

EXAMINING PSYCHOMETRIC DIMENSIONS OF THE AGES AND STAGES
QUESTIONNAIRES: INVENTORY: A CROSS-COUNTRY COMPARISON
BETWEEN TAIWAN AND THE UNITED STATES

by

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DISSERTATION ABSTRACT

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Title: Examining Psychometric Dimensions of the Ages and Stages Questionnaires: Inventory: A Cross-country Comparison between Taiwan and the United States

The Taiwanese early intervention/early childhood special education (EI/ECSE) system is modeled after the federal legislation and practices of the U.S., incorporating specific cultural beliefs in Taiwan. Nonetheless, in EI/ECSE assessments, several challenges are presented, including: (a) limited resources and funding, (b) lack of reliable and valid instruments, (c) lack of progress monitoring for at-risk children, (d) no (or limited) active role for caregivers as informants in the assessment administration process, and (e) lack of communication between parents and professionals.

The Ages and Stages Questionnaires: Inventory (ASQ: Inventory) is a dual-purpose tool that can be completed by early childhood practitioners and parents for developmental screening and progress monitoring. This instrument is considered a potential solution for the challenges in Taiwanese EI/ECSE assessments. Thus, the ASQ: Inventory was translated into Traditional Chinese following rigorous procedures. Its technical adequacy, cultural appropriateness, and utility were investigated in this study.

Results indicated that the Traditional Chinese ASQ: Inventory was an instrument with solid internal consistency and construct validity and that it was well accepted by parent and professional participants. The instrument was also able to document progress

in children's skills measured in chronological age intervals. Additionally, items in each domain were dispersed across a wide range of difficulty levels. When comparing between the two language versions using item response theory modeling, most items demonstrated invariant response patterns between the English and Traditional Chinese ASQ: Inventory. At the sample level, Taiwanese children scored significantly higher than U.S. children in problem-solving and personal-social, whereas U.S. children scored significantly higher in fine motor at the ages of 36, 42, and 48 months.

The findings of this initial investigation suggested that the Traditional Chinese ASQ: Inventory should continue to be studied with the Taiwanese population. This instrument may help accelerate the referral and identification process in EI/ECSE and promote the concept of caregiver-completed assessments. By completing the questionnaire, caregivers may have increased awareness of child development and will be able to closely oversee a child's progress and focus on strengths in his/her learning profile. Future studies should focus on studying the technical adequacy of this instrument and exploring the development of a computerized ASQ: Inventory system.

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CHAPTER I

INTRODUCTION

A rapid growth in science and technology has promoted interchanges in the global community. These exchanges occur in numerous facets of society (e.g., cultural, societal, economical, political), and have led to an increase in cross-country interdependence (Gibson, 2010). This complex process has been identified as “globalization” and acknowledges a cross-nation ecology, ranging from financial and political interconnections at the exosystematic level, to personal beliefs and values at the micro-level. Within this global ecology, one noteworthy phenomenon is migration. The significant increase in the incidence of migration may be due to the pursuit of better living quality from immigrants or inversely, the aspiration of improving living conditions of developing countries. Furthermore, the advancement in cross-continental transportation accelerates the process. Migration not only substantially results in the shift in demographics, but also contributes to the awareness of cultural diversity in everyday living (Sanagavarapu, 2010).

Nevertheless, discussions of the influence of globalization on migration have primarily focused on economic and technological advances. Even though in recent years the societal and cultural impacts of globalization have been brought into focus, examination of the relationship between globalization and education remains limited (Gibson, 2010; Sanagavarapu, 2010; Tierney, 2004). According to Gibson’s review of multicultural literature on globalization, “When globalization is theorized and critiqued, education is not necessarily foregrounded in the larger sociopolitical discussion (2010, p.

133).” Thus, the neglect of considering globalization as an influential factor in education prohibits the understanding of how different cultural beliefs interact with the system.

These globalization issues have been reflected in the adoption of Western (i.e., the United States) systems and practices in other countries. Many nations have modeled their educational systems, including policies and practices, after those in the United States. The differing educational philosophies of other countries, however, have frequently resulted in confusion, when these countries merely adopt the system without considering the cultural context (Hsue & Aldridge, 1995; Lee & Tseng, 2008; McMullen et al., 2005; Tsang, Shek, Lam, Tang, & Cheung, 2007).

Likewise, immigrants of different ethnic groups in the United States also may find it challenging to accommodate their cultural beliefs to the U.S. education philosophy, and may be disadvantaged in the education system (Parmar, Harkness, & Super, 2004, 2008; Sanagavarapu, 2010; Souto-Manning, 2007; Suarez-Orozco & Carhill, 2008; Suizzo et al., 2008; Tamis-LeMonda et al., 2007; Turney & Kao, 2008; Wang, McCart, & Turnbull, 2007). Children of immigrant families often suffer from language barriers during instruction and testing and are labeled as underachievers. Harper and Pelletier (2010) further denote that immigrant families may not be as involved in schools as native speaking families and communication challenges between parents and teachers are often present. Moreover, the low attainment of immigrant children may be due to different cultural beliefs in families that lead to lack of opportunities in practicing skills (e.g., less self-feeding opportunities, the use of scissors not allowed at early ages).

Challenges in Taiwan

Taiwan is one country encountering similar challenges. In Taiwan, early intervention (EI) is defined as “the specialized services provided to infants and toddlers from birth to three years and their families,” and early childhood special education (ECSE) is defined as “the needs-based support provided to preschool children from three to six years and their families”. The Taiwanese early intervention/early childhood special education (EI/ECSE) system is modeled after the federal legislation and practices from the U.S., adapted to Taiwanese traditional values. Nonetheless, conflicts between Taiwanese culture and the underlying U.S. framework have been reported in research studies (Hsieh, 2004; Hsue & Aldridge, 1995; Kang, Lovett, & Haring, 2002; Lee & Tseng, 2008; McMullen et al., 2005). To further understand the impact of cultural context, it is critical to recognize the philosophical and theoretical background of Taiwan and the U.S., as well as the similarities and differences in policies, service models, and practices between both countries. Besides the system-level apprehension, examining the cultural perceptions at the person-level (e.g., parents, children, professional) is equally important.

In the EI/ECSE system of Taiwan and the U.S., one commonality is that parent involvement (e.g., providing child information, participating in classroom activities, and making decisions regarding the child) is heavily valued and encouraged. Most children spend the majority of their time at home with family members, especially parents, during their early years, and parents play a vital role in their children’s growth. Research studies stress that parent-child relationships and family dynamics can have a positive or negative impact on children’s general development, academic performance, motivation, and social emotional competencies (Chiu, Gau, Tsai, Soong, & Shang, 2009; Harper & Pelletier,

2010; Hoover-Dempsey et al., 2001; Hung, 2007; Ko & Chan, 2009; Jose, Huntsinger, Huntsinger, & Liaw, 2000; Landy & Menna, 2006; Lung, Shu, Chiang, & Lin, 2011; Nonoyama-Tarumi, 2008; Suizzo & Cheng, 2007; Sy & Schulenberg, 2005; Turney & Kao, 2009). Since parent engagement is a critical component of the special education system, especially as it has been mandated in the legislation of both countries, the first challenge for professionals is finding an appropriate assessment tool that accurately reflects unique family cultures that are present among immigrants in the U.S. and native family members in Taiwan.

Current assessments in early childhood can be categorized into three types – screening, diagnostic and curriculum-based, each with distinct functions. A screening tool can be administered to all children, and is used to identify those who are potentially in need of special education services. Once a child is referred for further evaluation, a standardized diagnostic assessment is administered for determining eligibility for special services. A curriculum-based assessment may be used for corroborating the eligibility decision made by a diagnostic team, but is more frequently administered to inform practitioners of a child’s level of development, skills to target, and interventions to implement once the child is in an ECSE program (Bagnato, 2005; Bricker, Yovanoff, Capt, & Allen, 2003).

Regardless of the types and purposes of assessment, cultural diversity is a notable and sometimes thorny issue. A great number of assessments with solid psychometric properties have been developed in the U.S. However, based on the 2010 Census Briefs, approximately 28% of the population is other than White ethnicity (Humes, Jones, & Ramirez, 2011). This result reveals the importance of considering the cultural

appropriateness of test items and procedures, as well as examining the cultural values acculturated in families when developing or adapting a measurement tool. Therefore, the EI/ECSE professional organization in the U.S. – the Division for Early Childhood (DEC) of the Council of Exceptional Children – has released position statements and guidelines for administering assessments with minority children and families. In addition to the DEC, the primary professional organization in the U.S. for early childhood teachers – the National Association for the Education of Young Children (NAEYC) – has also outlined recommended practices for early childhood assessments to support inclusive practices in early childhood settings. The position statements and guidelines from both organizations suggest professionals stay sensitive and respectful when using a measurement tool with children and families with diverse cultural and linguistic backgrounds, and that they follow recommended practices in assessment administration (DEC, 2007; NAEYC, 2003, 2009; Neisworth & Bagnato, 2005).

In the assessment area, Taiwan also faces many challenges including: (a) limited resources and funding for screening, (b) low rates of identification of delays in young children, (c) lack of reliable and valid tools, (d) lack of follow-up and child monitoring for children at risk for delays, (e) shortages of professionals in assessment administration, (f) lack of communication between parents and professionals, and (g) lack of agency collaboration (Ho, 2009). Even though a child find system for early identification of children in need of specialized services is in place, many of these barriers remain. Specifically, there is a great need for screening tools with solid technical adequacy that can be utilized in screening systems, and further, tools need to be able to meet demands for progress monitoring and accountability demonstration in order to be widely accepted

and used. Because there are currently no appropriate tools in Taiwan for measuring specific developmental skills, one solution is to translate well-established measures from other countries with careful consideration to linguistic, functional, cultural and metric equivalence (Bornman, Sevcik, Ronski, & Pae, 2010; Heo & Squires, 2011; Pena, 2007).

The Ages and Stages Questionnaires: Inventory (ASQ: Inventory) is a newly developed dual-purpose tool for screening and progress monitoring that is adapted from the Ages and Stages Questionnaire-Third Edition (ASQ-3; Squires & Bricker, 2009). The ASQ-3 is a valid and reliable tool that has been translated into more than ten languages, with attention to cultural appropriateness (e.g., French, Spanish, Vietnamese, Korean, and Simplified Chinese). Various language versions of ASQ-3 and related research studies (e.g., Bian et al., 2012; Dionne, Squires, Leclerc, Peloguin, & McKinnon, 2006; Heo, Squires, & Yovanoff, 2008) serve as a foundation for translating and adapting items. The ASQ: Inventory is a tool that can be administered solely by education professionals or with collaboration from parents, and may satisfy the needs of developmental screening and progress monitoring for programs with limited resources and funding. By virtue of these characteristics, the ASQ: Inventory appears to be an instrument that may surpass many of the aforementioned barriers, and function as an appropriate and valid instrument for screening and monitoring the development of young children in Taiwan.

In summary, the social and cultural impact of globalization on education, including problems with educational testing and the use of valid and reliable tools for assessing young children's development, has not been extensively examined. Even though the awareness of cultural diversity is increasing, it remains challenging to work with parents that hold diverse beliefs about expectations for their children. These

differences may result in discriminant parenting styles and levels of parent involvement, resulting in barriers when using parent-completed tests. Other than recognizing the diverse culture of families, a fundamental yet critical challenge for professionals is to select an instrument that sensitively considers cultural contexts. Professionals should be cautious about administering assessments with culturally diverse groups without careful study. For those who plan to adopt a well-established assessment tool, translations and adaptations should be made accordingly.

The purposes of this study were multiple, including: (a) collecting preliminary normative data for the Traditional Chinese and English version of ASQ: Inventory in Taiwan and the U.S.; (b) examining the reliability and validity of both language versions of the ASQ: Inventory; (c) examining the relevance of cultural adaptations of the Traditional Chinese version; and (d) examining differences in assessment items between the two language versions. This study aimed to provide preliminary evidence of the ASQ: Inventory as a culturally appropriate screening and progress monitoring tool for Taiwan, adding to our understanding of how cultural contexts impact assessment practices and parent beliefs on child development.

In the following chapter, similarities and differences between the early intervention/early childhood special education (EI/ECSE) systems in Taiwan and the U.S. are described. Purposes and types of assessment, as well as the current needs, issues and trends are explained. Finally, cultural impacts on assessment are discussed.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The purpose of this chapter is to present a review of the literature on (a) the EI/ECSE system in Taiwan, (b) assessments in EI/ECSE, and (c) cultural considerations for assessment. This three-part literature review describes cultural differences, details current practices and needs, and justifies the necessity of conducting this research study.

The EI/ECSE System in Taiwan

During early years, if a Taiwanese child demonstrates signs of having a developmental delay, these red flags might not raise parents' concerns because the traditional belief is that "a smart child may show delays in the beginning" (Child Welfare Bureau, Ministry of the Interior, 2008; Kuo & Chwo, 2004). This myth results in a lack of awareness of the developmental challenges young children may encounter in their lives, and may prevent families from pursuing EI/ECSE services. With the efforts of several social welfare non-profit organizations, in 1991 the central government announced a six-year plan to improve early childhood education, and a five-year plan specifically focused on improving special education for young children. These two initiatives formed the basis for establishing EI/ECSE services in Taiwan. Child-related legislation was then amended and served as the foundation for this system in 1993 (Chen, Wu, & Yang, 2007; Huang & Chiang, 2006; Ko, 2009; Shen, 2009). As one of the pioneering countries in this field, the system in the United States was referenced by Taiwan when setting up its own system; the legislation and service models in the U.S. helped scaffold the Taiwanese system. Legislators used the U.S. as a role model, with

governors adapting the service models to match Taiwanese culture. To date, Taiwanese ECSE services for children from three to six are provided by the Ministry of Education and the Child Welfare Bureau of the Ministry of Interior. EI services for children birth to three are provided through the Child Welfare Bureau under the Ministry of Interior. To facilitate the understanding of the EI/ECSE system in Taiwan, three different perspectives are described: (a) cultural values, (b) legislation, and (c) service models. An overview of each perspective will be provided, highlighting the differences between the systems in Taiwan and the United States, and the difficulties Taiwan is currently encountering.

Cultural Values

To further the understanding of the EI/ECSE system in Taiwan, the first step is to examine underlying Taiwanese cultural values. Taiwanese culture is a blend of Eastern and Western cultures due to its colonization by various countries (e.g., Japan, Netherlands, and Portugal) with a heritage distinct from China. Even though the dominant philosophical foundations are Confucianism, Taoism, and Buddhism (Chan & Lee, 2004), the variations in Taiwanese culture raise challenges when examining the cultural values that influence the educational system. Nonetheless, certain traditional values are commonly shared by Taiwanese people across demographic levels. These traditional values include: (a) emphasis on the family unit (Chang & McConkey, 2008; Wang, et al., 2007), (b) conformity and harmony (Hsue & Aldridge, 1995; Jegatheesan, 2009; Suizzo et al, 2008; Tamis-LeMonda, Wang, Koutsouvanou, & Albright, 2002; Tamis-LeMonda et al., 2007; Wang, et al., 2007), (c) emphasis on academic education (Hsieh, 2004; Hsue & Aldridge, 1995; Huntsinger et al., 1997; McMullen et al., 2005;

Parmar et al., 2004, 2008; Wang, et al., 2007) and, (d) negative perception toward having a disability (Chang & McConkey, 2008; Jegatheesan, 2009; Kang et al., 2002; Wang, McCart, & Turnbull, 2007).

Emphasis on family units. Traditionally, individuals in Taiwan are considered to be nested within their families and the root of a family is the ancestors. Every family member should respect the spiritual legacy (e.g., family morals, motto, customs), and foster loyalty and obedience to the family (Wang et al., 2007). The family connection is reciprocal, and everything related to the family should be viewed as the priority of life. This connection is particularly important during decision-making since family needs and concerns should always be taken into consideration. Furthermore, because of family interdependence, extended family members (e.g., grandparents, relatives) may be either resources to parents who have children with disabilities, or may increase parents' stress levels (e.g., need to explain the situation, different childrearing beliefs) (Jegatheesan, 2009; Kang et al., 2002).

Conformity and harmony. Due to the significant influence of Confucian, Buddhist, and Taoist teachings, maintaining conformity and harmony, or “a middle path of virtue” is a core cultural value in Taiwanese society (Wang et al., 2007). This cultural value is pertinent to all generations, and directs the decision-making process of Taiwanese people throughout their daily lives. Individuals strive to avoid confrontation, stay respectful and polite to human beings (especially authorities), and tolerate the miseries in life (Tamis-LeMonda et al., 2002; Tamis-LeMonda et al., 2007; Wang et al., 2007). For example, a Taiwanese may nod his or her head and remain silent while people are talking. This behavior shows politeness and respectfulness, but does not necessarily

indicate full agreement (Jegatheesan, 2009; Wang et al., 2007). These cultural expectations of conformity and preservation of a harmonious environment inform parenting, classroom and industry management, and even societal order. Thus, to avoid disrupting the family equilibrium, a majority of parents may choose to conceal the fact that they have a child at risk for or with disabilities (Chang & McConkey, 2008; Jegatheesan, 2009; Kang et al., 2002).

Strong emphasis on academic education. “The worth of other pursuits is small. Only studying holds the highest regards” is an old saying in Taiwan, and it exemplifies the strong focus on academic education. Additionally, Confucian teachings have indicated that “children are ingrained with a lifelong respect for knowledge, wisdom, intelligence, and love of learning” (Chan & Lee, 2004, p.253). Starting in ancient China, teachers and scholars have been seen as highly valued and families invest in time and efforts to ensure that their children excel in school. Parents have high standards for children’s academic performance, and spend time working on pre-academic skills and school assignments (Huntsinger et al, 1997; Parmar et al., 2004, 2008). Likewise, children start early on learning pre-academic skills and are instructed that they should study diligently to reach their full potential. Parents consider children’s outstanding academic achievement the best recognition of their efforts, as well as an accomplishment to share with other family members (Wang et al., 2007). Nonetheless, children who are at risk for or have disabilities may not be able to meet their parents’ expectations. This challenging situation can result in parents overlooking their child’s strengths, creating frustration and eventually a negative attitude toward their child with disabilities.

Negative perception towards having disabilities. Buddhism and Taoism are the most prevalent religions in Taiwan. Despite having different roots, their religious perspectives are mingled together and profoundly affect Taiwanese people's beliefs about the causation of having a disability. While Buddhists believe in reincarnation and Taoists believe in retribution, the overarching concept is "karma", which is often considered as the cause of a disability (Chang & McConkey, 2008). Taiwanese people generally believe that having a disability is a result of doing evil or behaving inappropriately (e.g., committing a crime or breaking a traditional taboo during pregnancy) in the previous or current life. Bad behavior brings bad karma, and results in divine penalties, which are "disabilities" (Chan & Lee, 2004; Wang, et al., 2007). When having a child with disabilities, family members usually blame the parents, especially the mother, for her accumulative bad karma (e.g., residuals from previous life, not following long-established prenatal care procedures), and view the caregiving responsibilities as a debt the mother needs to pay back.

Legislation

As mentioned, in recognition of the importance and necessity of EI/ECSE services, major enactments regarding social welfare and education, such as the Children and Youth Welfare Act, the Special Education Act, and the Protection Law for the Handicapped and Disabled were amended in Taiwan in 1993. The revisions mandated establishing an EI/ECSE referral system in all counties and cities, and providing need-based services to young children with special needs (Ho, 2009; Huang & Chiang, 2006). Ever since, local governments have initiated the formulation of EI/ECSE agencies that coordinate referral, evaluation and services and have strived to provide adequate

EI/ECSE intervention services based on the amendments. The EI/ECSE related laws in these amendments and their bylaws, including a) the Special Education Act (i.e., the Enforcement Rules to the Act of Special Education), b) the Children and Youth Welfare Act (renamed from the Children Welfare Act), and c) the People with Disabilities Rights Protection Act (renamed from the Protection Law for the Handicapped and Disabled) are detailed below.

The Special Education Act and its bylaws. The Special Education Act and its bylaws set the legal ground for children with special needs and their families to receive subsidized special education services from central and local governments. This Act mandates that children age three to 18 years who are eligible for special education services receive relevant rehabilitative and educational interventions. In addition to cognitive, physical and mental disabilities (e.g., mental retardation, autism, learning disabilities), this Act and its bylaws include “developmental delays” as one of the disabilities, and define “developmental delays” as “children under six years old who have, will have, or are at risk for having deficits in cognitive, communication, motor, social-emotional, and adaptive domains, and need to receive early intervention services” (Chou, Cheng, & Lin, 2000, p.7). This definition has also been adopted by the Children and Youth Welfare Act and the People with Disabilities Rights Protection Act. Nonetheless, the diagnosis of having developmental delays depends on a child’s current level of development and professional judgment. No quantifiable eligibility criteria have been set.

Regarding EI services, the Special Education Act dictates that children should be placed in the least restrictive environment, and services should be provided at home, daycare centers, kindergarten, hospitals, or special education schools. Children should be

reevaluated each year, and yearly progress should be reported. Additionally, parent involvement is mandated in all decision-making processes.

The Children and Youth Welfare Act and its bylaws. In EI/ECSE, because the Special Education Act and its bylaws solely support legal rights in education, this enactment and its bylaws are considered the major law that directs all aspects of services. The Children and Youth Welfare Act mandates similar services to the Special Education Act for young children with special needs, except that more detailed service descriptions are provided in social welfare, and the age range extends from birth to six years. The welfare act also provides more specific information regarding the what, who, and how of a child find system, and requires the central government to establish or fund early childhood intervention programs.

The People with Disabilities Rights Protection Act and its bylaws. The People with Disabilities Rights Protection Act and its bylaws also validate the central and local government obligation to establish an early referral system, and provide demand-based medical and educational services to young children (i.e., children younger than six years old) with disabilities and their families. This act further identifies the types of services (e.g., nursing, consultation, assistive technology) that should be an integral part of the EI/ECSE intervention system.

Service Models

Unlike in the United States where each state has autonomy and interprets federal laws differently, Taiwan has a central government that directs local governments. Even though each city or county has its own parliament and mayors, all decision making is in accordance with governmental policies and enactments. The legislation mentioned above

dictates the EI/ECSE service models adopted in Taiwan and EI/ECSE accountability are maintained by yearly program evaluation. In the following paragraphs, the service models in Taiwan will be examined through procedures and teaming models.

Procedures. Current EI/ECSE practices involve medical, educational and social welfare services (Chang, 2009; Huang and Chiang, 2006; Kang et al., 2002; Ko, 2009). Each city/county has established an EI/ECSE coordination agency that advocates and administers developmental screening, accepts referrals, serves as a liaison between different programs and service providers, manages cases and provides resources. If caregivers (i.e., parents and professionals) suspect a child may have a potential developmental delay, they refer this child to the coordination agency. The child is then transferred to the EI/ECSE evaluation center and further evaluated by a multidisciplinary medical team (e.g., developmental pediatrician, clinical psychologist, physical therapist). Eligibility is determined using standardized diagnostic assessments and professional judgment. If the child qualifies for EI/ECSE services, with parental input, the coordination agency selects the most inclusive learning environment for this child and creates an Individualized Family Service Plan (IFSP) or an Individual Education Plan (IEP). Additionally, to acknowledge the important role parents play, professionals are strongly encouraged to select a family-centered approach when working with young children with special needs and their families so that resources and services will be provided to both. Figure 1 outlines a flowchart that illustrates the procedures of entering the EI/ECSE system in Taiwan (Child Welfare Bureau, Ministry of the Interior, 2007).

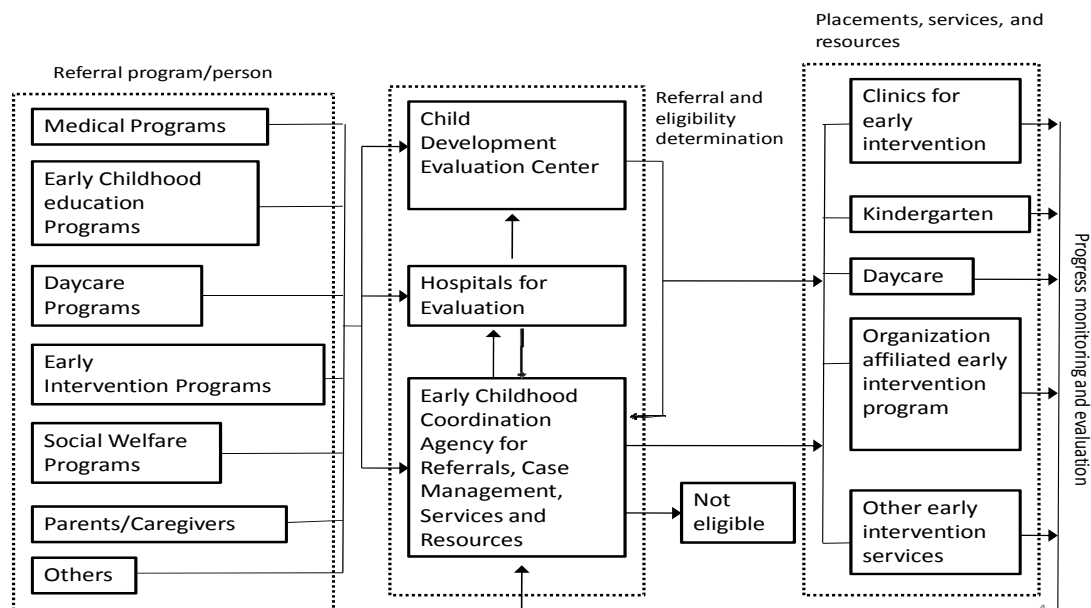


Figure 1. Procedures of the EI/ECSE system in Taiwan.

Teaming models. The enactments recognize that the demands of young children with special needs are complicated and specify the collaboration of professionals from multiple disciplines. In Taiwan, health care professionals, social workers and early interventionists work as a team to optimize the effectiveness of intervention service (Kuo & Chwo, 2004; Liaw, 1998). The three most prevalent teaming models in Taiwan are *multidisciplinary*, *interdisciplinary*, and *transdisciplinary* (Chang, 2009; Kuo & Chwo, 2004; Liaw, 1998).

While all three models include professionals from various disciplines, professionals in the *multidisciplinary model* focus on their individual work with the child, and communicate independently with the child's family. Limited exchanges occur between professionals. Thus, the family may need to repeatedly answer the same questions and can receive duplicate and sometimes conflicting information from different

practitioners. This model is usually found in well-established organizations that have competent professionals from various disciplines to work with children and families. The *interdisciplinary model* is often observed in the EI/ECSE system when professionals work with older children with mild disabilities. The team exchanges information and shares the decision-making process. However, for intervention services, professionals from each different discipline solely focus on their own specialization. When working with younger children with special needs, a *transdisciplinary model* is chosen to reflect the critical role the family plays, and to incorporate input from parents, as well as professionals from multiple disciplines. The team works as a unit to walk through every procedure in the EI/ECSE system, and reaches a consensus in making decisions. To simplify the process for parents, a service coordinator serves as the liaison for communication among parties.

Despite using the EI/ECSE system in the United States as a reference, the Taiwanese government has made cultural adaptations based on differing philosophical beliefs and childrearing practices, resulting in a Taiwanese system that is unique to its own culture. The cultural value system of Asia, including Taiwan, has long been considered to be “*collectivism*,” (e.g., orientation to the larger group, family connection, conformity) whereas the Western cultural value system is centered on “*individualism*” (e.g., self-maximization, personal choice). Even though researchers have proposed that “*individualism*” and “*collectivism*” are not two separate ends of a continuum and may not appropriately reflect the diversity within cultures (Fiske, 2002; Oyserman, Coon, & Kimmelmeier, 2002; Tamis-LeMonda et al., 2007), this dichotomous model generally represents the major distinction between Asian and Western cultures. In Taiwan,

emphasis on family connections and conformity has resulted in an EI/ECSE system that is more heavily focused on the social welfare perspective. The key enactment for EI/ECSE is the Child and Youth Welfare Act and EI/ECSE services are classified as social welfare services. Chou and colleagues (2000) argued that this discrepancy leads to a different family-centered approach used in Taiwan, one that emphasizes social services and subsidizes these services through the social welfare system. In the United States the provision of EI/ECSE services are based on the civil rights of citizens. EI/ECSE is covered by the Individuals with Disabilities Education Act (IDEA) and is considered part of educational rights. Furthermore, as Shen (2009) indicated in her policy comparison study, the EI/ECSE systems in Taiwan and the United States belong to different governmental administrations. The distinct governmental structure also contributes to the way EI/ECSE policies and legislation are carried out in Taiwan.

Additionally, the negative perception of disability due to religious beliefs, and the notion that “children will eventually grow up” challenge the early referral and identification system, and result in a low identification rate in Taiwan. Researchers (Chen, Li, & Chien, 2005; Huang & Chiang, 2006; Ko, 2009; Tsai, McClelland, Pratt, & Squires, 2006) have repeatedly reported this as an issue of concern. Since children usually do not go to preschool and are nurtured by parents (including grandparents) or nannies during their early years, parents or nannies may not be alerted to their children’s delays due to little comparison with peers the same chronological age. Furthermore, a lack of valid and reliable assessment tools results in inconsistent eligibility criteria. Most of the assessment tools in use (e.g., Denver Development Screening Test and Denver II, Taipei II), including screening or diagnostic tools, mostly were developed for administration by

professionals and rarely include up-to-date normative samples. Parents usually serve as passive informants during testing, and may feel the assessment results do not accurately reflect their child's level of development. Additionally, unlike eligibility criterion in the United States, there are no defined criteria in EI/ECSE-related enactments of Taiwan.

In summary, the EI/ECSE system in Taiwan has followed in the footsteps of the system in the United States, but with cultural adaptations. The core EI/ECSE concepts of family-centered and collaborative teaming are inherited. Legislative efforts have been made to ensure the legal infrastructure is in place to support young children with special needs, their families, and professionals. Nonetheless, the challenges that Taiwan is facing can be attributed to lack of public information and awareness about typical development, and lack of active parents' and educational professionals' involvement in administering assessments. The next section of the literature review will describe the types of assessments that should be included in the EI/ECSE system, the importance of each type of assessment, and the needs and challenges in Taiwan.

Assessment in EI/ECSE

The Division for Early Childhood ([DEC], 2007) defined assessment as “a shared experience between families and professionals in which information and ideas are exchanged to benefit a child's growth and development” (pp. 10). This definition enlightens the guiding principles for EI/ECSE assessment practices, including (a) parents as partners – parents should be included as part of the assessment team and collaborate with professionals in the process, and (b) individualized and developmentally appropriate – the assessment should be administered in natural contexts with multiple

informants (e.g., parents, teachers) so that the results will reflect the true ability of a child (Neisworth & Bagnato, 2005; DEC, 2007).

Parents as Partners

In the early years, parents play an important role in their children's life. Family demographics, parental beliefs in childrearing practices (e.g., independence or interdependence, responsiveness to children), parenting skills (e.g., parent involvement at school, behavior management), and adult-child interactions (e.g., positive or negative) of each family dyad intertwine and influence children's development and achievement, as well as impact the dynamics within a family (Arnold, Zeljo, Doctoroff, Ortiz, 2008; Chen et al., 1998; Chen & Uttal, 1988; Desimone, 1999; El Nokali, Bachman, & Votruba-Drzal, 2010; Grusec, 2006; Hastings & Rubin, 1999; Pomerantz, Moorman, & Litwack, 2007; Ramey & Ramey, 1998). The country's legal foundation (e.g., IDEA in the United States and the Special Education Act in Taiwan) and recommended practices from DEC and NAEYC have stressed the importance of including parents in the process of EI/ECSE service determination and delivery (DEC, 2007; NAEYC, 2003; Neisworth & Bagnato, 2005). Crais and Wilson (1996) have indicated three ways to involve parents in EI/ECSE services: (a) provide information regarding family needs, concerns, and resources, all of which need to be taken into consideration, (b) participate in the process of developing the IFSP/IEP, and (c) collaborate with professionals in the assessment process. While all three ways of parent involvement are equally important, partnering with parents in the assessment process can be considered as the overarching procedure of the three. During assessment administration, professionals may be able to identify family needs, priorities and resources, and evaluate the information to be included in an IFSP/IEP. Nevertheless,

parent involvement in the assessment process has been reported to be more challenging than collaborating with parents and provide information on family needs and to develop ISFPs (Crais & Wilson, 1996).

Researchers have reported that most parents are able to correctly identify the concerns of their children and provide valid and reliable reports with regards to their children's development (Chen, Lee, Yeh, Lai & Chen, 2004; Diamond, 1993; Diamond & Squires, 1993; Dinnebeil & Rule, 1994; Glascoe, 1994, 1997, 1999, 2000; Lin et al., 2011). Parents are able to provide authentic and ongoing information on their child's skill repertoire, and facilitate professionals in fostering a comprehensive understanding of their child and making eligibility or instructional decisions. Boone and Crais (1999) have identified five types of parent involvement in the assessment process, including: (a) observer, (b) advisor, (c) validator, (d) assistant, and (e) administrator. Parents traditionally take a passive role in the assessment team by simply receiving assessment-related information (an observer), providing background information on their child (an advisor), or supplying information relevant to the assessment during administration (a validator). Current recommended practices encourage parents to be actively involved in the assessment process by assisting in assessment administration (an assistant), or administering an assessment via parent report or interview (an administrator) (Boone & Crais, 1999; Clifford, 2006; McLean & Crais, 2004). This shift of role in the parent involvement continuum reflects an evolution in parent-professional collaboration from viewing parents as informants to viewing parents as active partners and contributors.

Individualized and Developmentally Appropriate

To accurately measure a child’s skill level, it is critical to implement an assessment practice that occurs in the child’s natural context and uses developmentally appropriate, high interest materials (DEC, 2007, NAEYC, 2003). In order to implement this practice, eight critical qualities – utility, acceptability, authenticity, equity, sensitivity, convergence, collaboration, and congruence – are standards for guiding the selection of appropriate early childhood assessment (Neisworth & Bagnato, 2004, 2005). Table 1 outlines critical qualities for early childhood assessments (Neisworth & Bagnato, 2004, 2005).

Table 1. Eight developmentally appropriate qualities for selecting early childhood assessment.

Quality	Description
Utility	The usefulness of an assessment in accomplishing multiple purposes (e.g., identify goals, objectives, and a child’s learning style) in early childhood settings.
Acceptability	The methods, styles, and materials for assessment are of agreement between parents and service providers.
Authenticity	The assessment will yield functional information that accurately reflects a child’s level of development in natural settings.
Equity	The assessment will be able to accommodate the individual differences and diverse abilities of children.
Sensitivity	The assessment includes a sufficient number of items to provide a comprehensive measurement of a child’s development so that even minimal progress can be detected.
Convergence	The assessment includes minimal jargon; the information gathered on the child is reliable and valid for all different assessment team members (e.g., teachers, parents, other professionals).
Collaboration	The methods and styles of assessment promote teamwork and include parent input in assessment administration and decision making.

Table 1. (continued).

Quality	Description
Congruence	Assessment materials are designed and field-tested for the target population of children that will be assessed to ensure equity and technical adequacy.

Three Types of Assessment

Assessment is an ongoing process utilized to answer questions regarding a child's development, and is mandated by legislation related to special education (e.g., IDEA in the United States, the Special Education Act in Taiwan). This process allows parents and professionals to (a) screen for possible delays, (b) determine eligibility, (c) program and monitor progress, and (d) evaluate program accountability (Clifford, 2006; DEC, 2007; McLean, 2004; Wolery, Strain, & Bailey, 1992). Three types of assessment tools encompass these functions: *developmental screening assessment* (developmental or domain-specific screening), *norm-referenced diagnostic assessment* (eligibility determination), and *curriculum-based assessment* (programming, progress monitoring, and program evaluation). Figure 2 portrays how these three types of assessment tools work within a comprehensive system. The purpose of each tool is described.

system.

Developmental Screening Assessment. To assure early identification, and to achieve the ultimate goal of promoting positive child and family outcomes, it is critical to efficiently and accurately identify children who may have a potential developmental delay for referral for further evaluation. A brief assessment regarding general, condition-specific, or domain-specific development is used for this purpose, called "*developmental screening*" (Clifford, Squires, Yockelson, Twombly, & Bricker, 2011; McLean, 2004;

Meisels & Provence, 1989; Meisels, 1991; Sices, 2007). Governmental administrators in both Taiwan and the United States recognize the necessity of developmental screening. A consensus between the education and medical fields is that early and universal screening is the first critical step for all children. In the United States, the American Academy of Pediatrics (AAP) recommended in a 2006 policy statement that “developmental screening tests should be administered regularly at the 9-, 18-, and 30-month visits” (The AAP, 2006, p.406). Enactments such as IDEA mandate each state to establish a comprehensive child-find system that includes procedures for screening the health and development of children. Lead agencies for infant/toddler services in each state are required to coordinate among different programs for early identification and should adopt standardized screening tools (McLean, 2004). In Taiwan, with the support from governmental policy (i.e., The Enforcement Plan of EI/ECSE for Children with Developmental Delays), the Department of Health under the Executive Yuan has established a universal developmental screening system for children age birth to six. The aim of this system is to help achieve the goal of early referral and early identification in Taiwan (Ho, 2009). Non-profit organizations also constantly provide itinerant screening services to parents in order to advocate the importance of staying alert to their children’s development. These initiatives in the United States and Taiwan also bring public awareness to early intervention services (Ko, 2009; Meisels & Provence, 1989; Miesels, 1991).

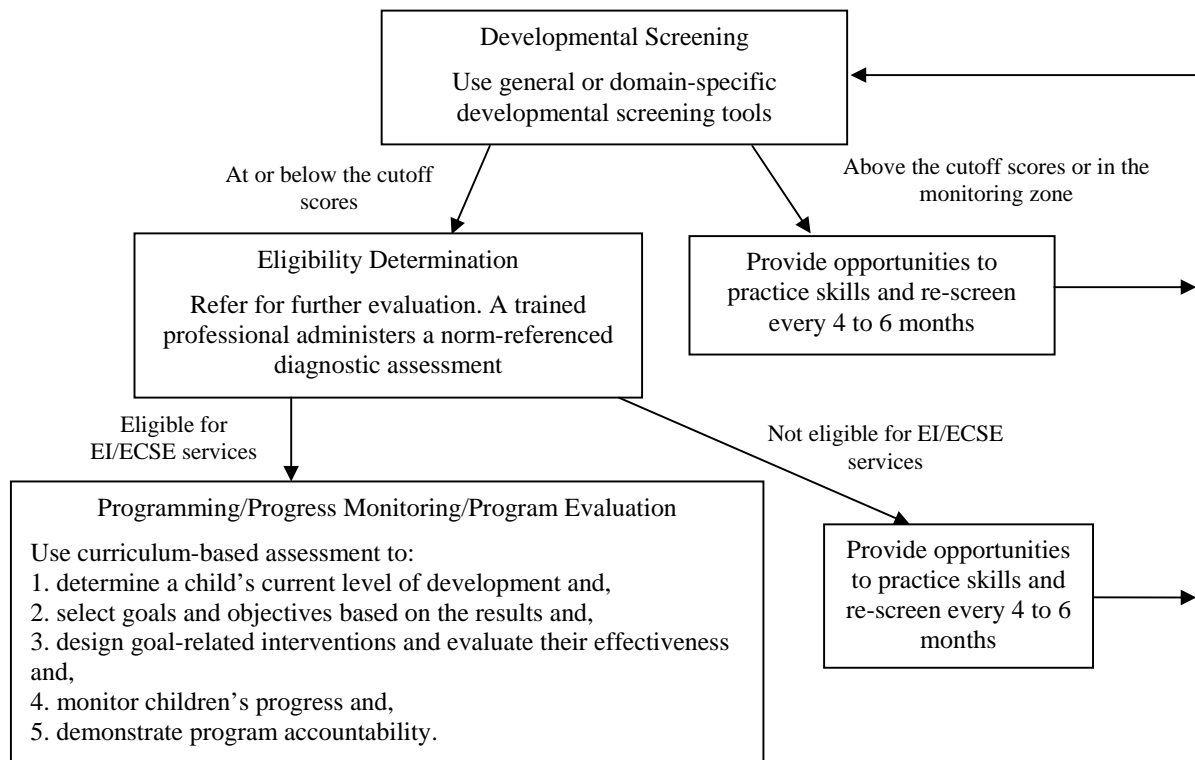


Figure 2. Three types of assessment tools and processes in a comprehensive assessment system.

