current efforts have been used to control the problem behavior?

Strategies for preventing problem behavior		**Strategies for responding to problem behavior**	
___ schedule change	Other: _____	___ reprimand	Other: _____
___ seating change	_____	___ office referral	_____
___ curriculum change	_____	___ detention	_____

March, Horner, Lewis-Palmer, Brown , Crone, Todd, & Carr (2000)

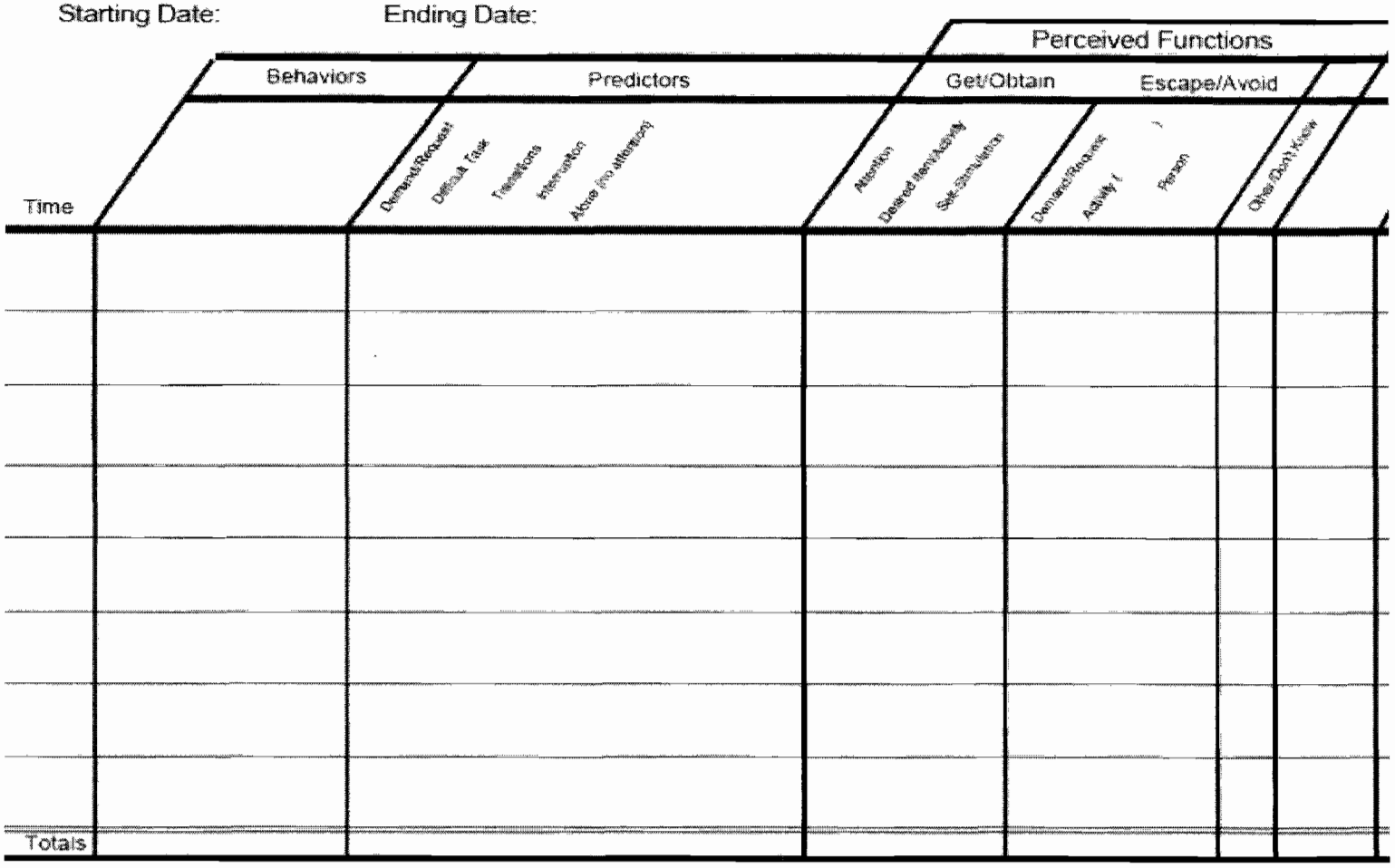
APPENDIX G

FUNCTIONAL ASSESSMENT OBSERVATION FORM (FAO)

Name:

Functional Assessment Observation Form

Starting Date: Ending Date:



APPENDIX H

CONTEXTUAL FIT QUESTIONNAIRE

CONTEXTUAL FIT IN SCHOOLS QUESTIONNAIRE

The purpose of this interview is to assess the extent to which the elements of a behavior support plan fit the contextual features of your school environment. The interview asks you to rate (a) your knowledge of the elements of the plan, (b) your perception of the extent to which the elements of the behavior support plan are consistent with your personal values, and skills, and (c) the school's ability to support implementation of the plan. This information will be used to design practical procedures that will help school personnel support children with problem behaviors. The information you provide will be maintained and reported in a confidential manner consistent with the standards of the American Psychological Association. You will never be identified.

Please read the attached behavior support plan, and provide your perceptions of the specific elements in this plan. Thank you for your contribution and assistance.

Name of Interviewee: _____ Role : _____
Support plan reviewed: _____

Knowledge of elements in the Behavior Support Plan.

1. I am aware of the elements of this behavior support plan.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

2. I know what I am expected to do to implement this behavior support plan.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

Skills needed to implement the Behavior Support Plan

3. I have the skills needed to implement this behavior support plan.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

4. I have received any training that I need to be able to implement this behavior support plan.

No training needed _____ .

