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| Author(s) | Jen Yi Li and Jia Yin Chong |
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# Social Skills of Mainstream Kindergarten Children with Special Needs in Singapore

Jen Yi LI, EdD
Jia Yin CHONG
Office of Education Research
National Institute of Education
Nanyang Technological University, Singapore

## Abstract

*There is an increase in the percentage of children with special needs enrolling in both segregated special schools and mainstream kindergartens. This study compares the social development of preschoolers who have intellectual disabilities (with and without additional enrollment in mainstream kindergarten) with mainstream peers. The results of a demographic questionnaire administered to parents, and the Social Skills Rating System (SSRS) form issued to the parents of children at preschool level, suggest that preschoolers who attend additional mainstream kindergartens display more appropriate social skills than their peers who attend special education only. An inclusive educational kindergarten experience is found to be beneficial to children with special needs, as this environment provides additional opportunities for experiential learning, social interaction and social integration.*

*Keywords: experiential learning, inclusive education, kindergarten children, social skills, special needs,*

## Introduction

In recent years, there has been a significant rise in the number of children with special needs, and specifically, with intellectual disabilities. Given the increase of identifiable biological and environmental risk factors associated with intellectual disability, it is estimated that up to 780 million children worldwide are affected (Olness, 2003). In Singapore, an estimated 15,200 children below the age of 18 are identified as having some form of intellectual disability (Chua & Basu, 2007). In the face of these statistics, the educational needs of young children with intellectual disabilities are a major global concern (Guralnick, 2005).

Within the context of Singapore, this phenomenon has prompted a growing interest in and awareness of the unique learning needs of these children. At present, there are 21 special schools in Singapore catering to the needs of children with a wide range of disabilities, including those who have intellectual disabilities. For children with intellectual or developmental disability, special education provides individualized programs with a strong emphasis on functional academic, self-help and daily living skills. Under the current system, children with intellectual disabilities are provided with the necessary early intervention educational services in a segregated environment (Quah, 1998).

## Literature Review

In Singapore, children with intellectual disabilities were excluded in past efforts toward integrating students with disabilities into mainstream education (mostly in a school setting), due to concerns that these students would be unable to cope with the academic demands (Clarke & Nomanbhoy, 1998). While integration into mainstream schools is a common practice in many Western countries, initiatives to integrate children with special needs in a regular classroom context remain at an early stage in Singapore. Nevertheless, studies on integration report positive attitudes from teachers and parents, which are indicative of a conducive climate for integration at the preschool level (Clark & Nomanbhoy, 1998; Quah, 1998), and a growing number of mainstream preschools and childcare centers are admitting children with intellectual disabilities.

One such preschool is the *Integrated Child-Care Program* (ICCP), an inclusive program offered by the Presbyterian Community Services for children with special needs between the ages of two and eight, allowing these children to learn alongside peers with differing levels of ability. The existence of preschools such as this, as well as anecdotal and informal information, indicates that a growing number of parents have opted for the additional mainstream curriculum for their children with special needs.

Preschool programs in Singapore place emphasis on basic skills required for language, literacy, reading, writing, speaking, listening, mathematics, science, social skills and environmental awareness, while increasingly devoting attention to also maximizing any opportunities for purposive play (Sharpe, 1998). The mainstream preschool curriculum in Singapore has a common goal of promoting skills in pre-reading, mathematics and (most importantly), producing an environment conducive to positive socialization (Honig & Lim, 1998). In general, mainstream preschool centres are deemed to be an environment where the intellectual, emotional and social development of children with disabilities can be enhanced (Clarke & Nomanbhoy, 1998). Evidently, the mainstream curriculum tailors to the needs of preschool children (with or without disabilities) by emphasizing the cultivation of social skills, which are seen as having equal importance as the learning of academic concepts.

To explore the benefits of integrating young children with intellectual disabilities, it is essential to understand their learning needs. Highly limited interactions with peers are indicative of impairments in the social functioning of children with disability (Guralnick & Weinhouse, 1984). Research shows that children with disabilities tend to engage in social interactions with peers less often than typically developing children, even within an inclusive classroom (Brown et al., 1999). In fact, numerous studies highlight the differences in the frequency of social interactions between children with disabilities and their same-age peers, as well as differences in levels of maturity and types of social behavior (Odom et al., 1992). In particular, impairment of social skills is a primary concern for parents and teachers of children with developmental disabilities (Choi, 2000).