Norm-Referenced Diagnostic Assessment. A norm-referenced diagnostic assessment is used for determining (a) whether a child has a developmental delay or disability (NAEYC, 2003) and (b) whether a child qualifies for EI/ECSE services (Danaher, 2011; Shackelford, 2006). This type of instrument may either target general development (e.g., communication, motor, intelligence, and adaptive), or certain developmental domains. The administration method is known as “*conventional testing*,” where a trained professional uses scripted procedures and a standardized assessment kit to compare a child of concern to same age peers from the normative sample (Meisels & Provence, 1989; Neisworth & Bagnato, 2004, 2011). Standardization eliminates the potential influences of extraneous factors (e.g., differences in toys or wordings). Thus,

the assessment results can solely be attributed to a child's measured ability. Standard scores, percentile rank and developmental quotients allow examination of how a child's score compares to the normative profile of typical development. These results are used to help determine in which domain(s) the child demonstrates a delay and is in need of supportive services. In the U.S., although the Part C eligibility criteria of each state vary, most states and territories use quantitative criteria such as standard deviation units below the mean or percent delay for determining eligibility (Bricker et al., 2003; Danaher, 2011; Shackelford, 2006). Among these states and territories, five (i.e., Connecticut, Delaware, Louisiana, Michigan, Virgin Islands) clearly specify the use of standardized instruments for Part C eligibility, whereas three (i.e., Colorado, Connecticut, Oklahoma) dictate the use of standardized assessments for Part B eligibility.

Due to the rigorous steps of test administration, the major drawback of a norm-referenced diagnostic assessment is "*decontextualization.*" *Decontextualization* means a child is assessed by strange adults using novel toys in clinic-like settings (Bagnato, 2005; Bagnato et al., 2010; Neisworth & Bagnato, 2004, 2005). The unfamiliarity may result in a discrepancy between the results obtained from a diagnostic assessment and the child's skills in everyday routines within natural settings. Additionally, the scripted procedures and standardized materials are designed to conduct solid psychometric studies with typical children in the norm, and may not be applicable to children with diverse special needs. The discriminative nature of the test items also often prevents the linkage between assessment results and intervention components. Due to the likelihood of mismeasuring a child's capacity and deviating from the recommended guidelines for assessment in EI/ECSE, researchers (Bagnato, 2005; Bagnato, et al., 2010; Neisworth & Bagnato, 2004,

2005) have proposed *authentic assessment* as an alternative to the existing conventional tests and administration methods. *Authentic assessment* entails observing a child in natural contexts for functional skills, and collects information from multiple sources. Furthermore, curriculum-based assessment is considered as an authentic measure and is recommended for determining eligibility (Bagnato, 2005; Bricker et al., 2003; Macy, Bricker, Squires, 2005; Neisworth & Bagnato, 2004). Advantages include shortening the lengthy evaluation process, lowering costs for eligibility determination, and the conversion of assessment results into programming suggestions.

Curriculum-Based Assessment (CBA). CBA is one type of criterion-referenced test, and is considered to be the most widely used assessment in EI/ECSE (Bagnato et al., 2010). Using CBA, a child's performance is compared to the predetermined set of critical skills to be included in the curriculum (Bailey, 2004), which helps decide the content of instruction (DEC, 2007). A child is observed several times in multiple natural settings and ideally family input is included (NAEYC, 2003). Each assessment domain encompasses an array of skills that are organized in hierarchical order. The comprehensiveness of assessment items provides a detailed picture of the child's developmental status. Goals and objectives are then developed based on the subsequent skills the child needs to learn, and goal-related intervention plans are designed to optimize opportunities for skill practice throughout classroom and family routines. Furthermore, to examine the child's mastery in target skills, a trained, familiar adult – usually the service provider – measures a child's growth at various junctures and modifies intervention practices accordingly. Administrators may also use the data to help

evaluate whether a program achieves its goals and addresses desired outcomes for the children and families it serves (DEC, 2007; NAEYC, 2003).

Since the promotion of *authentic assessment*, CBA has been recommended by DEC as a concurrent measure to norm-referenced assessments in programming, progress monitoring and program evaluation so that the most reliable outcomes of young children can be generated (DEC, 2007). In addition, researchers such as Bricker and colleagues (2003), and Macy and colleagues (2005) have studied the use of CBA in corroborating EI/ECSE eligibility decisions. These researchers compared the results from one CBA, the Assessment, Evaluation, and Programming System (AEPS) with existing diagnoses (e.g., IDEA status of eligible or not eligible for services) or conventional diagnostic assessments (e.g., Battelle Developmental Inventory, Vineland Adaptive Behavior Scales), and supported the notion that CBA may be used for eligibility determination. Researchers have also found evidence that using CBA for corroborating eligibility decisions will result in efficient use of time and resources, and children with special needs will receive needs-based intervention services in a timely manner (Bricker et al., 2003; Deno, 2003, Fuchs, Fuchs, Hosp, & Hamlett, 2003; Macy et al., 2005; Neisworth & Bagnato, 2004).

Using the three types of assessment mentioned above, Taiwan has a well-established system utilizing norm-referenced diagnostic tools to facilitate eligibility determination. In conjunction with the medical system, Taiwanese children are evaluated by a multidisciplinary medical team to decide whether they qualify for EI/ECSE services (Chen, Li, & Chien, 2005; & Huang & Chiang, 2006; Ko, 2009). Once children with special needs are placed in educational settings, service providers administer a CBA such

as the AEPS to gather information for the intervention components (e.g., goals and objectives, activity plans). However, the biggest challenge facing Taiwan is selecting a developmental screening tool that is caregiver-friendly (e.g., parents and early childhood educators) with solid technical adequacy (Ho, 2009). Most of the screening tools currently in use do not supply adequate psychometric properties based on a normative sample. Further, early childhood educators who work with at-risk children may be in need of a progress monitoring tool that helps them monitor children's progress and validate the services they are providing. To overcome this challenge, one solution is to adopt existing tools with well-established psychometric properties and make culturally appropriate adaptations (Bornman, Sevcik, Ronski, & Pae, 2010; Heo & Squires, 2011). Next, the cultural influences of assessment and cautions about making adaptations to instruments are reviewed.

Cultural Considerations for Assessment

Culture is defined as “a framework through which actions are filtered or checked as individuals go about daily life” (Lynch & Hanson, 2004, p. 4). Individuals have their own values and beliefs based on their own life experiences. These values and beliefs are internalized to inform everyday decision making and shape interactions with the surroundings. Under this premise, cultural diversity may exist between any two individuals that experience life within different cultural contexts. This notion applies to the professional-parent partnership within EI/ECSE assessment. When professionals collaborate with families in the assessment process, not all items and materials are appropriate to the unique family culture, especially for those families who are from or live in other countries (Brown & Barrera, 1999; Duran, Cheatham, & Santos, 2011;

Hambleton, Merenda, & Spielberger, 2005; Pena, 2007). Assessment tools are usually developed based on the mainstream culture (e.g., Western culture) and use a dominant language (e.g., English). Research studies regarding the technical adequacy of assessment tools show that psychometric properties are based solely on the use of these instruments with a certain culture in their native language, and may lead to biased assessment results when used with children who fall outside of the mainstream culture. Under this circumstance, assessment adaptations (including translations) are needed in order to produce reliable and valid results for the culturally diverse population.

Making adaptations to existing instruments presents multifaceted challenges (Bornman et al., 2010; Ercikan, Gierl, McCreith, Puhan, & Koh, 2004; Hambleton et al., 2005; Pena, 2007; Sireci & Berberoglu, 2000). First, a direct linguistic translation without adequate modifications (e.g., different measurement units, different temperature units) to reflect the underlying cultural values may threaten content validity. Second, instructions and materials in the translated assessment may not elicit the same target behaviors as the original assessment. This discrepancy may differentiate the constructs being measured. Third, the technical adequacy generated for the original assessment may not be applicable to the translated version. Lastly, poor adaptations may alter the assessment difficulty or familiarity, and result in misinterpretations of the assessment results. To prevent these challenges when adapting an instrument, Pena (2007) proposes four kinds of equivalence in methodological considerations – linguistic, functional, cultural, and metric equivalence. *Linguistic equivalence* refers to the application of rigorous procedures (e.g., the translation and back-translation process, review by a panel of experts) in assessment adaptation to ensure that wording and item meanings are comparable between the original

and the translated versions (Sireci & Berberoglu, 2000). *Functional equivalence* examines the agreement between the two versions in measuring the same construct, or in other words, whether an item and its related materials function in a similar manner in both versions so that the same target responses will be elicited (Ercikan et al., 2004). *Cultural equivalence* is associated with functional equivalence but shifts the focus to how individuals from diverse cultural groups interpret and perceive the critical skills each item is measuring. *Metric equivalence* refers to “equivalence in item or question difficulty” (Pena, 2007, pp. 1259). This kind of equivalence is developed to guarantee that psychometric properties are parallel for different language versions. These methodological considerations, working as an interlocking piece for adapting an assessment, are represented in Figure 3.

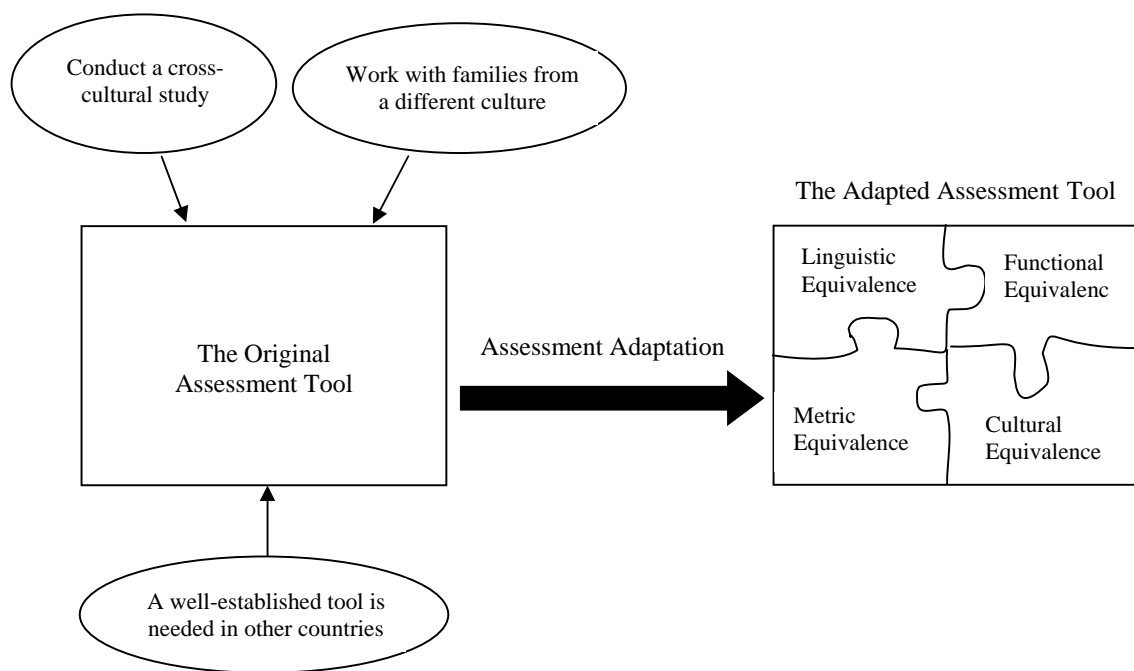


Figure 3. A visual representation of how methodological considerations function in assessment adaptation.

In summary, these four kinds of equivalence should be taken into consideration simultaneously during instrument adaptation. The four equivalences are interrelated, and will help ensure that an assessment tool addresses diverse family cultures and provides a non-biased look of a child's development.

In conclusion, the adaptation of an instrument that can be used for screening and progress monitoring purposes is critical in Taiwan. Specifically, adaptation of a valid and reliability assessment tool is needed. Investigation of the psychometric properties of the ASQ: Inventory is a proposed solution because Taiwan does not as yet have well established assessment tools for developmental screening and progress monitoring. Considering limited resources, the multi-functional ASQ: Inventory (i.e., developmental screening that links to the ASQ-3, progress monitoring, and program evaluation) is ideally suited. Additionally, the ASQ: Inventory will provide authentic information about a child because it promotes professional-parent collaboration throughout the assessment administration process and can be administered in natural settings. Using authentic assessment in educational settings is dictated in Taiwanese legislation and it complements the family-centered approach adopted by Taiwanese professionals working with families. Therefore, this study aims to adapt the English ASQ: Inventory to Traditional Chinese with regard to cultural, metric, functional, and linguistic equivalences, and will examine its psychometric properties.

CHAPTER III

METHOD OF STUDY

Introduction

The ASQ: Inventory has been developed as a dual purpose tool that can be used for developmental screening and progress monitoring with young children. The ASQ: Inventory builds on the foundation of the Ages and Stages Questionnaires-Third Edition (ASQ-3; Squires & Bricker, 2009). Through the administration of the ASQ: Inventory, the assessment results may help parents and preschool teachers better understand whether a child's development is on schedule. Additionally, the ASQ: Inventory allows educational personnel to monitor children's progress at different points in time, and may be further used to demonstrate program accountability (Clifford, 2006). Nonetheless, when an assessment is translated into another language, linguistic and cultural differences may affect how parents and professionals interpret and respond to the assessment items (Pena, 2007). Thus, it is critical to carefully examine the differences in response patterns between original and translated language versions, and to explore factors that may contribute to any differences in response patterns.

Differences between the Traditional Chinese and English versions of ASQ: Inventory are the topic of this research. Four areas were studied: (a) item functioning within and between the ASQ: Inventory English and Traditional Chinese versions, (b) differences in children's general development between Taiwan and the U.S., (c) preliminary reliability and validity of Traditional Chinese and English ASQ: Inventory language versions, and (d) information from respondents about the utility of the ASQ: Inventory. The research questions included:

1. What is the item functioning for the English and Traditional Chinese versions of ASQ: Inventory? Does the current item order accurately reflect the hierarchy of developmental skills in each version?
2. What are the psychometric properties of the English and Traditional Chinese versions of ASQ: Inventory?
 - 2.1. What is the *internal consistency*?
 - 2.2. What is the *construct validity* (i.e., convergent and discriminant validity, and known-groups validity)?
 - 2.3. What is the agreement between the screening classifications determined by the established ASQ-3 cutoffs and the existing diagnosis of children with special needs?
3. Are there cultural differences reflected in the English and Traditional Chinese ASQ: Inventory scores based on response patterns?
4. How do teachers and parents in Taiwan perceive usefulness, user-friendliness and cultural appropriateness of Traditional Chinese ASQ: Inventory, and do teachers and parents in the United States consider any items on the English ASQ: Inventory difficult to understand?

The following sections will describe the research design, participants, settings, measures, experimental procedures, and proposed data analyses.

Research Design

A non-experimental psychometric research design was used to explore the reliability and validity of the ASQ: Inventory. Traditional statistical analyses were

computed to obtain information at the measure level, and item response theory modeling was conducted for gathering item characteristics.

Participants

This study was approved by the Institutional Review Board at the University of Oregon prior to its commencement. Additionally, the principal investigator and data coder completed the “Collaborative Institutional Training Initiative” program to comply with research requirements. All participants were informed of the study purposes, procedures, benefits and risks listed on the consent form before agreeing to participate. All data were de-identified and stored in a locked file cabinet to maintain confidentiality.

The participants for this study were recruited from households, preschools and early intervention agencies in Taiwan and the United States. A convenience sampling method was used; inclusion criteria of participants are described below. Table 2 provides the number of participants, including children (i.e., typical children and children with special needs), parents and teachers (i.e., lead and assistant teachers, and other professionals who work with preschool children) of each country in the five ASQ: Inventory domains. Different numbers of participants were recruited for each domain due to on-line recruitment procedures.

Children

Typically developing children. The inclusion criteria for Taiwanese children included: (a) 36 to 60 months of age, (b) born in Taiwan, (c) at least one of the child’s biological parents is Taiwanese, and (d) the primary language used in the household is Mandarin. For recruitment of children in the United States, the criteria were: (a) 36 to 60 months of age, (b) born in the U.S., and (c) the primary language used in the household is

English. Permission was obtained from parents, preschools or agencies prior the study commencement.

Children with special needs. The same inclusion criteria were applied, including (a) 36 to 60 months of age, (b) born in Taiwan, (c) at least one of the child's biological parents is Taiwanese, and (d) the primary language used in the household is Mandarin for Taiwanese children, and (a) 36 to 60 months of age, (b) born in the U.S., and (c) the primary language used in the household is English for U.S. children. One additional criterion was that these children need to have medical or educational diagnoses, including results from diagnostic assessment tools or professional judgment that indicate they have developmental delays or other special needs. Consent was received from parents, preschools or agencies in advance of the data collection phase.

Parents and Teachers

Parents of children who met the inclusion criteria were invited to participate; no additional specific inclusion criteria were applied to these parents. In addition, the preschool teachers of eligible children participants in each country were recruited. The inclusion criteria for teachers were: (a) the teacher had worked with the participating child(ren) for more than a month, and (b) the teacher worked with the participating child(ren) at least 10 hours per week. Consents from all parties were obtained prior to data collection.

Table 2. Number of participants by country and ASQ: Inventory domain.

Domain	Country			
	Taiwan (Traditional Chinese version)		United States (English version)	
	Typical	With special needs	Typical	With special needs
Communication	218	10	130	20
Gross motor	198	9	185	15
Fine motor	181	10	114	28
Problem solving	190	9	109	10
Personal-social	185	9	199	31

Measures

Three measures were used: (a) demographic information form, (b) ASQ: Inventory, and (c) ASQ: Inventory utility survey. For the Traditional Chinese paper-pencil version, the demographic form and the utility survey were incorporated into the *Introduction and Summary Forms* of the full ASQ: Inventory protocol. For the paper-pencil version of the English ASQ: Inventory, in addition to the demographic form, one utility question regarding item comprehension was included. Table 3 outlines the instruments completed by parents and teachers in each country, and each measure is described below.

Table 3. Study measures completed by participants.

Country	Participants	Measurement tools
Taiwan	Parents	1. Demographic information form (for children and parents) 2. ASQ: Inventory 3. ASQ: Inventory utility survey
	Teachers	1. Demographic information form (for children and teachers) 2. ASQ: Inventory 3. ASQ: Inventory utility survey

Table 3. (continued).

Country	Participants	Measurement tools
United States	Parents	1. Demographic information form (for children and parents) 2. ASQ: Inventory 3. One ASQ: Inventory utility question
	Teachers	1. Demographic information form (for children and teachers) 2. ASQ: Inventory 3. One ASQ: Inventory utility question

Demographic Information Form

Teachers were invited to complete a demographic information form that included questions about their age, education level and major, position, years of teaching experience, and teaching certification. Parents were asked to provide information about themselves and their child(ren). Optional questions about parental information included geographical area of residence, mother's age at child's birth, mother's educational level, and annual household income. Information about their children included child(ren)'s date of birth, gender, ethnicity, disability status, and special education services received (if applicable).

ASQ: Inventory

English version. The ASQ: Inventory is a dual-purpose tool, designed to periodically screen and monitor the progress of children from birth to 60 months. A pilot dissertation study focused on the infant and toddler age intervals (aged birth to 36 months), and its findings indicated solid reliability and validity for the Ages and Stages Questionnaires: Inventory for Toddlers (ASQ: IT) (Clifford, 2006). Each domain of the ASQ: Inventory contains the entire item pool from the Ages and Stages Questionnaire-Third Edition (ASQ-3) system (i.e., approximately 50 items), hierarchically arranged

according to the level of difficulty, estimated from preliminary IRT analyses. A sample of the English ASQ: Inventory, including a demographic form, can be found in Appendix A.

Development. To select additional items needed for the upper range of children (i.e., older than 36 months), a panel of early intervention professionals reviewed various valid and reliable assessment tools and curricula (e.g., Assessment, Evaluation, and Programming System; Battelle Developmental Inventory-Second Edition; Hawaii Early Learning Profile) that reflected school readiness and were developmentally appropriate for four- to six-year-old children. New items for the ASQ: Inventory (i.e., preschool items), were written and arranged according to the developmental quotients supplied by tool developers and developmental resources. These items were also designed to be easily understood and administered by parents and practitioners.

An on-line pilot study was then conducted to examine if caregivers' responses reflected the pre-determined item order for all items. Caregivers were asked to complete one domain of the ASQ: Inventory and afterwards the ASQ-3 interval matching their child's age. Statistical and IRT analyses were then conducted to examine the agreement between the ASQ: Inventory and the ASQ-3, and to reorder all items according to their levels of difficulty, including the ASQ:IT items. To examine whether the ASQ: Inventory can be used for developmental screening by linking to the ASQ-3, two types of cutoff scores were employed for comparison – the established ASQ-3 cutoffs and the preliminary ASQ: Inventory cutoff set at one standard deviation below the mean. Domain scores of the ASQ-3 items extracted from the ASQ: Inventory were totaled and compared to each type of cutoff score to determine developmental status. The agreement between

the developmental status determined by the ASQ: Inventory was then compared to the screening classification determined by the matching ASQ-3. The overall sensitivity across domains ranged from 66.7% to 92.9%, whereas specificity ranged from 95.4% to 98.9%. The preliminary results indicated that the ASQ: Inventory has potential as a tool for developmental screening, despite the low sensitivity demonstrated in several age intervals. This low sensitivity might have resulted from skill assumptions that were made based on the applied basal and ceiling rules. Starting points were updated by examining the basal points established for each respondent, and the percentage of “yes” response on the few items before and after the original starting point.

Administration. To administer the ASQ: Inventory, a starting point was first determined based on a child’s chronological age. For the paper-pencil and web version, a starting point for each age range was set at more than 75% of respondents answering a “yes” for children of that age range. As for item reordering, ASQ: Inventory items were rearranged by their item difficulties as a result of the previous IRT analyses. With each item, professionals or parents marked “*Y (Yes)*,” “*S (Sometimes)*,” or “*N (Not yet)*” based on their estimation of the frequency of a child’s performance on the skill. “*Y*” was defined as a child constantly and consistently performing the skill on a regular basis, and was given a score of “2”. “*S*” was defined as a child demonstrating the skill at times with inconsistency, indicating an emerging skill, and received a score of one point. “*N*” was defined as the child has not acquired the skill, and was given zero points. Basal and ceiling rules (i.e., with three consecutive ‘yes’s or ‘no’s) were enforced to decrease the amount of items for completion. Since all items in each domain were hierarchically ordered based on their difficulties, each item before the basal point was automatically

assigned a “yes” as these were easier items, whereas items after the ceiling point were scored as “not yet” because the item difficulty gradually increased. Scores of each domain were totaled and converted into the percentage of skills acquired in a developmental domain, and transferred to a line graph. This allows programs to monitor a child’s progress at different points in time.

The current study used the experimental version of the ASQ: Inventory with an updated item order and revised starting points based on the online pilot. Both paper-pencil and web versions of the ASQ: Inventory were completed.

Traditional Chinese version. The English version of ASQ: Inventory was translated by a professional in the field of early intervention who is proficient in both English and Mandarin. The item-by-item translations were reviewed by a developmental pediatrician who is also a native Mandarin speaker. The two professionals discussed any differences to finalize item translations with careful consideration to cultural appropriateness. Adaptations were made to items based on cultural specifics (e.g., chopsticks were added as eating utensils). Items were then back translated to the source language (i.e., English) by another bilingual professional to ensure that the translation did not deviate from the construct of the original items. The starting points, the basal and ceiling rules for the Traditional Chinese version were identical to the English version. Response categories were modified from “Y” to “2,” “S” to “I”, and “N” to “0” because of language differences. Scoring methods remained the same. A sample of the Traditional Chinese ASQ: Inventory, including a demographic form, can be found in Appendix B.

ASQ: Inventory Utility Survey

A five-question ASQ: Inventory utility survey asked Taiwanese participants about ease of use, relevance of cultural adaptations, and other general utility questions. General utility questions included whether the ASQ: Inventory items are easy to understand and age appropriate, whether the questionnaire brings up concerns regarding the child, and whether completion improves understanding of general child development. A Likert scale and closed- and open-ended questions were included to solicit feedback from professionals and parents. This survey intends to evaluate the appropriateness of ASQ: Inventory items and cultural adaptations made for the Taiwanese ASQ: Inventory translation. Participants in the United States were asked to answer a utility question on whether there were any difficulties in understanding the ASQ: Inventory items.

Experimental Procedures

Experimental procedures, including recruitment procedures for parents and teachers and data collection methods and procedures are described. Descriptions of the two data collection formats (i.e., on-line, paper-pencil) are detailed.

Recruitment Procedures for Parents and Teachers

Approval for research with human research participants was obtained through the university via the institutional review board prior to beginning the study. Once approved, a three-part recruitment plan was instigated. First, program directors and administrators of preschool programs and early intervention agencies and programs were contacted to request permission to introduce the study to teachers and families in their program. After permission was granted, brief meetings were held at preschools to explain the study. In addition, training on the ASQ: Inventory was offered to recruit professionals who were

interested in participating in the study. Second, advertisements with details about the study appeared on web pages and on-line forums. Third, personal connections were contacted to recruit potential participants.

Participants in Taiwan who completed all domains of one paper-pencil ASQ: Inventory protocol received a \$100 New Taiwan Dollars (equivalent to approximately \$3.30 U.S. Dollars). Taiwanese participants who filled all domains of the web version of ASQ: Inventory entered a drawing of twenty \$200 New Taiwan Dollars gift cards (each is equivalent to approximately \$6.60 U.S. dollars). These participants also received play activities that are age appropriate to their child and a suggestive screening result on their child based on current U.S. ASQ-3 cutoffs.

The participating preschool or certified home child care programs in the United States received copies of the *Ages and Stages Learning Activities* (Twombly & Fink, 2004) as an incentive for completing the ASQ: Inventory, as well as reports generated from the ASQ: Inventory results entry site (<http://asq.uoregon.edu/asqi/>) to track and monitor child's progress. For U.S. participants who completed an on-line ASQ: Inventory, they received suggestions of play activities that are relevant to their child's age, and a developmental screening result (if the participants had offered a valid e-mail address) based on the ASQ-3 from one domain of the ASQ: Inventory.

Data Collection Methods and Procedures

Two completion formats were utilized: paper-pencil and web versions. Participants who were directly recruited from preschool programs completed all forms in paper copies. Once teachers consented to participate and gave consent, ASQ: Inventory administration trainings were provided in each preschool. Written instructions were also

provided. Participating teachers were provided with the number of full ASQ: Inventory packet (i.e., a demographic information form, an ASQ: Inventory, a utility survey) that they had agreed to complete. After every participating teacher in a preschool administered the ASQ: Inventory, the principal investigator returned to pick up the packets in person. Participating parents completed the ASQ: Inventory either with the principal investigator, or with a trained professional. Forms were collected by the principal investigator or returned by mail.

For participants who responded to on-line recruitment notices, the web version of the demographic information, ASQ: Inventory, and a utility survey were completed. (The research website was https://oregon.qualtrics.com/SE/?SID=SV_3qOBhkWOy7gsBUx for Taiwanese participants and <http://pages.uoregon.edu/asqstudy/> for U.S. participants.) The Taiwanese participants sequentially completed one test domain at a time on the research website, with the maximum of all five domains, but were allowed to stop at any time. On the other hand, because the U.S. participants were asked to complete an age-appropriate ASQ-3 in addition to the ASQ: Inventory, to shorten the completion time, U.S. participants were presented with and were asked to complete only one test domain. Thus, the group of respondents for each domain was different in the U.S. sample.

Paper-pencil data were stored in a locked cabinet. All data were accessible to only the principal investigator. Information was de-identified and remained confidential.

Data Analysis

The analyses applied to each research question are described in the following sections. Both IRT modeling and traditional statistical analyses were executed. IRT models were computed by Winsteps 3.75 (Linacre, 2012), and traditional statistical

analyses were conducted using SPSS 11.0. The statistical analyses conducted included: (a) item functioning, (b) DIF, (c) descriptive statistics, (d) correlation, and (e) analysis of covariance (ANCOVA). Table 4 lists the measurement tools and data analyses that were used for each research question.

Table 4. Outcome measures and data analyses for research questions.

Research Question	Measures	Data analysis
1. What is the item functioning for the English and Traditional Chinese versions of ASQ: Inventory? Does the current item order accurately reflect the hierarchy of developmental skills in each version?	Traditional Chinese and English ASQ: Inventory	IRT modeling: Item functioning and fit statistics
2. What are the psychometric properties of the English and Traditional Chinese versions of ASQ: Inventory?		
2.1. What is the <i>internal consistency</i> ?	Traditional Chinese and English ASQ: Inventory	Cronbach's Alpha
2.2. What is the <i>construct validity</i> (i.e., convergent and discriminant validity, and known-groups validity)?	Traditional Chinese and English ASQ: Inventory	Pearson's product-moment correlation coefficient, ANCOVA
2.3. What is the agreement between the screening classifications determined by the established ASQ-3 cutoffs and the existing diagnosis of children with special needs?	Traditional Chinese and English ASQ: Inventory	Descriptive statistics,
3. Are there cultural differences reflected in the English and Traditional Chinese ASQ: Inventory scores based on response patterns?	Traditional Chinese and English ASQ: Inventory	DIF analysis, ANCOVA
4. How do teachers and parents in Taiwan perceive usefulness, user-friendliness and cultural appropriateness of Traditional Chinese ASQ: Inventory, and whether teachers and parents in the United States consider any items on the English ASQ: Inventory difficult to understand?	Traditional Chinese ASQ: Inventory utility survey and English ASQ: Inventory utility question	Descriptive statistics, anecdotal notes

IRT Modeling

IRT models are widely applied in developing measures and are recommended approaches when examining psychometric properties of a measure (Reise, Ainsworth, & Haviland, 2005). IRT models provide an estimation of a person's trait level based on item properties and his/her responses to the items, which indicates that person ability (i.e. trait level) and item characteristics are placed on the same scale (Embretson & Reise, 2000). Likewise, based on a person's trait level and item characteristics, the probability of observing certain item responses may be predicted.

In this study, all IRT analyses were conducted with a Rasch one-parameter (1PL) partial credit model (PCM) using Winsteps 3.75 (Linacre, 2012), which is appropriate for polytomous scoring (Embretson & Reise, 2000; Masters, 1982). Based on the results of IRT model comparisons on ASQ-3 (Chen, 2009), 1 PL PCM appeared to be the best fitted model. Other previous ASQ-3 studies (Pomes, 2012; Pomes, Squires, & Yovanoff, 2013) and the ASQ:IT study (Clifford, 2006) have also selected 1PL PCM for IRT analysis. The Rasch 1PL PCM provides an estimate of item difficulty, and because the relative difficulty of steps between response categories (i.e., move from scoring a "0" or "N" to "1" or "S", or from "1" or "S" to "2" or "Y") varies within and across items, all items are allowed to have unique category thresholds.

Item functioning and order. This analysis was conducted to answer the research questions: (1) What is the item functioning (i.e., item difficulty and item fit) for the English and Traditional Chinese versions of ASQ: Inventory? and, (2) Does the current item order accurately reflect the hierarchy of developmental skills? Results from the 1PL PCM supplied item difficulty for both language versions of the ASQ: Inventory. Items

were listed according to their difficulty in the analysis outputs and informed the comparison between the current and the new item order. The fit statistics (i.e., infit and outfit) of items were also examined to evaluate the construct validity of the ASQ: Inventory.

DIF Analysis

To evaluate whether the translated or adapted version of an instrument is unbiased or equivalent when comparing to the original one, DIF analysis can be executed. When two different groups of examinees share the same level of latent trait (i.e. ability, skill), DIF analysis allows researchers to detect the items that function distinctly between groups and toward which group of examinees is biased. DIF analysis was included in this study for two purposes: managing data and examining cultural equivalence. Prior to data analyses, because completion methods (i.e., on-line and conventional paper-pencil) might potentially affect assessment scores, it was critical to ensure that participants of the same level of ability who had completed the ASQ: Inventory in different formats gave identical responses to an item. In an ASQ-Second Edition (ASQ-2) related study, Yovanoff, Squires, and McManus (2013) conducted a DIF analysis to examine the differences in parents' responses between the paper and web version of the ASQ-2 and only about 11% of the items were found to function differently according to completion methods. Even though the results seemed promising, it might not be applicable to the ASQ: Inventory. The ASQ: Inventory contains all items from the ASQ-3 and also new "preschool items". It also has a different layout and administration rules from the ASQ-2 and ASQ-3. To address this issue, a separate DIF analysis was applied to the data sample from Taiwan and the U.S. to examine whether significant differences were present in response patterns

between different completion methods. Once response invariance was verified, it would be appropriate to combine the two sub-samples.

The second purpose of conducting a DIF analysis was to examine cultural fairness of the ASQ: Inventory. The following research question was investigated: Are there cultural differences reflected in the English and Traditional Chinese ASQ: Inventory scores? Through examining the probability of certain response patterns generated by respondents from the two language versions, the DIF analysis results provided an in-depth look at whether participants differentiated their responses to items. The items that appeared to function differently were recorded and further analyzed by two experts who are familiar with Traditional Chinese and with the developmental expectations of Taiwanese children. The two experts reviewed the items that exhibited DIF based on linguistic, functional, cultural and metric equivalence and provided feedback on whether an item should be reworded or adapted.

Traditional Statistical Analysis

Descriptive statistics. Descriptive statistics were computed to analyze information on: (a) the demographic information, (b) the utility survey, and (c) preliminary sensitivity and specificity of the ASQ: Inventory. Results answered the following questions: (a) What is the agreement between the screening classifications determined by the established ASQ-3 cutoffs and the existing diagnosis of children with special needs? and, (b) How do teachers and parents in Taiwan perceive usefulness, user-friendliness and cultural appropriateness of the Traditional Chinese ASQ: Inventory; and (c) Do teachers and parents in the United States consider any items on the English ASQ: Inventory difficult to understand? Frequencies of each category on the demographic

information form, the mean and standard deviations of scores on each utility question, and the summation of extracted ASQ-3 item responses from each ASQ: Inventory domain were calculated. To investigate the screening function of the ASQ: Inventory, the agreement between the disability status of participating children and ASQ: Inventory screening classifications using ASQ-3 cutoffs was examined. That is, the domain totals of ASQ-3 extracted from the ASQ: Inventory were first compared to the established ASQ-3 cutoffs for screening classification, and then the result was compared to the child's disability status. Typically developing children were expected to score above the ASQ-3 cutoffs while children with special needs would score below the cutoffs. Afterwards, preliminary sensitivity and specificity were derived. *Sensitivity* refers to the capacity of an instrument to identify children with special needs (i.e., true positives), and *specificity* relates to the instrument's ability to recognize typically developing children when those children are truly without special needs (i.e., true negatives) (McLean, 2004). *Positive predictive value* and *negative predictive value* are "the proportion of children with positive or negative results who are correctly identified by the developmental screening instrument" (Altman & Bland, 1994). Figure 4 shows the matrix for examining classification agreement.

Correlations. Correlations were computed to address the following research questions: (a) What is the *internal consistency*? and, (b) What is the *construct validity*? First, Cronbach's Alpha was calculated as a measure of internal consistency. Correlations of items with each other within a domain were calculated to measure one construct (Bailey, 2004). Since each ASQ: Inventory domain measured one simple construct (e.g., communication, problem solving), participating children's performance should be

relatively consistent across all assessment items. Second, Pearson’s product-moment correlation coefficients between test domain scores were computed to examine the *convergent* and *discriminant* validity. *Convergent* validity suggests that a test domain is expected to demonstrate higher correlations with another test domain that measures related constructs (e.g., gross motor and fine motor), while *discriminant* validity is defined as test domains that measure different constructs showing lower correlations (e.g., personal-social and fine motor) (Bailey, 2004).

		Disability Status	
		Yes (with special needs)	No (typically developing)
Screening Result	Below Cutoffs (refer for further evaluation)	A	B
	Above Cutoffs (typically developing)	C	D

Figure 4. The matrix for calculating the screening classifications determined by the established ASQ-3 cutoffs and the existing diagnosis of children with special needs. Sensitivity = $A/(A+C)$, specificity = $D/(B+D)$, positive predictive value = $A/(A+B)$, and negative predictive value = $D/(C+D)$.

ANCOVA. A one-way ANCOVA was conducted for each domain to answer two research questions: (a) What is the *construct validity*? and, (b) Are there cultural differences reflected in the English and Traditional Chinese ASQ: Inventory scores based on response patterns? ANCOVA analysis helped investigate *known-groups* validity of each ASQ: Inventory domain (i.e., the relationship between each domain’s total score and disability status), and whether language (i.e. Traditional Chinese and English) was a significant variable for mean comparisons of each domain, both controlling for age. The

ANCOVA that examined *known-groups* validity encompassed the total score of each domain as the DV, and disability status as a two-level IV – yes (i.e., have special needs) and no (i.e., typically developing). DV was identical for the ANCOVA that compared domain total scores of different language versions, and IV was a two-level predictor – language.

Anecdotal Notes

Open-ended questions on the ASQ: Inventory utility survey helped identify items that parents and teachers had difficulty understanding, thought too easy or difficult, or considered as culturally inappropriate. These anecdotal notes were used to supplement the interpretation of quantitative analysis results.

CHAPTER IV

RESULTS

Results for each research question are presented in this chapter. First, demographic information pertaining to participants of each country is described. Second, as a data management procedure, results of the DIF analysis that examined whether items functioned differently based on completion methods are given. Finally, analysis results are arranged by research questions, including item functioning and order from IRT models, internal consistency, construct validity, cultural fairness examination using DIF and ANCOVA. This chapter will conclude with the results on ASQ: Inventory utility.

Participants

The sample included a total of 1,069 children participants. Overall, 55.4% ($n = 593$) were male and 44.1% ($n = 471$) were female; 0.5% ($n = 5$) did not report gender. Almost 80% of the questionnaires ($n = 794$) were completed by parents (i.e., mother, father, both parents, grandparents, foster parents, or relatives); the other 20% were by educational or clinical professionals. Among all parent respondents, 90.9% were mothers ($n = 722$).

For the 1,069 participants, the majority ($n = 841$) completed the English ASQ: Inventory, and 228 participants completed the Traditional Chinese version. Table 5 summarizes the number of completed ASQ: Inventory domains by language version.

Table 5. Number of participants for each test domain by language version.

Domain	Version		Total
	Traditional Chinese (Taiwan)	English (United States)	
Communication	228	150	378

Table 5. (continued).

Domain	Version		Total
	Traditional Chinese (Taiwan)	English (United States)	
Gross motor	207	200	407
Fine motor	191	142	333
Problem solving	199	119	318
Personal-social	194	230	424

Age of Child Participants

Seventy percent of the Taiwanese participants ($n = 160$) were 45- to 60-months-old. Fifty-nine percent of the U.S. participants ($n = 492$) were in the upper age intervals (i.e., 39 to 60 months for fine motor, and 45 to 60 months for all other domains). Number of participants in ASQ: Inventory and ASQ-3 age intervals is listed in Table 6.

Table 6. Study participants by ASQ: Inventory age intervals.

ASQ: Inventory age intervals	Version	
	Traditional Chinese (Taiwan)	English (United States)
Communication		
36 – 44 months	68	81
45 – 60 months	160	69
Gross motor		
36 – 44 months	59	87
45 – 60 months	145	113
Undisclosed	3	0
Fine motor		
36 – 38 months	24	21
39 – 60 months	167	121
Problem solving		
36 – 44 months	55	52

Table 6. (continued).

ASQ: Inventory age intervals	Version	
	Traditional Chinese (Taiwan)	English (United States)
Problem solving		
45 – 60 months	143	67
Unknown	1	0
Personal-social		
36 – 44 months	54	108
45 – 60 months	138	122
Unknown	2	0

Note. 36 – 45 months = 36 months 0 days to 44 months 30 days; 45 – 60 months = 45 months 0 days to 60 months 30 days; 36 – 39 months = 36 months 0 days to 38 months 30 days; 39 – 60 months = 39 months 0 days to 60 months 30 days.

Typically developing participants were grouped by ASQ-3 age intervals for developmental screening purposes. Table 7 presents the number of participants in each age group by country. In the Taiwanese sample, the age groups with the most participants were at 48 months (32.1%) and 54 months (29.8%), while in the U.S. sample, 42-month-old had the largest number (29.7%).

Table 7. Typically developing study participants by ASQ-3 age intervals.

ASQ-3 age intervals	Version	
	Traditional Chinese (Taiwan)	English (United States)
Communication		
36 months	27	31
42 months	40	40
48 months	70	18
54 months	65	20
60 months	16	21
Gross motor		
36 months	25	38

Table 7. (continued).