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

Values are consistent with elements of the behavior support plan

5. I am comfortable implementing the elements of this behavior support plan

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

6. The elements of this behavior support plan are consistent with the way I believe students should be treated.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

Resources available to implement the plan

7. My school provides the faculty/staff time needed to implement this behavior support plan.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

8. My school provides the funding, materials, and spaced needed to implement this behavior support plan.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

Administrative Support

9. My school provides the supervision support needed for effective implementation of this behavior support plan.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

10. My school administration is committed to investing in effective design and implementation of behavior support plans.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

Effectiveness of Behavior Support Plan

11. I believe the behavior support plan will be (or is being) effective in achieving targeted outcomes.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

12. I believe the behavior support plan will help prevent future occurrence of problem behaviors for this child.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

Behavior Support Plan is in the best interest of the student

13. I believe this behavior support plan is in the best interest of the student.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

14. This behavior support plan is likely to assist the child to be more successful in school.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

The Behavior Support Plan is efficient to implement

15. Implementing this behavior support plan will not be stressful.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

16. The amount of time, money and energy needed to implement this behavior support plan is reasonable.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

APPENDIX I

TEACHER CONSUMER SATISFACTION SURVEY

TEACHER CONSUMER SATISFACTION SURVEY

(Crone & Horner, 2003)

1. The goal of the behavior support plan addressed my concerns about _____s' behavior.

Strongly Agree				Strongly Disagree
1	2	3	4	5

2. The goal of the behavior support plan addressed my concerns about _____s' academic progress.

Strongly Agree				Strongly Disagree
1	2	3	4	5

3. The suggestions made by the team were helpful.

Strongly Agree				Strongly Disagree
1	2	3	4	5

4. The suggestions made by the team were manageable to implement in my classroom.

Strongly Agree				Strongly Disagree
1	2	3	4	5

5. I implemented the team's suggestions consistently and continuously.

Strongly Agree				Strongly Disagree
1	2	3	4	5

6. I have seen an improvement in_____'s behavior since the behavior support plan was implemented.

Strongly Agree				Strongly Disagree
1	2	3	4	5

7. I have seen an improvement in_____'s academic progress since the behavior support plan was implemented.

Strongly Agree				Strongly Disagree
1	2	3	4	5

8. Do you need any more help from the team?

9. Please list any other comments, concerns, or questions.

APPENDIX J

10S-INTERVAL OBSERVATION FORM

10S-INTERVEAL OBSERVATION FORM

Student #: _____ **Data collector:** _____
Reliability: Yes □ **No** □ **Date:** _____ **Time:** _____
Instructional Context: whole class small group instruction
independent work transition other _____

Interval	AE	PB	Interval	AE	PB	Interval	AE	PB	Interval	AE	PB
1			31			61			91		
2			32			62			92		
3			33			63			93		
4			34			64			94		
5			35			65			95		
6			36			66			96		
7			37			67			97		
8			38			68			98		
9			39			69			99		
10			40			70			100		
11			41			71			101		
12			42			72			102		
13			43			73			103		
14			44			74			104		
15			45			75			105		
16			46			76			106		
17			47			77			107		
18			48			78			108		
19			49			79			109		
20			50			80			110		
21			51			81			111		
22			52			82			112		
23			53			83			113		
24			54			84			114		
25			55			85			115		
26			56			86			116		
27			57			87			117		
28			58			88			118		
29			59			89			119		
30			60			90			120		
Total			***Total***			**Total**			***Total***		

Academic Engagement (AE): Orienting toward board/overhead/teacher; engaged physically or verbally with materials/objects/tasks; during independent work is writing or reading assigned task; contributing to assigned cooperative activities; engaged in appropriate activities approved by the teacher if completed independent work early.

Record a (+) if student is academically engaged for 8 out of 10 seconds in observation interval. Record a (0) if the student is not academically engaged (or engaged less than 8 sec.)

Problem Behavior (PB): aggressive (e.g., hitting, poking, kicking, yelling, starting fights, destroying materials), **disruptive** (e.g., behaviors that disrupt instruction such as talking out, making noises, blurting out an answer, throwing objects), **disrespect** (e.g., using gesture, teasing, mocking, verbal abusing or treating others), **non-compliant** (e.g., saying 'no' to teacher's instructional request, refusing to work or take out a book), and **off-task** (e.g., looking out to window, watching others, not completing work)

Record a (+) if problem behavior occurs at all during an observation interval.

Record a (0) if problem behavior does not occur.

APPENDIX K

DYNAMIC INDICATORS OF BASIC EARLY LITERACY SKILLS (DIBELS): PROGRESS MONITORING

Dynamic Indicators of Basic Early Literacy Skills™ 6th Edition

DIBELS™

Progress Monitoring DIBELS Oral Reading Fluency Third Grade Scoring Booklet

Roland H. Good III
Ruth A. Kaminski
University of Oregon
Sheila Dill

Available:
http://dibels.uoregon.edu/

Instructions:
This packet includes 2 parts: the third-grade scoring booklet and third-grade student materials. The scoring booklet is photocopied back to back and saddle stapled. The same booklet is used for each student for each progress monitoring assessment throughout the year. The second part is the reusable student materials. Make one copy for each person who is doing the progress monitoring testing. They can be laminated and comb bound for reuse.

Good, R. H., & Kaminski, R. A. , & Dill, S. (2002). DIBELS Oral Reading Fluency. In R. H. Good & R. A. Kaminski (Eds.), Dynamic Indicators of Basic Early Literacy Skills (6th ed.). Eugene, OR: Institute for the Development of Educational Achievement. Available: http://dibels.uoregon.edu/.