According to Gresham and Elliot (1984), 'social skills' refer to the learned socially acceptable behaviors that facilitate effective interactions with others. Odom et al. (1992) conceptualize social competence as the observable and measurable aspects of social behaviors when a targeted

child interacts with others. In this light, learning social skills involves a highly interactive process. The acquisition of these skills can enable successful interpersonal relationships with others, which is considered to be a significant developmental milestone during childhood (Gresham & Elliot, 1985). In accordance with this perspective, there is growing evidence that the development and acquisition of social skills in children is crucial to their overall developmental outcomes.

In addition to direct teaching, it has been widely documented that children with disabilities learn appropriate social skills through the incidental learning that takes place alongside typically developing peers. Hart and Risley (1982) define incidental teaching as the teaching that occurs whenever the teacher makes the best out of a situation that naturally calls for a reinforcing response, by prompting and praising that response. Research suggests that incidental teaching can contribute to the acquisition of, and more importantly, the generalization of social skills (Oswald et al., 1990). With an emphasis on naturally occurring behaviors, incidental learning takes place unintentionally and spontaneously in a naturalistic environment. The implication of incidental learning for children with disabilities within a mainstream classroom is that teachers as well as peers can facilitate the learning of social behaviors through daily activities. By means of incidental learning, the learning experience is contextually meaningful and can be easier to grasp from a child's perspective.

Based on these findings, it can be inferred that the mainstream kindergarten experience enhance the learning for children with intellectual disabilities, particularly when they are rewarded as a result of exhibiting appropriate social behaviors. Considering that children with cognitive impairments have difficulties communicating with others (Choi, 2000), typically developing peers in the mainstream kindergarten classroom provide useful peer models for competent social behavior, as socially responsive playmates (Gulranick et al., 1995). Odom and Brown (1993) note that most early childhood programs aim to provide an ideal context where the social dynamics and activities promote the peer interactions of young children.

However, this proposition for integrated mainstream education is undermined by mixed and inconclusive findings in literature. Proponents of inclusion highlight developmental gains made by children with disabilities in inclusive classrooms. Odom (2000) reports that students with special needs in an inclusive classroom experience growth (in terms of language, cognitive and motor development) comparable to, or above, their peers in special education. Burack and Volkmar (1992) conclude that students with special needs are better able to learn, accept individual differences, interact, communicate and develop friendships when placed in an inclusive environment.

Despite these observations, researchers have argued that the distinct learning behaviors and abilities of children with disabilities affect classroom organization and reduce the overall effectiveness of the inclusive classroom. Hundert et al. (1993) note that children with disabilities in integrated kindergarten classrooms demand more of a teacher's time than their non-disabled peers. In a review of 40 studies on inclusion of children with special needs, Gresham (1984) contend that children with disabilities do not demonstrate an increase in positive interactions as a result of physical placement in mainstream classrooms. Rather, the use of direct instructional model for fostering social skills of these children is recommended. In a review of social skills

intervention programs, LeBlanc and Matson (1995) emphasize that children with disabilities will require a high degree of direct instruction in order to enhance performance in the social domain. Researchers have highlighted that, in comparison to their typically developing peers, children with disabilities rely heavily on direct instructions to learn effectively and therefore require the low teacher-student ratio of a segregated classroom.

Nevertheless, considering that the key features of the mainstream preschool curriculum in Singapore, it is worthwhile to evaluate the effect of the mainstream curriculum for children with intellectual disabilities. In the local context, the benefits of additional mainstream environment for the social development of children with intellectual disabilities have been largely unknown. The present study compares children with intellectual disabilities and typically developing preschool children in the local context to provide a deeper understanding of differences in their social development. The social development of children with special needs is conceptualized beyond their schooling environment, as the study examines child, parent and familial characteristics to provide a better understanding of the development of their social skills.

This research poses the following questions:

(a) How are demographic characteristics (such as child, parental and family characteristics) related to social skills of children with intellectual disabilities?
(b) How do children with intellectual disabilities with and without mainstream kindergarten experience differ in their social skills?
(c) In what ways do children with intellectual disabilities differ from typically developing children in the context of their social skills?