ASQ-3 age intervals	Version	
	Traditional Chinese (Taiwan)	English (United States)
Gross motor		
42 months	33	43
48 months	58	45
54 months	63	36
60 months	16	23
Fine motor		
36 months	23	18
42 months	29	39
48 months	58	32
54 months	58	14
60 months	14	11
Problem solving		
36 months	23	11
42 months	31	37
48 months	59	30
54 months	61	23
60 months	15	8
Personal-social		
36 months	23	36
42 months	30	60
48 months	58	44
54 months	59	39
60 months	13	20

Note. 36 months = 36 months 0 days to 38 months 30 days; 42 months = 39 months 0 days to 44 months 30 days; 48 months = 45 months 0 days to 50 months 30 days; 54 months = 51 months 0 days to 56 months 30 days; 60 months = 57 months 0 days to 60 months 30 days.

Child and Family Demographics

The overall demographic information pertaining to all children and families participants is presented by country in Table 8. Of the child participants, 49.6% of their

mothers ($n = 530$) have a bachelor's or a graduate degree. In Taiwan, 23.2% ($n = 53$) of the families had a monthly income at NTD \$80,001 and above, and 58.6% ($n = 493$) of the U.S. families had an annual income of US \$40,001 and above.

For the Taiwanese sample, the geographical classifications were based on the official categories provided by Council for Economic Planning and development of Taiwan (2011). Among all Taiwanese participants, 26.8% ($n = 61$) were from the North, which is the most densely populated area of Taiwan. For the U.S. sample, the regions (e.g., Northeast, Midwest) designated by the U.S. Census Bureau (2010) were adopted as the categorizations. The U.S. participants evenly resided in the Midwest, South, and West regions, with less from the Northeast.

Table 8. Demographic characteristics of children and families by countries.

Variables	Country	
	Taiwan	United States
Total # of participants	228	841
Gender		
Male	133 (58.3%)	460 (54.7%)
Female	90 (39.4%)	381 (45.3%)
Undisclosed	5 (2.2%)	0 (0%)
Person filled the ASQ: Inventory		
Mother	101 (44.3%)	621 (73.8%)
Father	10 (4.4%)	33 (3.9%)
Both parents	0 (0%)	15 (1.8%)
Grandparents	1 (0.4%)	16 (1.9%)
Foster parents	0 (0%)	46 (5.5%)
Relatives	4 (1.8%)	2 (0.2%)
Professionals	111 (48.7%)	54 (6.4%)
Others	1 (0.4%)	54 (6.4%)

Table 8. (continued).

Mother's education		
Less than high school	0 (0%)	29 (3.4%)
High school	25 (11.0%)	189 (22.5%)
Associate's degree	20 (8.8%)	124 (14.7%)
Bachelor's/Graduate	89 (39.0%)	441 (52.4%)
Unknown	16 (7.0%)	58 (6.9%)
Undisclosed	78 (34.2%)	0 (0%)
Family income (TW: Monthly/US: Annual)		
Less than NTD \$25,000/US \$12,000	12 (5.3%)	59 (7.0%)
NTD \$25,001/US \$12,001 – NTD \$50,000/US \$24,000	29 (12.7%)	74 (8.8%)
NTD \$50,001/US \$24,001 – NTD \$80,000/US \$40,000	34 (14.9%)	128 (15.2%)
NTD \$80,001/US \$40,001 and above	53 (23.2%)	493 (58.6%)
Don't know	23 (10.1%)	87 (10.3%)
Undisclosed	77 (33.8%)	0 (0%)
Geographical region (TW/US)		
North/Northeast	61 (26.8%)	81 (9.6%)
Central/Midwest	52 (22.8%)	184 (21.9%)
South/South	42 (18.4%)	193 (22.9%)
East/West	1 (0.4%)	203 (24.1%)
Fujian Province (Outlying islands)	0 (0%)	N/A
Undisclosed	72 (31.6%)	180 (21.4%)

In the Taiwanese sample, the ethnicity of all participants was considered as “Asian.” In the U.S. sample, 62.6% of all participants were predominantly White/Caucasian ($n = 527$), followed by 6.9% of mixed ethnicity ($n = 58$), 6.3% of African American ($n = 53$), 5.2% of Hispanic/Latino ($n = 44$), 3.9% of Asian ($n = 33$), 1.3% of Native American ($n = 11$), 0.1% of Pacific Islander ($n = 1$), and 0.2% of others

($n = 2$); 13.3% ($n = 112$) did not report ethnicity or selected “*don’t know*.” Table 8 summarizes the ethnicity of participants in the United States by ASQ: Inventory domains.

Table 9. Ethnicity of U.S. participants by ASQ: Inventory domains.

Ethnicity	Domain					Total
	CM	GM	FM	Prob Solv	Per-Soc	
White/Caucasian	106	122	80	71	148	527
African American	13	9	12	10	9	53
Hispanic/Latino	4	8	11	5	16	44
Asian	5	9	6	8	5	33
Native American	1	2	2	2	4	11
Pacific Islander	0	1	0	0	0	1
Mixed	7	17	12	4	18	58
Others	1	1	0	0	0	2
Undisclosed/Don’t know	13	31	19	19	30	112
Total	150	200	142	119	230	841

Note. CM = Communication; GM = Gross Motor; FM = Fine Motor; Prob Solv = Problem Solving; Per-Soc = Personal-Social

Data Management

To test for any differences between the two completion methods (i.e., conventional paper-pencil and on-line) in subsequent data analyses, DIF analyses and independent-samples t-tests were conducted for all ASQ: Inventory domains. Table 10 outlines the number of Taiwanese and U.S. participants by completion methods and test domain.

Table 10. Number of participants by country, completion method and domains.

Domain	Traditional Chinese (Taiwan)		English (United States)
	Paper-pencil	On-line	On-line
Communication	92	136	150
Gross motor	90	117	200

Table 10. (continued).

Domain	Traditional Chinese (Taiwan)		English (United States)
	Paper-pencil	On-line	On-line
Fine motor	87	104	142
Problem solving	92	107	119
Personal-social	89	105	230

A total of 55 items (17%) functioned differently between the two completion methods. DIF was found in 5 (8%) items in communication, 11 (17%) items in gross motor, 16 (25%) items in problem solving, and 14 (22%) items in personal-social out of 65 items. 9 (14%) out of 63 items were detected in fine motor. DIF items evenly distributed across completion methods, as 26 items appeared to be easier for on-line completion methods, and 29 items were easier when completing hard copies. Thus, because of few differences and no consistent direction (i.e., easier, more difficult) were indicated (Yovanoff et al., 2012), the paper-pencil and on-line samples were combined for Traditional Chinese ASQ: Inventory in subsequent analyses. Table 11 lists the items in each domain in which participants might have selected variant responses because of different completion methods. For detailed information on all DIF items, please see Appendix C.

Table 11. DIF items in the Traditional Chinese ASQ: Inventory by domains and completion methods.

Domain	<i>N</i>	# of DIF items	DIF items
Communication	218	5	#47 (O), #49 (P), #50 (P), #61 (O), #65 (O)
Gross motor	198	11	#30 (P), #34 (P), #37 (P), #41 (P), #46 (O), #50 (O), #56 (O), #58 (O), #60 (P), #63 (O), #65 (P)

Table 11. (continued).

Domain	<i>N</i>	# of DIF items	DIF items
Problem solving	190	16	#34 (P), #35 (P), #38 (P), #39 (P), #44 (P), #47 (O), #50 (P), #51 (P), #52 (O), #54 (P), #55 (O), #58 (O), #60 (O), #62 (O), #63 (O), #64 (O)
Personal-social	185	14	#33 (P), #34 (P), #35 (P), #39 (O), #43 (P), #46 (P), #47 (P), #56 (P), #58 (O), #59 (O), #60 (P), #62 (O), #63 (O), #64 (O)

Note. The letter in the parentheses means the item is in favor of which language version. O = On-line version of Traditional Chinese ASQ: Inventory; P = Paper-pencil version of Traditional Chinese ASQ: Inventory

Item Functioning

Research Question 1. What Is the Item Functioning for the English and Traditional Chinese Versions of ASQ: Inventory? Does the Current Item Order Accurately Reflect the Hierarchy of Developmental Skills in Each Version?

Item difficulty. Analysis results from the 1PL PCM helped define how each ASQ: Inventory item functioned given the ability level of participants. Based on the participants' responses, a probabilistic relation with item difficulty was estimated. When the probability of success for a participant on an item is 50%, the trait level of this participant equals the item difficulty and thus a calibration of the item difficulty can be provided (Embretson & Reise, 2000). In this study, difficulties of all ASQ: Inventory items were estimated. Nevertheless, some items were not estimated by 1PL PCM due to lack of variability. The basal and ceiling rules embedded in the ASQ: Inventory resulted in assumptions of item responses in addition to the actual responses from the participants; that is, all items before the basal point received a score of "0", and all items after the ceiling point received a score of "2". Thus, to eliminate the possibility of fluctuating item

difficulty, Tables 12 to 21 include only items in each domain that appear after the starting points used in this study. For full results (all items and by age intervals), see Appendix D and E.

Item order by difficulty. The item order of English ASQ: Inventory was based on the item difficulty generated from previous rounds of data collection and analysis results. Since the Traditional Chinese ASQ: Inventory had not been previously studied, item order from the English ASQ: Inventory was applied. Results from 1PL PCM indicated that, in the Traditional Chinese ASQ: Inventory, a total of 31 (10%) items (i.e., 10 in communication, 3 in gross motor, 4 in fine motor, 3 in problem solving, and 11 in personal-social) demonstrated a noteworthy change in item order (i.e., showed a change of at least five spots in the hierarchical development order). In the English ASQ: Inventory, 11 (3%) items (i.e., 3 in communication, 1 in gross motor, 1 in fine motor, and 6 in personal-social) appeared to significantly shift in their order.

Item fit. Item fit helps determine how well the IRT model applied explains or predicts the participant's response to a specific item (Embretson & Reise, 2000) – that is, if the 1PL PCM fits the observed data. In Winsteps (Linacre, 2012) using a Rasch model analysis, two types of fit statistics are given: *infit* mean square (MNSQ) and *outfit* MNSQ. *Infit* MNSQ is sensitive to unexpected responses occurring to items of a participant's trait level, while *outfit* MNSQ is more sensitive to unexpected behaviors on outlying items of the participant's level of ability (Linacre, 2012). The acceptable range of *infit* and *outfit* MNSQ is from 0.5 to 1.5. A fit statistic value below 0.5 is considered to be “*overfit*,” which means the item is overly predictable. A fit statistic value above 1.5 is considered to

be “*underfit*,” indicating that the item may not be sensitive enough and that more noise and randomness are involved than useful information.

Infit MNSQ. In Traditional Chinese ASQ: Inventory, there was one misfit item in each communication, fine motor and personal-social. All three were “*underfit*” items. In English ASQ: Inventory, two items presented misfit. Communication and fine motor domain each had one “*underfit*” item.

Outfit MNSQ. In Traditional Chinese ASQ: Inventory, 51 out of 323 (15.8%) items were misfit items. Of these 51 items, 42 were “*underfit*” items, and 9 were “*overfit*” items. A breakdown of domains reveals that 6 misfit items (i.e., 5 underfit items and 1 overfit item) were in communication, 7 (i.e., all underfit items) were in gross motor, 21 (i.e., 19 underfit items and 2 overfit items) were in fine motor, 12 (i.e., 6 underfit items and 6 overfit items) were in problem solving, and 5 (i.e., all underfit items) were in personal-social.

In English ASQ: Inventory, 35 out of 323 items (10.8%) items presented misfit, and of them, 26 misfit items were “*underfit*” and 9 were “*overfit*.” Of all misfit items, 6 were in communication (i.e., 3 underfit items and 3 overfit item), 6 were in gross motor (i.e., 4 underfit items and 2 overfit item), 8 were in fine motor (i.e., 6 underfit items and 2 overfit item), 12 were in problem solving (i.e., 10 underfit items and 2 overfit item), and 3 were in personal-social (i.e., 3 underfit items).

Table 12. Item difficulty and fit statistics of Traditional Chinese ASQ: Inventory items in communication across age intervals.

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	60	<i>cm60m6</i>	218	4.03	0.88	0.76
64	64	<i>cm7p</i>	218	4.00	0.85	0.70

Table 12. (continued).

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
63	62	cm10p	218	3.70	1.08	1.03
62	65	cm60m4	218	3.34	0.79	0.58
61	59	cm5p	218	3.16	1.01	0.93
60	54	cm2p	218	3.00	0.77	0.81
59	53	cm8p	218	2.97	0.82	0.75
58	58	cm17p	218	2.94	0.74	0.64
57	52	cm48m3	218	2.73	0.87	0.75
56	63	cm1p	218	2.68	0.71	0.60
55	47	cm19p	218	2.53	1.36	1.28
54	46	cm6p	218	2.43	1.20	1.17
53	57	cm20p	218	2.41	0.77	0.78
52	61	cm36m6	218	2.29	0.75	0.76
51	56	cm15p	218	2.24	0.60	0.53
50	55	cm42m6	218	2.18	0.69	0.97
49	50	cm4p	218	2.02	0.89	0.86
48	49	cm21p	218	2.00	1.08	0.80
47	51	cm54m6	218	2.00	0.91	0.75
46	48	cm14p	218	1.91	0.86	0.84
45	45	cm48m4	218	0.86	1.32	1.00
44	41	cm42m5	218	0.03	1.72	1.45
43	43	cm54m5	218	-0.45	0.89	0.80
42	44	cm48m1	218	-0.59	1.07	1.71
41	42	cm48m2	218	-0.60	1.60	2.68
40	40	cm27m5	218	-0.94	1.27	3.91
39	39	cm22m5	218	-2.07	1.22	1.04
38	37	cm30m6	218	-2.33	0.87	2.42
37	38	cm33m6	218	-2.59	0.90	1.11
36	34	cm33m5	218	-2.73	1.62	9.90
35	36	cm18m6	218	-3.00	1.02	0.30

Table 12. (continued).

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
34	35	cm16m5	218	-3.20	1.58	1.13

Note. Misfit items are in bold. Items that showed noteworthy changes in order (i.e., showed a change of at least five spots) are in italics.

Table 13. Item difficulty and fit statistics of Traditional Chinese ASQ: Inventory items in gross motor across age intervals.

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	65	gm16p	198	4.84	0.76	0.63
64	64	gm18p	198	4.60	0.99	0.86
63	62	gm60m5	198	4.04	0.81	1.46
62	61	gm20p	198	3.77	0.78	1.24
61	57	gm4p	198	3.51	0.86	1.32
60	55	<i>gm19p</i>	<i>198</i>	<i>3.43</i>	<i>0.71</i>	<i>1.03</i>
59	59	gm60m6	198	3.38	0.81	0.60
58	63	<i>gm14p</i>	<i>198</i>	<i>3.26</i>	<i>1.10</i>	<i>0.86</i>
57	60	gm5p	198	3.22	0.80	0.62
56	51	<i>gm7p</i>	<i>198</i>	<i>3.17</i>	<i>0.82</i>	<i>0.72</i>
55	58	gm13p	198	2.82	0.91	1.06
54	49	gm3p	198	2.71	1.28	1.57
53	54	gm48m5	198	2.56	0.92	1.18
52	52	gm8p	198	2.52	0.92	1.21
51	56	gm9p	198	2.36	0.99	1.40
50	50	gm12p	198	2.14	1.10	1.11
49	53	gm6p	198	2.01	0.80	0.96
48	47	gm48m6	198	1.45	0.83	1.04
47	48	gm48m4	198	1.32	0.94	0.75
46	46	gm17p	198	0.74	1.38	3.51
45	43	gm42m5	198	0.70	1.46	3.09
44	41	gm48m3	198	0.59	1.50	5.60
43	42	gm54m6	198	0.55	1.11	2.08
42	44	gm36m6	198	0.46	1.33	5.22

Table 13. (continued).

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
41	45	gm10p	198	0.37	1.06	6.73
40	40	gm30m6	198	-0.57	0.97	1.18
39	39	gm27m5	198	-0.70	1.19	0.87

Note. Misfit items are in bold. Items that showed noteworthy changes in order (i.e., showed a change of at least five spots) are in italics.

Table 14. Item difficulty and fit statistics of Traditional Chinese ASQ: Inventory items in fine motor across age intervals.

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	63	fm3p	182	6.46	0.81	0.45
64	60	fm1p	182	5.60	0.81	0.55
63	55	<i>fm60m6</i>	<i>182</i>	<i>5.52</i>	<i>0.99</i>	9.90
62	61	fm9p	182	5.36	1.07	0.78
61	62	fm11p	182	5.25	0.83	0.58
60	59	fm60m5	182	4.98	0.73	0.52
59	57	fm10p	182	4.72	0.72	0.47
58	58	fm5p	182	4.66	0.86	6.25
57	53	fm2p	182	4.56	0.86	0.66
56	56	fm7p	182	4.32	0.93	5.82
55	50	<i>fm54m5</i>	<i>182</i>	<i>4.32</i>	<i>0.91</i>	5.23
54	54	fm60m4	182	4.28	0.72	0.53
53	45	<i>fm4p</i>	<i>182</i>	<i>4.25</i>	<i>1.44</i>	1.68
52	52	fm54m6	182	4.23	0.74	3.99
51	47	fm12p	182	4.23	1.64	1.61
50	51	fm48m6	182	3.97	0.78	2.75
49	42	<i>fm48m5</i>	<i>182</i>	<i>3.95</i>	<i>1.23</i>	3.51
48	48	fm54m4	182	3.92	0.78	2.13
47	44	fm48m2	182	3.88	0.83	2.99
46	46	fm6p	182	3.47	1.14	3.02
45	49	fm42m6	182	3.44	0.84	2.92
44	43	fm8p	182	3.27	1.26	2.46

Table 14. (continued).

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
43	41	fm48m3	182	3.15	1.00	0.87
42	39	fm42m5	182	3.05	1.52	2.62
41	37	fm33m6	182	2.74	1.11	1.61
40	40	fm48m4	182	2.56	1.09	1.50
39	38	fm36m6	182	2.47	0.97	1.48
38	35	fm27m6	182	2.11	1.22	1.33
37	36	fm22m6	182	2.03	1.49	3.28
36	34	fm27m3	182	1.95	0.97	1.14
35	33	fm30m5	182	1.02	1.08	0.75
34	32	fm30m6	182	-0.05	0.82	0.93
33	30	fm20m5	182	-0.57	1.05	5.42
32	31	fm20m6	182	-0.65	0.83	2.02

Note. Misfit items are in bold. Items that showed noteworthy changes in order (i.e., showed a change of at least five spots) are in italics.

Table 15. Item difficulty and fit statistics of Traditional Chinese ASQ: Inventory items in problem solving across age intervals.

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	65	cg11p	192	4.60	0.76	0.47
64	59	cg16p	192	4.35	0.89	0.93
63	64	cg17p	192	4.17	0.55	0.32
62	63	cg19p	192	4.12	0.65	0.41
61	51	cg30p	192	3.99	2.11	2.97
60	58	cg15p	192	3.67	0.71	0.92
59	62	cg18p	192	3.54	0.90	0.59
58	61	cg10p	192	3.44	0.62	0.37
57	57	cg14p	192	3.26	0.68	0.61
56	60	cg29p	192	2.95	0.75	1.18
55	54	cg28p	192	2.61	1.67	1.70
54	56	cg13p	192	2.52	1.17	1.07
53	50	cg60m6	192	2.20	1.27	1.21

Table 15. (continued).

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
52	55	cg9p	192	1.91	0.92	1.22
51	52	cg54m5	192	1.67	1.02	2.37
50	48	cg60m4	192	1.64	1.05	1.06
49	53	cg22p	192	1.19	0.85	0.72
48	49	cg54m6	192	0.74	0.83	0.76
47	47	cg48m6	192	0.70	1.04	1.33
46	44	cg18m5	192	0.23	1.20	2.45
45	39	<i>cg42m6</i>	<i>192</i>	<i>-0.05</i>	<i>1.30</i>	2.28
44	46	cg48m4	192	-0.10	0.96	1.49
43	41	cg48m3	192	-0.14	0.98	9.90
42	45	cg42m5	192	-0.16	0.84	0.43
41	43	cg30m6	192	-0.52	0.76	0.79
40	42	cg36m6	192	-0.52	0.87	0.47
39	40	cg27m6	192	-0.71	0.84	1.27

Note. Misfit items are in bold. Items that showed noteworthy changes in order (i.e., showed a change of at least five spots) are in italics.

Table 16. Item difficulty and fit statistics of Traditional Chinese ASQ: Inventory items in personal-social across age intervals.

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	65	ps13ap	187	3.69	0.91	0.96
64	56	<i>ps9ap</i>	<i>187</i>	<i>3.51</i>	<i>1.06</i>	<i>1.08</i>
63	61	ps8sp	187	2.99	0.70	0.69
62	57	<i>ps22sp</i>	<i>187</i>	<i>2.96</i>	<i>0.84</i>	<i>0.81</i>
61	60	ps54m6	187	2.89	0.79	0.79
60	55	<i>ps48m5</i>	<i>187</i>	<i>2.73</i>	<i>1.14</i>	<i>1.13</i>
59	48	<i>ps3ap</i>	<i>187</i>	<i>2.70</i>	<i>0.98</i>	<i>0.93</i>
58	50	<i>ps11ap</i>	<i>187</i>	<i>2.61</i>	<i>0.99</i>	<i>1.08</i>
57	54	ps9sp	187	2.58	0.98	0.96
56	59	ps11sp	187	2.52	0.93	1.12
55	64	<i>ps15sp</i>	<i>187</i>	<i>2.51</i>	<i>0.81</i>	<i>0.77</i>

Table 16. (continued).

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
54	62	<i>ps10sp</i>	187	2.50	1.07	1.23
53	63	<i>ps23sp</i>	187	2.43	0.85	0.71
52	37	<i>ps16m4</i>	187	2.16	2.08	2.99
51	58	<i>ps17sp</i>	187	2.11	0.83	0.87
50	51	ps42m5	187	2.09	0.85	0.83
49	53	ps48m2	187	2.00	0.90	1.20
48	52	ps10ap	187	1.94	0.71	0.61
47	49	ps8ap	187	1.91	0.90	0.74
46	46	ps27m6	187	1.60	1.01	0.86
45	47	ps2ap	187	1.49	0.93	0.82
44	45	ps60m5	187	1.40	1.07	1.27
43	43	ps48m6	187	1.11	0.88	0.84
42	42	ps60m6	187	1.09	1.17	1.09
41	44	ps48m4	187	0.90	1.17	1.44
40	41	ps42m6	187	0.11	0.94	1.05
39	40	ps33m6	187	0.07	0.99	1.81
38	39	ps24m6	187	-0.18	0.99	1.52
37	38	ps30m5	187	-0.36	0.92	1.64
36	36	ps30m6	187	-0.78	1.21	2.80

Note. Misfit items are in bold. Items that showed noteworthy changes in order (i.e., showed a change of at least five spots) are in italics.

Table 17. Item difficulty and fit statistics of English ASQ: Inventory items in communication across age intervals.

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	64	cm7p	130	4.42	0.97	0.87
64	65	cm60m4	130	4.36	1.28	1.23
63	62	cm10p	130	4.22	1.27	1.23
62	63	cm1p	130	4.16	1.14	1.49
61	61	cm36m6	130	3.82	1.36	1.24
60	60	cm60m6	130	3.70	0.98	0.88

Table 17. (continued).

59	59	cm5p	130	3.65	1.01	0.96
58	58	cm17p	130	3.19	0.88	0.58
57	57	cm20p	130	3.09	1.04	1.03
56	53	cm8p	130	2.95	0.85	0.53
55	56	cm15p	130	2.88	0.88	0.61
54	54	cm2p	130	2.81	0.98	0.93
53	47	<i>cm19p</i>	<i>130</i>	<i>2.67</i>	<i>1.48</i>	1.64
52	51	cm54m6	130	2.67	0.88	0.64
51	46	<i>cm6p</i>	<i>130</i>	<i>2.61</i>	<i>1.27</i>	1.99
50	55	<i>cm42m6</i>	<i>130</i>	<i>2.51</i>	<i>0.79</i>	<i>0.71</i>
49	52	cm48m3	130	2.49	0.68	0.57
48	48	cm14p	130	2.40	1.23	0.78
47	50	cm4p	130	2.36	1.22	1.39
46	45	cm48m4	130	2.29	0.95	0.76
45	49	cm21p	130	2.27	1.41	0.87
44	44	cm48m1	130	1.72	0.80	0.90
43	41	cm42m5	130	1.23	1.00	0.89
42	42	cm48m2	130	1.18	1.01	0.87
41	37	cm30m6	130	0.85	1.14	0.65
40	43	cm54m5	130	0.75	0.72	0.41
39	39	cm22m5	130	0.59	0.88	0.51
38	38	cm33m6	130	0.58	1.81	0.97
37	40	cm27m5	130	0.13	0.53	0.21
36	34	cm33m5	130	0.07	1.28	0.67
35	36	cm18m6	130	-1.00	0.64	0.16
34	35	cm16m5	130	-1.09	1.27	9.90

Note. Misfit items are in bold. Items that showed noteworthy changes in order (i.e., showed a change of at least five spots) are in italics.

Table 18. Item difficulty and fit statistics of English ASQ: Inventory items in gross motor across age intervals

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	65	gm16p	185	6.18	1.11	0.59
64	64	gm18p	185	5.77	1.23	2.47
63	63	gm14p	185	5.21	0.98	1.00
62	60	gm5p	185	4.55	0.90	1.06
61	61	gm20p	185	4.42	0.90	0.72
60	62	gm60m5	185	4.20	0.86	0.77
59	58	gm13p	185	4.06	0.72	0.56
58	57	gm4p	185	4.00	0.69	0.48
57	55	gm19p	185	3.93	0.80	0.85
56	59	gm60m6	185	3.88	1.29	1.25
55	51	gm7p	185	3.87	0.74	0.57
54	53	gm6p	185	3.79	0.81	0.65
53	50	gm12p	185	3.65	0.69	0.64
52	56	gm9p	185	3.62	0.84	0.97
51	52	gm8p	185	3.59	0.96	0.80
50	49	gm3p	185	3.43	0.67	0.48
49	45	gm10p	185	3.36	1.30	1.85
48	46	gm17p	185	3.26	0.74	0.76
47	54	<i>gm48m5</i>	<i>185</i>	<i>2.70</i>	<i>1.32</i>	<i>1.27</i>
46	47	gm48m5	185	2.34	1.09	1.53
45	48	gm48m4	185	2.20	1.08	1.13
44	44	gm36m6	185	1.53	0.83	0.73
43	43	gm42m5	185	1.32	1.21	1.35
42	41	gm48m3	185	1.17	1.34	4.57
41	42	gm54m6	185	0.94	0.86	1.19
40	40	gm30m6	185	0.69	0.75	0.89
39	39	gm27m5	185	-0.05	0.93	0.58

Note. Misfit items are in bold. Items that showed noteworthy changes in order (i.e., showed a change of at least five spots) are in italics.

Table 19. Item difficulty and fit statistics for English ASQ: Inventory items in fine motor domain by age intervals

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	63	fm3p	114	4.07	0.74	0.53
64	61	fm9p	114	3.77	0.80	0.62
63	60	fm1p	114	3.73	0.55	0.40
62	62	fm11p	114	3.71	0.76	0.71
61	58	fm5p	114	3.64	1.46	1.57
60	57	fm10p	114	3.47	1.20	1.01
59	56	fm7p	114	3.37	0.94	0.72
58	59	fm60m5	114	3.27	0.68	0.67
57	54	fm60m4	114	3.19	0.95	0.91
56	55	fm60m6	114	2.98	0.74	0.63
55	53	fm2p	114	2.88	0.94	0.93
54	50	fm54m5	114	2.87	0.96	0.92
53	51	fm48m6	114	2.67	0.92	0.82
52	52	fm54m6	114	2.58	0.71	0.73
51	48	fm54m4	114	2.53	0.84	0.77
50	49	fm42m6	114	2.51	0.65	0.55
49	45	fm4p	114	2.46	0.94	1.14
48	43	<i>fm8p</i>	<i>114</i>	<i>2.44</i>	<i>1.28</i>	<i>1.75</i>
47	46	fm6p	114	2.42	1.02	1.16
46	47	fm12p	114	2.40	1.18	1.55
45	42	fm48m5	114	2.24	0.89	0.90
44	44	fm48m2	114	2.22	0.84	0.69
43	41	fm48m3	114	2.12	1.00	0.86
42	38	fm36m6	114	2.07	1.33	1.91
41	40	fm48m4	114	1.89	1.52	2.33
40	39	fm42m5	114	1.58	1.38	1.19
39	37	fm33m6	114	1.22	1.27	1.41
38	35	fm27m6	114	0.85	1.05	0.86
37	34	fm27m3	114	0.84	1.10	0.95
36	36	fm22m6	114	0.78	1.02	0.93
35	33	fm30m5	114	0.53	0.67	0.36

Table 19. (continued).

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
34	30	fm20m5	114	-1.59	1.30	4.26
33	32	fm30m6	114	-1.59	1.20	1.03
32	31	fm20m6	114	-1.82	0.96	0.97

Note. Misfit items are in bold. Items that showed noteworthy changes in order (i.e., showed a change of at least five spots) are in italics.

Table 20. Item difficulty and fit statistics for English ASQ: Inventory items in problem solving domain by age intervals

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	65	cg11p	109	5.24	0.93	9.90
64	63	cg19p	109	5.03	1.04	9.90
63	61	cg10p	109	4.99	1.06	0.74
62	64	cg17p	109	4.96	0.95	9.90
61	62	cg18p	109	4.91	0.91	0.88
60	60	cg29p	109	4.83	1.03	1.28
59	58	cg15p	109	4.74	0.91	5.41
58	59	cg16p	109	4.72	1.07	0.99
57	57	cg14p	109	4.38	1.06	1.11
56	56	cg13p	109	4.37	1.24	9.90
55	55	cg9p	109	4.36	1.09	7.80
54	54	cg28p	109	4.26	1.03	1.02
53	53	cg22p	109	4.09	1.32	1.23
52	51	cg30p	109	4.09	1.21	9.90
51	52	cg54m5	109	2.69	0.86	1.18
50	50	cg60m6	109	2.65	0.87	1.94
49	49	cg54m6	109	1.95	1.01	1.02
48	48	cg60m4	109	1.75	1.13	1.15
47	47	cg48m6	109	1.03	1.06	0.69
46	46	cg48m4	109	0.91	0.65	0.36
45	45	cg42m5	109	0.86	1.32	0.88
44	44	cg18m5	109	0.78	1.19	0.59

Table 20. (continued).

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
43	40	cg27m6	109	0.67	1.38	2.01
42	41	cg48m3	109	0.46	0.98	1.47
41	42	cg36m6	109	0.32	1.34	1.72
40	43	cg30m6	109	0.10	1.15	0.97
39	39	cg42m6	109	-0.42	0.80	0.25

Note. Misfit items are in bold. Items that showed noteworthy changes in order (i.e., showed a change of at least five spots) are in italics.

Table 21. Item difficulty and fit statistics for English ASQ: Inventory items in personal social domain by age intervals

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	65	ps13ap	199	3.76	1.36	1.48
64	61	ps8sp	199	3.32	0.94	0.80
63	64	ps15sp	199	3.28	0.92	0.68
62	63	ps23sp	199	3.25	0.90	0.67
61	62	ps10sp	199	3.17	0.90	1.45
60	58	ps17sp	199	2.76	1.14	1.07
59	57	ps22sp	199	2.72	0.97	1.19
58	59	ps11sp	199	2.70	1.15	0.89
57	60	ps54m6	199	2.70	0.83	0.92
56	56	ps9ap	199	2.60	0.99	0.82
55	49	<i>ps8ap</i>	<i>199</i>	<i>2.54</i>	<i>1.34</i>	<i>1.71</i>
54	48	<i>ps3ap</i>	<i>199</i>	<i>2.34</i>	<i>1.00</i>	<i>0.97</i>
53	50	ps11ap	199	2.30	1.04	1.27
52	52	ps10ap	199	2.20	1.29	1.89
51	47	ps2ap	199	2.17	0.88	0.65
50	37	<i>ps16m4</i>	<i>199</i>	<i>1.85</i>	<i>1.13</i>	<i>1.23</i>
49	55	<i>ps48m5</i>	<i>199</i>	<i>1.85</i>	<i>0.85</i>	<i>0.92</i>
48	51	ps42m5	199	1.75	1.17	1.10
47	54	<i>ps9sp</i>	<i>199</i>	<i>1.60</i>	<i>1.23</i>	1.57
46	46	ps27m6	199	1.43	0.77	0.58

Table 21. (continued).

Order	Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
45	53	<i>ps48m2</i>	199	1.40	1.19	1.48
44	45	ps60m5	199	1.31	1.24	1.30
43	43	ps48m6	199	1.25	1.16	1.03
42	42	ps60m6	199	0.95	1.18	1.15
41	44	ps48m4	199	0.84	1.25	1.19
40	41	ps42m6	199	0.83	1.02	0.85
39	39	ps24m6	199	0.15	1.25	2.32
38	40	ps33m6	199	0.10	1.01	0.61
37	38	ps30m5	199	-0.11	0.84	0.65
36	36	ps30m6	199	-0.76	1.07	0.62

Note. Misfit items are in bold. Items that showed noteworthy changes in order (i.e., showed a change of at least five spots) are in italics.

Psychometric Properties

When creating an assessment tool, it is critical for researchers to ensure that psychometric properties such as reliability (i.e. consistency) and validity (i.e., accuracy) are adequate. A reliable and valid instrument should measure the construct it claims to measure, and consistently produce similar information across various assessors and intervals of time. In this study, the reliability (i.e., internal consistency) and the validity (i.e., convergent and discriminant validity, and known-groups validity) of all five ASQ: Inventory domains within both language versions were examined. The following sections report exploratory results on the technical adequacy of ASQ: Inventory.

Reliability

Reliability is a critical psychometric characteristic and refers to “the *consistency* of the test performance” (Bailey, 2004, p. 35). That is, the extent to which the measure can be generalized to different times (e.g., test-retest), item samples (e.g., internal

consistency), and scorers (e.g. inter-rater) (Salvia & Ysseldyke, 2007). In this study, internal consistency was the type of reliability investigated. Results are as follows.

Research Question 2.1. What is the internal consistency? Internal consistency examines whether an instrument measures a single construct, and focuses on whether a child's performance stays consistent across test items (Bailey, 2004). Overall Cronbach's Alphas were calculated using results from items in each domain of the Traditional Chinese and English ASQ: Inventory. Internal consistency measured by Cronbach's Alphas were computed for two age intervals (i.e., 36 to 44 months and above 45 months for communication, gross motor, problem solving, and personal-social; 36 to 38 months and above 39 months for fine motor) within each domain. For the Traditional Chinese ASQ: Inventory, the overall Cronbach's Alpha ranged from .93 to .96. For the English ASQ: Inventory, the overall Cronbach's Alpha ranged from .90 to .97. Table 22 presents the Cronbach's Alpha by age interval, domain and language version.

Table 22. Internal consistency (Cronbach's Alpha) by age interval, domain and language version.

Age Interval in Domain	Traditional Chinese	English
Communication		
36 to 44 months	.97	.97
45 to 60 months	.96	.96
Gross motor		
36 to 44 months	.94	.94
45 to 60 months	.93	.96
Fine motor		
36 to 38 months	.97	.94
39 to 60 months	.97	.96
Problem solving		
36 to 44 months	.94	.95

Table 22. (continued).

Age Interval in Domain	Traditional Chinese	English
Problem solving		
45 to 60 months	.93	.90
Personal-social		
36 to 44 months	.94	.94
45 to 60 months	.94	.94

Note. 36 months = 36 months 0 days to 38 months 30 days; 42 months = 39 months 0 days to 44 months 30 days; 48 months = 45 months 0 days to 50 months 30 days; 54 months = 51 months 0 days to 56 months 30 days; 60 months = 57 months 0 days to 66 months 0 days.

Validity

Validity is the most fundamental psychometric characteristic to consider in assessment development, which means “the extent to which a test performs the function for which it was intended” (Bailey, 2004, p.38). In other words, validity helps examine a test’s *accuracy* on what it proposes to measure. According to Sylvia and Ysseldyke (2007), validity can be evaluated through collecting evidence related to test content (e.g. content validity), internal structure (e.g. construct validity), the relationships between the test and other performances (e.g., predictive validity) convergent and discriminant power (e.g., convergent and discriminant validity), and the consequences of testing (e.g., social validity). In this section, the results of construct validity (i.e., convergent and discriminant validity, and known-groups validity) are reported.

Research Question 2.2. What is the construct validity?

Convergent and discriminant validity. The intercorrelations between scores of the five domains of the Traditional Chinese and English ASQ: Inventory were computed, respectively. The correlations between each domain and the total score of ASQ:

Inventory were also examined. In Traditional Chinese ASQ: Inventory, scores between gross motor and fine motor, gross motor and personal-social, fine motor and problem solving, fine motor and personal-social were significantly correlated. Gross motor and fine motor appeared to have the strongest correlation at .23, and the weakest correlation occurred between fine motor and problem solving, as well as gross motor and personal-social, at .15. All correlations between each domain score and Traditional Chinese ASQ: Inventory total score were significant, with the strongest correlation occurring at fine motor ($r = .71$). Table 23 presents the full results of correlations between domain scores and total scores.

Table 23. Correlations between domain scores and total scores of the Traditional Chinese ASQ: Inventory.

Domain	2	3	4	5	Total
1. Communication	.60*	.47*	.08	.66*	.77*
2. Gross motor		.53*	.19*	.70*	.81*
3. Fine motor			.33*	.52*	.82*
4. Problem solving				.15*	.45*
5. Personal-social					.82*

* $p < .05$

Of the English ASQ: Inventory, because data were collected by one domain at a time, observations within each domain were independent and unrelated. As a consequence, correlations between domains could not be computed. This limitation was a compromise between length of the assessment and completion time, and will be further discussed in the limitation section of Chapter V.

Known-groups validity. To examine known-groups validity, the domain total score of ASQ: Inventory between typical developing children and children with identified

special needs were compared. As an evidence of known-groups validity, significant mean differences were expected to occur based on disability status, and children with identified special needs to perform lower on each domain total. An ANCOVA analysis was conducted for each domain of each language version, using disability status as the classification variable (i.e., independent variable; IV), age as the covariate, and domain total score as the dependent variable (DV). Prior to calculating ANCOVA, underlying ANCOVA assumptions including: (a) the value of DV is normally distributed under all combinations of the covariate and levels of the IV, (b) equal variance of the DV under all conditional distributions, (c) independent DV scores, and (d) homogeneity-of-slopes assumption (i.e., the covariate has a linear relationship with the DV and the slopes are equal across all levels of the IV) were evaluated (Green & Salkind, 2010). Among all assumptions, it is necessary to meet the homogeneity-of-slopes assumption (i.e., no interaction effect between the covariate and the IV) before proceeding with any ANCOVA analysis. The results of testing homogeneity-of-slopes assumptions for each domain of the Traditional Chinese and English ASQ: Inventory are illustrated in Appendix G, and all domains in each language version met the assumption.

Results indicated that significant differences existed between the two groups by disability status across all domains and language versions, when controlling for age, except for fine motor in the Traditional Chinese ASQ: Inventory. That is, children with identified special needs scored significantly lower in all domains of the English ASQ: Inventory, and in communication, gross motor, problem solving, and personal-social of the Traditional Chinese ASQ: Inventory. All tables of the unadjusted and adjusted means

and variability based on disabilities status, domains, and language versions, and full ANCOVA results are listed in Appendix H.

Classification Agreement

Research Question 2.3. What is the agreement between the screening classifications determined by the established ASQ-3 cutoffs and the existing diagnosis of children with special needs? After considering the linkage between the ASQ-3 and the ASQ: Inventory, established ASQ-3 cutoff scores were adopted to determine the screening classification of participants. Parents or professionals were asked to provide disability status, type of disabilities and services received of children participants. Screening classifications from the ASQ: Inventory were then compared to the disability status reported by parents or professionals. A 2 x 2 contingency table was used with each domain of each language version to examine the preliminary sensitivity and specificity of the ASQ: Inventory. Table 24 and 25 outlines the results of classification agreement between ASQ: Inventory and disability status.

Table 24. Specificity and sensitivity of the Traditional Chinese ASQ: Inventory by domain.