 Revised 05/21/03

DORF Progress Monitoring 1

A Present from Me

I wanted to take my stepmother out to dinner for her birthday 12
and pay for our dinner with my own money. I wanted it to be a 27
surprise and I wanted it to be just from me. The problem was, I 41
didn't have any money! 45

I went out to try to find ways to earn money. The lady who 59
lives in the apartment upstairs said she wanted to get rid of all 72
her empty soda cans and bottles. She said I could keep the 84
money for the deposit if I took all of the cans and bottles back to 99
the store. It took me five trips, but I got them all taken back to 114
the store. 116

The man in the apartment downstairs said I could walk his 127
dog after supper every night for two weeks. Our neighbor lady 138
said she could use some help putting out the trash and getting rid 151
of old newspapers. One lady in our building said she would like 163
some help with her groceries, but she couldn't afford to pay me. 175
I helped her anyway. She said she would give me some flowers 187
to give to my stepmother. 192

The day before her birthday I asked Mom if she would go on 205
a date with me for dinner. She was surprised when I paid for the 219
dinner with the money I had earned. She made me tell her where 232
I had gotten the money. Then she gave me a big hug and said it 247
was the best birthday present ever. I think she liked the flowers 259
the best of all. 263

Retell: Total:

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48			
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71			
72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94			

APPENDIX L

READING INTERVENTION PLAN

(EXAMPLE)
READING INTERVENTION PLAN

Teacher: _____ Date: _____

Instructional Area: _____ Students: _____

Behavioral and Academic Goals:

- Kenso will answer on teacher's signal
- Kenso will keep eyes on his assignment or teacher (during teacher presentation)
- Kenso will raise his hands to ask question or answer questions (in small group with Kwan and Khun)
- Kenso will stay on his seat for the whole lesson (unless with permission)
- Kenso will do only the tasks that teacher assigns
- If finishing his task earlier, Kenso will do the tasks that teacher assign (e.g. crosswords, word search or reading books)
- Teacher will evaluate his behavior at the end of lesson—fill in sticker chart
- If Kenso meets the goal for each lesson, he will receive a sticker (5 counts for 1 House Point)

Student → Activity/Routines↓	Kenso	Khun	Kwan
Sample	✓ *Following direction* ✓ *Waiting for teacher signal*	✓ *Following direction* ✓ *Waiting for teacher signal*	✓ *Following direction* ✓ *Waiting for teacher signal*

Goals:

1. Given letters, students will tell the names correctly with 100% accuracy.
2. Given reading vocabularies, students will decode the sounds and read all words the fast way with 100% accuracy.
3. Given reading comprehension questions, students will answer with 100% accuracy
4. Given end of the lesson activities, students will independently complete the task with 80% accuracy with no verbal prompts.

Objective: Practice CVCe words
Daily Preparation:

A. Opening (5 minutes)
    1. Reviews behavioral rules/reinforcement rules
    2. Reviews sounds from previous lesson that they are having difficulties: using instructional games (groups and individual turns)
B. Instructional Activities, Procedures, and Estimated Time
    1. Sound Drill (2 minutes)
        a. Model sounds. Follow model-lead-test model and correction procedures and wordings according to the teacher guide
        b. Record errors for individual and group.
        c. Provide individual turns
        d. Use error correction
    2. New Words (3 minutes)
        a. Model words. Follow model-lead-test model and correction procedures and wordings according to the teacher guide
        b. Record errors for individual and group.
        c. Provide individual turns
        d. Use error correction
        e. Monitoring students work
    3. Review Words (3 minutes)
        a. Model words. Follow model-lead-test model and correction procedures and wordings according to the teacher guide
        b. Record errors for individual and group.
        c. Provide individual turns
    4. Word Endings (3 minutes)
        a. Model words. Follow model-lead-test model and correction procedures and wordings according to the teacher guide
        b. Record errors for individual and group.
        c. Provide individual turns
    5. Challenge Words (3 minutes)
        a. Model words. Follow model-lead-test model and correction procedures and wordings according to the teacher guide
        b. Record errors for individual and group.
        c. Provide individual turns
    6. Sight Words (5 minutes)
        a. Model words. Follow model-lead-test model and correction procedures and wordings according to the teacher guide
        b. Record errors for individual and group.

c. Provide individual turns

7. Sentences and Stories (5 minutes)
    a. Follow model-lead-test model and correction procedures and wordings according to the teacher guide
    b. Record errors for individual and group.
    c. Provide individual turns
    d. Monitor students work
8. Spelling (5 minutes)
    a. Follow model-lead-test model and correction procedures and wordings according to the teacher guide
    b. Record errors for individual and group.
    c. Provide individual turns
    d. Monitor students work
    e. Complete work check with students
9. Practice Activity 1 (5 minutes)
    a. Follow model-lead-test model and correction procedures and wordings according to the teacher guide
    b. Record errors for individual and group.
    c. Provide individual turns
    d. Monitor students work
    e. Complete work check with students
10. Practice Activity 2 (5 minutes)
    a. Follow model-lead-test model and correction procedures and wordings according to the teacher guide
    b. Record errors for individual and group.
    c. Provide individual turns
    d. Monitor students work
    e. Complete work check with students
11. Oral Reading Fluency Test (individual student during independent practice activity time)
    a. time 1 minute for one reading passage
    b. record scores

C. Lesson Closure/Wrap-Up (2 minutes)
    1. Provide positive feedbacks on students' performance
    2. Have students summarize their reward chart (e.g. color spots and exchange stickers)
    3. Summarize collaborative group reward points
    4. Instructional game time or craft time if the group earn designated points

D. Monitoring & Evaluation
    1. Data will be collected daily for each student. Data collection will occur throughout the lesson as described
    2. Refer to student's individual goals/objectives
    3. Refer to daily data sheets.
    4. Criteria for goals for this lesson is as follows:
        a. 100% accuracy for isolated sounds and vocabulary reading
        b. 85% accuracy for reading comprehension (1 error)
        c. 100% accuracy for independently activity with no verbal prompts.