## The Study

### Method

#### *Participants*

Three different groups of children participated in this study. The first group comprised of typically developing children in mainstream kindergartens ($n$ = 34). The second and third groups comprised of children with intellectual disabilities. Specifically, the second group constituted children with disabilities enrolled in special education schools, and not attending additional mainstream kindergartens ($n$ = 22). The third group consisted of children attending special education as well as additional mainstream kindergarten ($n$ = 32).

All participating preschoolers with intellectual disabilities had been attending a special school program for a minimum of 6 months. Preschoolers who received special schooling or mainstream kindergarten for a period less than this were not included in the study, as any effects of schooling may not surface if schooling is less than six months.

Based on information provided by preschools and childcare centers, a total of 218 questionnaires were sent out to the parents of children who met the criteria for the study. The final participants consisted of children whose parents returned the questionnaires with all items completed. Around 40% of parents asked to participate consented and a total of 88 completed questionnaires were returned. Of these, 67 were from Chinese families, 16 from Malay families, 2 from Indian

families and 1 from an expatriate family (from the Philippines). The age of children ranged from 28 months to 97 months (M = 61.34, SD = 15.26).

## Instruments

### *Demographic questionnaire*

Information was collected on the identified children when their parents completed the demographical questionnaires. A series of questions yielded information about the age, gender of the child and educational background of the parents. Parents were also required to indicate the number of siblings and the age(s) of siblings in the family. In cases where the identified child had more than one sibling, only the sibling closest in age to the child was considered. This rationale was in accordance with the previous studies involving sibling-dyads (Abramovitch et al., 1987).

### *Social Skills Rating System*

The *Social Skills Rating System* (Gresham & Elliot, 1985) questionnaire consists of the Social Skills domain (subdomains include: Cooperation, Assertion, Responsibility and Self-Control) and the Problem Behaviors domain (subdomains include: Internalizing Problems, Externalizing Problems and Hyperactivity). Based on these domains, the rating scale lists 49 statements relating to specific prosocial behaviors and problem behaviors. Examples of specific prosocial behaviors include 'follows instructions', 'attempts household tasks before asking for your help'; and examples of problem behaviors include 'argues with others' and 'disturbs ongoing activities'. Parents were requested to indicate how often each child exhibits certain social skills and how important those skills are for success in their development. On 3-point Likert-type scales, parents were asked to rate 0 = *Never*, 1 = *Sometimes*, 2 = *Very Often* for the frequency of each specific skill and 0= *Not important*, 1= *Important* and 2= *Critical* for perceived importance of each behavior. From the scores on the forms, a standard score for social skills was derived (*M = 100, SD = 15*) where a higher standard score on the frequency scale indicated better social skills and a higher standard score on the importance scale indicated higher perceived importance.

### *Procedures*

To locate a pool of potential participants, admission criteria (including types of disabilities and age range of children in mainstream kindergarten and special schools in Singapore) were considered. Schools and centers whose preschool programs cater to children suitable for the objective of the current research were approached for participation in the research. The purpose of the current study was explained to the respective principals and heads of the schools and centers. The final research participants were recruited from the schools and centers who consented to participate, namely, Presbyterian (PCF) schools (Ang Mo Kio, Woodlands, Hougang and Yishun branches), Rainbow Centre, Balestier Special School, Margaret Drive Special Schools, Movement for the Intellectual Disabled in Singapore (MINDS), Jurong Gardens School and Yio Chu Kang Gardens School.

Parents of the selected subjects were approached to participate in the study via their respective form teachers. A copy of the consent form, outlining the study, was provided to each parent. Parents indicated their willingness to participate in the study on the consent forms provided. Parents were encouraged to take home the questionnaire to complete and to return the completed

questionnaires to the form teachers. Parents were also provided with the contact details of the investigator and encouraged to ask any questions or voice any concerns about the research.

## Results of the Study

To address the extent to which parent and family variables were related to the development of social skills for children with intellectual disabilities, Pearson product- moment correlations were calculated between variables. As shown in Table 1, the results of these correlations show that the correlation between age of child and problem behaviors was negatively statistically significant. The correlations of demographic variables and prosocial behaviors tended to be lower and not statistically significant.