Domain	Traditional Chinese (Taiwan)			
	Sensitivity	Specificity	Positive predictive value	Negative predictive value
Communication	.30	.87	.10	.96
Gross motor	.33	.84	.09	.96
Fine motor	.33	.92	.08	.95
Problem solving	.30	.81	.16	.97
Personal-social	.33	.90	.14	.96

Table 25. Specificity and sensitivity of the English ASQ: Inventory by domain.

Domain	English (United States)			
	Sensitivity	Specificity	Positive predictive value	Negative predictive value
Communication	.25	.87	.29	.89
Gross motor	.53	.92	.28	.96
Fine motor	.32	.87	.38	.84
Problem solving	.40	.91	.30	.94
Personal-social	.35	.89	.31	.90

Comparison between English and Traditional Chinese ASQ: Inventory

This section describes the results of DIF analysis. Items were expected to function invariantly across language versions. Nonetheless, cultural diversity and adaptations made to the items may have led to different response patterns. In addition to an item-level comparison, ANCOVA was also conducted to examine whether significant mean differences existed between English and Traditional Chinese ASQ: Inventory.

Research Question 3. Are There Cultural Differences Reflected in the English and Traditional Chinese ASQ: Inventory Scores Based on Response Patterns?

DIF analysis. DIF analysis allows an examination of whether items function distinctly between two groups of respondents with similar trait levels, and of which group the items favored or had higher scores. U.S. participants (i.e., those who completed the English ASQ: Inventory) served as the reference group, and Taiwanese participants (i.e., those who filled the Traditional Chinese ASQ: Inventory) were the focal group for conducting DIF analysis by domain. Because the ASQ: Inventory had a polytomous response category, the probability of Mantel (1963) DIF statistics computed by Winsteps was examined. A p -value of .05 was applied as the criterion to determine whether an item

functioned differently between the two language versions. If the probability appeared to be smaller than .05, this significance indicated that the item generated different response patterns between the English and Traditional Chinese ASQ: Inventory.

Results identified 73 out of 323 items (22.6%) that functioned differently between the two groups. Of the 73 items, 39 items appeared to be easier for U.S. participants and 34 for Taiwanese participants. Table 26 shows all DIF items and which group the items favored.

Table 26. DIF items in the ASQ: Inventory by domain and language version.

Domain	<i>N</i>	# of DIF items	DIF items
Communication	348	10	#40 (E), #47 (E), #49 (E), #52 (E), #53 (E), #54 (E), #60 (E), #61 (TC), #63 (TC), #65 (TC)
Gross motor	198	20	#32 (TC), #35 (TC), #38 (TC), #41 (E), #42 (E), #43 (E), #45 (E), #46 (E), #49 (E), #50 (TC), #51 (E), #53 (TC), #54 (E), #55 (E), #57 (E), #59 (E), #61 (E), #62 (E), #63 (TC), #65 (TC)
Fine motor	182	11	#30 (TC), #31 (TC), #38 (TC), #40 (TC), #42 (E), #45 (E), #49 (TC), #55 (E), #56 (TC), #58 (TC), #63 (E)
Problem solving	190	14	#12 (TC), #14 (TC), #15 (TC), #39 (E), #47 (E), #48 (E), #50 (E), #53 (TC), #54 (TC), #55 (TC), #56 (TC), #59 (E), #60 (TC), #64 (E)
Personal-social	185	18	#33 (E), #34 (TC), #41 (TC), #46 (E), #48 (E), #49 (TC), #50 (E), #51 (E), #53 (E), #54 (E), #55 (E), # 56 (E), #58 (TC), #61 (TC), #62 (TC), #63 (TC), #64 (TC), #65 (TC)

Note. The letter in the parentheses indicates the language of which the item is in favor. E = English ASQ: Inventory; TC = Traditional Chinese ASQ: Inventory.

ANCOVA. An ANCOVA analysis was conducted for each domain to compare the mean of domain total between language versions. Language was used as the

classification variable (i.e., IV), age as the covariate, and domain total score as the DV. All ANCOVA assumptions were tested before executing analyses, especially the homogeneity-of-slopes assumption. All domains except fine motor met the assumption. For fine motor, because slopes of the two language groups were not identical across different ages, this violation prevented the application of a traditional ANCOVA model. Instead, a model that estimated separate slopes for the two groups was used. Tests of homogeneity-of-slopes assumptions for each domain are illustrated in Appendix I.

Results indicated that statistically significant differences existed between the two language groups in problem solving and personal-social when controlling for age. In these two domains, Taiwanese children scored considerably higher than U.S. children. All tables of the unadjusted and adjusted means and variability based on domains and language versions are detailed in Appendix J. ANCOVA results are presented from Tables 27 to 30.

For fine motor, because the homogeneity-of-slopes assumption was not met, the continuous covariate “*age*” was converted to a categorical variable with important ASQ-3 age intervals. Results show that statistically significant differences existed at 36, 42 and 48 months intervals between the two language versions, with U.S. children scoring noticeably higher than Taiwanese children. Table 31 contains the means and standard deviations of fine motor total score by age interval and language version. Table 32 presents the results of fine motor when comparing between groups by age interval.

Table 27. One-way ANCOVA for communication total score of the ASQ: Inventory as a function of language, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	7624.72	26.77	.00*	.07
Language	1	178.85	0.63	.43	.00
Error	345	284.83			
Total	348				

**p* < .05

Table 28. One-way ANCOVA for gross motor total score of the ASQ: Inventory as a function of language, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	9174.29	37.93	.00*	.09
Language	1	197.26	0.82	.37	.00
Error	375	241.90			
Total	378				

**p* < .05

Table 29. One-way ANCOVA for problem solving total score of the ASQ: Inventory as a function of language, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	10172.20	66.46	.00*	.18
Language	1	1871.56	12.23	.00*	.04
Error	295	153.06			
Total	298				

**p* < .05

Table 30. One-way ANCOVA for personal-social total score of the ASQ: Inventory as a function of language, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	12347.50	52.92	.00*	.12
Language	1	1450.19	6.22	.01*	.02
Error	379	233.32			
Total	382				

**p* < .05

Table 31. Means and standard deviations of fine motor total score by language version and age intervals.

Age intervals	Traditional Chinese (Taiwan)			English (United States)		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
36 months	23	77.70	22.81	18	91.00	15.45
42 months	29	87.14	19.02	39	94.28	18.81
48 months	58	93.07	20.18	32	103.09	23.90
54 months	58	106.41	14.94	14	102.86	18.17
60 months	14	112.29	7.56	11	108.27	17.43

Note. 36 months = 36 months 0 days to 38 months 30 days; 42 months = 39 months 0 days to 44 months 30 days; 48 months = 45 months 0 days to 50 months 30 days; 54 months = 51 months 0 days to 56 months 30 days; 60 months = 57 months 0 days to 60 months 30 days.

Table 32. Contrast results of fine motor total score of the ASQ: Inventory considering different age intervals for all language groups.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
36 months				
Contrast	1	3958.87	11.32	.00*
Error	291	349.73		
42 months				
Contrast	1	4092.86	11.70	.00*
Error	291	349.73		
48 months				
Contrast	1	1558.81	4.46	.04*
Error	291	349.73		
54 months				
Contrast	1	1.77	0.01	.94
Error	291	349.73		
60 months				
Contrast	1	293.64	0.84	.36
Error	291	349.73		

* $p < .05$

Utility

Eighty-seven out of 228 Taiwanese participants completed a 5-question utility survey. This survey included questions that focus on whether the ASQ: Inventory items are developmentally appropriate and easy to understand and complete, and if there were any positive effects from completing the ASQ: Inventory (e.g., bring up concerns regarding the child, and improve understanding of the child's current level of development). Parents or professionals rated each utility question with a four-point Likert Scale system, including strongly agree, agree, disagree, and strongly disagree. No U.S. participants completed the utility question on the paper-pencil version of English ASQ: Inventory. The utility survey used with Taiwanese participants and the utility question for U.S. participants can be found in the ASQ: Inventory protocols in Appendix A and B.

Research Question 4. How Do Teachers and Parents in Taiwan Perceive Usefulness, User-friendliness and Cultural Appropriateness of Traditional Chinese ASQ: Inventory, and Do Teachers and Parents in the United States Consider Any Items on the English ASQ: Inventory Difficult to Understand?

Ease of understanding. This question examined the readability of the Traditional Chinese ASQ: Inventory, and whether the words selected for item translations were linguistically relevant. Parents and teachers were asked to rate whether the Traditional Chinese ASQ: Inventory items were easy to understand. 25.3% ($n = 22$) of the survey respondents replied “*strongly agree*,” 72.3 % ($n = 63$) agreed, and 2.3% ($n = 2$) disagreed.

Relevance of items. Cultural diversity may result in different expectations of child development. This utility question intended to understand whether items included in

the Traditional Chinese ASQ: Inventory accurately captured the development and skills of Taiwanese children age 36 to 60 months. When being surveyed on whether the test items appropriately reflected the skills and expectations, 19.5% ($n = 17$) of survey respondents strongly agreed, 73.6% ($n = 64$) agreed, and 6.9% ($n = 6$) disagreed.

Informative and bring up concerns. The ASQ: Inventory is developed as a dual-purpose instrument. With the screening function, it may be used to help parents and teachers identify concerns regarding a child's development. Furthermore, with approximately 65 items per domain, the instrument may also be able to help parents and teachers better understand a child's skill repertoire. Of the 87 survey respondents, 23% ($n = 20$) strongly agreed, 72.4% ($n = 63$) agreed, and 4.6% ($n = 4$) disagreed that the Traditional Chinese ASQ: Inventory provides information in all areas. Additionally, 26.4% ($n = 23$) of respondents strongly agreed, 64.4% ($n = 56$) agreed, and 9.2% ($n = 8$) disagreed that the Traditional Chinese ASQ: Inventory helps to pinpoint concerns of a child's development.

Length of completion time. Survey respondents were asked to rate whether the time they had spent on completing the Traditional Chinese ASQ: Inventory was reasonable. Almost 15% (14.9%; $n = 13$) strongly agreed, 58.6% ($n = 51$) agreed, while 26.4% ($n = 23$) did not agree.

CHAPTER V

DISCUSSION

Early detection of children who are potentially in need of EI/ECSE services, especially those children at risk for developmental problems (e.g., live in poverty, have teen parents, and were born premature), is essential and critical. Early referral and identification help children with special needs make progress in their targeted developmental areas. Their families also benefit from the information and resources they receive, as well as from the emotional support provided by practitioners. EI/ECSE services are reported to be more cost-effective than for students receiving special education service at school ages (McLean, 2004). Moreover, timely and effective early childhood interventions help decrease the gap in ability level between children with special needs and typically developing peers of the same age. The family-centered approach also helps promote positive family outcomes and empower caregivers. Nevertheless, for at-risk children who are slightly behind their same age peers, or who are not eligible for EI/ECSE services after referral, their progress should be closely monitored at early childhood programs. Because assessment is a critical piece of all early childhood programs (NAEYC, 2003), and taking into account the fiscal challenges of today, a dual-purpose assessment tool, such as the ASQ: Inventory, that can perform both developmental screening and progress monitoring, might help carry out the recommended practices while staying within budget limitations of most programs.

The EI/ECSE system established in Taiwan fundamentally adopted what was implemented in the United States but with essential cultural adaptations. Even though the government makes an effort to increase parents' awareness of vital developmental

milestones in early years, and extensively promotes the importance of early identification, research studies still show that the identification rate of young children is low (Chen et al., 2005; Huang & Chiang, 2006; Ko, 2009; Tsai et al., 2006). This is because many of the existing developmental screening tools in Taiwan have not documented adequate technical adequacy to support the instrument (Ko, 2009). Oftentimes, the psychometric properties reported are outdated, or the normative sample collected is not nationally representative. Moreover, researchers tend to stop renewing the normative sample once a government grant is concluded.

Tsai and colleagues (2006) conducted a pilot study to examine the feasibility of the 36-month Traditional Chinese Ages and Stages Questionnaires-Second Edition (ASQ-2). Results indicated that the 36-month Traditional Chinese ASQ-2 items demonstrated initial cultural relevance, and adequate reliability and validity. Built on the foundation of that 2006 study, this research extended the scope and conducted preliminary examination of the newly translated and developed Traditional Chinese ASQ: Inventory that included all items from ASQ-3 and new items for older children. This chapter discusses results of this study on the initial cultural appropriateness of ASQ: Inventory items, a number of psychometric properties, and instrument utility perceived by parents and teachers.

Interpretation of Results

First, the means and standard deviations of English and Traditional Chinese ASQ: Inventory presented in Table 33 and 34 were examined. Results show that the ASQ: Inventory was able to demonstrate progression in skills measured in chronological age intervals. Regardless of ASQ: Inventory or ASQ-3 age intervals, means increased in most

of the domains as typically developing children aged, which indicated that these children demonstrated mastery on more ASQ: Inventory skills when they matured.

Table 33. Means and standard deviations by ASQ: Inventory age intervals in English and Traditional Chinese ASQ: Inventory.

Age Interval in Domain	Traditional Chinese (Taiwan)			English (United States)		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Communication						
36 – 44 months	67	108.79	19.00	71	109.27	21.17
45 – 60 months	151	115.72	14.59	59	118.81	15.32
Gross motor						
36 – 44 months	58	101.50	14.45	81	98.05	14.34
45 – 60 months	137	109.36	13.16	104	108.68	19.87
Fine motor						
36 – 38 months	23	77.70	22.81	18	91.00	15.45
39 – 60 months	159	98.55	19.25	96	100.07	20.76
Problem solving						
36 – 44 months	54	100.63	13.54	48	95.81	14.77
45 – 60 months	135	110.09	12.88	61	105.16	11.06
Personal-social						
36 – 44 months	53	105.38	16.62	96	102.63	17.52
45 – 60 months	130	116.34	12.33	103	113.17	16.45

Note. 36 – 45 months = 36 months 0 days to 44 months 30 days; 45 – 60 months = 45 months 0 days to 60 months 30 days; 36 – 39 months = 36 months 0 days to 38 months 30 days; 39 – 60 months = 39 months 0 days to 60 months 30 days.

Table 34. Means and standard deviations by ASQ-3 age intervals in English and Traditional Chinese ASQ: Inventory.

Age Interval in Domain	Traditional Chinese (Taiwan)			English (United States)		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Communication						
36 months	27	111.89	16.00	31	103.87	21.73
42 months	40	106.70	20.71	40	113.45	20.00

Table 34. (continued).

Age Interval in Domain	Traditional Chinese (Taiwan)			English (United States)		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Communication						
48 months	70	112.67	17.39	18	114.28	18.28
54 months	65	117.78	11.96	20	118.00	18.41
60 months	16	120.69	6.33	21	123.48	5.72
Gross motor						
36 months	25	98.72	14.33	38	95.37	13.15
42 months	33	103.61	14.41	43	100.42	15.07
48 months	58	104.81	14.35	45	107.96	14.87
54 months	63	112.83	11.60	36	108.78	24.41
60 months	16	112.25	9.53	23	109.96	21.32
Fine motor						
36 months	23	77.70	22.81	18	91.00	15.45
42 months	29	87.14	19.02	39	94.28	18.81
48 months	58	93.07	20.18	32	103.09	23.90
54 months	58	106.41	14.94	14	102.86	18.17
60 months	14	112.29	7.56	11	108.27	17.43
Problem solving						
36 months	23	98.35	12.33	11	93.73	11.76
42 months	31	102.32	14.33	37	96.43	15.64
48 months	59	104.07	12.52	30	100.30	12.42
54 months	61	114.84	11.12	23	109.65	6.86
60 months	15	114.47	11.69	8	110.50	7.84
Personal-social						
36 months	23	101.78	18.21	36	101.44	15.35
42 months	30	108.13	15.02	60	103.33	18.80
48 months	58	112.34	14.29	44	110.20	13.63
54 months	59	119.24	9.87	39	115.69	18.72

Table 34. (continued).

Age Interval in Domain	Traditional Chinese (Taiwan)			English (United States)		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Personal-social						
60 months	13	121.00	7.14	20	114.80	17.15

Note. 36 months = 36 months 0 days to 38 months 30 days; 42 months = 39 months 0 days to 44 months 30 days; 48 months = 45 months 0 days to 50 months 30 days; 54 months = 51 months 0 days to 56 months 30 days; 60 months = 57 months 0 days to 60 months 30 days.

Participants

A total of 1,069 children participated in this study; 228 were from Taiwan, and 841 were from the United States. The dissimilation of on-line data collection patterns in both countries resulted in the large discrepancy between the two participants. In the United States, data of each English ASQ: Inventory domain were independently gathered; but in Taiwan, each domain of Traditional Chinese ASQ: Inventory was sequentially presented to participants with the arrangement that they could stop completing at anytime.

Most of the ASQ: Inventory were completed by parents (i.e., mother, father, both parents, grandparents, foster parents or relatives) in the two countries, especially those completed on the web. Among all parent participants, mothers were the primary responders. This finding is in accordance with previous ASQ-3 and ASQ: Inventory studies (Bian et al., 2012; Clifford, 2006; Heo & Squires, 2011; Heo et al., 2008; Squires et al., 2009), and other researchers' report on mother as the person assuming major caregiving responsibilities regardless of children's disability status (Hassall, Rose, & McDonald, 2005; Tsai & Wang, 2009). One important note is that the Taiwanese

participants who completed the paper-pencil ASQ: Inventory in Traditional Chinese were directly recruited from preschools, and all were practitioners.

A general phenomenon in this study was that more boys than girls participated. In the Taiwanese sample, there were 18% more boys. Comparing this result with the report from Department of Statistics, Ministry of the Interior (2012) in Taiwan, the birth ratio of boys to girls was approximately 109:100 (i.e., 52% of newborns were male and 48% were female) in the years of 2007, 2008 and 2009. Even though the percentage of boys was slightly higher than girls' in this study, the gender ratio corresponded to the national norms. Of the U.S. sample, 9% more boys participated than girls, which was consistent with the distribution reported in the 2010 Census report of sex and gender (U.S. Census Bureau, 2011) – under age 5, 51% of the population was boys and 49% was girls.

The Taiwanese families of children who participated in this study were of high socio-economic status (SES) backgrounds. When examining the monthly family income, of those who provided the demographic information, families were distributed roughly even across income levels, with 35% of families in the highest income category (i.e., NTD \$80,001 and above). For the education level of mother, a large portion (73%) of mothers possessed at least a bachelor's degree. This is considerably higher than what was reported in the report from Department of Statistics, Ministry of the Interior (2012) – 48% of Taiwanese females older than 15 years old attained more than an associate's degree. Besides recruiting early childhood programs from urban, suburban and rural settings, recruitment efforts were also made on-line through different websites to capture families of various income and education levels. Nonetheless, the finding was that one of the participating preschool programs happened to be located in proximity to a local

university and might have enrolled children whose parents possessed advanced degree levels. Likewise, parents with higher education attainment were more likely to respond to on-line recruiting materials, especially mothers. These mothers might have a fundamental understanding of child development, as well as be equipped with the knowledge of how to get access to a variety of services and resources.

Similar to the Taiwanese sample, the U.S. sample also consisted of families with high SES status. This is constant with the findings from the dissertation study conducted on ASQ:IT (Clifford, 2006). Over half of the mothers (52.4%) were reported as holding a bachelor's degree or above, and almost 60% of the respondents had a family annual income that exceeds U.S. \$40,000. Based on the statistical abstract of family income from 2010 Census (U.S. Census Bureau, 2012), approximately 60% of the family had an annual income above U.S. \$50,000, which was moderately compatible with the current result. When examining educational attainment, in the statistical abstract (U.S. Census Bureau, 2012) 29.6% of the females were college graduates or above. Since the current U.S. sample was based on on-line recruitment, similar to the Taiwanese sample, greater number of mothers with higher education attainment responded to the questionnaires.

Comparable to the results from 2010 Census, most participants (62.6%) reported the ethnicity of children to be White/Caucasian (U.S. Census Bureau, 2011). African American and Hispanic/Latino children were considered as under-represented when compared to the national distributions, which might be a result of inadequate sample participants recruited from the South – the most populated region of the United States for both non-Hispanic Whites and minorities (U.S. Census Bureau, 2011).

Item Functioning

Results of item difficulty and fit statistics from IRT models illustrated how informative each item was regarding the latent construct measured in each domain and, by analyzing actual responses, whether the items were hierarchically organized according to their levels of difficulty. Especially for the Traditional Chinese ASQ: Inventory, because it is newly developed, the current item order was inherited from the English version. Considering how cultural beliefs and developmental expectations may be slightly different between Taiwan and U.S. parents and teachers, results on item difficulty were remarkably helpful in ordering items in the Traditional Chinese ASQ: Inventory.

Item difficulty. As previously mentioned in Chapter IV, because IRT analysis heavily relied on actual responses; items that received assigned scores (i.e., before basal or after ceiling points) with no variability were not estimated in IRT models. In addition, an easy item might share similar item difficulty with a more difficult item if the two items were of minimal variability (i.e., both items only had one respondent scoring a “0” or a “1,” and responses from other respondents were identical). Likewise, the starting points were set lower to begin with to optimize the number of actual responses captured. Thus, in this study, only the difficulty levels of items after starting points were examined. For Traditional Chinese ASQ: Inventory, results indicated that items from each domain were distributed across a wide range of difficulty level. A similar pattern was discovered for the English ASQ: Inventory, except in personal-social, where two dyads of item presented equivalent levels of difficulty. Table 35 lists those pairs.

Table 35. Items that shared identical item difficulty in personal-social of English ASQ: Inventory.

Item difficulty	Item #	Item
2.70	59 (ps11sp)	Does your child tell an adult when he or she is having trouble with a friend?
	60 (ps54m6)	Does your child dress and undress himself including buttoning medium-size buttons and zipping front zippers?
1.85	37 (ps16m4)	While looking at himself in the mirror, does your child offer a toy to his own image?
	55 (ps48m5)	Does your child brush her teeth by putting toothpaste on the toothbrush and brushing all her teeth without help? (You may still need to check and rebrush your child's teeth.)

Note. ps = Personal-social; 11sp = The eleventh new social item in personal-social; 54m6 = The sixth item in the 54-month ASQ-3; 16m4 = The fourth item in the 16-month ASQ-3; 48m5 = The fifth item in the 48-month ASQ-3.

Since item “*ps11sp*” was a new item added to the ASQ: Inventory for older children in the sample, the item can be reworded or further clarified in future studies with examples to raise the level of difficulty. For example, instead of “*Does your child tell an adult when he or she is having trouble with a friend?*” a possible revision may be “*Does your child describe problems and seek help from an adult when he or she is having trouble with a friend?*” For items “*ps16m4*” and “*ps48m5*,” since the developmental screening function of the ASQ: Inventory is linked to the ASQ-3 cutoffs, the original wording for both items will be retained in order to assure that ASQ-3 cutoff scores can continue to be used in conjunction with the ASQ: Inventory.

Item order by difficulty. Item order was informed by the relative difficulty of all items in the domain, and facilitated the application of basal and ceiling rules to the ASQ: Inventory. As mentioned previously, when items were organized according to the hierarchy of their difficulty – the more precise the item difficulty was, the more accurate those scoring assumptions would be in reflecting person trait. This helped decrease the

amount of items completed by parents and teachers. In this study, the item order applied to the English and Traditional Chinese ASQ: Inventory was based on results of previous English ASQ: Inventory analyses. Given that the Traditional Chinese ASQ: Inventory was recently developed, IRT analysis results from this study informed the updates on item order of the Traditional Chinese ASQ: Inventory, corresponding to actual responses collected from Taiwanese participants. Nevertheless, because item order mirrored the relative difficulty of items, similar to the item difficulty section, only the order of items after starting points were examined to avoid difficulty fluctuations.

Not surprisingly, more items in the Traditional Chinese ASQ: Inventory changed their positions in the scale of item order since these items were originally organized based on the results of the English ASQ: Inventory. Particularly in communication and personal-social, due to the linguistic characteristics and differences of Traditional Chinese, and to the adaptations made to accommodate the Taiwanese cultural beliefs in child rearing, the results were understandable. Thus, in the updated future version of the Traditional Chinese and English ASQ: Inventory, items will be reorganized based on the findings of this study. Detailed information on items that demonstrated a noteworthy change (i.e., has a change of item order of at least five spots) is in Appendix K.

Item fit. Both *infit* MNSQ and *outfit* MNSQ were computed to examine how sensitive the items were to unexpected responses when the item was at or far from the respondent's level of ability (Linacre, 2012). Generally, both language versions had fewer items that presented misfit in *infit* MNSQ, which indicated that participants were able to produce reasonable responses with the items that were of their trait levels. That is, children with advanced level of skills are more likely to receive full credit with the easier

items and children who are not as skillful are less likely to. Interestingly, though not a high percent (i.e., about 16% for Traditional Chinese ASQ: Inventory and 11% for English ASQ: Inventory), more items were identified as misfit items in *outfit* MNSQ. This illustrated that these items were insensitive to unusual responses from participants when they answered items that were outlying to their level of ability. Children with limited abilities may fully score on items that are extremely difficult; and exceptionally skilled children may not receive full credit from very easy items.

The explanation for *outfit* MNSQ misfit items outnumbering the ones from *infit* MNSQ might be due to the score assumptions made before the basal and after the ceiling points. Even though the items were hierarchically listed based on their difficulty, there were noteworthy item order changes demonstrated by each language version based on the analysis results of this study. Furthermore, the assigned scores (i.e., “0” for all items after the ceiling point, and “2” for all items before the basal points) might not truly reflect the trait levels of sample respondents and provide accurate information.

A completed list of misfit items in each domain of English and Traditional Chinese ASQ: Inventory is in Appendix F. For misfit items, > 1.5 was considered as “*underfit*” and < 0.5 as “*overfit*.” “*Underfit*” items were more problematic because they presented more randomness than useful information regarding the underlying construct, and degraded an assessment such that these items would need to be revised promptly (Linacre, 2012). For misfit items that were originally retrieved from ASQ-3, at this point wordings will be retained in ASQ: Inventory so that the ASQ-3 cutoffs can be used for the screening purpose, but modifications should be made in the future. Due to the possible effects of scoring assumptions on *outfit* MNSQ, only one underfit item from *infit*

MNSQ were suggested for wording changes based on the results of item fit. Item “12p” in fine motor of the Traditional Chinese ASQ: Inventory read “*Can your child buckle a seat belt while riding in a car?*” – this arguably can be also categorized as a problem solving skill: whether the child knows he or she should buckle a seat belt while riding in a car. The involvement of a skill in other developmental domains might lead to different response patterns from parents or teachers. Additionally, parents tend to buckle the seat belt for their children *before* riding in a car; therefore, substituting this item with a new item may also be an appropriate solution.

Reliability

Internal consistency. To inspect the stability of a child’s responses across items in each domain (e.g., communication), and in consideration of the polytomous scoring nature of ASQ: Inventory items, Cronbach’s Alpha was calculated (Chiu, 2006; Clifford, 2006). Cronbach’s Alpha ranges from 0 to 1.0, and the widely accepted rule of thumb is that as the value of coefficient alpha approaches to 1.0, greater internal consistency is indicated (Cronbach & Shavelson, 2004; Yang & Green, 2011). The coefficient alphas across domains and age intervals were between .93 to .97 for the Traditional Chinese ASQ: Inventory, and .90 to .97 for the English version. This demonstrated excellent internal consistency was demonstrated in both language versions, which means that most of the items within each domain measured a unidimensional construct. Nonetheless, an important caution to note was that, as previously mentioned, basal and ceiling rules were applied to the ASQ: Inventory to shorten the length of completion, resulting in score assumptions of the items that were before and after the ceiling. Compared to collected actual responses from caregivers, these score assumptions (i.e., all items before the basal

point received a score of “0,” and those after the ceiling point received a score of “2”) remained consistent throughout the items, and might have inflated the results of internal consistency.

Validity

Construct validity. Construct validity was evaluated via convergent and discriminant validity, and known-groups validity. Both types of construct validity were calculated for the Taiwanese sample, but only known-groups validity was computed for the U.S. sample due to the limitation in data collection methods.

Convergent and discriminant validity. Developmental domains that measured related skills (e.g., gross motor and fine motor) were hypothesized to be moderately correlated. This means that the interdependency between domains was detected, but the skills assessed in two domains were not completely overlapped. On the other hand, domains with different underlying constructs should be less related (e.g., problem solving and gross motor) to clearly distinguish between the type of skills examined. All intercorrelations were significant at $p < .05$, except for correlations between communication and problem solving. Most of the developmental domains demonstrated moderate to strong (i.e., ranging from .30 to .69) intercorrelations, which evidenced the interdependency between domains, and implied that when measuring an item within a domain, skills from other developmental areas are related and might be needed to perform a skill.

In Taiwan, the discrepancy between parental and teacher expectations of children was noteworthy. Learning pre-academic skills at preschool is considered a priority to many of Taiwanese parents (Huntsinger et al., 1997; Parmar et al., 2004, 2008), while

teachers deem the well-being of children as the critical goal in preschool classrooms (Liou, 2000, 2006). Additionally, private and public preschools focus on different skills to teach. Because public preschools have stable governmental funding support, teachers do not overly stress the importance of cognitive skill, and have flexibility in creating play-based activity plans that target other vital competences (e.g., sharing, turn taking and emotional regulation). Conversely, the major income source for private preschools is tuition. Even though some parents – due to influences of higher educational attainment and Western cultures – have started to emphasize the importance of children developing social and emotional skills (Liou, 1999, 2001, 2002, 2006), the majority of parents still prefer their children to start with learning reading and writing in preschools. For private preschools to stay competitive in enrolling new children, teachers from private preschools are requested to capitalize on all opportunities in teaching reading and writing. As a result, the number of children enrolled in private preschools is double that of children enrolled in public preschools (Ministry of Education, 2012).

The strong focus on pre-academic skills often leads to fewer opportunities for children to develop competencies in other developmental domains. This might explain the low correlations between problem solving and other domains, and with the Traditional Chinese ASQ: Inventory total. Furthermore, preschool children are expected to follow teacher directions and to stay quiet when teachers are talking or during instruction time. While children are significantly progressing in their problem solving skills, skills in other developmental domains, especially communication, might not advance at a comparable level.

Known-groups validity. Known-groups validity was evaluated by examining whether significant differences were demonstrated between typically developing children and children with identified special needs across domains, after controlling for age. Results indicated that after maturation effects were accounted for (i.e., age was treated as a covariate), the domain totals scored by typically developing children were significantly higher than those scored by children with disabilities across all domains in the two language versions, except for fine motor in Traditional Chinese ASQ: Inventory. Even though the difference in fine motor total scores was statistically insignificant in the Traditional Chinese ASQ: Inventory, one important observation was that the average total of typically developing children was approximately 10 points higher than that of children with special needs. Overall, the findings suggest that both English and Traditional Chinese ASQ: Inventory were able to detect disparity between two groups of children with different levels of development in the United States and Taiwan, respectively.

Classification agreement. ASQ: Inventory was developed as a dual-purpose tool that can perform developmental screening as well as progress monitoring. A critical first step of validating this tool is to evaluate the effectiveness of ASQ: Inventory in identifying children who may need further assessment and who potentially have special needs. The linkage with the ASQ-3 allows the ASQ: Inventory to determine screening classifications through extracting ASQ-3 items scores from each domain of the ASQ: Inventory and comparing the totals to established ASQ-3 cutoffs. For both language versions of ASQ: Inventory, solid specificity (i.e., true negatives) was demonstrated across domains, ranging from .81 to .92. This means the Traditional Chinese ASQ: Inventory detected 81% to 92 % of the typically developing participants without

identified special needs, and the English ASQ: Inventory identified 87% to 92% of typically developing children in the sample. When comparing across all domains within the Traditional Chinese ASQ: Inventory, fine motor showed the highest specificity, while in English ASQ: Inventory, gross motor had the highest.

Unlike specificity, the results of sensitivity (i.e., true positives) were not as promising, ranging from .25 to .53. This indicated that both language versions of ASQ: Inventory were only able to catch less than half of the children participants with special needs, with 30% to 33% in Traditional Chinese, and 25% to 53% in English. Across all domains within the Traditional Chinese ASQ: Inventory, gross motor, fine motor and personal-social had the highest sensitivity. For the English ASQ: Inventory, gross motor had the highest. The small sample of children with special needs (i.e., number of participants was between 9 and 28) might contribute to low sensitivity. Likewise, these children with special needs in the sample were either recruited from EI/ECSE agencies or reported by parents or teachers as presently receiving services. Thus, their ASQ: Inventory scores might be inflated as a result of the remedial services received. Most important of all, because the Traditional Chinese ASQ-3 (Chen & Bian, 2012) has not been studied and no cutoff scores has been established, in this study the screening classification results of the Traditional Chinese ASQ: Inventory were based on the U.S. ASQ-3 cutoffs. Moreover, the normative sample of the United States did not appropriately reflect the population constitution of Taiwan. This might also explain why the sensitivity results were lower than anticipated. Despite these reasons, results of sensitivity were still unacceptable. Future studies (i.e., concurrent validity studies) are required to re-examine the sensitivity of ASQ: Inventory.

Positive and negative predictive values were also computed, which examined the proportion of children who were correctly identified by the developmental screening instrument, either with or without disabilities (Altman & Bland, 1994). Promising results were obtained for negative predictive values, which indicated that both the Traditional Chinese and English ASQ: Inventory were able to correctly recognize typically developing children. Nevertheless, similar to sensitivity, the challenges of the small sample number and the receipt of EI/ECSE services procured less than desirable results of positive predictive value. This limited the capability of both language versions of ASQ: Inventory to accurately screen children who have special needs.

The Comparison between English and Traditional Chinese ASQ: Inventory

Results from DIF analysis using IRT models provided item-level information that helped examine whether linguistic and functional equivalence (Pena, 2007) were adequately addressed for the Traditional Chinese translation of ASQ: Inventory. Other than item-level information, ANCOVA results that compare the mean total scores of each domain between the Taiwan and U.S. samples helped explain how children from the two counties performed in each domain, after age effects were accounted for.

DIF analysis. As a recommended practice from the International Test Commission, the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education for adapting an instrument (Hambleton, 2005), DIF analyses were computed to examine whether the translated and adapted items in the Traditional Chinese ASQ: Inventory were linguistically and functionally equivalent to the original ones in the English ASQ: Inventory. Item invariance should be demonstrated as an indicator of test fairness

between two groups of respondents (e.g., males and females, students who have English as their native language and those who have English as their second language) with comparable levels of trait level (Embretson & Reese, 2000; Pomes, 2012). Item translations of the Traditional Chinese ASQ: Inventory were mindful of the linguistic and cultural dissimilarity, and pertinent adaptations were made accordingly while retaining the skills intended to be measured by each item. Under the premise of the sampled children participants from both countries sharing identical levels of ability, results from DIF analyses provided insights on whether different items response patterns were presented and whether the items were in favor of the Taiwanese or the U.S. participants.

In general, regardless of language versions, the majority of items (number of items = 250; 77.4%) were unbiased and showed invariant item response patterns. This indicated that those translated items were linguistically and functionally equivalent to the English items. Even for those items with adaptations, they retained similar levels of item difficulty, and were robust culturally relevant substitutes for Taiwanese children of that age. Of the 73 items that functioned differently between the two language versions, slightly more items (number of item = 5) were found to be easier for U.S. children to receive full item credits on. In some domains, including communication and personal-social, a clear pattern regarding DIF items was discovered. In communication, when children were at the same ability level, items with lower levels of difficulty were in favor of U.S. children whose caregivers had completed the English ASQ: Inventory. This meant there was a higher likelihood for children in the United States to receive a full score on these items. On the other hand, Taiwanese children tended to receive full credits for more *difficult* items. The pattern in personal-social was similar to that in

communication, even though a smaller number of easier items were in favor of Taiwanese children. These DIF results suggested that when answering these items, the parents and teachers from Taiwan and the United States might have had different interpretations of the skills that the items were measuring – an indication of violating the linguistic or functional equivalence of assessment translation suggested by Pena (2007). Additionally, in the English ASQ: Inventory, items usually started with “can” or “does” to ask about the *frequency* of the skill measured; parents or teachers answered the questionnaire with “yes,” “sometimes,” or “not yet.” Nevertheless, when translated into Traditional Chinese, the words “can” and “does” carried the additional meaning of asking about whether the child has the *ability* to perform the items, while the answering categories were related to behavior *frequency*. This issue might have resulted in confusion for Taiwanese parents and teachers during the questionnaire completion, and should be addressed in future revisions.

Another possible explanation of the results was that children with equal underlying true abilities might possess different skill repertoires, which corresponded to what other researchers had postulated (Bailey, 2004; Salvia & Ysseldyke, 2007), especially for children from different countries. Even though the developmental milestones are universal, the sequence of skill development may vary to some extent because of diverse parenting beliefs, different emphasis and expectations during early childhood, and opportunities for practice. All the items identified as having DIF and their descriptions are listed in Appendix L.

Two Taiwanese expert reviewers in the field of EI/ECSE or assessment were invited to examine the DIF items. It is imperative to obtain further information on these

items regarding linguistic and functional equivalence so that modifications can be made to future editions. Both reviewers have Traditional Chinese as their native language, and are fluent in English. Table 36 presents the items that had concerns from at least one of the expert reviewers.

Table 36. Concerns from reviewers regarding DIF items.

DIF item #	DIF Item	Comments from reviewers
Communication		
#40 (27m5)	Does your child make sentences that are three or four words long? Please give an example:	Lack of examples. English and Traditional Chinese may have different definitions of sentences that are three or four words long.
#47 (19p)	Does your child make her voice go high at the end of a sentence that is a question?	In Mandarin, questions do not necessarily end with a high intonation.
#52 (48m3)	Does your child tell you at least two things about common objects? For example, if you say to your child, “Tell me about your ball,” does he say something like, “It’s round. I throw it. It’s big”?	For better clarity, certain words should be added, removed, or replaced, but these are minor.
Gross motor		
#46 (17p)	Does your child walk down the stairs with alternating feet?	Change the translation to “walk down the stairs with one foot on a step.” May better reflect the original item.
#49 (3p)	Does your child kick a ball while running and changing directions? For example, while playing soccer?	Punctuation error.
#61 (20p)	Can your child throw a small ball and hit a target that is 5-6 feet away?	Need to identify size of the target.
#62 (60m5)	Does your child hop forward on one foot for a distance of 4-6 feet without putting down the other foot? (You may give him two tries on each foot. Mark “sometimes” if he can hop on one foot only.)	Too many questions regarding jumping forward on both feet or hop forward on one foot. (DIF item examples: #51, #53, #54, #57)

Table 36. (continued).

DIF item #	DIF Item	Comments from reviewers
Fine motor		
#38 (36m6)	When drawing, does your child hold a pencil, crayon, or pen between her fingers and thumb like an adult does?	A minor wording error.
#48 (60m4)	Does your child finish the following sentences using a word that means the opposite of the word that is italicized? For example: “A rock is hard, and a pillow is soft.” Please write your child’s responses below: A cow is big, and a mouse is _____. Ice is cold, and fire is _____. We see stars at night, and we see the sun during the _____. When I throw the ball up, it comes _____. (Mark “yes” if she finishes three of four sentences correctly. Mark “sometimes” if she finishes two of four sentences correctly.)	Besides using “is italicized”, because of the syntax difference, should add the Chinese word “label” to clarify.
Problem solving		
#50 (60m6)	Does your child name at least four letters in her name? Point to the letters and ask, “What letter is this?”(Point to the letters out of order.)	Add Chinese words “my” and “word” to the translation so it clarifies the question (asking about whether the child recognizes every word in his or her name).
Personal-social		
#33 (20m6)	Does your child eat with a fork <i>or chopsticks</i> ?	By adding chopsticks as an adaptation, the skill becomes much more difficult than only asking about using forks.
#34 (36m6)	Does your child take turns by waiting while another child or adult takes a turn?	The translation is difficult to understand. The translation correctly reflects the original English wording, but this makes the item difficult to understand.
#51 (42m5)	Does your child serve herself, taking food from one container to another using utensils? (For example, does your child use a large spoon to scoop applesauce from a jar into a bowl?)	Applesauce may not be the best example to use for the Taiwanese population. The food is not as common as it is in the U.S.

Table 36. (continued).