APPENDIX M

PHONICS FOR READING INTEGRITY CHECKLIST

Interrater Reliability? Yes or No
Reliability Observer: _____

Phonics for Reading Level 1 Integrity Checklist
Project CIRCUITS 2004

Interventionist: _____ School: _____

Observer: _____ Date: _____

Number of Students in Group Observed: _____ Day of Intervention: _____

Start Time (Clock Time): _____ **Stop Time (Clock Time):** _____

Phonics for Reading Lesson #: _____ Group ID Number: _____

Lesson Introduction (bulleted activities)				
Skill	*Level of Implementation* *High*	*Medium*	*Low*	*Comments*
Follows procedures in lesson	2	1	0	
Follows wording in lesson	2	1	0	
Provides individual turns when specified	2	1	0	
Uses error correction appropriately.	2	1	0	
New Words				
Follows procedures in lesson	2	1	0	
Follows wording in lesson	2	1	0	
Provides individual turns when specified	2	1	0	
Uses error correction appropriately.	2	1	0	
Teacher monitors students work	2	1	0	
Review Words				
Follows procedures in lesson	2	1	0	
Follows wording in lesson	2	1	0	
Provides individual turns when specified	2	1	0	
Uses error correction appropriately.	2	1	0	
Sight Words				
Follows procedures in lesson	2	1	0	
Follows wording in lesson	2	1	0	
Provides individual turns when specified	2	1	0	
Uses error correction appropriately.	2	1	0	
Challenge Words				
Follows procedures in lesson	2	1	0	
Follows wording in lesson	2	1	0	
Provides individual turns when specified	2	1	0	
Uses error correction appropriately.	2	1	0	

Interrater Reliability? Yes or No
Reliability Observer: _____

Part B: Sentences and Stories				
Skill	*Level of Implementation* *High*	*Medium*	*Low*	*Comments*
Follows procedures in lesson	2	1	0	
Follows wording in lesson	2	1	0	
Provides individual turns when specified	2	1	0	
Teacher monitors student work	2	1	0	
Uses error correction appropriately.	2	1	0	
Part C: Spelling				
Skill	*Level of Implementation* *High*	*Medium*	*Low*	*Comments*
Follows procedures in lesson	2	1	0	
Follows wording in lesson	2	1	0	
Provides individual turns when specified	2	1	0	
Teacher monitors student work	2	1	0	
Uses error correction appropriately.	2	1	0	
Part D: Practice Activity 1				
Skill	*Level of Implementation* *High*	*Medium*	*Low*	*Comments*
Follows procedures in lesson	2	1	0	
Follows wording in lesson	2	1	0	
Provides individual turns when specified	2	1	0	
Teacher monitors student work	2	1	0	
Uses error correction appropriately.	2	1	0	
Completes work check with students	2	1	0	
Part E: Practice Activity 2				
Skill	*Level of Implementation* *High*	*Medium*	*Low*	*Comments*
Follows procedures in lesson	2	1	0	
Follows wording in lesson	2	1	0	
Provides individual turns when specified	2	1	0	
Teacher monitors student work	2	1	0	
Uses error correction appropriately.	2	1	0	
Completes work check with students	2	1	0	

Total Time of Instruction (Stopwatch): _____

Interrater Reliability? Yes or No
Reliability Observer: _____

GENERAL OBSERVATIONS				
Skill	*Level of Implementation* *High*	*Medium*	*Low*	*Comments*
Teacher uses clear signals (verbal and physical)	2	1	0	
Models skills/strategies appropriately and with ease.	2	1	0	
Provides student adequate think time.	2	1	0	
Moves quickly from one activity to the next.	2	1	0	
Maintains good pacing.	2	1	0	
Ensures students are firm on content prior to moving forward.	2	1	0	
Student is highly engaged in lesson.	2	1	0	
Teacher encourages student effort.	2	1	0	
Teacher completes all parts of lesson.	2	1	0	
Student success rate is high.	2	1	0	

Observation Notes:

_____

_____

_____

_____

_____

_____

_____

_____

_____

APPENDIX N

BEHAVIOR SUPPORT PLANS

KENSO
Behavior Support Plan for Kenso (KS)

Statement:

During reading tasks, Kenso gets out of seat, makes excuses to leave the classroom, asks for break, plays with materials, and looks out and away from tasks to avoid reading tasks. The behavior is more likely when he returns from recess, when the tasks are difficult, and when the classroom instruction is not explicit.

Student: Kenso Year: 5	Date: June 11, 2008 School: _____
Behavior Support Team:	EAL Teachers EAL Coordinator Behavior support coordinator

1. What does the behavior look like?	Disengaged behavior: • Get out of seat • Ask for break • Make excuses to leave classroom • Play with materials • Look out and away from tasks
2. What seems to trigger the problem behavior?	• His DORF benchmark scores indicated difficulty reading sounds and words. (Median = 43 CWPM and 7 errors). Problem behavior was likely to occur during reading tasks that required knowledge about comprehension and vocabularies. When he was asked to complete these tasks independently, problem behavior was more likely to increase (e.g. asking to leave classroom, playing with materials, looking away). His behaviors decreased when he worked one-on-one with teacher (e.g. during guided reading). When there was no expectation for him, he tended to engage in behaviors not related to academic works (e.g. put his face down on the table while waiting for other students to finish their tasks).
3. What typically happens immediately after the problem behavior?	• Teacher looked at him, called his name and prompted him to get back to work • Teacher asked him to answer a few questions before leaving the classroom (incase he asked permission to leave class)

	• No response/attention for desired behaviors • Avoid tasks
4. What events, conditions, or activities make the problem behavior worse?	• Come back from break

5. Given the above information, what best describes the situation?	Setting Event	Antecedent	Behavior	Maintaining Consequence
	Back from break	Difficult task demands Class instruction is not explicit.	Getting out of seat, making excuses to leave classroom and ask for break, looking out and away from task, playing with materials	Avoid tasks

6. What is the expected behavior for this time and place? What would be an acceptable alternative behavior?	<u>Expected:</u> • Kenso will stay on task: engaging in and completing tasks as assinged, following teacher instructions, focusing only on his own assigned work, and raising hand to request assistence from teacher <u>Alternative:</u> • Follow academic and behavior rules according to Phonics for Reading Program • Kenso can request only one break time per session • Choose to work in group or in pair

<table>
<tr><td rowspan="2">7. What positive feedback can be given when expected behavior occurs?</td><td>What</td><td>When</td><td>Who</td></tr>
<tr><td>Stickers counted towards House Point (based on the school rewarding system)

Specific praises</td><td>Every EAL session</td><td>EAL teachers</td></tr>
<tr><td rowspan="2">8. What can be done to increase the occurrence of expected behavior?</td><td colspan="3">Antecedent Strategies