*Table 1.*
*Correlation Matrices for Variables of Children with Intellectual Disabilities, Prosocial Behaviors and Problem Behaviors*

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Child characteristics | | | | | | | | |
| 1 Age | | | | | | | | |
| 2 Gender | .11 | | | | | | | |
| Parent and family characteristics | | | | | | | | |
| 3 Parent education | -.24 | -.05 | | | | | | |
| 4 Perceived importance of social skills | -.01 | .03 | .02 | | | | | |
| 5 Number of siblings | .28 | -.15 | -.25 | -.05 | | | | |
| 6 Age-interval between sibling-dyads | .04 | .03 | .06 | .12 | -.56 | | | |
| Social skills | | | | | | | | |
| 7 Prosocial Behaviors | .02 | -.03 | -.14 | -.03 | .11 | -.26 | | |
| 8 Problem Behaviors | -.51** | .11 | .24 | -.03 | -.04 | -.03 | -.03 | |

***p<.05*

A multiple regression analysis was conducted to evaluate how well these variables predicted prosocial behaviors. The results are presented in Table 2. The combination of variables was not significantly related to prosocial behaviors, $F$ (6, 47) = .782, $p$ >.01. Therefore, the analysis indicates that the variance of prosocial skills and behaviors cannot be significantly accounted for by variance of child, parent and family characteristics. As shown in Table 3, a regression analysis reveals that the age of child was a highly significant predictor of problem behaviors (ß = -.4.35, $p$ < .01), accounting for 34% of the variance in problem behaviors.

As presented in Table 4, the educational background of parents had a negative association with the responsibility domain ($r$ = -.31, $p$ <.05), suggesting that a high level of education in the parent resulted in the child exhibiting lesser responsibility. Furthermore, age-interval between sibling-dyads was inversely correlated with cooperation domain ($r$ = -.28, $p$ < .05). This indicates that amongst children with intellectual disabilities who have siblings, the lower the age difference between the sibling-dyads, the higher was the frequency of the identified child in demonstrating prosocial skills requiring cooperation.

*Table 2.*
*Summary of Multiple Regression Analysis for Variables on Prosocial Behaviors in Children with Intellectual Disabilities*

| Variable | *B* | *SE B* | ß |
|---|---|---|---|
| Child's age | .05 | .04 | .25 |
| Child's gender | -1.60 | -.05 | -.34 |
| Parent education | -1.22 | -.14 | -.95 |
| Perceive importance of social skills | .01 | .01 | .05 |
| Number of siblings | -1.86 | -.12 | -.62 |
| Age-interval between Siblings | -.09 | -.32 | -1.82 |

*Table 3.*
*Summary of Multiple Regression Analysis for Variables on Problem Behaviors in Children with Intellectual Disabilities*

| Variable | *B* | *SE B* | ß |
|---|---|---|---|
| Child's age | -.40 | -.57 | -4.35 |
| Child's gender | 4.47 | .22 | 1.77 |
| Parent education | .95 | .17 | 1.41 |
| Perceive importance of social skills | -.03 | -.04 | .72 |
| Number of siblings | 2.61 | .26 | .11 |
| Age-interval between Siblings | .03 | .13 | .38 |

Multiple regression analyses computed child, parent and family characteristics as independent variables using the subdomains of prosocial behaviors (cooperation, assertion, responsibility and self-control) and problem behaviors (externalizing and internalizing) as separate dependent variables. Analyses yielded non-significant results across all the subdomains.

Analyses were conducted to compare parents of children with intellectual disabilities who had enrolled their children for additional mainstream kindergarten and those who did not, in terms of parental perception regarding the importance of social skills for their children. Results found no

differences in terms of the perceived importance of social skills between the two groups of parents, $t(52) = 0.333$, $p = 0.74$.

*Table 4.*
*Correlation Matrices for Variables of Children with Intellectual Disabilities, Subscales of Prosocial Behaviors and Subscales of Problem Behaviors*

| Variables | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Prosocial Behaviors | | | | | | |
| 7 Cooperation | .22 | .09 | -.02 | -.04 | .17 | **-.28*** |
| 8 Assertion | .05 | -.04 | -.17 | -.18 | .06 | .12 |
| 9 Responsibility | .27 | .04 | **-.31*** | .02 | .14 | .17 |
| 10 Self-Control | .11 | .12 | -.20 | -.05 | .09 | .18 |
| Problem Behaviors | | | | | | |
| 11 Externalizing | -.05 | .03 | .03 | -.13 | .22 | -.24 |
| 12 Internalizing | .06 | .08 | -.20 | -.09 | .23 | -.16 |