DIF item #	DIF Item	Comments from reviewers
Personal-social		
#55 (48m5)	Does your child brush her teeth by putting toothpaste on the toothbrush and brushing all her teeth without help? (You may still need to check and rebrush your child's teeth.)	Add the Chinese word "although" to sentence in the parentheses). Also parentheses were not included in the translated item.
#62 (10sp)	Does your child claim a toy that belongs to him by taking the toy back or by saying, "That's mine!"	The translation stays true to the English item, but makes the sentence difficult to understand.
#65 (13ap)	Does your child know what to do in an emergency? For example, does he know how to call an adult or dial 911 for help?	A minor error.

Note. Items listed here are from the English ASQ: Inventory, but the words in italics are the adaptations made based on specific Taiwanese culture. The comments from reviewers were in Traditional Chinese, and were translated into English.

Feedback from reviewers provided insights on items that functioned differently between the Taiwanese and U.S. samples. Seven DIF items presented minor grammatical or punctuation errors. The reviewers suggested either word deletion or word addition to help clarify the item. Three items were reported by the reviewers as having translations that were difficult to understand, and one item out of the three was in need of a translation to be functionally equivalent with the original item. Four items were indicated as culturally or linguistically unrelated and should be revised with new items or new examples. Interestingly, one reviewer mentioned that too many gross motor items focused on two-foot jumping or one-foot hopping, and recommended deleting or combining some of these items. Despite these minor cultural and linguistic discrepancies, the overall examination of the DIF results and of the reviewers' comments demonstrated that the Traditional Chinese ASQ: Inventory was generally equivalent, both linguistically

and functionally, to the English version. Comments from reviewers will be addressed in the next experimental version of the Traditional Chinese ASQ: Inventory.

ANCOVA. In problem solving and personal-social domains, after controlling for age, statistically significant differences were found between the samples from Taiwan and the United States (i.e. Taiwanese completed the Traditional Chinese ASQ: Inventory and Americans completed the English ASQ: Inventory), with Taiwanese children scoring higher than children from the United States. Considering the overwhelming parental focus on pre-academic skills in Taiwan, the result in problem solving is predictable. With regards to the between-country difference observed in personal-social, because of Taiwan's core cultural value of "*emphasis on family units*," extended family members (especially grandparents) usually live in proximity to the nuclear family, and play a vital role in child development (Jegatheesan, 2009; Wang et al., 2007). Based on a report from Child Welfare Bureau, Ministry of the Interior (2006), Taiwanese grandparents constantly share caregiving responsibilities with parents, and an increase in the number of grandparents serving as the primary caregiver is observed. The involvement of extended family members and easy access to other children in the family (i.e., cousins, nephews and nieces) might provide sufficient opportunities for learning and practicing social skills, and this notion is reflected by the higher totals in personal-social domain.

Since fine motor did not meet the homogeneity-of-slopes assumption, *age* was then categorized into ASQ-3 age intervals so that the differences between the two country samples could be examined. Even though results showed that U.S. children scored considerably higher than Taiwanese children at the 36 (i.e., 36 months 0 days to 38 months 30 days), 42 (i.e., 39 months 0 days to 44 months 30 days), and 48 (i.e., 45

months 0 days to 50 months 30 days) months intervals, Taiwanese children caught up at 54 and 60 months intervals. This pattern mirrors that of previous studies conducted with children in Shanghai and Korea (Bian et al., 2012; Heo et al., 2008). Unlike U.S. children who, in their early years are generally encouraged to be more independent and to self-explore, Taiwanese children tend to have parents who are more limiting and protective (Lin, 1999, 2000; Liou, 1999; Wei, 1986). Nonetheless, according to the report from Department of Statistics, Department of the Interior (2012), most Taiwanese children (85.1%) entered preschools at the age of four. Once Taiwanese children start receiving trainings in pre-academic writing skills (e.g., holding pencils) and independently eating snacks at preschools, it is not surprising that the disparity in fine motor skills is mitigated.

Utility

Besides examining the preliminary psychometric properties of the Traditional Chinese ASQ: Inventory, the current study also evaluated the usefulness and efficiency of this assessment tool. This study surveyed participants on whether the Traditional Chinese ASQ: Inventory is an appropriate instrument for the Taiwanese population via five utility questions regarding ease of understanding, readability, cultural and developmental appropriateness, and benefits; these questions were completed by participating parents and practitioners. Based on the overall ratings of all utility questions, it can be concluded that most survey respondents had positive experiences when completing the Traditional Chinese ASQ: Inventory, and considered this version of translation to properly reflect the linguistic differences and address the developmental expectations of Taiwanese children age 36 to 60 months. Nonetheless, based on anecdotal notes from the utility survey, a

total of twelve items were identified as difficult to understand or questionable. Table 37 lists these items and concerns from parents or teachers.

Table 37. List of questionable Traditional Chinese ASQ: Inventory items.

Item #	Questionable item	Concern
Communication		
#47 (19p)	Does your child make her voice go high at the end of a sentence that is a question?	In Mandarin, questions do not necessarily end with an upward inflection.
Gross motor		
#61 (20p)	Can your child throw a small ball and hit a target that is 5-6 feet away?	Not sure the size of the target.
Fine motor		
#7 (4m5)	Does your baby grab or scratch his fingers on a surface in front of him, either while being held in a sitting position or when he is on his tummy?	Difficult to understand.
#10 (4m6)	When you hold your baby in a sitting position, does she reach for a toy on a table close by, even though her hand may not touch it?	Item reads strangely.
#20 (10m6)	Does your baby put a small toy down, without dropping it, and then take her hand off the toy?	Item reads strangely.
Problem solving		
#51 (31p)	Does your child tell you if spoken or printed words have the same or different beginning and ending sounds? (Adaptations are made based on language differences. Use Mandarin beginning and ending sounds examples).	Difficult to understand.
#57 (14p)	Does your child say the days of the week in the correct order?	Not sure if this asks about how many days in a week or the days in a week.

Table 37. (continued).

Item #	Questionable item	Concern
Personal-social		
#30 (18m5)	Does your child drink from a cup or glass, putting it down again with little spilling?	The wording of this question is a bit weird. My daughter usually drinks water without spilling. By answering "most of the time," it seems like my daughter drinks with little spilling all the time.
#33 (20m6)	Does your child eat with a fork or chopsticks?	I think this is a difficult skill meant for children older than 5 years old.
#34 (36m6)	Does your child take turns by waiting while another child or adult takes a turn?	Difficult to understand
#62 (10sp)	Does your child claim a toy that belongs to him by taking the toy back or by saying, "That's mine!"	Difficult to understand

Ease of understanding. More than 90% of parents and practitioners agreed that the Traditional Chinese ASQ: Inventory items were easy to understand. This indicates that even though grammars and sentence structure of the two languages (i.e., English and Traditional Chinese) were vastly different, linguistically most of the items remained readable after being translated into Traditional Chinese. In addition, most of the items were clearly written and explained.

Relevance of items. Similar to *ease of understanding*, above 90% of parents and teachers who responded to the utility questionnaire agreed that the Traditional Chinese ASQ: Inventory items were developmentally appropriate for 3- to 5-year-olds in Taiwan, and the adaptations made based on cultural specifics (e.g., use of chopsticks) were pertinent. This initial examination evidenced the content validity of Traditional Chinese ASQ: Inventory.

Expected benefits. Researchers (Chou, Cheng, & Lin, 2000; Ho, 2009; Huang & Chiang, 2006) have reported that Taiwanese parents' lack of awareness in child development stages that results in the delay of referral, diagnosis and the provision of early intervention services. One potential benefit of the ASQ: Inventory is that, because this instrument encompassed items from all ASQ-3 age intervals and measured skills that comprise a wide range of age and developmental domains, it might help caregivers, especially parents, recognize age appropriate skills and expectations. Many of the survey respondents agreed that this assessment tool provided sufficient information for all developmental domains, and helped identify concerns in their children's development. One parent anecdotally described the Traditional Chinese ASQ: Inventory as a tool that *"helps me try skills with my child and realize that there are skills I did not know my child can do!"*

Length of completion time. Compared to other utility questions, length of completion time presented the highest rate of *disagree* response. Several parents or teachers also reported *"It takes too much time/too long to complete the whole assessment"* in their narrative responses. This might be due to the fact that the assessment tool has five domains and each contains approximately 65 items. Even though basal and ceiling rules were applied, in order to collect more actual responses for analysis purposes, the starting points of each age interval were set at fairly easy items (i.e., 75% to 80% of typically developing children within the age range receive a full item score) for a typically developing child considering his/her chronological age. The average numbers of items completed by parents or teachers were 25 to 30 items per domain. To overcome this challenge without losing the linkage between the ASQ-3 and the ASQ: Inventory, one

solution may be to adjust the starting points of items of the average ability (i.e., 50% of typically developing children within the age range receive a full item score) of typically developing children in the current sample so that parents and teachers can answer less items within a shorter completion time.

Limitations of the Study

Several limitations should be noted before presenting implications of the study findings. Limitations include: (a) sample attrition, (b) small sample number, (c) characteristics of participants, and (d) variability in completion procedures.

Sample Attrition

During the recruiting phase, several early childhood education programs and agencies consented to participate in the study. Nevertheless, due to various reasons (e.g., some considered the ASQ: Inventory too long or difficult, some did not respond or were slow in replying to emails and reminders, major personnel became busy or unavailable), these programs ended up withdrawing from the study or not returning any completed protocols. The sample attrition led to the shortage in the number of total participants, and to the lack of paper-pencil version copies in the English ASQ: Inventory. Though the comparisons of item response patterns were done for the Traditional Chinese ASQ: Inventory, and the discrepancy was negligible enough to allow the combining of data for analysis, this result might not apply to the English ASQ: Inventory since it was completed for children in the United States. Having parents or teachers complete the entire paper-pencil version of the English ASQ: Inventory would help examine whether differences between the two data collection methods – hard copies and on-line research website – led to disparities in item response patterns in the U.S. sample. Furthermore,

when examining the test fairness of the ASQ: Inventory, cross-country comparisons could be executed based on the type of completion method so that any confounding influence made by different completion methods was controlled for.

Small Sample Number

According to the research reports from Buzick and Stone (2011), and Zwick (2012) of Educational Testing Service, DIF analysis requires adequate sample sizes for both the focal and reference groups so that between-group differences in performance can be detected, and that the results will be stable. Particularly when conducting DIF analysis with IRT models, larger samples are needed to allow accurate estimates on parameters (Clauser & Mazor, 1998). At the preliminary item analysis phase, the smaller group should have at least 300 participants, and the total number of participants in both groups should be 700. Due to the challenge of sample attrition, the number of participants in this study did not meet these criteria, and the DIF analyses of completion methods or language versions were computed across the two age intervals (i.e., 36 to 44 months and 45 to 60 months for communication, gross motor, problem solving, and personal-social; 36 to 38 months and 39 to 60 months for fine motor). This was a compromise made for the smaller-than-ideal sample size. This limitation could have resulted in comparing item responses from a wide age range (i.e., 36 to 60 months) of children who demonstrated various levels of abilities between the two countries. The underlying assumption of DIF analyses should be conducted between groups with similar trait levels might also be violated under this circumstance. Additionally, instead of utilizing a more stringent DIF criteria (i.e., review both statistical significance and effect size) suggested by Educational Testing Service, the current study primarily examined the statistical significance of

Mantel (1963) probability, which might have increased the number of DIF items detected. Thus, a degree of caution is required in explaining and interpreting the results since there are inherent limitations in the study sample and the analysis technique.

Characteristics of Participants

When examining the sensitivity and specificity of both language versions of ASQ: Inventory, because of time constraints, children with identified special needs were chosen as the criterion for comparison. Despite having educational or medical diagnoses, these children were also reported by their parents or teacher as currently receiving EI/ECSE services. The receipt of EI/ECSE services (if effective) might help children advance in targeted developmental domains and thus improve the scores on ASQ: Inventory.

Additionally, there were also great variabilities in diagnoses, ranging from developmental delays to autism spectrum disorders; and in services, ranging from speech-language therapy to individualized special instructions for all developmental domains. Measuring children receiving services likely deflated results on sensitivity, and contributed to the low sensitivity of English and Traditional Chinese ASQ: Inventory in this study.

Variability in Completion Procedures

Even though participants from both countries could complete the ASQ: Inventory via research websites or by hard copies, distinctions existed in on-line completion procedures. For the U.S. sample, to balance between the length of completion time and data collection needs, the on-line system asked the participants to complete one English ASQ: Inventory domain at a time, in addition to an age-appropriate ASQ-3. On the other hand, the Taiwanese participants were simply presented with the Traditional Chinese

ASQ: Inventory¹, one domain at a time, until all five domains were completed. The Taiwanese participants could stop answering at any point, especially at the end of a domain. Such procedural differences resulted in two drawbacks. First, because scores from each domain were entirely unrelated, convergent and discriminant validity were unable to be computed for the English ASQ: Inventory. Pearson's product-moment correlation coefficient is an index that quantifies the linear relationship between two variables, and examines "the extent to which changes in one variable are reflected by changes in the second variable" (Salvia & Ysseldyke, 2007, p. 80). The disconnection of scores between domains violated the fundamental prerequisites of computing correlation coefficients and was considered as a problem. Second, Taiwanese participants might have been more susceptible to fatigue effects. This could be an external variable that might partially account for the differences in item responses and total scores.

Implications

Research

The current study contributes to the growing body of cross-country studies in the field of early childhood assessment, especially targeted on administering the ASQ across cultures (e.g., Bian, et al., 2012; Dionne et al., 2006; Heo & Squires, 2011; Heo et al., 2008; Jegatheesan, 2009; Pomes, 2012). As Notari-Syverson, Losardo, and Lim (2003) indicate, traditional assessment tools, due to their lack of attention to cultural, linguistic and contextual influences, are oftentimes biased against children from different cultural backgrounds. Cross-country research helps ensure that instruments remained reliable and

¹ Unlike the well researched and established English ASQ-3, Traditional Chinese ASQ-3 is a newly translated and adapted instrument with no research evidence. Agreement between the Traditional Chinese ASQ-3 and ASQ: Inventory could not be examined like the English version.

valid for children of various linguistic and cultural backgrounds, and careful adaptations were made. The accumulative findings from ASQ related cross-country studies have led to a paradigm shift in translating and adapting the ASQ, and have also created systematic approaches for examining test fairness, the technical adequacy specific to another country, and instrument utility (including cultural appropriateness of items) such that the true abilities of children are more likely tested, regardless of differences in language, cultural values and beliefs. Additionally, findings from these cross-country studies provide evidence that the majority of ASQ items are arguably universal, which means that the skills measured by these items are crucial milestones for children in many countries.

Particularly, results from the current study – a cross-country study of the ASQ:

Inventory – allow an initial examination of diverse developmental sequences demonstrated by children in the two countries. Even though the findings from the current study are preliminary, most Traditional Chinese ASQ: Inventory items met the required linguistic and functional equivalence suggested by Pena (2007) when compared to the English version. This study will serve as a solid foundation for future studies.

Researchers who are interested in studying the Traditional Chinese ASQ: Inventory with the Taiwanese population or with Taiwanese immigrants can expand the research scope, improve the research methodologies, and overcome the limitations identified in this study.

Another implication of this research is the future potential application of a screening tool that is developed based on a “Critical (or Developmental) Skills Mastery (CSM)” approach (Deno, 1997; McConnell, 2011) in progress monitoring. This CMS model is used in the development of the ASQ-3, and it measures children’s acquisition of skills in sequence at different points in time (i.e., age intervals). Disparity may be found

in each sequential skill when the skill appears in its corresponding age interval, but all these skills will eventually serve as the building blocks for the overarching competence. The CSM approach is robust for developing a developmental screening tool – the ASQ-3. However, the need to monitor long-term outcomes of children and the challenge of limited budgets result in field practitioners stretching the ASQ-3 into a progress tracking tool. The dilemma, as Bricker and colleagues (2010) have mentioned, is that the ASQ-3 is a *developmental screening* instrument. Progress monitoring is not an intended objective of the ASQ-3, nor has any research study been conducted for this purpose. Furthermore, McConnell (2000) suggests that because the CSM approach targets important developmental skills at each time interval, instruments developed using this approach cannot adequately track the growth of children because the ultimately desired outcome behaviors that relate to these developmental skills are not measured. The development of the ASQ: Inventory, on the other hand, not only responds to the needs of practitioners, it also explores the possibility of tracking children’s progress with an assessment tool that adopts the CSM approach. Although how the ASQ: Inventory can be used for progress monitoring has yet to be studied, the preliminary examination of its technical adequacy in this study provides evidence that the ASQ: Inventory is a robust and promising tool for further use and future development.

Practice

This study examined the cultural equivalence and appropriateness of using the ASQ: Inventory with children of different cultural and linguistic backgrounds, and provided an initial look at some psychometric properties of this instrument. Results of this study suggested that the Traditional Chinese ASQ: Inventory is an instrument that

measured a wide range of skills, and that most of the items adequately reflected the specific cultural practices and developmental expectations of Taiwan. Thus, it is advantageous to continue exploring the use of the Traditional Chinese ASQ: Inventory with children in Taiwan. Parents and teachers who participated in this study indicated that they found the Traditional Chinese ASQ: Inventory a culturally and developmentally appropriate instrument. In the past, most developmental screening has been completed by professionals (Tsai et al., 2006). The concept of parent-completed assessments is new and is recently introduced to the Taiwanese parents. Despite this, parents appeared to like completing the Traditional Chinese ASQ: Inventory, and found few items that were difficult to understand or answer.

Taiwanese parents traditionally stress the importance of pre-academic skills, and prefer to closely oversee their child's progress in academic related areas. Therefore, the Traditional Chinese ASQ: Inventory may be appropriate for parents to use to periodically as an update on their child's developmental and early academic skills. Importantly, it can help parents focus on the strengths of their child without over comparing their child to same-age peers. This may somewhat reduce the stress that children feel about academic learning. Additionally, the Taiwanese cultural value of "emphasis on family units" suggests the importance and preference of involving family members in practices. Because the Traditional Chinese ASQ: Inventory can be completed by early childhood educators or parents, this instrument promotes active parental involvement and provides opportunities for professional-caregiver collaborations. Parents have a scaffold from which to discuss their child's skills and completing the Traditional Chinese ASQ: Inventory may help alleviate stress they feel about their child's lack of progress. Teachers

may benefit as they can evaluate their teaching effectiveness by analyzing and reporting quantified results of children's developmental progress. This is especially relevant due to the competitive nature of Taiwanese preschool programs. The Traditional Chinese ASQ: Inventory results will also be very useful for demonstrating program accountability to both parents and the Ministry of Education.

The acceptance from parents and teachers mentioned above indicates that the Traditional Chinese ASQ: Inventory is socially valid for the Taiwanese population, and it accurately reflects the critical values pertaining to child development. At the program level, caregivers, especially parents, may gain an increased awareness of their child's typical and atypical development after completing the measure, and it may help identify their developmental concerns that lead to timely referrals. As with the ASQ-3, the Traditional Chinese ASQ: Inventory encourages parents or teachers to try each item (i.e., skills) with children in a natural environment, a recommended practice by Notari-Syverson and colleagues (2003). Because of these benefits, the Traditional Chinese ASQ: Inventory is arguably a sound solution to increase the number of accurate referrals and the identification rate of children with special needs, and to track the developmental progress of those at-risk children who are in early childhood programs.

At the system level, the challenges in funding, instrumentation, referral and identification, and dearth of qualified assessors have demanded that a cost-effective, efficient, and caregiver-friendly instrument be used in the Taiwanese EI/ECSE assessment system. The introduction of the dual-functioned Traditional Chinese ASQ: Inventory may provide viable solutions to these challenges. Its major contribution will be the possibility of accelerating the referral and identification process, and suggesting the

use of authentic assessment in addition to the standardized, diagnostic ones. Under the current Taiwanese EI/ECSE assessment system, a child can be referred to the early childhood coordination agency to receive an evaluation from a hospital-based interdisciplinary evaluation team (e.g., pediatrician, clinical psychologist, social workers, speech-language pathologist, physical therapist, and occupational therapist); or personnel from the child development clinic can directly assess a child using standardized, norm-referenced assessments of different developmental domains. Results of the assessments – combined with clinical judgments – will determine whether a child is eligible for EI/ECSE services. If the child is eligible for services, the early childhood coordination agency then will decide, with parent inputs, a placement for the child. Determining EI/ECSE eligibility is a unified process based on the medical diagnoses given by the child development clinic; however, the average waiting time for a child to be evaluated is 60 days (Ko, 2009). This lengthy period often results in parental anxiety and delays in providing timely services. Through the completion of the Traditional Chinese ASQ: Inventory, caregivers will foster a better understanding of their child's development, and supply the clinical professionals with a developmental profile of the child that accurately reflects the child's true ability when being assessed by familiar adults in a natural environment. This information may also help the early childhood coordination agency and the child development clinic pinpoint the domain(s) in need of further evaluation and avoid retesting the skills the child already has. Moreover, caregivers can continuously monitor the development and growth of the child during any waiting periods, and use the assessment results to partially inform universal intervention strategies and instructional

decisions. Figure 5 demonstrates the processes and potential uses of the Traditional ASQ: Inventory in the Taiwanese EI/ECSE assessment system.

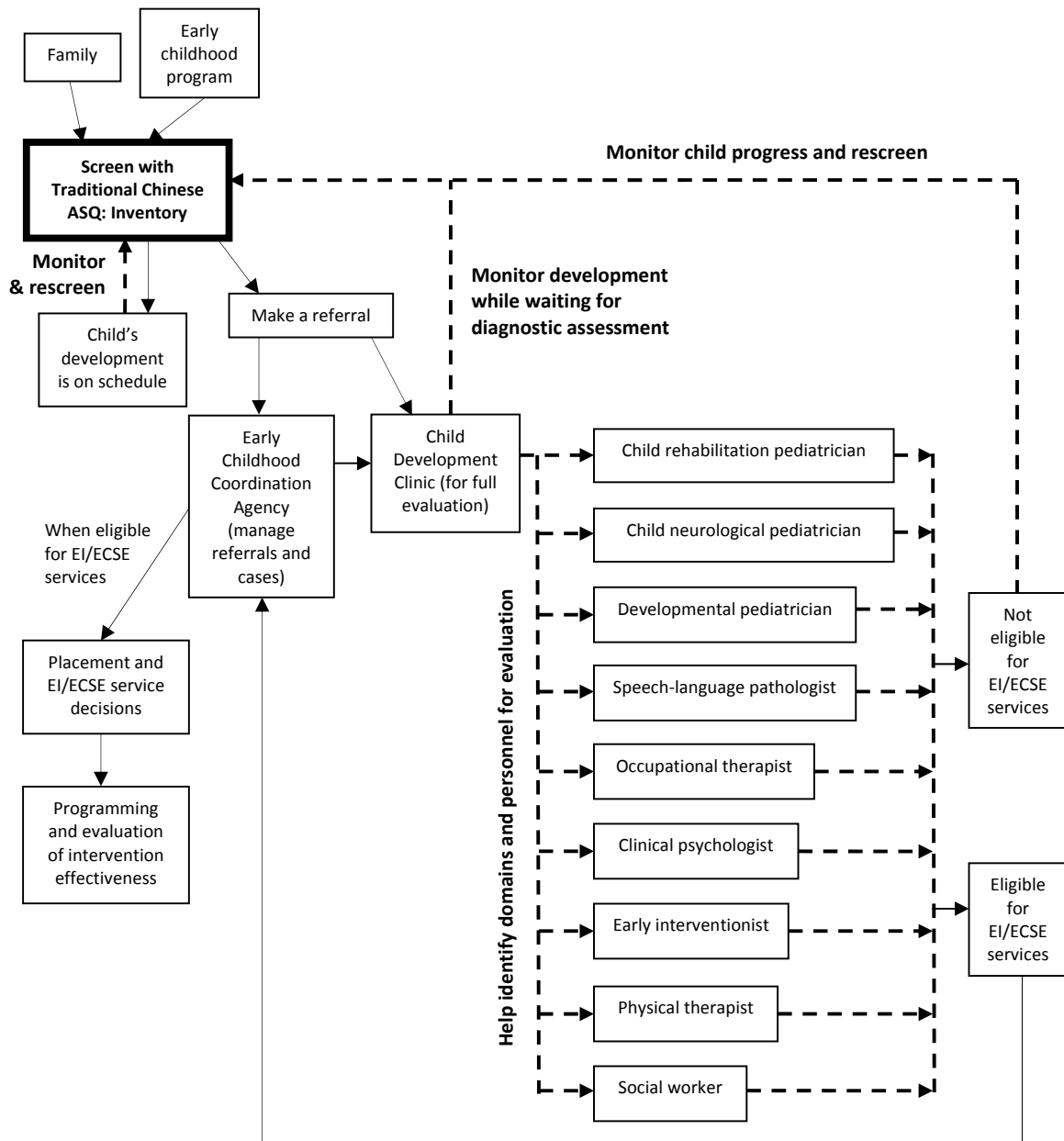


Figure 5. The processes and potential uses of the Traditional Chinese ASQ: Inventory in the current EI/ECSE assessment system in Taiwan. Dotted lines and descriptions in bold indicate how the Traditional Chinese ASQ: Inventory can contribute to the system.

This study also provides initial evidence of successfully expanding the age range of the ASQ: Inventory. Previous studies reported that a significant proportion of typically developing three-year-olds in the samples were able to demonstrate mastery of all ASQ:IT items, suggesting that the ASQ:IT may not be an ideal instrument for monitoring the progress of children of this age (i.e., these children may hit the ceiling of these items at the first completion). With the inclusion of more difficult questions in addition to all the ASQ-3 items, results of this current study indicated that 54 months was the age when most children reached the ceiling of the ASQ: Inventory, regardless of language version. Practitioners who are interested in using the ASQ: Inventory will be able to monitor the progress of children until nearly five years of age.

Moreover, the utilization of a computerized version of the ASQ: Inventory was widely accepted by participating parents and teachers in the study. The prevalence of smart phones and tablets offers new possibilities in ways of completing assessment tools in the home or preschool environment. Instead of carrying hard copies of ASQ: Inventory protocols, parents and teachers can load the computerized ASQ: Inventory to hand-held devices, allowing them to observe and record children performing the skills in natural environments and during daily routines.

Future Directions

This pilot study was an initial examination of the cultural appropriateness, preliminary psychometric properties and utility of the Traditional Chinese translation of the ASQ: Inventory, while also adding to existing research on the English version. The study findings will be utilized to refine misfit items and update the item order of the two language versions of the ASQ: Inventory. Future directions for the ASQ: Inventory

include: (a) study of younger age intervals in the Traditional Chinese ASQ: Inventory, (b) inclusion of new items for the upper age range, (c) further examination in technical adequacy, (d) evaluation of the progress monitoring function, and (e) exploration of a computerized ASQ: Inventory system.

Study of Younger Age Intervals in Traditional Chinese ASQ: Inventory

This study sampled Taiwanese children aged 36 to 60 months to conduct a preliminary examination of the Traditional Chinese ASQ: Inventory. The younger age intervals – birth to 36 months – still need to be studied. These younger intervals will allow the evaluation the cultural appropriateness of items, item parameters and order for children from birth to 36 months.

Inclusion of New Items for the Upper Age Range

One important finding from the study was that even though the instrument was originally developed to be used with children up to 60 months, in both countries, children aged 54 months reached the ceiling of the ASQ: Inventory. This indicated the need to search and include more advanced items so practitioners and parents can effectively monitor the developmental progress of children in the upper age interval. Especially for the Traditional Chinese ASQ: Inventory, extending the age range up to 72 months would be appropriate and beneficial. In Taiwan, preschool programs are often linked to kindergartens. Together, these two types of programs constitute the holistic early childhood education system, while the onset of first grade is considered to be the beginning of school-age education. Therefore, an instrument that can be used to measure children up to 72 months will be relevant for the Taiwanese education system in order to help screen and monitor the development of children before they enter first grade.

Further Examination of Technical Adequacy

Since over half of the parent participants in this study were reported to have a high SES status, as additional normative data are collected, more children and families from low SES households should be included in the sample. Moreover, examinations of the reliability and validity are needed to investigate the technical adequacy of ASQ: Inventory. The consistency between raters (i.e., inter-rater reliability) and over time (i.e., test-retest reliability), and the correlation with a criterion measure such as the Battelle Developmental Inventory-Second Edition (i.e., concurrent validity) should be examined. The results of internal consistency, sensitivity and specificity, and construct validity should also be updated with the new normative sample, and eventually, can be utilized to develop ASQ: Inventory cutoff scores for developmental screening purposes.

Evaluation of the Progress Monitoring Function

The ASQ: Inventory was developed as a dual-purpose instrument that can both screen child development and track developmental progress. Most of the ASQ: Inventory studies (Clifford, 2006, Bae, 2007, Chen, Clifford & Squires, 2012), have evaluated the developmental screening function of the ASQ: Inventory. A progress chart is attached to the ASQ: Inventory for parents or practitioners to plot a child's growth in each domain, and a growth chart is under development based on the normative sample. However, little research has been done on determining whether the ASQ: Inventory is useful for progress monitoring. Future research studies should co-work with early childhood programs and families to pilot the ASQ: Inventory as a progress monitoring tool so that this function of the ASQ: Inventory can be field tested.

Exploration of a Computerized ASQ: Inventory System

Practitioners training to administer the ASQ: Inventory liked the idea of having a computerized ASQ: Inventory system that included the assessment and report system. During this current study, some parents and teachers reported they loaded the ASQ: Inventory on hand-held devices for completion, and they were able to simultaneously answer the questionnaire while observing the children. One significant advantage of a complete ASQ: Inventory system is that the computer will help determine the starting points, will apply the basal and ceiling rules, as well as score items, will produce reports and will keep track of child records. Compared to the paper-pencil version, this is arguably more user-friendly, and faster to complete.

This study provides strong preliminary evidence that the ASQ: Inventory, with rigorous translation procedures and careful adaptations, appears to be a promising dual-purpose instrument suitable to be used for children from different cultural backgrounds. At the same time, the findings and implications of this study will benefit tremendously from additional future research, which will help to refine and fully develop the ASQ: Inventory to complement the ASQ system as a whole.

APPENDIX A

ENGLISH ASQ: INVENTORY, DEMOGRAPHIC INFORMATION FORM AND
UTILITY SURVEY

Ages & Stages Questionnaires®:Inventory

For children ages 4 weeks up to 54 months

Introduction and Summary Forms

The Ages & Stages Questionnaires:Inventory (ASQ:I) asks questions about activities many children learn to do. Each ASQ:I can be used up to **four different times** in order to monitor your child's development. Each completion date can be filled in the space provided under Date 1 (1st), Date 2 (2nd), Date 3 (3rd) and Date 4 (4th).

To complete the ASQ:Inventory, please follow these steps:

1. Find your child's *starting* point based on their age.
2. Read each question carefully and indicate whether your child is able to do the activity by answering "**yes (regularly)**", "**sometimes**", or "**not yet**".
3. Continue to answer the questions until you reach your child's *stopping* point.
4. Please complete these steps for each of the five developmental areas: Communication, Gross Motor, Fine Motor, Problem Solving, and Personal-Social.

Instructions for finding your child's starting and stopping point are on page 4.

Tips for completing the ASQ:Inventory :

- Try to make completing this questionnaire a fun game for you and your child.
- Make sure your child is rested, fed, and ready to play.
- Be sure to try an activity with your child unless you are certain that he or she can already or cannot yet do the activity.
- *There may be some activities that your child used to do, but has replaced with a more advanced skill (for example, most children no longer crawl after they learn to walk).*

Family and Child Information ASQ:Inventory

Please provide the following information.

Child's name: _____

Child's date of birth: _____

Date(s) ASQ:Inventory completed:

Date 1: _____ Date 2: _____ Date 3: _____ Date 4: _____

Child's age at completion:

Date 1: _____ Date 2: _____ Date 3: _____ Date 4: _____

For children younger than 24 months:

a. Was your child born prematurely? Yes No If yes, how many weeks? _____

b. If your child was born more than 3 weeks premature, you will need to calculate an *adjusted* age by subtracting weeks of prematurity from your child's age. **This *adjusted* age will be your child's starting point on the ASQ:Inventory.**

Child's Adjusted Age:

Date 1: _____ Date 2: _____ Date 3: _____ Date 4: _____

Name of person filling out this questionnaire: _____

What is your relationship to the child? _____

Administering program or provider: _____

Additional Information for Pilot Project (to be completed by agency personnel):

Child's ID: _____ Program ID: _____

Child's Gender: Male Female

Child's Race: (Please check all that apply)

Caucasian Native American Other: _____
 African American Pacific Islander
 Asian Hispanic

Family receiving subsidized childcare? Yes No

Does child have an identified disability or is child receiving EI/ECSE Services? Yes No

If yes, what is the child's disability or eligibility category (e.g., Down Syndrome, speech delay)?

General Developmental Questions

Please mark either a
Y for "Yes"
N for "No"
in the boxes below:

Date 1 Date 2 Date 3 Date 4

Section I. For all ages

1. Do you think your child hears well? (For infants, did your child pass the newborn screening?)
 If no, explain: _____
2. Does either parent have a family history of childhood deafness or hearing impairment?
 If yes, explain: _____
3. Do you have concerns about your child's vision?
 If yes, explain: _____
4. Has your child had any medical problems in the last several months?
 If yes, explain: _____
5. Do you have any concerns about your baby's/child's behavior?
 If yes, explain: _____
6. Does anything about your child worry you?
 If yes, explain: _____

Date 1	Date 2	Date 3	Date 4

Section II. Please answer the questions that match your child's age

Up to 15 months:

- (1-15 m) 1. Does your baby use both hands and both legs equally well?
 If no, explain: _____
- (3-15 m) 2. When you help your baby stand, are his/her feet flat on the surface most of the time?
 If no, explain: _____
- (3-15 m) 3. Do you have concerns that your baby is too quiet, or does not make sounds like other babies?
 If yes, explain: _____
- (11-15 m) 4. Does your baby play with sounds or seem to make words?
 If no, explain: _____

15 months and older:

1. Do you think your child talks like other children his / her age?
 If no, explain: _____
2. Can you understand most of what your child says?
 If no, explain: _____
3. Do you think your child walks, runs, climbs like other children his / her age?
 If no, explain: _____

30 months and older:

1. Can other people understand most of what your child says?
 If no, explain: _____

--	--	--	--

Instruction Page

How to Start and Stop on the ASQ:Inventory?

1. Find your child's starting point based on his or her age.

For example, in the Communication section, if your child is 15 months, you would start at item #18.

12 up to 18 month
children start here

2. Answer the questions.

- Mark "Y" (yes) for activities that you have observed your child doing on a regular basis.
- Mark "S" (sometimes) for activities that your child is just beginning to do.
- Mark "N" (not yet) for activities that you have not yet seen your child do even when given the opportunity.

3. Find your child's stopping point.

Stop answering questions when you have marked 3 "N"s in a row. (In this example, the child's stopping point is question #30.) **Draw a circle around the 3 "N"s, and write the administration date .**

4. Look for 3 "Y"s in a row.

Go back and review your responses. There should be at least 3 Y's in a row from your child's starting point. **Circle the 3 Y's** (e.g. #'s 18, 19, 20 in this example).

IF NOT, go back to the starting point and work backwards one question at a time until there are 3 "Y"s in a row.

5. Please complete these steps for EACH of the sections of the ASQ:Inventory (Communication, Gross Motor, Fine Motor, Problem Solving, and Personal-

4/5/10

18.	1st	Y
19.		Y
20.		Y
21.		Y
22.		Y
23.		S
24.		S
25.		N
26.		S
27.		S
28.		N
29.		N
30.		N
31.		

Communication Scores

(ASQ™: Inventory Communication pages 2-9)

Instructions:

- Total scores for each page.
- Enter subtotal score for each page in table below.
- Add scores from each page for "Total Score".
- Divide "Total Score" by 130 (total score possible) to calculate "Domain Percent".

Scoring Guide:

- Yes (Y) = 2
- Sometimes (S) = 1
- Not Yet (N) = 0

	Date 1	Date 2	Date 3	Date 4
Page	Subtotal	Subtotal	Subtotal	Subtotal
2				
3				
4				
5				
6				
7				
8				
9				
Total Score	/ 130	/ 130	/ 130	/ 130
Domain Percent				

Please list the questions that were **difficult** to understand:

Page & Question #	Comments

Gross Motor Scores

(ASQ™: Inventory Gross Motor pages 2-8)

Instructions:

- Total scores for each page.
- Enter subtotal score for each page in table below.
- Add scores from each page for "Total Score".
- Divide "Total Score" by 130 (total score possible) to calculate "Domain Percent".

Scoring Guide:

Yes (Y) = 2
 Sometimes (S) = 1
 Not Yet (N) = 0

	Date 1	Date 2	Date 3	Date 4
Page	Subtotal	Subtotal	Subtotal	Subtotal
2				
3				
4				
5				
6				
7				
8				
Total Score	/ 130	/ 130	/ 130	/ 130
Domain Percent				

Please list the questions that were **difficult** to understand:

Page & Question #	Comments

Fine Motor Scores

(ASQ™:Inventory Fine Motor pages 2-9)

Instructions:

- Total scores for each page.
- Enter subtotal score for each page in table below.
- Add scores from each page for "Total Score".
- Divide "Total Score" by 126 (total score possible) to calculate "Domain Percent".

Scoring Guide:

Yes (Y) = 2
 Sometimes (S) = 1
 Not Yet (N) = 0

	Date 1	Date 2	Date 3	Date 4
Page	Subtotal	Subtotal	Subtotal	Subtotal
2				
3				
4				
5				
6				
7				
8				
9				
Total Score	/ 126	/ 126	/ 126	/ 126
Domain Percent				

Please list the questions that were **difficult** to understand:

Page & Question #	Comments

Problem Solving Scores

(ASQ™:Inventory Problem Solving pages 2-9)

Instructions:

- Total scores for each page.
- Enter subtotal score for each page in table below.
- Add scores from each page for "Total Score".
- Divide "Total Score" by 136 (total score possible) to calculate "Domain Percent".

Scoring Guide:

- Yes (Y) = 2
- Sometimes (S) = 1
- Not Yet (N) = 0

	Date 1	Date 2	Date 3	Date 4
Page	Subtotal	Subtotal	Subtotal	Subtotal
2				
3				
4				
5				
6				
7				
8				
9				
Total Score	/ 136	/ 136	/ 136	/ 136
Domain Percent				

Please list the questions that were **difficult** to understand:

Page & Question #	Comments

Personal-Social Scores

(ASQ™: Inventory Personal-Social pages 2-8)

Instructions:

- Total scores for each page.
- Enter subtotal score for each page in table below.
- Add scores from each page for "Total Score".
- Divide "Total Score" by 134 (total score possible) to calculate "Domain Percent".

Scoring Guide:

Yes (Y) = 2
 Sometimes (S) = 1
 Not Yet (N) = 0

	Date 1	Date 2	Date 3	Date 4
Page	Subtotal	Subtotal	Subtotal	Subtotal
2				
3				
4				
5				
6				
7				
8				
Total Score	/ 134	/ 134	/ 134	/ 134
Domain Percent				

Please list the questions that were **difficult** to understand:

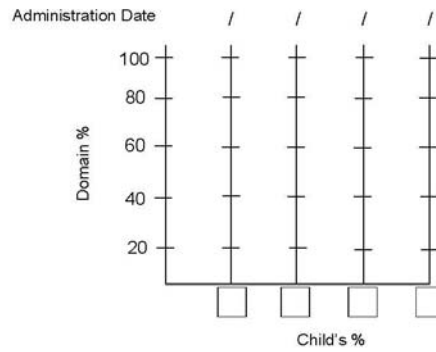
Page & Question #	Comments

Score Summary

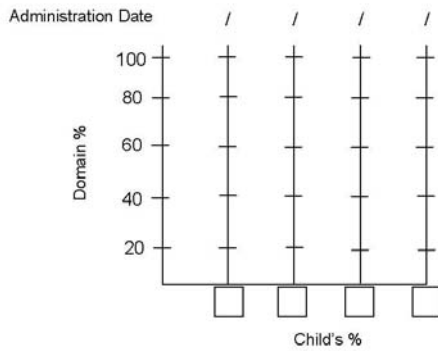
To show the child's progress in each domain, here are the instructions:

1. Fill in the administration date.
2. Transfer the Domain Percent from the ASQ:Inventory Score pages.
3. Plot percentages for each administration time.