• Modified the class time and instruction to support reading at his appropriate instructional level
• Follow Phonics for Reading teacher directed program in 50 minutes each, 5 days per week
o The program provided close teacher's monitoring and explicit instruction
o The content built on phonics skill that the student needs to decode words and achieve fluency and accuracy
• Provide clear models of lesson objectives, including his response expectations, reinforcement system (how he will be rewarded with sticker and the reward will be removed), clear feedback to student on his errors and misbehavior.
• Change seating arrangement for the group to sit facing the teacher and blackboard in the same row. Kwan will sit in the middle to separate the two boys.</td></tr>
<tr><td colspan="3">Teaching Strategies
• Teach Kenso expectations during tasks
• Teach him to properly ask for break or request for assistance from teacher
• Establish positive reinforcement system (e.g., rewards, privileges, free time)
o Sticker
o House Point</td></tr>
</table>

	Reminders/Prompts
	
	• Provide regular prompts for on-task behavior
	  o "By 10:15, you should have question #2 done"
	  o "Raise your hands if you need help"
	
	• Immediately acknowledge and respond specifically to appropriate behaviors and alternative behaviors
	  o "thank you for raising your hand to ask for help"
	  o "great job completing question 2!"
	
	• Provide frequent positive feedback (praises, pat in the back, nominate her as good example to the whole class) when observing Kenso following the rules and stay on task.
	
	• Use correction procedures when observing Kenso engaging in inappropriate behaviors
	  o "Remember we will say the sound together"
	  o "Our rule is to stay on your seat" "What should I do if you get out of seat?" (e.g. taking points off)
	
	• When Kenso engages in disengaged behaviors, he may loose his reward (sticker)

9. How will you monitor student progress?	• Weekly progress reports/observation • Oral reading fluency test • Classroom observation for behavior and engagement • Contextual Fit Questionnaire for teachers

10. When will you review student progress?	Date(s) Reviewed	Effectiveness
	Review 1st- July 3, 2008 2nd- on going with teachers 3rd- End of study	☐ Very effective ☐ Somewhat effective ⇨revise/improve ☐ Not effective ⇨request assistance from behavior support team

KWAN
Behavior Support Plan for Kwan (KK)

Statement:

During reading tasks, Kwan looks out and away from her tasks, does not respond to request and question, and/or withdraws from activities to avoid reading tasks. The behavior is more likely when the classroom instruction is not explicit.

Student: Kwan	Date: June 11, 2008
Year: 5	School: _____
Behavior Support Team:	EAL Teachers EAL Coordinator Behavior support coordinator

1. What does the behavior look like?	Disengaged behavior: • Look out and away from tasks • Not respond to requests and questions • Withdraw from activities
2. What seems to trigger the problem behavior?	• Her DORF benchmark scores indicated significant difficulty reading sounds and words. (Median = 58 CWPM and 19 errors). Problem behavior was likely to occur during reading tasks that required comprehension and grammar rules, and activities that required an individual or group response (e.g. during teacher' presentation on grammar rules). When the teacher asked questions that require comprehension, she did not give the answer. She looked out or kept silent. When she was asked to complete her tasks independently, she mostly stayed engaged and did her task in silence. However, the work product indicated that she failed to follow the direction. It is difficult to tell whether she was responding to questions since she has soft voice and usually whisper the answer.
3. What typically happens immediately after the problem behavior?	• No response/attention for desired behaviors • Avoid tasks

4. What events, conditions, or activities make the problem behavior worse?	N/A

5. Given the above information, what best describes the situation?	Setting Event	Antecedent	Behavior	Maintaining Consequence
	N/A	Unstructured time Difficult task demands Class instruction is not explicit	Looking out and away from her task, not responding to question, and withdrawing from activities	Avoid tasks

6. What is the expected behavior for this time and place? What would be an acceptable alternative behavior?	Expected: • Kwan will stay on task: engaging in and completing tasks as assinged, following teacher instructions, focusing only on her own assigned work, and raising hand to request assistence from teacher Alternative: • Follow academic and behavior rules according to Phonics for Reading Program • Ask for break or request for assistance from teacher • Choose to work in group or in pair

<table>
<tr><td rowspan="2">7. What positive feedback can be given when expected behavior occurs?</td><td>What</td><td>When</td><td>Who</td></tr>
<tr><td>Stickers counted towards House Point (based on the school rewarding system)

Specific praises</td><td>Every session</td><td>EAL teachers</td></tr>
<tr><td rowspan="2">8. What can be done to increase the occurrence of expected behavior?</td><td colspan="3">Antecedent Strategies

• Modified the class time and instruction to support reading at her appropriate instructional level
• Follow Phonics for Reading teacher directed program in 50 minutes each, 4 days per week
• Provide explicit behavior expectations and instruction during task
• Change seating arrangement for the group to sit facing the teacher and blackboard in the same roll. Kwan will sit in the middle.</td></tr>
<tr><td colspan="3">Teaching Strategies

• Teach Kwan expectations during tasks
• Teach her to request for assistance from teacher by raising hand
• Establish positive reinforcement system (e.g., rewards, privileges, free time)
o Sticker
o House Point</td></tr>
</table>

	Reminders/Prompts
	• Provide regular prompts for on-task behavior
	  ○ "By 10:15, you should have question #2 done"
	  ○ "Raise your hands if you need help"
	• Immediately acknowledge and respond specifically to appropriate behaviors and alternative behaviors
	  ○ "thank you for raising your hand to ask for help"
	  ○ "great job staying on task!"
	• Provide frequent positive feedback (praises, pat in the back, nominate her as good example to the whole class) when observing Kwan following the rules and stay on task.
	• Use correction procedures when observing Kwan engaging in inappropriate behaviors
	  ○ "Remember we will say the sound together"
	  ○ "Our rule is to talk only in English" "What should I do if you speak Thai?"
	• When Kwan engages in disengaged behaviors, she may loose her reward (sticker)

9. How will you monitor student progress?	• Weekly progress reports/observation • Oral reading fluency test • Classroom observation for behavior and engagement • Contextual Fit Questionnaire for teachers

	Date(s) Reviewed	Effectiveness
10. When will you review student progress?	Review 1st- July 3, 2008 2nd- on going with teachers 3rd- End of study	☐ Very effective ☐ Somewhat effective ⇨revise/improve ☐ Not effective ⇨request assistance from behavior support team

KHUN
Behavior Support Plan for Khun (KH)

Statement:

During unstructured reading tasks, Khun refuses to work on task, gets out of seat, plays with materials and looks out and away from tasks to avoid doing his reading tasks. The behavior is more likely when he has to adjust to the new school environment. The behavior increases when the tasks are difficult and when the classroom instruction is not explicit.