*1: Child's age, 2: Child's gender, 3: Parents' education, 4: Perceived importance of social skills, 5: Number of siblings, 6: Age-interval between siblings*

***p <.05*

*Table 5*
*Adjusted Means of Prosocial and Problem Behaviors for Children With and Without Additional Kindergarten*

| Domains of disabilities social behaviors | Intellectual disabilities with additional kindergarten | Intellectual without additional kindergarten |
|---|---|---|
| Prosocial Behaviors | | |
| Cooperation | 7.97 | 7.82 |
| Assertion | 9.12 | 9.31 |
| Responsibility | 4.28 | 5.50 |
| Self-control | 9.86 | 10.05 |
| Total Prosocial Behaviors | 72.75 | 71.32 |
| Problem Behaviors | | |
| Externalizing | 4.71 | 4.64 |
| Internalizing | 2.03 | 2.45 |
| Total Problem Behavior | 96.22 | 90.91 |

To evaluate differences between children with intellectual disabilities with and without additional mainstream kindergarten, independent-sample t-tests were conducted. Group means are presented in Table 5. Prosocial behaviors and problem behaviours were analyzed using separate independent t-tests for children with and without additional kindergarten. Overall, the analyses yielded non-significant results for total prosocial behaviors, $t$ (52) =0.308, $p$ > .05 and total problem behaviors, $t$ (52) =0.457, $p$ >0.05. The results of these analyses indicated that, on the average, children with intellectual disabilities who attended additional mainstream education demonstrated limited social skills and problem behaviors as frequently as those without.

In response to research question three, independent sample *t*-tests were conducted to compare group differences between typically developing children and children with intellectual disabilities. As shown in Table 6, the two groups differed significantly in prosocial behaviors, $t(86)= 3.92$, $p< 0.01$. Typically developing children ($M$=86.21, $SD$=15.88) on average demonstrated a significantly higher frequency of prosocial behaviors than children with intellectual disabilities ($M$=72.17, $SD$=16.65). A one-way multivariate analysis of variances (MANOVA) was conducted to determine the differences between typically developing children and children with intellectual disabilities on the four subdomains of prosocial behaviors (cooperation, assertion, responsibility and self-control).

*Table 6.*
*Prosocial and Problem Behaviors for Typically Developing Children and Children with Intellectual Disabilities*

| Types of social skills disabilities | Typically developing children | Children with intellectual |
|---|---|---|
| Prosocial Behaviors | 86.21 | 72.17 |
| Problem Behaviors | 94.06 | 96.74 |

Significant differences were found among the two groups across the four subdomains of prosocial behaviors: Wilks's $\Lambda$=0.64, $F$ (3, 76)=11.75, $p$<0.05. Analyses of variances (ANOVA) on each dependent variable were conducted as follow-up tests to the MANOVA. The results yielded significant differences on cooperation (i.e. $F$ (4, 86)=9.15, $p$<0.05), assertion (i.e. $F$ (4, 86)=18.24, $p$<0.05) and responsibility (i.e. $F$ (4, 86) = 28.72, $p$ < 0.05). However, there was no significant difference found for self-control (i.e. $F$ (4, 86)=1.59, $p$ >0.05). This means that typically developing children demonstrated a significantly greater amount of social behavior requiring cooperation, assertion and responsibility than children with intellectual disabilities.

Results also suggested that children with intellectual disabilities exhibited social behaviors requiring self-control comparable to typically developing children. To determine any differences between typically developing children and children with intellectual disabilities on the two subdomains of problem behaviors (externalizing and internalizing), a one-way MANOVA was conducted. Table 7 presents the means on the dependent variables for the two groups. The results

yielded significant differences on externalizing behaviors, $F$ (2, 86)=3.95, $p$<0.05 between typically developing children and children with intellectual disabilities. However, there was no significant difference found for internalizing: $F$ (2, 86)=1.44, $p$>0.05.