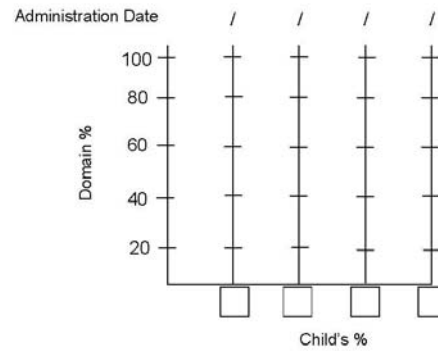
Communication



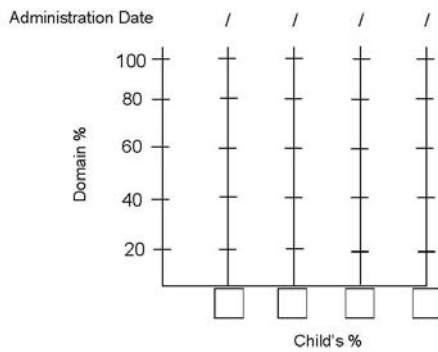
Gross Motor



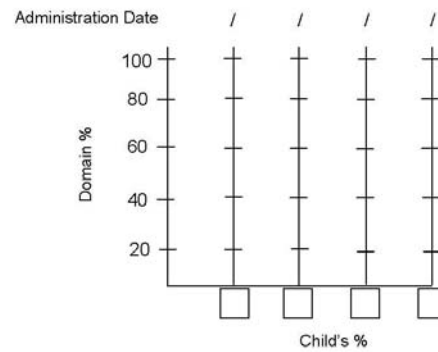
Fine Motor



Problem Solving



Personal-Social



Ages and Stages Questionnaires®: Inventory

(For children ages 4 weeks up to 54 months)

Communication

Instructions for completion:

1. Use the following table to find your child's starting point based on his/her age.
2. Read each question carefully and check the box that tells whether your child is doing the activity **yes (regularly)**, **sometimes**, or **not yet**.
3. Try each activity unless you are certain that your child can already do the item, or you know they cannot yet do the item.

Please note: there may be some activities that your child used to do, but has replaced with a more advanced skill (for example, older children may start talking instead of cooing). An-

Starting points for the Communication domain:		
If your child's age is:	Start with item:	Page:
1 up to 3 months	1	2
3 up to 6 months	4	2
6 up to 9 months	9	2
9 up to 12 months	13	3
12 up to 18 months	18	3
18 up to 24 months	21	3
24 up to 30 months	25	4
30 up to 36 months	29	4
36 up to 45 months	34	5
45 up to 54 months	40	6

Tips for completing the ASQ™:Inventory

- Try to make completing this questionnaire a game that is fun for you and your child.
- Make sure your child is rested, fed, and ready to play.

Communication		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
1 up to 3 month babies start here:					
1.	Does your baby sometimes make throaty or gurgling sounds? <small>1-2</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	After you have been out of sight, does your baby smile or get excited when she sees you? <small>6-2</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Does your baby make cooing sounds such as “ooo,” “gah,” and “aah”? <small>2-2</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 up to 6 month babies start here:					
4.	Does your baby make high-pitched squeals? <small>4-4</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Does your baby smile when you talk to him? <small>4-2</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	When you speak to your baby, does she make sounds back to you? <small>3-2</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Does your baby laugh? <small>5-4</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Does your baby make sounds when looking at toys or people? <small>6-4</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 up to 9 month babies start here:					
9.	If you call your baby when you are out of sight, does she look in the direction of your voice? <small>3-6</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	When a loud noise occurs, does your baby turn to see where the sound came from? <small>4-6</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Does your baby chuckle softly? <small>5-2</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	When playing with sounds, does your baby make grunting, growling, or other deep-toned sounds? <small>2-6</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Subtotal _____			
Remember: Stop when you have marked 3 ‘Not Yet’s in a row, circle them, & write the date .					

Communication	Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
	1 st	2 nd	3 rd	4 th
9 up to 12 month babies start here:				
13. Does your baby respond to the tone of your voice and stop his activity at least briefly when you say “no-no” to him? <small>5-8</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Does your baby make sounds like “da,” “ga,” “ka,” and “ba”? <small>5-6</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. If you copy the sounds your baby makes, does your baby repeat the same sounds back to you? <small>6-6</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Does your baby make two similar sounds like “ba-ba,” “da-da,” or “ga-ga”? (The sounds do not need to mean anything.) <small>6-8</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Does your baby stop crying when she hears a voice other than yours? <small>3-4</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 up to 18 month children start here:				
18. If you ask your child to, does he play at least one nursery game even if you don’t show him the activity yourself (such as “bye-bye,” “Peek-a-boo,” “clap your hands,” “So Big”)? <small>4-10</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Does your child point to, pat, or try to pick up pictures in a book? <small>4-14</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. When you ask, “Where is the ball (hat, shoe, etc.)?” does your child look at the object? (Make sure the object is present. Mark “yes” if he knows one object.) <small>5-12</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18 up to 24 month children start here:				
21. Does your child follow one simple command, such as “Come here”, “Give it to me”, or “Put it back”, <i>without</i> your using gestures? <small>5-10</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Does your child say three words, such as “Mama”, “Dada” and “Baba”? (A “word” is a sound or sounds your child says consistently to mean someone or something.) <small>6-10</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subtotal _____				
Remember: Stop when you have marked 3 ‘Not Yet’s in a row, circle them, & write the date .				

Communication		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet									
		1 st	2 nd	3 rd	4 th						
23.	When your child wants something, does he tell you by <i>pointing</i> to it? <small>6-12</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
24.	Does your child shake his head when he means “no” or “yes”? <small>3-14</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
24 up to 30 month children start here:											
25.	Does your child say four or more words in addition to “Mama” and “Dada”? <small>5-14</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
26.	Without your giving him clues by pointing or using gestures, can your child carry out at least <i>three</i> of these kinds of directions? <small>5-20</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;">a. “Put the toy on the table.”</td> <td style="width: 50%; vertical-align: top;">d. “Find your coat.”</td> </tr> <tr> <td style="vertical-align: top;">b. “Close the door.”</td> <td style="vertical-align: top;">e. “Take my hand.”</td> </tr> <tr> <td style="vertical-align: top;">c. “Bring me a towel.”</td> <td style="vertical-align: top;">f. “Get your book.”</td> </tr> </table>	a. “Put the toy on the table.”	d. “Find your coat.”	b. “Close the door.”	e. “Take my hand.”	c. “Bring me a towel.”	f. “Get your book.”				
a. “Put the toy on the table.”	d. “Find your coat.”										
b. “Close the door.”	e. “Take my hand.”										
c. “Bring me a towel.”	f. “Get your book.”										
27.	When you ask him to, does your child go into another room to find a familiar toy or object? (You might ask, “Where is your ball?” or say, “Bring me your coat” or “Go get your blanket.”) <small>6-14</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
28.	When you ask your child to point to her nose, eyes, hair, feet, ears, and so forth, does your child correctly point to at least <i>seven</i> body parts? (She can point to part/s of herself, you, or a doll. Mark “sometimes” if she correctly points to at least three different body parts.) <small>3-22</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
30 up to 36 month children start here:											
29.	Without your showing him, does your child <i>point</i> to the correct picture when you say, “Show me the kitty” or ask, “Where is the dog?” (He needs to identify only one picture correctly.) <small>5-18</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
30.	Does your child say eight or more words in addition to “Mama” and “Dada”? <small>6-16</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
31.	If you point to a picture of a ball (kitty, cup, hat, etc.) and ask your child, “What is this?” does your child correctly <i>name</i> at least one picture? <small>4-20</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
		Subtotal _____									
Remember: Stop when you have marked 3 ‘Not Yet’s in a row, circle them, & write the date .											

Communication		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
32. Without giving your child help by pointing or using gestures, ask him to “put the book <i>on</i> the table” and “put the shoe <i>under</i> the chair.” Does your child carry out both of these directions correctly? <small>6-27</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Does your child say 15 or more words in addition to “Mama” and “Dada”? <small>4-22</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36 up to 45 month children start here:					
34. Show your child how a zipper on a coat moves up and down, and say, “See, this goes up and down.” Put the zipper to the middle, and ask your child to move the zipper <i>down</i> . Return the zipper to the middle, and ask your child to move the zipper <i>up</i> . Do this several times, placing the zipper in the middle before asking your child to move it up or down. Does your child consistently move the zipper up when you say “up” and down when you say “down”? <small>5-33</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Does your child imitate a two-word sentence? For example, when you say a two-word phrase, such as “Mama eat,” “Daddy play,” “Go home,” or “What’s this?” does your child say both words back to you? (Mark “yes” even if his words are difficult to understand.) <small>5-16</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Does your child say two or three words that represent different ideas together, such as “See dog,” “Mommy come home,” or “Kitty gone”? (Don’t count word combinations that express one idea, such as “bye-bye,” “all gone,” “all right,” and “What’s that?”) <small>6-18</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Please give an example of your child’s word combinations: _____ _____					
37. When looking at a picture book, does your child tell you what is happening or what action is taking place in the picture (for example, “barking,” “running,” “eating,” and “crying”)? You may ask, “What is the dog (or boy) doing?” <small>6-30</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. When you ask, “What is your name?” does your child say his first name or nickname? <small>6-33</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Subtotal _____			
Remember: Stop when you have marked 3 ‘Not Yet’s in a row, circle them, & write the date .					

Communication		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
39. Does your child correctly use at least two words like “me,” “I,” “mine,” and “you”? <small>5-22</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45 up to 54 month children start here:					
40. Does your child make sentences that are three or four words long? <small>5-27</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Please give an example: _____					
41. Without your giving help by pointing or repeating directions, does your child follow three directions that are <i>unrelated</i> to one another? Give all three directions before your child starts. For example, you may ask your child, “Clap your hands, walk to the door, and sit down,” or “Give me the pen, open the book, and stand up.” <small>5-42</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. Does your child answer the following questions? (Mark “sometimes” if your child answers only one question.) “What do you do when you are hungry?” (Acceptable answers include: “get food,” “eat,” “ask for something to eat,” and “have a snack.”) Please write your child’s response: _____ _____ “What do you do when you are tired?” (Acceptable answers include “take a nap,” “rest,” “go to sleep,” “go to bed,” “lie down,” and “sit down.”) Please write your child’s response: _____ _____		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Does your child use four- and five-word sentences? For example, does your child say, “I want the car”? <small>5-54</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Please write an example: _____					
		Subtotal _____			
Remember: Stop when you have marked 3 ‘Not Yet’s in a row, circle them, & write the date .					

Communication	Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
	1 st	2 nd	3 rd	4 th
44. Does your child name at least three items from a common category? For example, if you say to your child, "Tell me some things that you can eat," does your child answer with something like "cookies, eggs, and cereal"? Or if you say, "Tell me the names of some animals," does your child answer with something like, "cow, dog, and elephant"? <small>1-48</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. Does your child use endings of words, such as "-s," "-ed," and "-ing"? For example, does your child say things like, "I see two cats," "I am playing," or "I kicked the ball"? <small>4-48</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. After hearing new words, does your child try to use them in conversation? <small>6p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. Does your child make her voice go high at the end of a sentence that is a question? <small>19p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. Does your child use words to describe things? For example, your child says, "Throw the big ball," or "I want the red pepper." <small>14p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. Does your child talk about things that are going to occur in the future? For example, your child says, "We are going to the zoo tomorrow." <small>21p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. When your child talks on the phone, can other people understand what she says? <small>4p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. When talking about something that already happened, does your child use words that end in "-ed," such as "walked", "jumped", or "played"? Ask your child questions, such as "How did you get to the store?" ("We walked.") "What did you do at your friend's house?" ("We played.") <small>6-54</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Please write an example: _____ _____				
				Subtotal _____
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .				

Communication		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
52. Does your child tell you at least two things about common objects? For example, if you say to your child, "Tell me about your ball," does she say something like, "It's round. I throw it. It's big?" <small>3-48</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. Does your child use at least 5 words to describe position? For example, does she use words such as "above," "across," "around," "between," "below," "near," "over," and "through". <small>8p</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54. Does your child use 5 words to describe how things feel? For example, does she use words like soft, hard, bumpy, rough, smooth, shimmy, or scratchy? <small>2p</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55. Does your child use all of the words in a sentence (for example, "a," "the," "am," "is," and "are") to make complete sentences, such as "I am going to the park," or "Is there a toy to play with?" or "Are you coming, too?" <small>6-42</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56. Does your child use words to talk about how things are different from one another? For example, your child says, "I have the biggest bowl of ice cream," "My car is best," or "She is the strongest." <small>15p</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57. Does your child talk about things that happened in the past using at least 3 irregular verbs such as came, did, went, ran, sat, and fell? <small>20p</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58. Does your child use words that connect other words such as "and," "but," "because," "if," and "or"? For example, your child says, "We could play or take a nap." <small>17p</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59. Does your child ask you to explain words she does not understand? <small>5p</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subtotal _____					
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .					

Communication	Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
	1 st	2 nd	3 rd	4 th
<p>60. Does your child repeat the sentences shown below back to you, without any mistakes? (Read the sentences one at a time. You may repeat each sentence one time. Mark “yes” if your child repeats both sentences without mistakes or “sometimes” if your child repeats one sentence without mistakes.)</p> <p style="margin-left: 20px;"><small>6-60</small></p> <p style="margin-left: 40px;">Jane hides her shoes for Maria to find. Al read the blue book under his bed.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>61. When you ask, “What is your name?” does your child say both her first and last names?</p> <p style="margin-left: 20px;"><small>6-36</small></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>62. Here are examples of five things that have irregular plural endings: man→men, mouse→mice, child→children, goose→geese, and tooth→teeth. Does your child say at least 3 of these or other similar words correctly?</p> <p style="margin-left: 20px;"><small>10p</small></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>63. Can your child tell you all the steps in a family routine? For example, if you ask her to tell you all the steps to wash her hands, your child says, “I turn on the water, get some soap, wash my hands, turn off the water and dry my hands.”</p> <p style="margin-left: 20px;"><small>1p</small></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>64. After reading a new story to your child, can your child tell you the beginning, middle, and ending of the story? (You can help the child by saying, “How does the story begin?”)</p> <p style="margin-left: 20px;"><small>7p</small></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>65. Does your child use comparison words, such as “heavier,” “stronger”, or “shorter”? Ask your child questions, such as “A car is big, but a bus is _____” (bigger); “A cat is heavy, but a man is _____” (heavier); “A TV is small, but a book is _____” (smaller)</p> <p style="margin-left: 20px;"><small>4-60</small></p> <p style="margin-left: 20px;">Please write an example :</p> <p>_____</p> <p>_____</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subtotal _____				
Remember: Stop when you have marked 3 ‘Not Yet’s in a row, circle them, & write the date .				

Ages & Stages Questionnaires®:Inventory (For children ages 4 weeks up to 54 months)

Gross Motor

Instructions for completion:

1. Use the following table to find your child's starting point based on his/her age.
2. Read each question carefully and check the box that tells whether your child is doing the activity **yes (regularly)**, **sometimes**, or **not yet**.
3. Try each activity unless you are certain that your child can already do the item, or you know they cannot yet do the item.

Please note: there may be some activities that your child used to do, but has replaced with a more advanced skill (for example, most children no longer crawl after they learn to walk).

Starting points for the Gross Motor domain:		
If your child's age is:	Start with item:	Page:
1 up to 3 months	1	2
3 up to 6 months	5	2
6 up to 9 months	8	2
9 up to 12 months	13	3
12 up to 18 months	19	3
18 up to 24 months	24	4
24 up to 30 months	29	4
30 up to 36 months	34	5
36 up to 45 months	39	6
45 up to 54 months	45	6

Tips for completing the ASQ™:Inventory

- Try to make completing this questionnaire a game that is fun for you and your child.
- Make sure your child is rested, fed, and ready to play.

Gross Motor

Please mark either a:
Y for Yes,
S for Sometimes, and
N for Not Yet

1 up to 3 month babies start here:



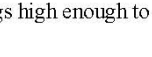

1st 2nd 3rd 4th

- | | | | | | |
|---|--|--|--|--|--|
| 1. While your baby is on his back, does your child wave his arms and legs, wiggle and squirm?
<small>1-2</small> | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> </tr> </table> | | | | |
| | | | | | |
| 2. When your baby is on her back, does she kick her legs?
<small>4-2</small> | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> </tr> </table> | | | | |
| | | | | | |
| 3. After holding her head up while on her tummy, does your baby lay her head back down on the floor, rather than let it drop or fall forward?
<small>6-2</small> | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> </tr> </table> | | | | |
| | | | | | |
| 4. When your baby is on his tummy, does he hold his head up longer than a few seconds?
<small>3-2</small> | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> </tr> </table> | | | | |
| | | | | | |

3 up to 6 month babies start here:

- | | | | | | |
|--|--|--|--|--|--|
| 5. While your baby is on his back, does he move his head from side to side?
<small>5-2</small> | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> </tr> </table> | | | | |
| | | | | | |
| 6. When your baby is on her tummy, does she turn her head to the side?
<small>2-2</small> | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> </tr> </table> | | | | |
| | | | | | |
| 7. When you hold him in a sitting position, does your baby hold his head steady?
<small>5-4</small> | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> </tr> </table> | | | | |
| | | | | | |

6 up to 9 month babies start here:







- | | | | | | | |
|---|--|--|--|--|--|--|
| 8. When your baby is on his tummy, does he hold his head up so that his chin is about 3 inches from the floor for at least 15 seconds?
<small>3-4</small> |  | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> </tr> </table> | | | | |
| | | | | | | |
| 9. While your baby is on her back, does she bring her hands together over her chest, touching her fingers?
<small>6-4</small> |  | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> </tr> </table> | | | | |
| | | | | | | |
| 10. While your baby is on his back, does your baby lift his legs high enough to see his feet?
<small>1-6</small> |  | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> </tr> </table> | | | | |
| | | | | | | |
| 11. When she is on her tummy, does your baby hold her head straight up, looking around? (<i>She can rest on her arms while doing this.</i>)
<small>4-4</small> |  | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> <td style="width: 25px; height: 20px;"></td> </tr> </table> | | | | |
| | | | | | | |

Subtotal _____




Remember: **Stop** when you have marked 3 'Not Yet's in a row, **circle** them, & write the **date**.

Gross Motor

Please mark either a:
Y for Yes,
S for Sometimes, and
N for Not Yet

- | | | 1 st | 2 nd | 3 rd | 4 th |
|--|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 12. When you put your baby on the floor, does she lean on her hands while sitting? (If she already sits up straight without leaning on her hands, mark "yes" for this item.)
<small>4-6</small> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9 up to 12 month babies start here: | | | | | |
| 13. If you hold both hands just to balance your baby, does he support his own weight while standing?
<small>5-6</small> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. When your baby is on her tummy, does she straighten both arms and push her whole chest off the bed or floor?
<small>2-6</small> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Does your baby roll from his back to his tummy, getting both arms out from under him?
<small>3-6</small> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. When sitting on the floor, does your baby sit up straight for several minutes <i>without</i> using her hands for support?
<small>5-8</small> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Does your baby get into a crawling position by getting up on her hands and knees?
<small>6-6</small> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. When you stand your baby next to furniture or the crib rail, does he hold on without leaning his chest against the furniture for support?
<small>6-8</small> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12 up to 18 month children start here: | | | | | |
| 19. If you hold both hands just to balance your child, does he take several steps without tripping or falling? (If your child already walks alone, mark "yes" for this item.)
<small>4-12</small> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. While holding onto furniture, does your child lower himself with control (without falling or flopping down)?
<small>5-10</small> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Subtotal | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Remember: **Stop** when you have marked 3 'Not Yet's in a row, **circle** them, & write the **date**.

Gross Motor		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
21. While holding onto furniture, does your child bend down and pick up a toy from the floor and then return to a standing position? <small>4-10</small>					
22. Does your child walk beside furniture while holding on with only one hand? <small>6-10</small>					
23. When you hold one hand just to balance your child, does she take several steps forward? (If your child already walks alone, mark "yes" for this item.) <small>5-12</small>					
18 up to 24 month children start here:					
24. Does your child bend over or squat to pick up an object from the floor and then stand up again without any support? <small>5-14</small>					
25. Does your child climb onto furniture or other large objects such as large climbing blocks? <small>4-14</small>					
26. Does your child stand up in the middle of the floor by himself and take several steps forward? <small>6-12</small>					
27. Does your child move around by walking, rather than by crawling on his hands and knees? <small>6-14</small>					
28. Does your child walk well and seldom fall? <small>5-16</small>					
24 up to 30 month children start here:					
29. Does your child climb on an object such as a chair to reach something she wants? (For example, to get a toy on a counter or to "help" you in the kitchen.) <small>6-16</small>					
30. When you show your child how to kick a large ball, does he try to kick the ball by moving his leg forward or by walking into it? (If your child already kicks a ball, mark "yes" for this item.) <small>6-18</small>					
		Subtotal _____			
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .					

Gross Motor

Please mark either a:
Y for Yes,
S for Sometimes, and
N for Not Yet

1st 2nd 3rd 4th

31. Does your child walk either up or down at least two steps by himself? He may also hold onto the railing or wall.
6-20



--	--	--	--

32. Does your child walk down stairs if you hold onto one of her hands? She may also hold onto the railing or wall. (You can look for this at a store, on a playground, or at home.)
5-18

--	--	--	--

33. Does your child run fairly well, stopping herself without bumping into things or falling?
5-20



--	--	--	--

30 up to 36 month children start here:

34. Without holding onto anything for support, does your child kick a ball by swinging his leg forward?
6-22



--	--	--	--

35. Does your child climb the rungs of a ladder of a playground slide and slide down without help?
6-42

--	--	--	--

36. Does your child jump with both feet leaving the floor at the same time?
5-22



--	--	--	--

37. While standing, does your child throw a ball *overhand* by raising his arm to shoulder height and throwing the ball forward? (Dropping the ball or throwing the ball underhand should be scored as "not yet" .)
6-33



--	--	--	--






38. Does your child walk up stairs, using only one foot on each stair? (The left foot is on one step, and the right foot is on the next.) He may hold onto the railing or wall.
6-27









--	--	--	--

Subtotal _____

Remember: **Stop** when you have marked 3 'Not Yet's in a row, **circle** them, & write the **date**.

Gross Motor		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet				
		1 st	2 nd	3 rd	4 th	
36 up to 45 month children start here:						
39.	Does your child jump forward at least 3 inches with both feet leaving the ground at the same time? <small>5-27</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40.	Does your child stand on one foot for about 1 second without holding onto anything? <small>6-30</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41.	While standing, does your child throw a ball <i>overhand</i> in the direction of a person standing at least 6 feet away? To throw overhand, your child must raise her arm to shoulder height and throw the ball forward. (Dropping the ball or throwing the ball underhand should be scored as "not yet.") <small>3-48</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42.	Does your child walk on his tiptoes for 15 feet (about the length of a large car)? (You may show him how to do this.) <small>6-54</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43.	Does your child catch a large ball with both hands? (You should stand about 5 feet away and give your child two or three tries before you mark the answer.) <small>5-42</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44.	Does your child jump forward at least 6 inches with both feet leaving the ground at the same time? <small>6-36</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45 up to 54 month children start here:						
45.	Does your child walk forward on a straight line for 10 or more steps? <small>10p</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Subtotal	_____	_____	_____	_____
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .						

Gross Motor		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
46.	Does your child walk down the stairs with alternating feet? <small>17p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47.	Without holding onto anything, does your child stand on one foot for at least 5 seconds without losing his balance and putting his foot down? (You may give your child two or three tries before you mark the answer.) <small>6-48</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48.	Does your child hop up and down on either the right or left foot at least one time without losing his balance or falling? <small>4-48</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49.	Does your child kick a ball while running and changing directions? For example, while playing soccer? <small>3p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50.	Show your child how to walk forward by placing the heel of one foot right in front of the toe of her other foot. Can your child walk 10 or more steps forward? <small>12p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51.	Does your child hop on one foot for a distance of 2 feet? <small>7p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					
52.	Does your child jump and turn so that she faces the other way? <small>8p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53.	Does your child hop in place on one foot for 3 times? <small>6p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					
54.	Does your child jump forward a distance of 20 inches from a standing position, starting with her feet together? <small>5-48</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					
55.	Can your child catch a small ball (such as a tennis ball) that is thrown from 5-6 feet away? <small>19p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Subtotal _____			
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .					

Gross Motor		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
56.	Ask your child to repeat a movement pattern, such as run, jump, and skip. Does your child do all three movements at least 2 times? <small>9p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57.	Does your child jump forward a distance of 3 feet from a standing position? She should start with her feet together. <small>4p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					
58.	Show your child how to walk backward by placing the toe of one foot in back of and touching the heel of the other. Can your child walk 10 or more steps backward? <small>13p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59.	Does your child skip using alternating feet? (You may show her how to do this.) <small>6-60</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60.	Does your child jump on one foot 10 times, first using her right foot (5 times) and then her left foot (5 times)? <small>5p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					
61.	Can your child throw a small ball and hit a target that is 5-6 feet away? <small>20p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62.	Does your child hop forward on one foot for a distance of 4-6 feet without putting down the other foot? (You may give him two tries on each foot. Mark "sometimes" if he can hop on one foot only.) <small>5-60</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					
63.	Can your child swing on a swing by herself using her legs back and forth to pump. <small>14p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64.	Can your child ride and steer a two-wheel bicycle without training wheels for at least 20 feet? <small>18p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65.	Can your child skip rope? He should jump at least three times while flipping the rope over his head and under his feet. <small>16p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Subtotal _____			
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .					

Ages & Stages Questionnaires®: Inventory

(For children ages 4 weeks up to 54 months)

Fine Motor

Instructions for completion:

1. Use the following table to find your child's starting point based on his/her age.
2. Read each question carefully and check the box that tells whether your child is doing the activity **yes (regularly)**, **sometimes**, or **not yet**.
3. Try each activity unless you are certain that your child can already do the item, or you know they cannot yet do the item.




Please note: there may be some activities that your child used to do, but has replaced with a more advanced skill (for example, older children no longer have their hands tightly closed when they are awake). Answer these items as "Yes".







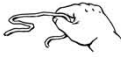
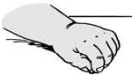
Starting points for the Fine Motor domain:




If your child's age is:	Start with item:	Page:
1 up to 3 months	1	2
3 up to 6 months	5	2
6 up to 9 months	10	2
9 up to 12 months	14	3
12 up to 18 months	19	3
18 up to 24 months	23	4
24 up to 30 months	26	4
30 up to 39 months	30	5
39 up to 54 months	34	5









Tips for completing the ASQ™:Inventory



- Try to make completing this questionnaire a game that is fun for you and your child.
- Make sure your child is rested, fed, and ready to play.





Fine Motor		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
1 up to 3 month babies start here:		1 st	2 nd	3 rd	4 th
1. Does your baby touch her face with her hands? <small>4-2</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does your baby grasp your finger if you touch the palm of her hand? <small>2-2</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Does your baby hold his hands open or partly open when he is awake (rather than in fists, as they were when he was a newborn)? <small>5-2</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is your baby's hand usually tightly closed when he is awake (If your baby used to do this but is no longer, mark "yes".) <small>1-2</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 up to 6 month babies start here:					
5. Does your baby grab or scratch at his clothes? <small>6-2</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. When you put a toy in her hand, does your baby hold it in her hand briefly? <small>3-2</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Does your baby grab or scratch his fingers on a surface in front of him, either while being held in a sitting position or when he is on his tummy? <small>5-4</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. When you put a toy in her hand, does your baby hold onto it for about 1 minute while looking at it, waving it about, or trying to chew it? <small>4-4</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Does your baby grab a toy you offer and look at it, wave it about, or chew on it for about 1 minute? <small>1-6</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 up to 9 month babies start here:					
10. When you hold your baby in a sitting position, does she reach for a toy on a table close by, even though her hand may not touch it? <small>6-4</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subtotal _____					
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date.					

Fine Motor		Please mark either: Y for Yes, S for Sometimes, and N for Not Yet				
		1 st	2 nd	3 rd	4 th	
11.	Does your baby pick up a small toy with only one hand? <small>6-6</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	Does your baby reach for or grasp a toy using both hands at once? <small>2-6</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	Does your baby pick up a small toy, holding it in the center of her hand with her fingers around it? <small>4-6</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9 up to 12 month babies start here:						
14.	Does your baby reach for a crumb or Cheerio and touch it with his finger or hand? (If he already picks up a small object the size of a pea, mark "yes" for this item.) <small>3-6</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	Does your baby try to pick up a crumb or Cheerio by using his thumb and all his fingers in a raking motion, even if he isn't able to pick it up? (If he already picks up the crumb or Cheerio, mark "yes" for this item.) <small>5-6</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	Does your baby successfully pick up a crumb or Cheerio by using his thumb and all his fingers in a raking motion? (If he already picks up a crumb or Cheerio, mark "yes" for this item.) <small>5-8</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.	Does your child pick up a small toy with the tips of her thumb and fingers? (You should see a space between the toy and her palm.) <small>6-8</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.	After one or two tries, does your baby pick up a piece of string with her first finger and thumb? (The string may be attached to a toy.) <small>4-10</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 up to 18 month children start here:						
19.	Does your child pick up a crumb or Cheerio with the tips of his thumb and a finger? He may rest his arm or hand on the table while doing it. <small>5-10</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Subtotal	_____	_____	_____	_____
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date.						

Fine Motor		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
20.	Does your child put a small toy down, without dropping it, and then take her hand off the toy? <small>6-10</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.	Without resting his arm or hand on the table, does your child pick up a crumb or Cheerio with the tip of his thumb and a finger? <small>4-12</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					
22.	Does your child help turn the pages of a book? (You may lift a page for her to grasp.) <small>6-12</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18 up to 24 month children start here:					
23.	Does your child turn the pages of a book by himself? (He may turn more than one page at a time.) <small>6-16</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24.	Does your child make a mark on the paper with the tip of a crayon (or pencil or pen) when trying to draw? <small>5-14</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					
25.	Does your child stack a small block or toy on top of another one? (You could also use spools of thread, small boxes, or toys that are about 1 inch in size.) <small>4-14</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24 up to 30 month children start here:					
26.	Does your child flip switches off and on? <small>5-22</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27.	Does your child throw a small ball with a forward arm motion? (If he simply drops the ball, mark "not yet" for this item.) <small>5-12</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					
28.	Does your child stack three small blocks or toys on top of each other by herself? (You could also use spools of thread, small boxes, or toys that are about 1 inch in size.) <small>6-14</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.	Does your child get a spoon into her mouth right side up so that the food usually doesn't spill? <small>6-18</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Subtotal _____			
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date.					

Fine Motor		Please mark either: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
30 up to 39 month children start here:					
30.	Does your child stack six small blocks or toys on top of each other by himself? (You could also use spools of thread, small boxes, or toys that are about 1 inch in size.) <small>5-20</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31.	Does your child use a turning motion with her hand while trying to turn doorknobs, wind-up toys, twist tops, or screw lids on and off jars? <small>6-20</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.	Does your child turn pages in a book, one page at a time? <small>6-30</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33.	After your child watches you draw a single circle, ask him to make a circle like yours. Do not let him trace your circle. Does your child copy you by drawing a circle? <small>5-30</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Count as "yes" 			
		Count as "not yet" 			
39 up to 54 month children start here:					
34.	After your child watches you draw a line from the top of the paper to the bottom with a pencil, crayon, or pen, ask him to make a line like yours. Do not let your child trace your line. Does your child copy you by drawing a single line in a vertical direction? <small>3-27</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Count as "yes" 			
		Count as "not yet" 			
35.	After your child watches you draw a line from one side of the paper to the other side, ask her to make a line like yours. Do not let your child trace your line. Does your child copy you by drawing a single line in a horizontal direction? <small>6-27</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Count as "yes" 			
		Count as "not yet" 			
36.	Can your child string small items such as beads, macaroni or pasta "wagon wheels", onto a string or shoelace? <small>6-22</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					
37.	Does your child try to cut paper with child-safe scissors? She does not need to cut the paper but must get the blades to open and close while holding the paper with the other hand. (You may show your child how to use scissors. Carefully watch your child's use of scissors for safety reasons.) <small>6-33</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					
Subtotal					_____
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date.					

Fine Motor		Please mark either: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
38. When drawing, does your child hold a pencil, crayon, or pen between her fingers and thumb like an adult does? <small>6-36</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. Does your child put together a five to seven piece interlocking puzzle? (If one is not available, take a full-page picture from a magazine or catalog and cut it into six pieces. Does your child put it back together correctly?) <small>5-42</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Does your child unbutton one or more buttons? (Your child may use his own clothing or a doll's clothing.) <small>4-48</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. Using the shape at right to look at, does your child copy it onto a large piece of paper using a pencil or crayon, without tracing? (Your child's drawing should look like the design of the shape, except it may be different in size.) <small>6-42</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. Does your child draw pictures of people that have at least three of the following features: head, eyes, nose, mouth, neck, hair, trunk, arms, hands, legs, or feet? <small>5-48</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Does your child cut up soft food into smaller pieces using a dull knife? For example, can your child use a butter knife to cut bananas or mangos? (Please supervise your child on this item.) <small>8p</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. Using child-safe scissors, does your child cut a paper in half on a more or less straight line, making the blades go up and down? (Carefully watch your child's use of scissors for safety reasons.) <small>2-48</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. Can your child hold 5 or more playing cards so they look like a fan? <small>4p</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subtotal _____					
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date.					

Fine Motor		Please mark either: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
46. Does your child button large sized buttons (larger than 1/2 inch in size)? <small>6p</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. Can your child buckle a seat belt when riding in a car? <small>12p</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. Ask your child to trace on the line below with a pencil. Does your child trace on the line without going off the line more than two times? (Mark "sometimes" if your child goes off the line three times.) <small>4-54</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. Using the shapes below to look at, does your child copy at least three shapes onto a large piece of paper using a pencil or crayon, without tracing? (Your child's drawings should look similar to the design of the shapes below, but they may be different in size.) <small>3-48</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. Ask your child to draw a picture of a person on a blank sheet of paper. You may ask your child to "Draw a picture of a girl or a boy." If your child draws a person with head, body, arms, <i>and</i> legs, mark "yes." If your child draws a person with only three parts (head, body, arms or legs), mark "sometimes." If your child draws a person with two or fewer parts (head, body, arms, or legs), mark "not yet." <small>5-54</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. Does your child color mostly within the lines in a coloring book or within the lines of a 2 inch circle that you draw? (Your child should not go more than 1/4 inch outside the lines on most of the picture.) <small>6-48</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52. Draw a line across a piece of paper. Using child-safe scissors, does your child cut the paper in half on a more or less straight line, making the blades go up and down? (Carefully watch your child's use of scissors for safety reasons.) <small>6-54</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. Can your child cut a 4 inch line across paper that is thick paper (such as light cardboard)? <small>2p</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subtotal _____					
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date.					

Fine Motor

Please mark either:
Y for Yes,
S for Sometimes, and
N for Not Yet

1st 2nd 3rd 4th

54. Using the shapes below to look at, does your child copy the shapes in the space below without tracing? (Your child's drawings should look similar to the design of the shapes below, but they may be different in size. Mark "yes" if she can copy all three shapes; mark "sometimes" if your child can copy two shapes.)

--	--	--	--

4-60



(Copy shapes below)

55. Print your child's first name. Can your child copy the letters? The letters may be large, backward, or reversed. (Mark "sometimes" if your child copies about half of the letters.)

--	--	--	--

6-60

(Space for adult's printing below)

(Space for child's printing below)

56. Does your child cut up soft food such as banana or mango into smaller pieces using the edge of a fork?

--	--	--	--

7p


57. Give your child an 8 1/2 by 11 inch piece of paper and ask him to fold the short sides together. Does your child fold the paper so that the sides match up within a half inch?

--	--	--	--

10p

Subtotal _____

Remember: **Stop** when you have marked 3 'Not Yet's in a row, **circle** them, & write the date.

Fine Motor	Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
	1 st	2 nd	3 rd	4 th
58. Does your child button most buttons on her clothing, including small buttons less than 1/2 inch? <small>5p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59. Using the letters below to look at, does your child copy the letters without tracing? Cover up all of the letters except the letter being copied. (Mark “yes” if your child copies four of the letters, and you can read them. Mark “sometimes” if your child copies two or three letters, and you can read them.) <small>5-60</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
V H T C A				
(Copy letters here)				
60. Draw a 4-inch circle on a piece of paper. Does your child use child-safe scissors to cut it out staying within a 1/4 inch of the lines? (Carefully watch your child’s use of scissors for safety reasons.) <small>1p</small>				<input type="checkbox"/>
61. Does your child cut up soft food such as banana or mango into smaller pieces using a dull knife in one hand and a fork in the other? <small>9p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62. Does your child successfully use a key to unlock the door? <small>11p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63. Can your child tie shoelaces making a bow? <small>3p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subtotal _____				
Remember: Stop when you have marked 3 ‘Not Yet’s in a row, circle them, & write the date.				

Ages and Stages Questionnaires®: Inventory

(For children ages 4 weeks up to 54 months)

Problem Solving

Instructions for completion:

1. Use the following table to find your child's starting point based on his/her age.
2. Read each question carefully and check the box that tells whether your child is doing the activity **yes (regularly)**, **sometimes**, or **not yet**.
3. Try each activity unless you are certain that your child can already do the item, or you know they cannot yet do the item.






Please note: there may be some activities that your child used to do, but has replaced with a more advanced skill (for example, older children no longer put toys in their mouths). Answer these items as "Yes".

Starting points for the Problem Solving domain:		
If your child's age is:	Start with item:	Page:
1 up to 3 months	1	2
3 up to 6 months	3	2
6 up to 9 months	6	2
9 up to 12 months	12	3
12 up to 18 months	17	3
18 up to 24 months	24	4
24 up to 30 months	28	4
30 up to 36 months	34	5
36 up to 45 months	39	6
45 up to 54 months	45	7



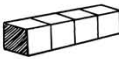

Tips for completing the ASQ™:Inventory



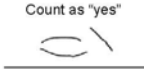
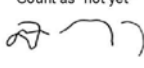
- Try to make completing this questionnaire a game that is fun for you and your child.
- Make sure your child is rested, fed, and ready to play.

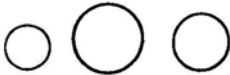
Problem Solving	Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
<i>1 up to 3 month babies start here:</i>	1 st	2 nd	3 rd	4 th
1. Does your baby look at objects that are 8-10 inches away? <small>1-2</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2. When you move a small toy up and down slowly in front of your baby's face (about 10 inches away), does your baby follow the toy with his eyes? <small>4-2</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<i>3 up to 6 month babies start here:</i>				
3. When you move a toy slowly from side to side in front of your baby's face (about 10 inches away), does your baby follow the toy with her eyes, sometimes turning her head? <small>3-2</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
4. When you move around, does your baby follow you with his eyes? <small>2-2</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
5. When you put a toy in her hand, does your baby look at it? <small>4-4</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<i>6 up to 9 month babies start here:</i>				
6. When you hold your baby in a sitting position, does she look at a toy (about the size of a cup or rattle) that you place on the table or floor in front of her? <small>5-2</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
7. When you put a toy in his hand, does your baby put the toy in his mouth? <small>5-4</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8. When you dangle a toy above your baby while he is lying on his back, does he wave his arms toward the toy? <small>6-2</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
9. Does your baby pick up a toy and put it in his mouth? <small>4-6</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
10. When your baby is on his back, does he turn his head to look for a toy when he drops it? (If he already picks it up, mark "yes" for this item.) <small>2-6</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
11. When your baby is on her back, does she try to get a toy she has dropped if she can see it? <small>3-6</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Subtotal _____				
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date.				

Problem Solving		Please mark either: Y for Yes, S for Sometimes, and N for Not Yet				
		1 st	2 nd	3 rd	4 th	
9 up to 12 month babies start here:						
12.	Does your baby play by banging a toy up and down on the floor or table? <small>6-6</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	When a toy is in front of your baby, does she reach for it with both hands? <small>1-6</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	Does your baby pass a toy back and forth from one hand to the other? <small>5-6</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	When holding a toy in his hand, does your baby bang it against another toy on the table? <small>6-8</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	Does your baby pick up two small toys, one in each hand, and hold onto them for about 1 minute? <small>5-8</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 up to 18 month children start here:						
17.	After watching you hide a small toy under a piece of paper or cloth, does your child find it? (Be sure the toy is completely hidden.) <small>6-10</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.	While holding a small toy in each hand, does your child clap the toys together (like "Pat-a-cake")? <small>4-10</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	Does your child poke at or try to get a crumb or Cheerio that is inside a clear bottle (such as a plastic soda-pop bottle or baby bottle)? <small>5-10</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.	If you put a small toy into a bowl or box, does your child copy you by putting in a toy, although she may not let go of it? (If she already lets go of the toy into a bowl or box, mark "yes" for this item.) <small>4-12</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.	Does your child drop two small toys, one after the other, into a container like a bowl or box? (You may show him how to do it.) <small>5-12</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Subtotal _____			
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date.						