Student: Khun Year: 5	Date: June 11, 2008 School: _____
Behavior Support Team:	EAL Teachers EAL Coordinator Behavior support coordinator

1. What does the behavior look like?	Disengaged behavior: • Refuse to work • Get out of seat • Play with materials • Look out and away from tasks
2. What seems to trigger the problem behavior?	• Khun's ORF benchmark scores indicated that he had significant difficulty with reading sounds and words (Median = 28 error 8). Problem behavior occurred when the tasks require skills in reading comprehension and grammar rules. His English reading background was unknown. However, it is obvious that the reading materials were higher than his level. Teacher's and peer attention did not have effect on the behavior.
3. What typically happens immediately after the problem behavior?	• Teacher prompted him to get back to work-calling his name and pointing to the tasks • No response—teacher worked with other students while Khun turned his head back and did not do the task • No response/attention for desired behaviors • Avoid tasks

4. What events, conditions, or activities make the problem behavior worse?	• He is new to the school and the EAL group

5. Given the above information, what best describes the situation?	Setting Event	Antecedent	Behavior	Maintaining Consequence
	New to the school and EAL group	Unstructured time Difficult task demands Class instruction is not explicit	Refusing to work on tasks, getting out of seat, playing with materials, and looking out and away from tasks	Avoid tasks

6. What is the expected behavior for this time and place? What would be an acceptable alternative behavior?	<u>Expected:</u> • Khun will stay on task: engaging in and completing tasks as assinged, following teacher instructions, focusing only on hisown assigned work, and raising hand to request assistence from teacher <u>Alternative:</u> • Follow academic and behavior rules according to Phonics for Reading Program • Ask for break or request for assistance from teacher • Choose to work in group or in pair

<table>
<tr><td rowspan="2">. What positive feedback can be given when expected behavior occurs?</td><td>What</td><td>When</td><td>Who</td></tr>
<tr><td>Stickers counted towards House Point (based on the school rewarding system)

Specific praises</td><td>Every session</td><td>EAL teachers</td></tr>
<tr><td rowspan="2">8. What can be done to increase the occurrence of expected behavior?</td><td colspan="3">Antecedent Strategies
• Modified the class time and instruction to support reading at his appropriate instructional level
• Follow Phonics for Reading teacher directed program in 50 minutes each, 4 days per week
o The program provided close teacher's monitoring and explicit instruction
o The content built on phonics skill that the student needs to decode words and achieve fluency and accuracy

• Provide clear models of lesson objectives, including his response expectations, reinforcement system (how he will be rewarded with sticker and the reward will be removed), clear feedback to student on his errors and misbehavior.
• Change seating arrangement for the group to sit facing the teacher and blackboard in the same row. Kwan will sit in the middle to separate the two boys.</td></tr>
<tr><td colspan="3">Teaching Strategies
• Teach Khun expectations during tasks:
• Teach him to ask for break ore request for assistance from teacher
• Establish positive reinforcement system (e.g., rewards, privileges, free time)
o Sticker
o House Point</td></tr>
</table>

	Reminders/Prompts
	• Provide regular prompts for on-task behavior
	  o "By 10:15, you should have question #2 done"
	  o "Raise your hands if you need help"
	
	• Immediately acknowledge and respond specifically to appropriate behaviors and alternative behaviors
	  o "thank you for raising your hand to ask for help"
	  o "great job completing question 2!"
	
	• Provide frequent positive feedback (praises, pat in the back, nominate her as good example to the whole class) when observing Khun following the rules and stay on task.
	
	• Use correction procedures when observing Khun engaging in inappropriate behaviors
	  o "Remember we will say the sound together"
	  o "Our rule is to stay on your task" "What should I do if you keep playing with your pencil?"
	
	• When Khun engages in disengaged behaviors, he may loose his reward (sticker)

9. How will you monitor student progress?	• Weekly progress reports/observation • Oral reading fluency test • Classroom observation for behavior and engagement • Contextual Fit Questionnaire for teachers

	Date(s) Reviewed	Effectiveness
10. When will you review student progress?	Review 1st- July 3, 2008 2nd- on going with teachers 3rd- End of study	☐ Very effective ☐ Somewhat effective ⇨revise/improve ☐ Not effective ⇨request assistance from behavior support team

SALIM
Behavior Support Plan for Salim (SI)

Statement:

During unstructured reading tasks, Salim waits to be told what to do, does not respond to question and withdraw from class activities to avoid doing task. He also copies his peer's work. The behavior is more likely when the classroom instruction is not explicit.