## Discussion of the Results

For children with intellectual disabilities, the results suggest that familial characteristics are related to the prosocial and problem behaviors of children with intellectual disabilities. Firstly, the negative association between the educational background of parents and responsibility (a subdomain of prosocial behaviors) suggests that the higher the level of educational background of parents, the lower the frequency of responsible social behaviors demonstrated by the child in the responsibility domain. A child who displays a low frequency of responsible social behaviors is less obliged to complete a task or he or she is less accountable for a specific task. While this finding may be unprecedented in the literature, it can be explained within the context of Singapore. In Singapore, it is common for both parents to join the workforce to contribute to household income. In many dual-income families, care-giving roles and duties are largely assumed by domestic helpers. This phenomenon is especially prevalent in families who can afford to hire domestic helpers. Based on the current findings, it is likely that domestic helpers who perform care-giving duties will provide children with fewer opportunities to acquire responsibility, dependability or to take ownership of tasks. At this point, however, this explanation remains largely speculative. Future research should explore the link between parental education and family income in relation to social skills in children with disabilities, to draw more conclusive inference.

In this study, age-interval between sibling-dyads was shown to be inversely associated with cooperative behaviors. Specifically, children with intellectual disabilities who had typically developing siblings, tended to demonstrate proportionately more skills in cooperation when the age gap between siblings was smaller. It is possible that siblings who are closer in age may have more common goals and purposes than siblings whose ages are farther apart. As Howe and Recchia (2005) observe, siblings reciprocate and complement each other through interactions during play and even conflict. Therefore, cooperative behaviors may be learned through daily interactions with typically developing siblings, where opportunities arise for siblings to work together for a common goal or purpose.

This finding is consistent with earlier research, which suggests that interactions with siblings provide an important context for socialization (Criss & Shaw, 2005). The existing literature has highlighted the role of siblings in the development of children with a range of disabilities. The results of this study support the assertion of a positive impact of siblings on the development of social skills in children with intellectual disabilities. This finding also supports the proposition that the development of social skills in children with special needs is associated with, and thereby enhanced by, the presence of typically developing siblings (Tsao & Odom, 2006).

The association between age-interval in siblings and social behaviors underscores the potential of siblings' impact for children with intellectual disabilities. There are direct implications for intervention programs aimed at developing appropriate social skills. At present, social skills intervention programs typically involve a classroom of children with disabilities and a trained

therapist. Social skills are taught within the classroom and there is little room to perform the skills outside of the classroom. To extend the current findings into field practice, social skills interventions programs can be designed to tap into a sibling who is close in age as the role of a "partner" and the curriculum can be written with strong emphasis on role-play and activities shared between siblings. By involving a close-age sibling in the program, the child with intellectual disabilities can learn alongside the typically developing sibling and thus providing more opportunities to generalize the social skills taught beyond the classroom.

Although the study recognizes the importance of interaction with a typically developing child for children with intellectual disabilities, this study found no differences between children with additional mainstream kindergarten and those without. This finding indicates that while the additional mainstream kindergarten provides additional opportunities for social interaction with typically developing peers, a mainstream environment does not necessarily develop social skills in children with intellectual disabilities. Therefore, the speculation that additional mainstream environment will enhance the development of social skills in children with intellectual disabilities was not supported.

There are several possible explanations as to why this hypothesis was not supported. According to Bateman (2007), the optimal educational placement of children with intellectual disabilities should be an environment which strikes a balance between inclusion and appropriate specialization to meet the special needs of the population. This environment is one where the identified child can mingle alongside his typically developing peers and benefit from accommodations made to cater to his learning needs. Even though mainstream kindergartens in Singapore have taken a major step by admitting children with special needs in recent years, this mainstream environment may still be lacking in strategies to accommodate and support the unique learning needs of these students. As Gresham (1981) postulates, physical placement in the mainstream environment is not synonymous with learning. It is possible that, for children with intellectual disabilities in this study, there may be physical inclusion in the classroom without appropriate accommodation for their needs.

The lack of differences between children with intellectual disabilities with and without additional mainstream kindergarten suggest that the influence of mainstream kindergarten on children with intellectual disabilities can be undermined by a number of factors. Centers and staff may be restricted by a combination of factors, including lack of time, lack of resources and lack of prior knowledge, when providing for children with disabilities. Clearly, factors relating to classroom dynamics require further detailed examination. An area of particular importance would be the use of instructional strategies in the mainstream classroom toward catering to the learning needs of children with intellectual disabilities. If children with intellectual disabilities require a high degree of direct instructional modeling (LeBlanc & Matson, 1995), then they are likely to benefit from a classroom environment where such instructional strategies are strongly reinforced.