Problem Solving	Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
	1 st	2 nd	3 rd	4 th
22. If you give your child a bottle, spoon, or pencil upside down, does she turn it right side up so that she can use it properly? <small>4-20</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. After you scribble back and forth on paper with a crayon (or a pencil or pen), does your child copy you by scribbling? (If she already scribbles on her own, mark "yes" for this item.) <small>6-12</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18 up to 24 month children start here:				
24. Does your child drop several (3 or more) small toys, one after another, into a container like a bowl or box? (You may show her how to do it.) <small>5-14</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Can your child drop a crumb or Cheerio into a small, clear bottle (such as a plastic soda-pop bottle or baby bottle)? <small>4-14</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Without your showing him how, does your child scribble back and forth when you give him a crayon (or pencil or pen)? <small>5-16</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. After a crumb or Cheerio is dropped into a small, clear bottle, does your child turn the bottle upside down to dump it out? (You may show him how.) <small>6-16</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24 up to 30 month children start here:				
28. After a crumb or Cheerio is dropped into a small, clear bottle, does your child turn the bottle upside down to dump out the crumb or Cheerio? (Do not show her how.) <small>6-18</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. If you do any of the following gestures, does your child copy at least one of them? <small>3-20</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<div style="display: flex; justify-content: space-between;"> a. Open and close your mouth b. Blink your eyes </div> <div style="display: flex; justify-content: space-between;"> c. Pull on your earlobe d. Pat your cheek </div>				
30. Does your child put things away where they belong? For example, does he know his toys belong on the toy shelf, his blanket goes on his bed, and dishes go in the kitchen? <small>4-24</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subtotal _____				
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .				

Problem Solving		Please mark either: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
31. Does your child pretend objects are something else? For example, does your child hold a cup to his ear, pretending it is a telephone? Does he put a box on his head, pretending it is a hat? Does he use a block or small toy to stir food? <small>3-22</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. While your child watches, line up four objects like blocks or cars in a row. Does your child copy or imitate you and line up at least <i>two</i> blocks side by side? (You can also use spools of thread, small boxes, or other toys.) <small>5-20</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. If your child wants something he cannot reach, does he find a chair or box to stand on to reach it (for example, to get a toy on a counter or to "help" you in the kitchen)? <small>6-20</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30 up to 36 month children start here:					
34. After you have shown your child how, does he try to get a small toy that is slightly out of reach by using a spoon, stick, or similar tool? <small>6-14</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. When looking in the mirror, ask "Where is _____?" (Use your child's name.) Does your child point to his image in the mirror? <small>3-27</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. While your child watches, line up four objects like blocks or cars in a row. Does your child copy or imitate you and line up <i>four</i> objects in a row? (You can also use spools of thread, small boxes, or other toys.) <small>6-24</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. Show your child how to make a bridge with blocks, boxes, or cans, like the example. Does your child copy you by making one like it? <small>5-36</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. When you say, "Say 'seven three,'" does your child repeat <i>just</i> the two numbers in the same order? <i>Do not repeat the numbers.</i> If necessary, try another pair of numbers and say, "Say 'eight two.'" Your child must repeat just one series of two numbers for you to answer "yes" to this question. <small>5-30</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Subtotal _____			
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date.					

Problem Solving		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet
		1 st 2 nd 3 rd 4 th
36 up to 45 month children start here:		
39. Does your child dress up and “play-act,” pretending to be someone or something else? For example, your child may dress up in different clothes and pretend to be a mommy, daddy, brother, or sister, or an imaginary animal or figure. <small>6-42</small>		<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
40. When you point to the figure and ask your child, “What is this?” does your child say a word that means a person or something similar? (Mark “yes” for responses like “snowman,” “boy,” “man,” “girl,” “Daddy,” “spaceman” and “monkey”.) <small>6-27</small>		<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
41. Without your giving help by pointing, does your child follow three different directions using the words “under,” “between,” and “middle”? For example, ask your child to put a shoe “under the couch.” Then ask her to put the ball “between the chairs” and the book “in the middle of the table.” <small>3-48</small>		<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
42. When you say, “Say ‘five eight three,’” does your child repeat <i>just</i> the three numbers in the same order? <i>Do not repeat the numbers.</i> If necessary, try another series of numbers and say, “Say ‘six nine two.’” (Your child must repeat just one series of three numbers for you to answer “yes” to this question.) <small>6-36</small>		<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
43. After your child draws a “picture,” even a simple scribble, does she tell you what she drew? (You may say, “Tell me about your picture,” or ask, “What is this?” to prompt her.) <small>6-30</small>		<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
44. After watching you draw a line from the top of the paper to the bottom with a crayon (or pencil or pen), does your child copy you by drawing a single line on the paper in <i>any direction</i> ? (Mark “not yet” if your child scribbles back and forth.) <small>5-18</small>	Count as “yes”  Count as “not yet” 	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Subtotal _____		
Remember: Stop when you have marked 3 ‘Not Yet’s in a row, circle them, & write the date.		

Problem Solving	Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet						
1 st 2 nd 3 rd 4 th							
45 up to 54 month children start here:							
45. When asked, "Which circle is the smallest?" does your child point to the smallest circle? (Ask this question without providing help by pointing, gesturing, or looking at the smallest circle.) <small>5-42</small>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
							
46. When shown objects and asked, "What color is this?" does your child name five different colors like red, blue, yellow, orange, black, white, or pink? (Mark "yes" only if your child answers the question correctly using five colors.) <small>4-48</small>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
47. If you place five objects in front of your child, can he count them by saying, "one, two, three, four, five," in order? (Ask this question <i>without</i> providing help by pointing, gesturing, or naming.) <small>6-48</small>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
48. Does your child know the following six words for shapes? For example, your child says, "That's a square," when pointing to a box. If she knows at least 3 shapes mark "sometimes". <small>29p</small>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
<table style="width: 100%; border: none;"> <tr> <td style="padding: 0 20px;">a. circle</td> <td style="padding: 0 20px;">c. diamond</td> <td style="padding: 0 20px;">e. rectangle</td> </tr> <tr> <td style="padding: 0 20px;">b. triangle</td> <td style="padding: 0 20px;">d. square</td> <td style="padding: 0 20px;">f. star.</td> </tr> </table>		a. circle	c. diamond	e. rectangle	b. triangle	d. square	f. star.
a. circle	c. diamond	e. rectangle					
b. triangle	d. square	f. star.					
49. Ask your child which of these is the biggest and which is the smallest. Then say, "a house," "a car," and "a cup." Can your child tell you which one is the biggest and smallest? <small>21p</small>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
50. Show the 26 printed letters of the alphabet to your child. Can your child correctly name more than 10 of them? If the child can name 7, mark "sometimes." <small>27p</small>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
Subtotal _____							
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date.							

Problem Solving	Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet				
	1 st 2 nd 3 rd 4 th				
51. Does your child finish the following sentences using a word that means the opposite of the word that is italicized? For example: "A rock is <i>hard</i> , and a pillow is <i>soft</i> ." Please write your child's responses below: A cow is <i>big</i> , and a mouse is _____. Ice is <i>cold</i> , and fire is _____. We see stars at <i>night</i> , and we see the sun during the _____. When I throw the ball <i>up</i> , it comes _____. (Mark "yes" if she finishes three of four sentences correctly. Mark "sometimes" if she finishes two of four sentences correctly.) 4-60	<table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>				
52. Does your child know the names of numbers? (Mark "yes" if he identifies the three numbers below. Mark "sometimes" if he identifies two numbers.) 6-54 <div style="text-align: center; font-size: 24px; font-weight: bold; margin: 10px 0;"> 3 1 2 </div>	<table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>				
53. Does your child name at least four letters in her name? Point to the letters and ask, "What letter is this?" (Point to the letters out of order.) 6-60	<table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>				
54. Does your child know printed numbers from 1 to 10? For example, when you point to a number in a book, on cards, or on road signs, does your child correctly name the numbers? (If your child knows at least 5 numbers, mark "sometimes".) 31p	<table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>				
55. Does your child count up to 15 without making mistakes? If so, mark "yes." If your child counts to 12 without making mistakes, mark "sometimes." 5-54	<table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>				
56. Can your child show you her left hand or her left foot? 22p	<table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>				
57. Does your child know the sounds of 5 of these letters? s, t, k, m, p, c, f, j. 28p	<table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>				
58. Does your child count up to 20? 9p	<table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>				
59. Put a penny, nickel, and dime in front of your child. Can your child point to the penny? 13p	<table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>				
	Subtotal _____				
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .					

Problem Solving		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
60.	Does your child say the days of the seven week in the correct order? <small>14p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61.	Ask your child what day comes before and after Friday, does your child answer correctly? Mark "sometimes" if your child can name one of the days. <small>15p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62.	Ask your child what is 6 minus (or take away) 1, 4 minus 2, and 8 minus 3. Does your child correctly subtract one number from another? They can use their fingers to count. <small>16p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63.	Does your child tell you if a spoken or printed word has the same or different beginning and ending sounds? For example, CAR and CAKE have the same beginning sounds. BEG and DOG have the same end sounds. MAMA and LLAMA have different beginning sounds. TOP and TOY have different ending sounds. <small>30p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64.	Can your child count past "40"? <small>10p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65.	Does your child correctly spell 3-letter words? For example, "cat," "dog," "pen". <small>18p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
66.	Can your child tell you all 12 months of the year? Mark "Sometimes" if your child can tell you more than 6 months of the year. <small>19p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
67.	Ask your child what is 4 plus 2, 3 plus 5, 7 plus 1. Does your child correctly add the numbers? They can use their fingers to count. <small>17p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
68.	Can your child count to 100 by 10's? <small>11p</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Subtotal _____			
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .					

Ages and Stages Questionnaires®: Inventory

(For children ages 4 weeks up to 54 months)

Personal-Social

Instructions for completion:




1. Use the following table to find your child's starting point based on his/her age.
2. Read each question carefully and check the box that tells whether your child is doing the activity **yes (regularly)**, **sometimes**, or **not yet**.
3. Try each activity unless you are certain that your child can already do the item, or you know they cannot yet do the item.



Please note: there may be some activities that your child used to do, but has replaced with a more advanced skill (for example, older children are no longer fed by bottles). Answer these items as "Yes".

Starting points for the Cognitive domain:		
If your child's age is:	Start with item:	Page:
1 up to 3 months	1	2
3 up to 6 months	5	2
6 up to 9 months	8	2
9 up to 12 months	11	2
12 up to 18 months	15	3
18 up to 24 months	21	3
24 up to 30 months	27	4
30 up to 36 months	31	4
36 up to 45 months	36	5
45 up to 54 months	41	5

Tips for completing the ASQ™:Inventory

- Try to make completing this questionnaire a game that is fun for you and your child.
- Make sure your child is rested, fed, and ready to play.

Personal-Social	Please mark either: Y for Yes, S for Sometimes, and N for Not Yet			
<i>1 up to 3 month babies start here:</i>	1 st	2 nd	3 rd	4 th
1. Does your baby cry when he is hungry, wet, tired, or wants to be held? <small>2-2</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does your baby sometimes try to suck, even when he's not feeding? <small>1-2</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Does your baby smile at you? <small>3-2</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. When you smile at your baby, does he smile back? <small>4-2</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>3 up to 6 month babies start here:</i>				
5. When your baby sees the breast or bottle, does he seem to know he is about to be fed? <small>6-2</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Before you smile or talk to your baby, does he smile when he sees you nearby? <small>5-4</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Does your baby watch her hands? <small>5-2</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				
<i>6 up to 9 month babies start here:</i>				
8. When your baby has her hands together, does she play with her fingers? <small>2-4</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. When in front of a large mirror, does your baby smile or coo at herself? <small>6-4</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				
10. While lying on her back, does your baby play by grabbing her foot? <small>3-6</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				
<i>9 up to 12 month babies start here:</i>				
11. Does your baby try to get a toy that is out of reach? (She may roll, pivot on her tummy, or crawl to get it.) <small>6-6</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subtotal _____				
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date.				

Personal-Social		Please mark either: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
12.	Does your baby help hold the bottle with both hands at once, or when nursing, does she hold the breast with her free hand? <small>4-4</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	When in front of a large mirror, does your baby reach out to pat the mirror? <small>4-6</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					
14.	Does your baby feed himself a cracker or a cookie? <small>6-8</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 up to 18 month children start here:					
15.	Does your child drink water, juice, or formula from a cup while you hold it? <small>5-8</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	Does your child act differently toward strangers than he does with you and other familiar people? (Reactions to strangers may include staring, frowning, withdrawing, or crying.) <small>2-6</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.	While your child is on his back, does he put his foot in his mouth? <small>5-6</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					
18.	When you dress your child, does he push his arm through a sleeve once his arm is started in the hole of the sleeve? <small>5-10</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	When you hold out your hand and ask for her toy, does your child offer it to you even if she doesn't let go of it? (If she already lets go of the toy into your hand, mark "yes" for this item.) <small>4-10</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.	When you hold out your hand and ask for her toy, does your child let go of it into your hand? <small>6-10</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18 up to 24 month children start here:					
21.	Does your child roll or throw a ball back to you so that you can return it to him? <small>5-12</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Subtotal _____			
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date.					

Personal-Social		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
22.	Does your child play with a doll or stuffed animal by hugging it? <small>6-12</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
23.	When you dress your child, does he lift his foot for his shoe, sock, or pant leg? <small>4-12</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
24.	Does your child copy the activities you do, such as wipe up a spill, sweep, shave, or comb hair? <small>6-18</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
25.	Does your child push a little wagon, stroller, or other toy on wheels, steering it around objects and backing out of corners if she cannot turn? <small>6-22</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
26.	Does your child feed herself with a spoon, even though she may spill some food? <small>4-14</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
24 up to 30 month children start here:					
27.	Does your child get your attention or try to show you something by pulling on your hand or clothes? <small>6-14</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
28.	Does your child come to you when she needs help, such as with winding up a toy or unscrewing a lid from a jar? <small>6-16</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
29.	Does your child use a spoon to feed himself with little spilling? <small>2-30</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
30.	Does your child drink from a cup or glass, putting it down again with little spilling? <small>5-18</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
30 up to 36 month children start here:					
31.	If you do any of the following gestures, does your child copy at least one of them? <small>2-22</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	a. Open and close your mouth.				
	b. Blink your eyes.				
	c. Pull on your earlobe.				
	d. Pat your cheek.				
		Subtotal _____			
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .					

Personal-Social		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
32.	Does your child help undress herself by taking off clothes like socks, hat, shoes, or mittens? <small>5-14</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33.	Does your child eat with a fork? <small>6-20</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34.	Does your child take turns by waiting while another child or adult takes a turn? <small>6-36</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35.	When playing with either a stuffed animal or doll, does your child pretend to rock it, feed it, change its diapers, put it to bed, and so forth? <small>5-20</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36 up to 45 month children start here:					
36.	When your child is looking in a mirror and you ask, "Who is in the mirror?" does he say either "me" or his own name? <small>6-30</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37.	While looking at himself in the mirror, does your child offer a toy to his own image? (Mark "yes" if your child used to do this when he was younger.) <small>4-16</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38.	After you put on loose-fitting pants around his feet, does your child pull them completely up to his waist? <small>5-30</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39.	Does your child call herself "I" or "me" more often than her own name? For example, "I do it," more often than "Juanita do it." <small>6-24</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40.	Does your child feel proud of the things she is able to do? For example, she might show you a picture she drew and say, "Look at what I made!" <small>23sp</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45 up to 54 month children start here:					
41.	Using these exact words, ask your child, "Are you a girl or a boy?" Does your child answer correctly? <small>6-33</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42.	Does your child tell you what he or she likes and does not like? For example, your child says, "I love chocolate cake," or "I don't like to play dolls." <small>17sp</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Subtotal _____			
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .					

Personal-Social		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
43.	Does your child wash her hands using soap and water and dry off with a towel without help? <small>6-42</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
44.	Does your child usually take turns and share with other children? <small>6-60</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
45.	Does your child dress or undress herself without help (except for snaps, buttons, and zippers)? <small>6-48</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
46.	Does your child tell you the names of two or more playmates, not including brothers and sisters? (Ask this question without providing help by suggesting names of playmates or friends.) <small>4-48</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
47.	Does your child use the toilet by himself? (He goes to the bathroom, sits on the toilet, wipes, and flushes.) Mark "yes" even if he does this after you remind him. <small>5-60</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
48.	Does your child put on a coat, jacket, or shirt by himself? <small>6-27</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
49.	Does your child do the following by himself? Wash hands, blow nose, brush teeth, and comb/brush hair. <small>2ap</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
50.	When you cross the street with your child, does she know how to look both ways before crossing? <small>3ap</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
51.	Does your child pour liquid from one container to another? For example does he pour juice from a small pitcher into a cup? <small>8ap</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
52.	Does your child know how to behave when you take her out to a public place? For example when you are at a library, church, or grocery store? <small>11ap</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
53.	Does your child serve herself, taking food from one container to another using utensils? For example, does your child use a large spoon to scoop applesauce from a jar into a bowl? <small>5-42</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
54.	Does your child stay away from dangerous things? For example, a hot stove or moving cars. <small>10ap</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
		Subtotal _____			
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .					

Personal-Social		Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
		1 st	2 nd	3 rd	4 th
55. Does your child tell you at least four of the following? Please mark the items your child knows. <small>2-48</small>	a. First name b. Age c. City she lives in d. Last name e. Boy or girl f. Telephone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56. Does your child begin activities and encourage friends to join in? For example does your child say, "Come on, let's build a house. You make the garage." <small>9sp</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57. Does your child brush his teeth by putting toothpaste on the toothbrush and brushing all his teeth without help? (You may still need to check and re-brush your child's teeth.) <small>5-48</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58. Does your child do most of the bath time routine by herself (with your supervision)? Does she take off clothes, get into the tub, clean her body, and dry herself off? <small>9ap</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59. Does your child take turns when playing a sit down game such as board games or cards? <small>22sp</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60. Does your child take part in an adult-led large group activity with other children for at least 10-15 minutes? For example, circle time with more than 5 kids? <small>15sp</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61. Does your child tell an adult when he or she is having trouble with a friend? <small>11sp</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62. Does your child dress and undress himself, including buttoning medium-size buttons and zipping front zippers? <small>6-54</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63. Does your child try to solve a conflict with playmates? For example, your child might say, "I'll play with the ball first, and then it's your turn." <small>8sp</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64. Does your child claim a toy that belongs to him by taking the toy back or by saying, "That's mine!" <small>10sp</small>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subtotal _____					
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .					

Personal-Social	Please mark either a: Y for Yes, S for Sometimes, and N for Not Yet			
	1 st	2 nd	3 rd	4 th
65. Does your child ask before using other people's things? <small>21sp</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
66. Does your child begin playing with toys and finish the activity without being told? For example, your child gets out a puzzle, puts it together, and puts it away. <small>13sp</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
67. Does your child know what to do in an emergency? For example, does he know how to call an adult or dial 911 for help? <small>13ap</small>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Subtotal _____				
Remember: Stop when you have marked 3 'Not Yet's in a row, circle them, & write the date .				

APPENDIX B

TRADITIONAL CHINESE ASQ: INVENTORY, DEMOGRAPHIC INFORMATION

FORM AND UTILITY SURVEY

年齡與進程檢核表

(適用於1到54個月大的嬰幼兒)

測驗簡介與分數表

年齡與進程檢核表詢問與多數孩子日常學習活動相關的問題。每份年齡與進程檢核表可以在四個不同的時間點使用，以作為孩子發展進度的評量。每一次完成的日期可以填寫在日期1 (1st)，日期2 (2nd)，日期3 (3rd) 及日期4 (4th) 下方的空格。

填寫年齡與進程檢核表，請照著以下步驟：

1. 請根據孩子的年齡找到他在問卷中的起始點。
2. 請詳細閱讀每個問題並填寫「**2 (經常是)**」，「**1 (有時是)**」，或是「**0 (很少或還沒有)**」來指出您的孩子是否能完成某項活動。
3. 請繼續回答問題直到您遇到孩子的停止點。
4. 請依照以上步驟完成五個分測驗（溝通和語言、粗大動作、精細動作、認知和社會與適應能力）中的每一個。

如何找到孩子的起始和停止點的教學說明在第4頁。

完成本檢核表的一些小技巧

- 您和孩子可試著以像玩有趣遊戲的方式完成本檢核表。
- 請確保孩子睡眠充足、吃飽並準備好和您一起玩。
- 除非您很確定孩子已經具備某項能力，或是您知道孩子尚未學會某項能力，請務必與孩子嘗試各項活動。
- 有些活動可能孩子曾經會做，但是之後被更進階的技能取代（例如：較年長的孩子不再用奶瓶餵奶）。這些技能請您填寫「**2 (經常是)**」。

嬰幼兒基本資料

- 孩子姓名: _____ 父母或監護人姓名 (選填): _____
- 孩子生年月日: _____
 - 給24個月以下的幼兒:
您的孩子是早產兒嗎? 否 是: 如果是, 早產幾個星期? _____
- 孩子的性別: 男 女
- 孩子有鑑定過的身心障礙或是正接受特殊教育服務嗎? 否 是
 - 如果是, 請問孩子的身心障礙是哪一種 (例如: 唐氏症, 溝通障礙)? _____

如果是家長填寫本檢核表, 請填寫以下家庭資訊:

如果是老師填寫本檢核表, 請填寫以下教師資訊:

- | | |
|---|--|
| <ul style="list-style-type: none"> • 這個小孩出生時, 媽媽的年齡是: _____ • 家裡一共有幾個小孩: _____ • 婚姻狀況:
<input type="checkbox"/> 已婚 <input type="checkbox"/> 單身 <input type="checkbox"/> 分居
<input type="checkbox"/> 離婚 <input type="checkbox"/> 其他 (請舉例): _____ • 媽媽的教育程度:
<input type="checkbox"/> 未完成高中 (職) 學業
<input type="checkbox"/> 高中 (職)
<input type="checkbox"/> 專科
<input type="checkbox"/> 大學或以上 • 家庭年收入:
<input type="checkbox"/> 新台幣25000以下 <input type="checkbox"/> 新台幣25001-50000
<input type="checkbox"/> 新台幣50001-80000 <input type="checkbox"/> 新台幣80001以上 | <ul style="list-style-type: none"> • 老師的年齡: _____ • 老師的教育程度:
<input type="checkbox"/> 未完成高中 (職) 學業
<input type="checkbox"/> 高中 (職)
<input type="checkbox"/> 專科
<input type="checkbox"/> 大學或以上 • 老師在學時的主修是:
_____ • 0-5歲孩子的教學經驗共有幾年: _____ • 有幼兒教育或學前特殊教育的合格教師證嗎?
<input type="checkbox"/> 沒有 <input type="checkbox"/> 有 |
|---|--|

施測紀錄

- 填寫本檢核表的人是: _____ 與孩子的關係是? _____
- 填寫檢核表時孩子的年紀:
如果孩子在24個月 (2歲以下) 而且早產超過3個星期以上, 請使用調整過的年紀:
 - 請從孩子的年齡中減去早產的週數。
 - 這個調整過的年紀或是您的孩子在年齡與進程檢核表中的起始點。
- 填寫檢核表時的日期:
日期1: _____ 日期2: _____ 日期3: _____ 日期4: _____
- 填寫檢核表時孩子的年紀 (或是調整過的年紀):
日期1: _____ 日期2: _____ 日期3: _____ 日期4: _____

兒童一般發展問題

在以下的空格內，請填寫

Y 表示「是」

N 表示「否」

第一部份：孩子年齡介於1-54個月之間，請回答下列問題。

1. 您覺得孩子聽得清楚嗎？（如為新生兒，請問您的孩子有通過新生兒聽力篩檢嗎？）
 如果否，請解釋： _____
2. 請問爸爸或媽媽任何一方有兒童時期耳聾或聽力障礙的家族歷史嗎？
 如果是，請解釋： _____
3. 請問您擔心孩子的視力嗎？
 如果是，請解釋： _____
4. 過去幾個月，您的孩子有任何健康上的問題嗎？
 如果是，請解釋： _____
5. 請問您擔心孩子的行為嗎？
 如果是，請解釋： _____
6. 請問孩子有任何令您擔心的地方嗎？
 如果是，請解釋： _____

日期 1	日期 2	日期 3	日期 4

第二部份：請根據孩子目前年齡回答與年齡相符的問題。

15個月以下的孩子：

- 1-15 個月 1. 請問寶寶對稱的使用雙手和雙腿嗎？
 如果否，請解釋： _____
- 3-15 個月 2. 當您協助寶寶站著時，他/她的雙腳大多數時間是平放在踩著的表面上嗎？
 如果否，請解釋： _____
- 3-15 個月 3. 請問您是否擔心寶寶太安靜，或不像其他寶寶一樣發出聲音嗎？
 如果是，請解釋： _____
- 11-15 個月 4. 請問寶寶是否會玩他/她的聲音或是好像在說話一樣？
 如果否，請解釋： _____

15個月以上（含15個月）的孩子：

1. 請問您認為孩子講話是否和同年齡的小朋友一樣？
 如果否，請解釋： _____
2. 請問您是否能理解孩子說得大部分的話？
 如果否，請解釋： _____
3. 請問您覺得孩子是否和同年齡的小朋友一樣攀爬、走路和跑步？
 如果否，請解釋： _____

30個月以上（含30個月）的孩子：

1. 請問其他人是否能理解您的孩子說得大部分的話？
 如果否，請解釋： _____

--	--	--	--

檢核表填寫說明

如何開始與停止填寫年齡與進程檢核表？

1. 根據孩子年齡（請參照第2頁）找到本檢核表的起始點。

舉例來說，在溝通和語言能力分測驗中，如果孩子是 15個月大，請從問題#18開始作答。

2. 請回答每個問題。

- 如果平時您經常會觀察到孩子表現問題內的技能，請填寫「2（經常是）」。
- 如果您觀察到孩子有時候或才剛開始表現問題內的技能，請填寫「1（有時是）」。
- 即使給孩子機會，如果您沒有觀察到他/表現問題內的技能，請填寫「0（還沒有）」。

3. 找到屬於孩子的停止點。

如果您連續填寫了3個「0」，請停止作答（在右側的例子裡，孩子的停止點是問題#30）。請畫圈框住那3個連續的「0」。

4. 尋找連續3個「2」。

回到起始點並由起始點開始檢查您的回答。從起始點的問題起算，請找到至少連續3個「2」。請畫圈框住那3個連續的「2」。

如果從起始點問開始找不到連續3個「2」，請往回作答，一次一個問題直到回答連續3個「2」為止。

5. 請依照以上步驟完成年齡與進程檢核表的每一個分測驗。

（溝通和語言、粗大動作、精細動作、認知及社會和適應）

12到18個月的寶寶
請從這裡開始

日期 1
4/5/10

18.	2
19.	2
20.	2
21.	2
22.	2
23.	1
24.	1
25.	0
26.	1
27.	1
28.	0
29.	0
30.	0
31.	

溝通及語言能力分數

(年齡與進程檢核表 溝通和語言能力 頁數 2-9)

	日期 1	日期 2	日期 3	日期 4
頁數	小計	小計	小計	小計
2				
3				
4				
5				
6				
7				
8				
9				
總分	/130	/130	/130	/130
分測驗百分比				

計分說明

經常是 (2) = 2
 有時是 (1) = 1
 很少或還沒有 (0) = 0

說明：

- 請將分項能力測驗中每一頁的分數相加起來
- 請將每頁的小計分數填寫在左側的表格內。
- 請將每一頁的小計分數相加起來，即得「總分」。
- 請將「總分」除以130（可能獲得的全部分數）即可得到「分測驗百分比」。

● 根據您填寫本檢核表的經驗，請回答下列問題。

1. 檢核表內的問題很容易理解。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

請列出理解上有困難的問題。

頁數與問題號碼	意見

2. 我填寫檢核表時，回答的問題適當的反應出孩子的年齡和能力。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

請列出不適當的問題（請列題號）： _____

3. 這份檢核表提供了孩子溝通及語言能力發展的資訊。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

4. 這份檢核表協助我發現對孩子的溝通及語言能力發展有疑問的地方。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

5. 我覺得填寫本檢核表的時間長度很合理。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

粗大動作能力分數

(年齡與進程檢核表 粗大動作能力 頁數 2-8)

	日期 1	日期 2	日期 3	日期 4
頁數	小計	小計	小計	小計
2				
3				
4				
5				
6				
7				
8				
9				
總分	/130	/130	/130	/130
分測驗百分比				

計分說明

經常是 (2) = 2
有時是 (1) = 1
很少或還沒有 (0) = 0

說明：

- 請將分項能力測驗中每一頁的分數相加起來
- 請將每頁的小計分數填寫在左側的表格內。
- 請將每一頁的小計分數相加起來，即得「總分」。
- 請將「總分」除以130（可能獲得的全部分數）即可得到「分測驗百分比」。

● 根據您填寫本檢核表的經驗，請回答下列問題。

1. 檢核表內的問題很容易理解。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

請列出理解上有困難的問題。

頁數與問題號碼	意見

2. 我填寫檢核表時，回答的問題適當的反應出孩子的年齡和能力。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

請列出不適當的問題（請列題號）： _____

3. 這份檢核表提供了孩子粗大動作能力發展的資訊。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

4. 這份檢核表協助我發現對孩子的粗大動作能力發展有疑問的地方。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

5. 我覺得填寫本檢核表的時間長度很合理。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

精細動作能力分數

(年齡與進程檢核表 精細動作能力 頁數 2-9)

	日期 1	日期 2	日期 3	日期 4
頁數	小計	小計	小計	小計
2				
3				
4				
5				
6				
7				
8				
9				
總分	/126	/126	/126	/126
分測驗百分比				

計分說明

經常是 (2) = 2
有時是 (1) = 1
很少或還沒有 (0) = 0

說明：

- 請將分項能力測驗中每一頁的分數相加起來
- 請將每頁的小計分數填寫在左側的表格內。
- 請將每一頁的小計分數相加起來，即得「總分」。
- 請將「總分」除以126（可能獲得的全部分數）即可得到「分測驗百分比」。

● 根據您填寫本檢核表的經驗，請回答下列問題。

1. 檢核表內的問題很容易理解。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

請列出理解上有困難的問題。

頁數與問題號碼	意見

2. 我填寫檢核表時，回答的問題適當的反應出孩子的年齡和能力。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

請列出不適當的問題（請列題號）： _____

3. 這份檢核表提供了孩子精細動作能力發展的資訊。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

4. 這份檢核表協助我發現對孩子的精細動作能力發展有疑問的地方。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

5. 我覺得填寫本檢核表的時間長度很合理。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

認知能力分數

(年齡與進程檢核表 認知能力 頁數 2-9)

	日期 1	日期 2	日期 3	日期 4
頁數	小計	小計	小計	小計
2				
3				
4				
5				
6				
7				
8				
9				
總分	/130	/130	/130	/130
分測驗百分比				

計分說明

經常是 (2) = 2
有時是 (1) = 1
很少或還沒有 (0) = 0

說明：

- 請將分項能力測驗中每一頁的分數相加起來
- 請將每頁的小計分數填寫在左側的表格內。
- 請將每一頁的小計分數相加起來，即得「總分」。
- 請將「總分」除以130（可能獲得的全部分數）即可得到「分測驗百分比」。

● 根據您填寫本檢核表的經驗，請回答下列問題。

1. 檢核表內的問題很容易理解。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

請列出理解上有困難的問題。

頁數與問題號碼	意見

2. 我填寫檢核表時，回答的問題適當的反應出孩子的年齡和能力。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

請列出不適當的問題（請列題號）： _____

3. 這份檢核表提供了孩子認知能力發展的資訊。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

4. 這份檢核表協助我發現對孩子的認知能力發展有疑問的地方。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

5. 我覺得填寫本檢核表的時間長度很合理。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

社會與適應能力分數

(年齡與進程檢核表 社會與適應能力 頁數 2-9)

	日期 1	日期 2	日期 3	日期 4
頁數	小計	小計	小計	小計
2				
3				
4				
5				
6				
7				
8				
9				
總分	/130	/130	/130	/130
分測驗百分比				

計分說明

經常是 (2) = 2
 有時是 (1) = 1
 很少或還沒有 (0) = 0

說明：

- 請將分項能力測驗中每一頁的分數相加起來
- 請將每頁的小計分數填寫在左側的表格內。
- 請將每一頁的小計分數相加起來，即得「總分」。
- 請將「總分」除以130（可能獲得的全部分數）即可得到「分測驗百分比」。

● 根據您填寫本檢核表的經驗，請回答下列問題。

1. 檢核表內的問題很容易理解。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

請列出理解上有困難的問題。

頁數與問題號碼	意見

2. 我填寫檢核表時，回答的問題適當的反應出孩子的年齡和能力。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

請列出不適當的問題（請列題號）： _____

3. 這份檢核表提供了孩子社會與適應能力發展的資訊。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

4. 這份檢核表協助我發現對孩子的社會與適應能力發展有疑問的地方。請圈選一個答案。

非常同意 同意 不太同意 非常不同意

5. 我覺得填寫本檢核表的時間長度很合理。請圈選一個答案。

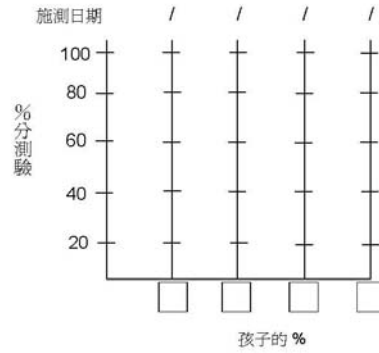
非常同意 同意 不太同意 非常不同意

檢核表分數總結

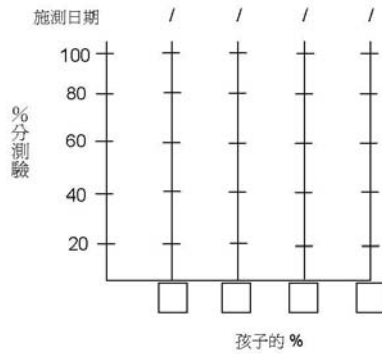
要紀錄出孩子在各分項能力的進展，請照著以下步驟：

1. 請填寫施測日期。
2. 將年齡與測驗分數表中各分項測驗的%（百分比）填寫到「孩子的%」的空格中。
3. 將%（百分比）畫在各施測日期的線上。

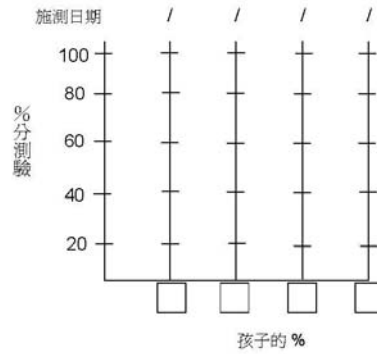
溝通及語言



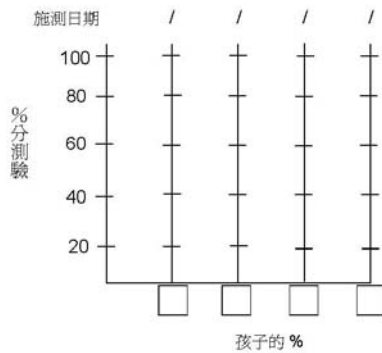
粗大動作



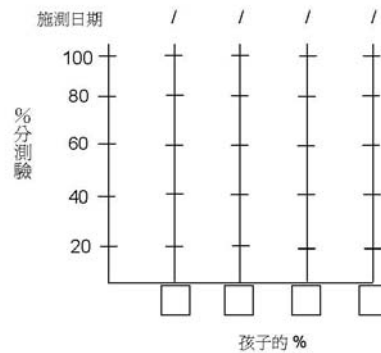
精細動作



認知



社會與適應



年齡與進程檢核表

(適用於1到54個月大的嬰幼兒)

溝通及語言能力

填寫本檢核表時的注意事項：

1. 請先計算出孩子的年齡，並利用下方的表格找到開始作答的問題與頁數。
2. 請詳細閱讀每個問題，並在空格中填入「2（經常是）」，「1（有時是）」或「0（很少或還沒有）」來代表孩子展現這些技能的頻率。
3. 除非您很確定孩子已經具備某項能力，或是您知道孩子尚未學會某項能力，請務必與孩子嘗試各項活動。

請注意：有些活動可能孩子曾經會做，但是之後被更進階的技能取代（例如：年紀大的孩子會以說話取代發出咕咕聲）。這些技能請您填寫「2（經常是）」。

溝通及語言能力分測驗的起始點：

如果孩子的年紀是：	開始作答的題號：	頁碼：
1 到 3 個月	1	2
3 到 6 個月	4	2
6 到 9 個月	9	2
9 到 12 個月	13	3
12 到 18 個月	18	3
18 到 24 個月	21	4
24 到 30 個月	25	4
30 到 36 個月	29	5
36 到 45 個月	34	6
45 到 54 個月	40	7

完成本檢核表的一些小技巧

- 您和孩子可試著以像玩有趣遊戲的方式完成本檢核表。
- 請確保孩子睡眠充足、吃飽並準備好和您一起玩。

溝通和語言能力		對於孩子在各問題的行為表現，請填寫： 2 ：經常是 1 ：有時是 0 ：很少或還沒有			
1 到3個月的嬰兒請從這裡開始：		1 st	2 nd	3 rd	4 th
1. 寶寶有時候會發出喉音或咯咯聲嗎？ <small>Does your baby sometimes make throaty or gurgling sounds? 1-2</small>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>				
2. 當您不在寶寶視線內，之後又出現在她的面前時，一看見您，她會微笑或顯得興奮嗎？ <small>After you have been out of sight, does your baby smile or get excited when she sees you? 6-2</small>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>				
3. 寶寶會發出咕咕聲（如哦/噉/噢和咕聲）嗎？ <small>Does your baby make cooing sounds such as "ooo," "gah," and "aah"? 2-2</small>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>				
3 到6個月的嬰兒請從這裡開始：					
4. 寶寶會發出尖細的叫聲嗎？ <small>Does your baby make high-pitched squeals? 4-4</small>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>				
5. 當您對寶寶「說話」時，他/她會對您微笑嗎？ <small>Does your baby smile when you talk to him? 4-2</small>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>				
6. 當您對寶寶「說話」時，他能發出聲音回應您嗎？ <small>When you speak to your baby, does she make sounds back to you? 3-2</small>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>				
7. 寶寶會大聲笑嗎？ <small>Does your baby laugh? 5-4</small>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>				
8. 寶寶會看著玩具或人發出聲音嗎？ <small>Does your baby make sounds when looking at toys or people? 6-4</small>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>				
6到9個月的嬰兒請從這裡開始：					
9. 如果您在寶寶看不到的地方叫她，她能朝您的方向看嗎？ <small>If you call your baby when you are out of sight, does she look in the direction of your voice? 3-6</small>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>				
10. 當大聲的噪音出現時，寶寶會轉頭看聲音的來源嗎？ <small>When a loud noise occurs, does your baby turn to see where the sound came from? 4-6</small>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>				
小計 _____					
當您連續填寫3個“0”之後，請記得停止作答。					

溝通和語言能力		對於孩子在各問題的行為表現，請填寫：			
		1 st	2 nd	3 rd	4 th
11. 寶寶會輕輕的咯咯笑嗎？ Does your baby chuckle softly? 5-2		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
12. 當寶寶試著發出聲音時，他能發出咕噥聲、喊叫聲或其他喉音嗎？ When playing with sounds, does your baby make grunting, growling, or other deep-toned sounds? 2-6		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
9到12個月的嬰兒請從這裡開始：					
13. 當您對寶寶說「不可以」時，他能對您說話的聲調做出反應，至少短暫的停止不動嗎？ Does your baby respond to the tone of your voice and stop his activity at least briefly when you say "no-no" to him? 5-8		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
14. 寶寶會發出類似「大」、「嘎」、「喀」和「爸」的聲音嗎？ Does your baby make sounds like "da," "ga," "ka," and "ba"? 5-6		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
15. 如果您模仿寶寶發的聲音，他能對您重複這種聲音嗎？ If you copy the sounds your baby makes, does your baby repeat the same sounds back to you? 6-6		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
16. 寶寶能發出兩個相似的音如「爸爸」、「大大」或「嘎嘎」嗎？這聲音可能沒有任何特定的意義。 Does your baby make two similar sounds like "ba-ba," "da-da," or "ga-ga"? (The sounds do not need to mean anything.) 6-8		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
17. 當寶寶聽見除您之外其他人的聲音，她會停止啼哭嗎？ Does your baby stop crying when she hears a voice other than yours? 3-4		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
12到18個月的嬰兒請從這裡開始：					
18. 如果您口頭要求寶寶玩遊戲（如「再見」、「躲貓貓」、「拍拍手」或「那麼大」等），而不加以示範，他會玩至少一種童謠遊戲嗎？ If you ask your baby to, does he play at least one nursery game even if you don't show him the activity yourself (such as "bye-bye," "Peek-a-boo," "clap your hands," "So Big")? 4-10		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
19. 孩子會指、用手拍或想拿起書中的圖畫嗎？ Does your child point to, pat, or try to pick up pictures in a book? 4-14		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
					小計 _____
當您連續填寫3個“0”之後，請記得停止作答。					

		1 st	2 nd	3 rd	4 th
溝通和語言能力					
對於孩子在各問題的行為表現，請填寫： 2 ：經常是 1 ：有時是 0 ：很少或還沒有					
<p>20. 當您問寶寶，「球、帽子或鞋子等在哪兒？」時，她會看著您所問的物體嗎？請確保物體出現在孩子面前。請勾選「是」如果她認得至少一個物體。</p> <p style="font-size: x-small;">When you ask, "Where is the ball (hat, shoe, etc.)?" does your child look at the object? (Make sure the object is present. Mark "yes" if he knows one object.) 5-12</p>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18到24個月的嬰兒請從這裡開始：					
<p>21. 在沒有您的手勢的輔助下，寶寶能遵從至少一個的簡單指令，如「過來」、「把東西給我」或「把東西放回去」嗎？</p> <p style="font-size: x-small;">Does your baby follow one simple command, such as "Come here", "Give it to me", or "Put it back", <i>without</i> your using gestures? 5-10</p>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>22. 寶寶會說三個詞彙，例如「媽媽」、「爸爸」或「杯杯」嗎？（「一個詞」指的是寶寶持續使用以代表某個人或某個事物的語言。如「杯杯」代表杯子）</p> <p style="font-size: x-small;">Does your child say three words, such as "Mama", "Dada" and "Baba"? (A "word" is a sound or sounds your child says consistently to mean someone or something.) 6-10</p>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>23. 當寶寶想要某一件東西時，他會指著那個東西告訴您嗎？</p> <p style="font-size: x-small;">When your child wants something, does he tell you by <i>pointing</i> to it? 6-12</p>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>24. 寶寶會以搖頭表示「不」或「是」嗎？</p> <p style="font-size: x-small;">Does your child shake his head when he means "no" or "yes"? 3-14</p>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24到30個月的嬰兒請從這裡開始：					
<p>25. 除了「媽媽」、「爸爸」以外，孩子還會說4個或更多語詞嗎？</p> <p style="font-size: x-small;">Does your child say four or more words in addition to "Mama" and "Dada"? 5-14</p>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>26. 在不以手勢指示或使用肢體語言提示的情況下，孩子能完成下列指令中至少三項嗎？</p> <p style="font-size: x-small;">Without your giving him clues by pointing or using gestures, can your child carry out at least <i>three</i> of these kinds of directions? a. "Put the toy on the table." b. "Close the door." c. "Bring me a towel." d. "Find your coat." e. "Take my hand." f. "Get your book." 5-20</p> <p style="font-size: x-small;">a. 把玩具放在桌子上 b. 把門關上 c. 拿毛巾給我 d. 找到你的外套 e. 拉著我的手 f. 拿你的書</p>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
小計 _____					
當您連續填寫3個 "0" 之後，請記得停止作答。					

溝通和語言能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

27. 孩子能照您的要求到另一個房間找出他熟悉的玩具或物品嗎？您可以問他「妳的球在哪？」、「把妳的外套拿來。」或「去拿妳的毯子。」

When you ask him to, does your child go into another room to find a familiar toy or object? (You might ask, "Where is your ball?" or say, "Bring me your coat" or "Go get your blanket.")