Student: Salim	Date: June 11, 2008
Year: 4	School: _____
Behavior Support Team:	EAL teachers EAL Coordinator Behavior support coordinator

1. What does the behavior look like?	Disengaged behavior: waits to be told what to do, does not respond to question and withdraw from class activities to avoid doing task, copies his peers' work

2. What seems to trigger the problem behavior?	• Difficult task demand • Independent work • Class instruction is not explicit • Unstructured time

3. What typically happens immediately after the problem behavior?	• Teacher redirected him to do this own work • No attention from teacher and peer • No response/attention for desired behaviors • Avoid tasks
4. What events, conditions, or activities make the problem behavior worse?	• N/A

5. Given the above information, what best describes the situation?	Setting Event	Antecedent	Behavior	Maintaining Consequence
	N/A	Hard tasks/independent and unstructured work Class instruction is not explicit	Waits to be told what to do, does not respond to question and withdraw from class activities to avoid doing task, copies his peer's work	Avoid tasks

6. What is the expected behavior for this time and place? What would be an acceptable alternative behavior?	<u>Expected:</u> • Salim will stay on his own task: engaging in and completing tasks as assinged, following teacher instructions, focusing only on his own assigned work, and raising hand to request assistence from teacher <u>Alternative:</u> • Follow behavior rules • Ask for break or request for assistance from teacher • Choose to work in group or in pair • Choose alternative tasks

7. What positive feedback can be given when expected behavior occurs?	What	When	Who
	Smiley faces counted towards House Point ☺ Specific praises	Each session	EAL teachers

8. What can be done to increase the occurrence of expected behavior?	Antecedent Strategies
	
	• Modified the class time and instruction to support reading at his appropriate instructional level
	• Follow Phonics for Reading teacher directed program in 50 minutes each, 4 days per week
	  o The program provided close teacher's monitoring and explicit instruction
	  o The content built on phonics skill that the student needs to decode words and achieve fluency and accuracy
	• Provide clear models of lesson objectives, including his response expectations, reinforcement system (how he will be rewarded with smiley faces and how the reward will be removed), clear feedback to student on his errors and misbehavior.

	Teaching Strategies
	
	• Teach Salim expectations during tasks
	• Teach him to ask for break ore request for assistance from teacher
	• Establish positive reinforcement system (e.g., rewards, privileges, free time)
	  o Smiley faces ☺ /filling the chart
	  o House Point

	Reminders/Prompts
	
	• Provide regular prompts for on-task behavior
	  o "By 10:15, you should have question #2 done"
	  o "Raise your hands if you need help"
	
	• Immediately acknowledge and respond specifically to appropriate behaviors and alternative behaviors
	  o "thank you for raising your hand to ask for help"
	  o "great job completing question 2!"
	
	• Provide frequent positive feedback (praises, pat in the back, nominate her as good example to the whole class) when observing Salim following the rules and stay on task.
	
	• Use correction procedures when observing Salim engaging in inappropriate behaviors
	  o "Remember we will say the sound together"
	
	• When Salim engages in disengaged behaviors, he may loose his reward (sticker)

9. How will you monitor student progress?	• Weekly progress reports/observation • Oral reading fluency test • Classroom observation for behavior and engagement • Contextual Fit Questionnaire for teachers

	Date(s) Reviewed	*Effectiveness*
10. When will you review student progress?	Review 1st- July 3, 2008 2nd- on going with teachers 3rd- End of study	☐ Very effective ☐ Somewhat effective ⇨revise/improve ☐ Not effective ⇨request assistance from behavior support team

GUS
Behavior Support Plan for Gus (GU)

Statement:

During reading tasks, Gus talks to peers, laughs, sings, makes noises, looks out and away to avoid doing his reading tasks. The behavior is most likely to occur during independent and unstructured tasks.

Student: Gus Year: 4	Date: June 11, 2008 School: _____
Behavior Support Team:	EAl teachers EAL Coordinator Behavior support coordinator

1. What does the behavior look like?	Disengaged and disruptive behavior: talks to peers, laughs, sings, makes noises, looks out and away from tasks to avoid doing his reading tasks.

2. What seems to trigger the problem behavior?	• Difficult task demand • Independent work • Class instruction is not explicit • Unstructured time

3. What typically happens immediately after the problem behavior?	• Teacher's reprimand—prompted Gus to get back to work • No response/attention for desired behaviors • Avoid tasks
4. What events, conditions, or activities make the problem behavior worse?	• N/A

5. Given the above information, what best describes the situation?	Setting Event	Antecedent	Behavior	Maintaining Consequence
	N/A	Unstructured/ independent tasks Difficult task demands	Talks to peers, laughs, sings, makes noises, looks out and away from tasks	Avoid tasks

6. What is the expected behavior for this time and place? What would be an acceptable alternative behavior?	Expected: • Gus will stay on task: engaging in and completing tasks as assinged, following teacher instructions, focusing only on his own assigned work, and raising hand to request assistence from teacher Alternative: • Follow academic and behavior rules according to Phonics for Reading Program • Ask for break or request for assistance from teacher • Choose to work in group or in pair

7. What positive feedback can be given when expected behavior occurs?	What	When	Who
	Smiley faces counted towards House Point ☺ (based on the school rewarding system) Specific praises	Every session	EAL teachers

8. What can be done to increase the occurrence of expected behavior?	Antecedent Strategies
	
	• Modified the class time and instruction to support reading at his appropriate instructional level
	• Follow Phonics for Reading teacher directed program in 50 minutes each, 4 days per week and 1 library reading session
	  o The program provided close teacher's monitoring and explicit instruction
	  o The content built on phonics skill that the student needs to decode words and achieve fluency and accuracy
	
	• Provide clear models of lesson objectives, including his response expectations, reinforcement system (how he will be rewarded with smiley faces and how the reward will be removed), clear feedback to student on his errors and misbehavior.

	Teaching Strategies
	
	• Teach Gus expectations during tasks:
	• Teach him to ask for break ore request for assistance from teacher
	• Establish positive reinforcement system (e.g., rewards, privileges, free time)
	  o Smiley faces ☺ /filling the chart
	  o House Point

	Reminders/Prompts
	
	• Provide regular prompts for on-task behavior
	  ○ "By 10:15, you should have question #2 done"
	  ○ "Raise your hands if you need help"
	
	• Immediately acknowledge and respond specifically to appropriate behaviors and alternative behaviors
	  ○ "thank you for raising your hand to ask for help"
	  ○ "great job completing question 2!"
	
	• Provide frequent positive feedback (praises, pat in the back, nominate her as good example to the whole class) when observing Gus following the rules and stay on task.
	
	• Use correction procedures when observing Gus engaging in inappropriate behaviors
	  ○ "Remember we will say the sound together"
	  ○ "Our rule is to talk only in English" "What should I do if you speak Thai?"
	