While there is definitely an optimistic outlook with regards to the integration of children with special needs in Singapore, there is also a pressing need to examine the mechanisms of support for children with special needs in the inclusive classroom. Specifically, the quality of teaching for preschool children with special needs requires development. To ensure quality curriculum and pedagogy, an environment for continuous learning is essential. Teachers can benefit from in-

service workshops and courses to keep themselves updated with the evidence-based research and practice.

Compared to typically developing children, children with intellectual disabilities demonstrate a significantly lower frequency of the social behaviors that require cooperation, assertiveness and responsibility. Consistent with the literature comparing behavioral problems of children with intellectual disabilities and the general population (Bereton, Tonge & Einfeld, 2006), the present study found that children with intellectual disabilities display a higher frequency of externalizing 'problem behaviors' than typically developing children. However, children with intellectual disabilities demonstrate social behaviors requiring self-control as frequently as typically developing children. The third hypothesis, therefore, which suggests differences between typically developing children and children with intellectual disabilities across all domains of social skills, is only partially supported. In this study, social behaviors are defined as multi-dimensional and requiring different skills and abilities across different social contexts (Gresham & Elliot, 1990). That typically developing children display similar levels of self-control as children with intellectual disabilities can be partly attributed to the age levels of the children in this study. It is believed that preschool-age children are unable to exert inhibitory control and have little control over behavioral impulses (Isquith, Gioia & Espy, 2004). Consequently, typically developing children may develop maturity and self-control whereas children with special needs are likely to lag behind. Therefore, the gap between typically developing children and children with intellectual disabilities in this area of development is likely to emerge later in life and become more apparent by middle-childhood. This is an avenue for future research; to understand this gap in the development of social skills in children with intellectual disabilities when compared with the general population.

It is important to consider several caveats, which limited the possibility of generalizing these findings. For this research, relevant information (such as intelligence quotient) was not included, as this was not readily available for the required age group. Due to developmental delays, it is common to abandon cognitive assessments when young children with special needs cannot perform the basic required tasks, hence an intelligence quotient cannot be computed for many of these children. An obvious limitation to these results is the lack of differentiation between the ranges of intellectual disabilities, which is due to this omission. As it was not possible to control for differences in cognitive ability statistically in the participants, further research would benefit from including intelligence quotient as a variable when examining middle-childhood age groups.

These findings were also limited by low response rates from parents with children with special needs. This is not uncommon, and many documented studies examining segregated and inclusive preschools reported small sample sizes. In their meta-analysis of comparative studies on children in inclusive and segregated settings, Buysse and Bailey (1993) reviewed 22 studies with their findings based on samples of less than thirty children in each comparison group. Such small sample sizes undermine the overall reliability and validity of findings, and in a similar way, the present data must be treated with caution in view of the low response rate.

Several explanations for these low response rates can be offered. Initially, the search for participants was laborious, due to the lack of a central register of children with intellectual disabilities. Indeed, the lack of a central database of individuals with intellectual disabilities is

common across many countries (Bateman, 2007). Searches for participants were conducted using a door-to-door approach, from one school to another. Information regarding potential participants was gathered via school principals, teachers and parents. Due to time constraints and limited resources, a much broader sample could not be included. Thus, it is likely that many children who were suitable for this study were not invited to participate. Furthermore, questionnaires were administered solely in English language. In a multi-racial society like Singapore, this means that parents who were non English-speaking were indirectly excluded from the study. This aside, the lack of incentive may be a plausible explanation for the lukewarm responses. Given appropriate time and resources, it is recommended that future researchers consider translation of questionnaires into the more commonly spoken native languages, as well as providing small incentives to increase participants' motivation to respond.

Lastly, the issue of cross-cultural validity should be carefully considered when interpreting the results of the present study. The terminologies and variables used in the present study may be subjected to variation across different societies, cultures and countries of the world. For example, the terms "inclusion" and "mainstream" education are defined in accordance to the context of Singapore and reflect current developments in the local context. As there may be a high degree of contextual subjectivity in the definition of these factors, caution should be used before applying the findings and implications of the present study beyond its present locality.

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## About the Authors

Dr Jenyi Li is a research scientist with the Office of Education Research at the National Institute of Education, Nanyang Technological University, Singapore.

Ms Ya Yin Chong is a research assistant.