	• When Gus engages in disengaged and disruptive behaviors, he may loose his reward (sticker)

9. How will you monitor student progress?	• Weekly progress reports/observation • Oral reading fluency test • Classroom observation for behavior and engagement • Contextual Fit Questionnaire for teachers

	Date(s) Reviewed	Effectiveness
10. When will you review student progress?	Review 1st- July 3, 2008 2nd- on going with teachers 3rd- End of study	☐ Very effective ☐ Somewhat effective ⇨revise/improve ☐ Not effective ⇨request assistance from behavior support team

Grade 3 EAL Group
Target to Achieve in Lessons

Everyone will:

1. Try to stay focused on the task set
2. Not disrupt the others in the group by being silly or interrupting
3. Take my studies seriously and try to improve
4. Listen to the advice given to me by the teacher and try to follow it
5. Practice my phonics to improve my reading skills
6. If I do not understand a word or instructions I will ASK.

Salim: Will try to work independently of others
Gus: Will try not to rush the tasks taking care to complete it properly
Sam: Will try to complete his tasks more quickly

If I succeed I the following:-

1. Arriving at the lesson pm toe and be organised without being told
2. Stay completely focused on each task
3. Behave in a sensible manner during lessons-not shout out, laugh at others, distract other etc.
4. Complete a task to the best of my ability with the minimum amount of help
5. Tidy up at the end of the lesson without any fuss

I will get a smiley face each time I succeed, if I get____smiley faces in a lesson I will get one house point.

Smiley Faces and House Points Sheet

Name_____ Week Beginning_____

Day	Smiley Faces ☺	Total	House Points
Monday			
Tuesday			
Wednesday			
Thursday			

APPENDIX O

BEHAVIOR SUPPORT PLAN CRITICAL FEATURES SCORING GUIDE

Behavior Support Plan # _____: *Student Name*

Critical Elements of the Behavior Support Plan	**No**	**Yes**
Operational description of problem behavior	0	1
Operational description of problem behavior *is consistent with hypothesis statement in the FBA*	0	1
Identification of the antecedent(s) to problem behavior	0	1
Identification of the antecedent(s) *is consistent with hypothesis statement in the FBA*	0	1
Identification of the maintaining function of the problem behavior	0	1
Identification of the maintaining function of the problem behavior *is consistent with hypothesis statement in the FBA*	0	1
Strategies for preventing the problem behavior(s) from occurring	0	1
Strategies are consistent with hypothesis statement in the FBA	0	1
Instructional strategies for teaching "alternative" behaviors/routines	0	1
Strategies are *consistent with hypothesis statement in the FBA*	0	1
Strategies for minimizing rewards for problem behavior	0	1
Strategies are *consistent with hypothesis statement in the FBA*	0	1
Positive reinforcement planned for desired behavior	0	1
Strategies are *consistent with hypothesis statement in the FBA*	0	1
The person(s) responsible for the implementation of each intervention has been identified	0	1
Documentation of a formal and regular (at least twice a month) system for assessing the fidelity with which the plan has been implemented is clear	0	1
Documentation of a formal and regular (at least twice a month) system for assessing the impact of the plan on student outcomes is clear	0	1
Technical adequacy score for this behavior support plan	___/17	

APPENDIX P

INDIVIDUALIZED INTERVENTIONS CRITICAL FEATURES CHECKLIST

Intensive Individualized Interventions Critical Features Checklist

Used for scoring I-SSET Part III, Feature H.

FBA includes:	Plan #1	Plan #2	Plan #3	Plan #4	Plan #5	Mean	Range
1. Brief description of student and his/her goals and strengths?	Y N	Y N	Y N	Y N	Y N		
2. Operational description of problem behavior(s) that are observable & countable?	Y N	Y N	Y N	Y N	Y N		
3. Identification of routines where problem behavior is most and least likely to occur?	Y N	Y N	Y N	Y N	Y N		
4. Functional behavior assessment summary statement that includes problem behavior, predictors, and maintaining consequence?	Y N	Y N	Y N	Y N	Y N		
5. Alternative &/or desired behaviors are defined and consistent with FBA summary statement (competing pathway)	Y N	Y N	Y N	Y N	Y N		
6. Confirmation data is available and includes 2 or more interviews with a high rating of accuracy and direct observation data (ABC chart, Scatter Plot, FAOF, or equivalent)	Y N	Y N	Y N	Y N	Y N		
Total yes responses							

Behavior Support Plan Includes:	Plan #1	Plan #2	Plan #3	Plan #4	Plan #5	Mean	Range
1. Operational description of problem behavior (or attached FBA)?	Y N	Y N	Y N	Y N	Y N		
2. FBA summary statement (or attached FBA)?	Y N	Y N	Y N	Y N	Y N		
3. a. Strategies for preventing the problem behavior(s) from occurring?	Y N	Y N	Y N	Y N	Y N		
b. Strategies are consistent with the FBA results?	Y N	Y N	Y N	Y N	Y N		
4. a. Instructional strategies for teaching "alternative" behaviors/routines?	Y N	Y N	Y N	Y N	Y N		
b. Strategies are consistent with the FBA results?	Y N	Y N	Y N	Y N	Y N		
5. a. Strategies for minimizing rewards for problem behaviors?	Y N	Y N	Y N	Y N	Y N		
b. Strategies are consistent with the FBA results?	Y N	Y N	Y N	Y N	Y N		
6. a. Positive reinforcement planned for desired behavior(s)?	Y N	Y N	Y N	Y N	Y N		
b. Strategies are consistent with the FBA results?	Y N	Y N	Y N	Y N	Y N		
7. If punishment procedures are documented, are they indicated?	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA		
8. Safety/crisis procedures due to potential for physical harm to self or others are documented, if needed?	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA		
9. A formal and regular (at least twice a month) system for assessing the fidelity with which the plan of support is being implemented?	Y N	Y N	Y N	Y N	Y N		
10. A formal and regular (at least twice a month) system for assessing the impact of the plan on student outcomes?	Y N	Y N	Y N	Y N	Y N		
Total yes responses							

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