6-14

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28. 當您要孩子指她的鼻子、眼睛、頭髮、腳、耳朵等等身體部位，她能正確的指出至少七個身體部位嗎？（她可以指他自己的、您的、或娃娃的身體的一部分。如果她可以指出至少三個不同的身體部位，請回答「1」。）

When you ask your child to point to her nose, eyes, hair, feet, ears, and so forth, does your child correctly point to at least seven body parts? (She can point to part/s of herself, you, or a doll. Mark "sometimes" if she correctly points to at least three different body parts.)

3-22

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30到36個月的嬰兒請從這裡開始：

29. 不先加以示範，當您對孩子說「指那隻小貓給我看看」，或是問孩子「狗在哪裡？」時，孩子能正確的指出圖片嗎？（孩子必須只指出一張正確圖片）

Without your showing him, does your child *point* to the correct picture when you say, "Show me the kitty" or ask, "Where is the dog?" (He needs to identify only one picture correctly.)

5-18

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30. 除了「媽媽」、「爸爸」以外，孩子還會說8個或更多語詞嗎？

Does your child say eight or more words in addition to "Mama" and "Dada"?

6-16

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31. 如果您指的一張球（小貓、杯子或帽子等）的圖片問孩子「這是什麼？」，她能正確的說出至少一張圖片的名稱嗎？

If you point to a picture of a ball (kitty, cup, hat, etc.) and ask your child, "What is this?" does your child correctly *name* at least one picture?

4-20

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32. 在不用手勢指示或使用肢體語言協助的情況下，要您的孩子「把這本書放在桌子上」和「把這雙鞋子放在椅子下面」，她能正確的完成這兩個方位的指令嗎？

Without giving your child help by pointing or using gestures, ask him to "put the book *on* the table" and "put the shoe *under* the chair." Does your child carry out both of these directions correctly?

6-27

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

溝通和語言能力

對於孩子在各問題的行為表現，請填寫：

- 2：經常是
- 1：有時是
- 0：很少或還沒有

1st 2nd 3rd 4th

33. 除了「媽媽」、「爸爸」之外，孩子還會說15個或更多語詞嗎？
Does your child say 15 or more words in addition to "Mama" and "Dada"?
4-22

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36到45個月的嬰兒請從這裡開始：

34. 示範外套上的拉鍊如何上下移動給孩子看，並對孩子說：「看，這個東西可以上下移動。」接著將拉鍊頭拉到中間位置，要您的孩子向下拉拉鍊。然後，您再把拉鍊頭拉回中間位置，並要您的孩子將拉鍊向上拉。如果反覆多次，記得在要求孩子將拉鍊拉上拉下前將拉鍊頭拉到中間位置。每次在您說「拉上」時，孩子是否都能做到拉上拉鍊，並在您說「拉下」時就拉開拉鍊？

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Show your child how a zipper on a coat moves up and down, and say, "See, this goes up and down." Put the zipper to the middle, and ask your child to move the zipper down. Return the zipper to the middle, and ask your child to move the zipper up. Do this several times, placing the zipper in the middle before asking your child to move it up or down. Does your child consistently move the zipper up when you say "up" and down when you say "down"?

5-33

35. 孩子能模仿兩個詞的句子嗎？例如當您說「媽媽吃」或「爸爸玩」等兩個詞的句子時，他能複述這兩個詞回應您嗎？

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Does your child imitate a two-word sentence? For example, when you say a two-word phrase, such as "Mama eat," "Daddy play," "Go home," or "What's this?" does your child say both words back to you? (Mark "yes" even if his words are difficult to understand.)

5-16

36. 孩子能組合兩到三個代表不同想法的字詞，如「看見狗」、「媽媽回家」、「貓咪走了」並說出來嗎？（表示同一概念的組合詞不算，如「拜拜」、「沒有了」、「好吧」以及「那是什麼？」）

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Does your child say two or three words that represent different ideas together, such as "See dog," "Mommy come home," or "Kitty gone"? (Don't count word combinations that express one idea, such as "bye-bye," "all gone," "all right," and "What's that?") Please give an example of your child's word combinations:

6-18

請舉一個孩子說的詞語組合：

37. 當孩子看繪本的時候，他能告訴您圖畫中正在發生的事情或正在進行的動作嗎？（例如，「吠叫」、「跑步」、「吃」和「哭泣」）您可以問孩子「狗（或小男孩）正在做什麼？」

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When looking at a picture book, does your child tell you what is happening or what action is taking place in the picture (for example, "barking," "running," "eating," and "crying")? You may ask, "What is the dog (or boy) doing?"

6-30

小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

溝通和語言能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

38. 當您問：「你叫什麼名字？」時，孩子能正確的說出他的名字或小名嗎？

When you ask, "What is your name?" does your child say his first name or nickname?
6-33

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39. 孩子能正確的使用兩個以上的人稱代名詞，如「我」、「我的」、「你」及「你的」嗎？

Does your child correctly use at least two words like "me," "I," "mine," and "you"?
5-22

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45到54個月的嬰兒請從這裡開始：

40. 孩子能說由3-4個詞構成的句子嗎？

Does your child make sentences that are three or four words long? Please give an example:
5-27

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如果能，請舉例：

41. 在不用手勢幫助或重複指令的情況下，您的孩子能完成三個各不相同的指令嗎？在孩子開始前，請將三個指令一次下達完畢。舉例來說，您可以要孩子「拍拍妳的手、走到門口、並坐下」，或是「把筆給我、翻開書、並站起來」。

Without your giving help by pointing or repeating directions, does your child follow three directions that are *unrelated* to one another? Give all three directions before your child starts. For example, you may ask your child, "Clap your hands, walk to the door, and sit down," or "Give me the pen, open the book, and stand up."
5-42

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42. 孩子能否回答下列問題：

「你肚子餓了的時候怎麼辦？」（可接受的回答包括：「拿食物」、「吃」、「要一些東西吃」或「吃點心」）。請寫下孩子的回答：

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「你累了怎麼辦？」（可接受的回答包括：「小睡一下」、「休息」、「睡覺」、「上床」、「躺下」和「坐下」）。請寫下孩子的回答：

Does your child answer the following questions? (Mark "sometimes" if your child answers only one question.)
"What do you do when you are hungry?" (Acceptable answers include: "get food," "eat," "ask for something to eat," and "have a snack.") "What do you do when you are tired?" (Acceptable answers include "take a nap," "rest," "go to sleep," "go to bed," "lie down," and "sit down.")
2-48

小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

溝通和語言能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

43. 孩子能使用4-5個單詞組成的句子嗎？舉例來說，孩子是否會說：「我要這台汽車」？

Does your child use four- and five-word sentences? For example, does your child say, "I want the car"? Please write an example.
5-54

請舉例：

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44. 孩子能說出同一類物品中至少三樣東西嗎？舉例來說，如果您對孩子說：「告訴我哪些東西可以吃？」您的孩子能答出某些食物如「餅乾、蛋或水果嗎」？或者您說：「告訴我一些動物的名字。」孩子能答出如「牛、狗或大象」等動物名稱嗎？

Does your child name at least three items from a common category? For example, if you say to your child, "Tell me some things that you can eat," does your child answer with something like "cookies, eggs, and cereal"? Or if you say, "Tell me the names of some animals," does your child answer with something like, "cow, dog, and elephant"?

1-48

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45. 孩子能用表示過去或現在時態的詞造句嗎？舉例來說，她會不會說這樣的句子如「我剛剛看到兩隻貓」、「我正在玩」、或「我昨天踢球」。

Does your child use endings of words, such as "-s," "-ed," and "-ing"? For example, does your child say things like, "I see two cats," "I am playing," or "I kicked the ball"?

4-48

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46. 在聽到新的字彙後，孩子會試著在對話中使用它們嗎？

After hearing new words, does your child try to use them in conversation?
6p

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47. 當孩子問問題的時候，她的聲調在最後會上揚嗎？

Does your child make her voice go high at the end of a sentence that is a question?
19p

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48. 孩子會用形容詞描述東西嗎？舉例來說，孩子會說：「把那顆大球丟過來」或是「我想要紅蘋果」。

Does your child use words to describe things? For example, your child says, "Throw the big ball," or "I want the red pepper."
14p

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

溝通和語言能力		對於孩子在各問題的行為表現，請填寫：			
		1 st	2 nd	3 rd	4 th
49.	<p>孩子會談論未來將要發生的事情嗎？例如，孩子會說，「我們明天要去動物園玩。」</p> <p>Does your child talk about things that are going to occur in the future? For example, your child says, "We are going to the zoo tomorrow." 21p</p>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
50.	<p>當孩子講電話時，電話另一頭的人能理解他說什麼嗎？</p> <p>When your child talks on the phone, can other people understand what she says? 4p</p>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
51.	<p>當聊到已經發生過的事情，孩子能用過去的時態加上動詞來說明嗎？您可以問孩子問題如：「我們昨天怎麼去買菜的？」（我們昨天用走的去買菜）、「妳剛剛去朋友家裡玩什麼？」（我們剛剛玩洋娃娃）。</p> <p>When talking about something that already happened, does your child use words that end in "-ed," such as "walked", "jumped", or "played"? Ask your child questions, such as "How did you get to the store?" ("We walked.") "What did you do at your friend's house?" ("We played.") Please write an example: 6-54</p> <p>請舉例： _____</p>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
52.	<p>孩子能說出常見物品至少兩個特徵嗎？舉例來說，如果您問孩子：「告訴我妳的球特別的地地方。」她會回答類似「它是圓的。我丟球。它是大的。」等答案。</p> <p>Does your child tell you at least two things about common objects? For example, if you say to your child, "Tell me about your ball," does she say something like, "It's round. I throw it. It's big?" 3-48</p>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
53.	<p>孩子會用至少五個詞來描述位置嗎？例如，她會用「上面」、「對面」、「附近」、「之間」、「下面」、「周圍」及「穿過」等詞。</p> <p>Does your child use at least 5 words to describe position? For example, does she use words such as "above," "across," "around," "between," "below," "near," "over," and "through". 8p</p>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
54.	<p>孩子會用至少五個詞來描述東西摸起來的感覺嗎？例如，她會用「軟」、「硬」、「凹凸」、「粗」、「柔順」或「癢」等詞。</p> <p>Does your child use 5 words to describe how things feel? For example, does she use words like soft, hard, bumpy, rough, smooth, or scratchy? 2p</p>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
		小計 _____			
當您連續填寫3個 "0" 之後，請記得停止作答。					

		1 st	2 nd	3 rd	4 th
對於孩子在各問題的行為表現，請填寫： 2 ：經常是 1 ：有時是 0 ：很少或還沒有					
溝通和語言能力					
55. 孩子能正確使用「一個」和「許多（OO個、多個或好多）」嗎？例如當您問她「天上有幾個太陽？」或「桌上有幾個蘋果？」時，她能正確回答「一個」或「OO個」。 <small>Does your child use all of the words in a sentence (for example, "a," "the," "am," "is," and "are") to make complete sentences, such as "I am going to the park," or "Is there a toy to play with?" or "Are you coming, too?"</small> 6-42	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>				
56. 孩子能以詞語比較物體的不同嗎？例如，孩子說：「我吃最大碗的冰淇淋」、「我的車最棒」、「她最強壯」。 <small>Does your child use words to talk about how things are different from one another? For example, your child says, "I have the biggest bowl of ice cream," "My car is best," or "She is the strongest."</small> 15p	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>				
57. 孩子能正確使用「這個」、「那個」、「這些」、「那些」來說完整的句子嗎？例如，「這個是我的糖」或「那些是圖畫書」等。 <small>Does your child talk about things that happened in the past using at least 3 irregular verbs such as came, did, went, ran, sat, and fell? (A different question in the Taiwanese version, Traditional Chinese does not contain irregular verbs).</small> 20p	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>				
58. 孩子說話時會使用連接詞如「和」、「與」、「但是」、「因為」、「如果」及「或」。例如，孩子可能會說：「我們可以玩玩具或是睡午覺」。 <small>Does your child use words that connect other words such as and, but, because, if, and or? For example, your child says, "We could play or take a nap."</small> 17p	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>				
59. 孩子會請您解釋她聽不懂的語詞嗎？ <small>Does your child ask you to explain words she does not understand?</small> 5p	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>				
60. 孩子能對您重複以下的句子而不犯錯嗎？每個句子您都可以再重複一次。如果您的孩子可以重複兩個句子而不犯任何錯誤，請勾選「是」，或是勾選「有時」如果孩子只有正確重複一個句子。 「小紅藏起小麗的鞋子讓她找」。 「小明讀了他床底下那本藍色的書」。 <small>Does your child repeat the sentences shown below back to you, without any mistakes? (Read the sentences one at a time. You may repeat each sentence one time. Mark "yes" if your child repeats both sentences without mistakes or "sometimes" if your child repeats one sentence without mistakes.) Jane hides her shoes for Maria to find. Al read the blue book under his bed.</small> 6-60	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>				
小計 _____					
當您連續填寫3個“0”之後，請記得停止作答。					

溝通和語言能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

61. 當您問，「你叫什麼名字？」時，孩子能正確的說出她的姓和名嗎？
When you ask, "What is your name?" does your child say both her first and last names?
6-36

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62. 如果您請孩子說故事給您聽，孩子能完整說出熟悉的故事的情節嗎？
Here are examples of five things that have irregular plural endings: man→men, mouse→mice, child→children, goose→geese, and tooth→teeth. Does your child say at least 3 of these or other similar words correctly? (A different question in the Taiwanese version, Traditional Chinese does not contain irregular plurals).
10p

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63. 孩子能正確告訴您家裡常做的事情的步驟嗎？例如，如果您問她洗手的步驟，孩子會說：「把手弄濕、用肥皂、搓搓手、沖一沖、把水關掉，然後把手擦乾。」
Can your child tell you all the steps in a family routine? For example, if you ask her to tell you all the steps to wash her hands, your child says, "I turn on the water, get some soap, wash my hands, turn off the water and dry my hands."
1p

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64. 在您讀一個新故事給孩子聽之後，他能告訴您故事的開頭、中間與結尾嗎？（您可以問孩子：「故事是怎麼開始的？」來提示他。）
After reading a new story to your child, can your child tell you the beginning, middle, and ending of the story? (You can help the child by saying, "How does the story begin?")
7p

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65. 孩子會使用表示比較的意思的詞彙嗎，如較重或更重、較強壯或更強壯、較短或更短嗎？您可以問孩子這些問題，如「汽車很大台，但是巴士.....（更大台）」、「貓的體重很重，但是人的體重.....（更重）」、「電視體積很小，但是書.....（更小）」。
Does your child use comparison words, such as "heavier," "stronger", or "shorter"? Ask your child questions, such as "A car is big, but a bus is _____" (bigger); "A cat is heavy, but a man is _____" (heavier); "A TV is small, but a book is _____" (smaller). Please write an example:
4-60

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請寫下孩子回答的例子：

小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

年齡與進程檢核表

(適用於1到54個月大的嬰幼兒)

粗大動作能力

填寫本檢核表時的注意事項：

1. 請先計算出孩子的年齡，並利用下方的表格找到開始作答的問題與頁數。
2. 請詳細閱讀每個問題，並在空格中填入「2 (經常是)」，「1 (有時是)」或「0 (很少或還沒有)」來代表孩子展現這些技能的頻率。
3. 除非您很確定孩子已經具備某項能力，或是您知道孩子尚未學會某項能力，請務必與孩子嘗試各項活動。

請注意：有些活動可能孩子曾經會做，但是之後被更進階的技能取代（例如：大部分的孩子學會走路後就不再爬行）。這些技能請您填寫「2 (經常是)」。

粗大動作能力分測驗的起始點：

如果孩子的年紀是：	開始作答的題號：	頁碼：
1 到 3 個月	1	2
3 到 6 個月	5	2
6 到 9 個月	8	2
9 到 12 個月	13	3
12 到 18 個月	19	3
18 到 24 個月	24	4
24 到 30 個月	29	4
30 到 36 個月	34	5
36 到 45 個月	39	6
45 到 54 個月	45	6

完成本檢核表的一些小技巧

- 您和孩子可試著以像玩有趣遊戲的方式完成本檢核表。
- 請確保孩子睡眠充足、吃飽並準備好和您一起玩。

粗大動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1到3個月的嬰兒請從這裡開始：

1st 2nd 3rd 4th

1. 當寶寶仰臥時，他會揮動、擺動和扭動他/她的雙腿和雙臂嗎？
When on his back, does your baby wave his arms and legs, wiggle and squirm?
1-2

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2. 寶寶俯臥時，他/她能踢蹬雙腿嗎？
When your baby is on her back, does she kick her legs?
4-2

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3. 當寶寶以俯臥的姿勢抬起頭後，她能將頭輕放回地板或床上，而不是無力的垂落到地板或床上嗎？
After holding her head up while on her tummy, does your baby lay her head back down on the floor, rather than let it drop or fall forward?
6-2

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4. 寶寶俯臥時，他能抬起頭並持續撐著幾秒鐘嗎？
When your baby is on his tummy, does he hold his head up longer than a few seconds?
3-2



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3到6個月的嬰兒請從這裡開始：

5. 當寶寶仰臥時，他能將頭從一側轉到另一側嗎？
While your baby is on his back, does he move his head from side to side?
5-2



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6. 當寶寶俯臥時，她會把頭轉到旁邊嗎？
When your baby is on her tummy, does she turn her head to the side?
2-2

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7. 當您抱著寶寶坐著時，他能維持頭部的直立嗎？
When you hold him in a sitting position, does your baby hold his head steady?
5-4

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6到9個月的嬰兒請從這裡開始：

8. 當寶寶俯臥時，他能抬頭使下巴離開地板或床面約7.5公分，並持續15秒以上嗎？
When your baby is on his tummy, does he hold his head up so that his chin is about 3 inches from the floor for at least 15 seconds?
3-4



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9. 當寶寶仰臥時，她能將雙手移到胸前並碰到另一隻手的手指嗎？
While your baby is on her back, does she bring her hands together over her chest, touching her fingers?
6-4

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

粗大動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

10. 當寶寶仰臥時，他能抬起腿，看到自己的腳嗎？
While your baby is on his back, does your baby lift his legs high enough to see his feet?
1-6

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11. 當寶寶俯臥時，他/她能抬起頭（可能是用手臂支撐著身體）朝周圍看嗎？
When she is on her tummy, does your baby hold her head straight up, looking around? (She can rest on her arms while doing this.)
4-4

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12. 把寶寶放在地板上時，他能自己用手撐著地面坐嗎？
(如果已經能不靠手支撐就坐直，請回答「是」)
When you put your baby on the floor, does she lean on her hands while sitting?
(If she already sits up straight without leaning on her hands, mark "yes" for this item.)
4-6



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9到12個月的嬰兒請從這裡開始：

13. 當您握住寶寶的雙手以保持平衡時，她能承受自身的重量站直嗎？
If you hold both hands just to balance your baby, does he support his own weight while standing?
5-6



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14. 當寶寶俯臥時，她能伸直雙臂支撐起整個胸部離開床或地面嗎？
When your baby is on her tummy, does she straighten both arms and push her whole chest off the bed or floor?
2-6

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15. 寶寶能從仰臥翻身至俯臥，並將雙臂從身體下抽出來嗎？
Does your baby roll from his back to his tummy, getting both arms out from under him?
3-6

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16. 當坐在地板上時，寶寶能不用手支撐的坐直幾分鐘嗎？
When sitting on the floor, does your baby sit up straight for several minutes without using her hands for support?
5-8



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17. 寶寶能做出用手和膝蓋支撐起身體的爬行姿勢嗎？
Does your baby get into a crawling position by getting up on her hands and knees?
6-6



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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

粗大動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

18. 當您讓寶寶扶著家具或嬰兒床的圍欄站立時，他能維持姿勢，不靠著家具或嬰兒床的圍欄嗎？

When you stand your baby next to furniture or the crib rail, does he hold on without leaning his chest against the furniture for support?
6-8



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12到18個月的幼兒請從這裡開始：

19. 當您握著寶寶的雙手站立時，他能走幾步而不絆跌或摔倒嗎？如果他已經能自己行走，請回答「是」。

If you hold both hands just to balance your child, does he take several steps without tripping or falling? (If your child already walks alone, mark "yes" for this item.)
4-12



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20. 當寶寶扶著家具時，他能平衡的彎腰蹲下，不會摔倒或癱軟的坐在地上嗎？

While holding onto furniture, does your child lower himself with control (without falling or flopping down)?
5-10

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21. 當寶寶扶著家具時，她能彎腰從地板上撿起玩具，然後再站起來嗎？

While holding onto furniture, does your child bend down and pick up a toy from the floor and then return to a standing position?
4-10



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22. 寶寶能只用一隻手扶著家具，並沿著家具走嗎？

Does your child walk beside furniture while holding on with only one hand?
6-10

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23. 當您抓著寶寶的一隻手，使他保持平恆，他能向前走幾步嗎？如果她已經能自己行走，請回答「是」。

When you hold one hand just to balance your child, does she take several steps forward? (If your child already walks alone, mark "yes" for this item.)
5-12



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18到24個月的幼兒請從這裡開始：

24. 您的孩子能夠不用扶就彎腰或蹲下從地板撿起東西，然後再站起來嗎？

Does your child bend over or squat to pick up an object from the floor and then stand up again without any support?
5-14

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

粗大動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是


1：有時是


0：很少或還沒有

1st 2nd 3rd 4th

25. 您的孩子能爬上家具嗎？
Does your child climb onto furniture or other large objects such as large climbing blocks?
4-14
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|
-
26. 寶寶能自己站穩在地板中央，並向前走幾步嗎？
Does your child stand up in the middle of the floor by himself and take several steps forward?
6-12
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|
-
27. 您的孩子能在四周走來走去，而不必靠著手和膝蓋爬行嗎？
Does your child move around by walking, rather than by crawling on his hands and knees?
6-14
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|
-
28. 您的孩子走的穩並很少摔倒嗎？
Does your child walk well and seldom fall?
5-16
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

24到30個月的幼兒請從這裡開始：

29. 孩子能爬上類似椅子的物體去拿他想要的東西嗎？
Does your child climb on an object such as a chair to reach something she wants? (For example, to get a toy on a counter or to "help" you in the kitchen.)
6-16
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|
-
30. 當您示範給孩子看如何踢一顆大球後，他會試著向前移動他的腿踢球或像走路一般的碰球來踢嗎？如果他已經會踢球了，請回答「2」。
When you show your child how to kick a large ball, does he try to kick the ball by moving his leg forward or by walking into it? (If your child already kicks a ball, mark "yes" for this item.)
6-18
- 

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31. 孩子能自己上或下至少兩階樓梯嗎？您可以在商店裡、遊樂設施處或家裏觀察。（請勾選「是」即使孩子需要扶著牆壁或樓梯扶手）
Does your child walk either up or down at least two steps by himself? He may also hold onto the railing or wall.
6-20
- 

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-
32. 如果您牽著孩子的一隻手，她能走下樓梯嗎？（您可以在商店、遊樂設施處或是家裏觀察）
Does your child walk down stairs if you hold onto one of her hands? She may also hold onto the railing or wall. (You can look for this at a store, on a playground, or at home.)
5-18
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

粗大動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

33. 您的孩子跑得很穩，停下來時不會撞到東西或摔倒嗎？
Does your child run fairly well, stopping herself without bumping into things or falling?
5-20



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30到36個月的幼兒請從這裡開始：

34. 不扶著任何東西支撐，孩子能向前擺動他的腿踢球嗎？
Without holding onto anything for support, does your child kick a ball by swinging his leg forward?
6-22



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35. 孩子能夠不靠別人幫忙，自己爬上溜滑梯的梯子，並且滑下來嗎？
Does your child climb the rungs of a ladder of a playground slide and slide down without help?
6-42

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36. 孩子能雙腳同時跳離地面嗎？
Does your child jump with both feet leaving the floor at the same time?
5-22



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37. 當孩子站著時，她能舉手過肩將球向前投擲出去嗎？
(若球掉下或是投球時手不過肩，請回答「0」。)
While standing, does your child throw a ball *overhand* by raising his arm to shoulder height and throwing the ball forward? (Dropping the ball or throwing the ball *underhand* should be scored as "not yet".)
6-33



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38. 孩子能左右腳交替著，一次只有一隻腳在一階樓梯上的上樓梯嗎？他可能會扶著樓梯扶手或牆壁。(您可以在商店裡、遊樂設施處或家裏觀察)
Does your child walk up stairs, using only one foot on each stair? (The left foot is on one step, and the right foot is on the next.) He may hold onto the railing or wall.
6-27



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39. 孩子能雙腳同時離地，向前方跳至少7.5公分遠嗎？
Does your child jump forward at least 3 inches with both feet leaving the ground at the same time?
5-27



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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

粗大動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

36到45個月的幼兒請從這裡開始：

40. 孩子能不扶任何東西的單腳站立一秒鐘嗎？
Does your child stand on one foot for about 1 second without holding onto anything?
6-30



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41. 當孩子站著時，她能舉手過肩將球投向某個站在離他180公分之外的人嗎？要舉手過肩，您的孩子必須將手臂舉至肩膀高度並將球向前投擲。（若球掉下或是投球時手不過肩，請回答「0」。）



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While standing, does your child throw a ball *overhand* in the direction of a person standing at least 6 feet away? To throw overhand, your child must raise her arm to shoulder height and throw the ball forward. (Dropping the ball or throwing the ball underhand should be scored as "not yet.")
3-48

42. 孩子能用腳尖走4.5公尺（大約一輛轎車的長度）嗎？您可以示範給孩子看。

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Does your child walk on his tiptoes for 15 feet (about the length of a large car)? (You may show him how to do this.)
6-54

43. 孩子能夠用雙手接住大顆的球嗎？請您站在離孩子150公分的地方丟球給她，而且可以讓孩子嘗試2-3次。



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Does your child catch a large ball with both hands? (You should stand about 5 feet away and give your child two or three tries before you mark the answer.)
5-42

44. 孩子能雙腳同時離地，向前方跳至少15公分遠嗎？



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Does your child jump forward at least 6 inches with both feet leaving the ground at the same time?
6-36

45到54個月的幼兒請從這裡開始：

45. 孩子能向前走一直線至少10步以上嗎？

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Does your child walk forward on a straight line for 10 or more steps?
10p

小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

粗大動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

46. 孩子能左右腳交替著走下樓梯嗎？

Does your child walk down the stairs with alternating feet?

17p

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47. 不扶任何東西，孩子能單腳站立，而且身體不失去平衡或

腳放下至少5秒鐘嗎？您可以在作答前讓孩子嘗試2-3次。

Without holding onto anything, does your child stand on one foot for at least 5 seconds without losing his balance and putting his foot down? (You may give your child two or three tries before you mark the answer.)

6-48



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48. 孩子能只用左腳或右腳上下蹦跳至少一次，並且不失去平衡或摔倒嗎？

Does your child hop up and down on either the right or left foot at least one time without losing his balance or falling?

4-48

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49. 孩子能一邊跑步並變換方向，一邊踢球嗎？例如踢足球時？

Does your child kick a ball while running and changing directions? For example, while playing soccer?

3p

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50. 當您示範給孩子看如何以一腳腳跟放在另一腳腳趾前面的方式向前走，孩子能以這種方式至少向前走十步嗎？

Show your child how to walk forwards by placing the heel of one foot right in front of the toe of her other foot. Can your child walk 10 or more steps forward?

12p

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51. 孩子能以單腳跳至少60公分的距離嗎？

Does your child hop on one foot for a distance of 2 feet?

7p



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52. 孩子能跳起來轉身面向另一邊嗎？

Does your child jump and turn so that she faces the other way?

8p

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53. 孩子能在原地單腳跳三次嗎？

Does your child hop in place on one foot for 3 times?

6p



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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

粗大動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

54. 孩子能從站姿開始，接著雙腳同時離地，向前跳至少50公分遠嗎？

Does your child jump forward a distance of 20 inches from a standing position, starting with her feet together?
5-48



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55. 孩子能接住從150-180公分外丟過來的小顆球（約網球大小）嗎？

Can your child catch a small ball (such as a tennis ball) that is thrown from 5-6 feet away?
19p

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56. 要求您的孩子重複以下的連續動作，如跑、用力跳及蹦跳。您的孩子能完成全部三個動作至少兩次嗎？

Ask your child to repeat a movement pattern, such as run, jump, and skip. Does your child do all three movements at least 2 times?
9p

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57. 孩子能從站姿，雙腳向前跳至少90公分嗎？開始跳的時候必須雙腳併攏。

Does your child jump forward a distance of 3 feet (36 inches) from a standing position? She should start with her feet together.
4p



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58. 您示範給孩子看如何以一腳腳趾放在另一腳腳跟後面的方式倒退走。孩子能倒退走至少十步嗎？

Show your child how to walk backwards by placing the toe of 1 foot in back of and touching the heel of the other. Can your child walk 10 or more steps backwards?
13p

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59. 孩子能兩隻腳交替著跳著走嗎？您可以示範給孩子看。

Does your child skip using alternating feet? (You may show her how to do this.)
6-60

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60. 孩子能先單用右腳跳十下，再換用左腳跳十下嗎？

Does your child skip 10 times from using her right foot and then her left foot?
5p



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61. 孩子能投小顆球並打中約150-180公分外的目標嗎？

Can your child throw a small ball and hit a target that is 5-6 feet away?
20p

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

粗大動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

62. 孩子能單腳向前跳120-180公分嗎？左右腳您各可以給孩子兩次嘗試的機會。如果僅一隻腳能完成，請勾選「有時候」。

Does your child hop forward on one foot for a distance of 4-6 feet without putting down the other foot? (You may give him two tries on each foot. Mark "sometimes" if he can hop on one foot only.)
5-60



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63. 孩子能自己盪鞦韆嗎？她必須前後移動雙腿推動鞦韆。
Can your child swing on a swing by herself? She should move their legs back and forth to pump.
14p

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64. 孩子能騎著沒有輔助輪的兩輪腳踏車前進至少6公尺嗎？
Can your child ride and steer a two-wheel bicycle without training wheels for at least 20 feet?
18p

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65. 孩子會跳繩嗎？當繩子翻過她的頭頂和腳下時，她必須完成至少三次的跳躍。
Can your child skip rope? She should jump at least three times while flipping the rope over her head and under her feet.
16p

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

年齡與進程檢核表

(適用於1到54個月大的嬰幼兒)

精細動作能力

填寫本檢核表時的注意事項：

1. 請先計算出孩子的年齡，並利用下方的表格找到開始作答的問題與頁數。
2. 請詳細閱讀每個問題，並在空格中填入「2（經常是）」，「1（有時是）」或「0（很少或還沒有）」來代表孩子展現這些技能的頻率。
3. 除非您很確定孩子已經具備某項能力，或是您知道孩子尚未學會某項能力，請務必與孩子嘗試各項活動。

請注意：有些活動可能孩子曾經會做，但是之後被更進階的技能取代（例如：年紀大的孩子醒著的時候手不會呈現握拳的樣子）。這些技能請您填寫「2（經常是）」。

精細動作能力分測驗的起始點：

如果孩子的年紀是：	開始作答的題號：	頁碼：
1 到 3 個月	1	2
3 到 6 個月	5	2
6 到 9 個月	10	3
9 到 12 個月	14	3
12 到 18 個月	19	4
18 到 24 個月	23	4
24 到 30 個月	26	5
30 到 39 個月	30	5
39 到 54 個月	34	6

完成本檢核表的一些小技巧

- 您和孩子可試著以像玩有趣遊戲的方式完成本檢核表。
- 請確保孩子睡眠充足、吃飽並準備好和您一起玩。

精細動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1到3個月的嬰兒請從這裡開始：

1st 2nd 3rd 4th

1. 寶寶的手能碰到他自己的臉嗎？
Does your baby touch her face with her hands?
4-2

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2. 當您觸摸寶寶的手心時，他會抓住您的手指嗎？
Does your baby grasp your finger if you touch the palm of her hand?
2-2



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3. 寶寶的手是全展開或部份展開（不像新生兒時雙手握拳）的嗎？
Does your baby hold his hands open or partly open when he is awake (rather than in fists, as they were when he was a newborn)?
5-2



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4. 當寶寶醒著時，她的手是緊緊地握成拳頭嗎？(如果以前有，但現在沒有這個行為，請回答「2」.)
Is your baby's hand usually tightly closed when he is awake? (If your baby used to do this but is no longer, mark "yes".)
1-2

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3到6個月的嬰兒請從這裡開始：

5. 寶寶會拉或抓住他自己的衣服嗎？
Does your baby grab or scratch at his clothes?
6-2

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6. 當您把玩具放在寶寶手裡時，她能短暫的握一會兒嗎？
When you put a toy in her hand, does your baby hold it in her hand briefly?
3-2



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7. 當寶寶被抱著坐或俯臥時，她會在身前的平面上抓撓自己的手指嗎？
Does your baby grab or scratch his fingers on a surface in front of him, either while being held in a sitting position or when he is on his tummy?
5-4

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8. 當您把玩具放在寶寶手裡時，他會抓住玩具不放1分鐘，同時注視、揮動或者試著咬玩具嗎？
When you put a toy in her hand, does your baby hold onto it for about 1 minute while looking at it, waving it about, or trying to chew it?
4-4

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9. 當寶寶抓著玩具時，他會注意看、揮動或用嘴咬，並持續1分鐘嗎？
Does your baby grab a toy you offer and look at it, wave it about, or chew on it for about 1 minute?
1-6

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

精細動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

6到9個月的嬰兒請從這裡開始：

10. 當您抱著寶寶坐下時，儘管不見得能碰到，他會伸去拿附近桌上的玩具嗎？

When you hold your baby in a sitting position, does she reach for a toy on a table close by, even though her hand may not touch it?
6-4

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11. 寶寶通常是用一隻手拿起小玩具嗎？

Does your baby pick up a small toy with only one hand?
6-6



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12. 寶寶會同時伸出雙手去拿或抓住玩具嗎？

Does your baby reach for or grasp a toy using both hands at once?
2-6

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13. 寶寶拿起小玩具時，是放在手心並用手指握住嗎？

Does your baby pick up a small toy, holding it in the center of her hand with her fingers around it?
4-6



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9到12個月的嬰兒請從這裡開始：

14. 寶寶會嘗試著伸手去觸碰麵包屑或玉米粒大小的東西嗎？如果她已經能拿起碗豆大小的東西，請回答「2」。

Does your baby reach for a crumb or Cheerio and touch it with his finger or hand? (If he already picks up a small object the size of a pea, mark "yes" for this item)
3-6



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15. 當寶寶想拿碗豆大小的東西時，無論是否拿到，他是用拇指與其他四指像耙子似的拿嗎？

Does your baby try to pick up a crumb or Cheerio by using his thumb and all his fingers in a raking motion, even if he isn't able to pick it up? (If he already picks up the crumb or Cheerio, mark "yes" for this item)
5-6



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16. 寶寶能用拇指與其他四指像耙子似的成功拿起碗豆大小的東西嗎？（如果寶寶已經可以拿起麵包屑或玉米粒大小的東西，請回答「2」）

Does your baby successfully pick up a crumb or Cheerio by using his thumb and all his fingers in a raking motion? (If he already picks up a crumb or Cheerio, mark "yes" for this item)
5-8



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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

精細動作能力

對於孩子在各問題的行為表現，請填寫：

- 2：經常是
- 1：有時是
- 0：很少或還沒有

1st 2nd 3rd 4th

17. 寶寶能用拇指和其他手指的指尖拿起小玩具嗎？（您應該會看到在寶寶的手掌與玩具間有空隙）

Does your baby pick up a small toy with the tips of her thumb and fingers? (You should see a space between the toy and her palm.)
6-8



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18. 經過一、兩次努力，寶寶能用食指與拇指撿起一條繩子嗎？這根繩子可能是繫在玩具上的。

After one or two tries, does your child pick up a piece of string with her first finger and thumb? (The string may be attached to a toy.)
4-10



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12到18個月的幼兒請從這裡開始：

19. 寶寶能用拇指指尖與其他任一手指的指尖撿起麵包屑或碗豆大小的東西嗎？做這個動作時，手或手腕可以放在桌子上。

Does your child pick up a crumb or Cheerio with the tips of his thumb and a finger? He may rest his arm or hand on the table while doing it.
5-10



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20. 寶寶能放下，而不是丟下一個小玩具，然後手離開玩具嗎？

Does your child put a small toy down, without dropping it, and then take her hand off the toy?
6-10

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21. 不將手或手腕放在桌子上，寶寶能用拇指指尖與另一手指的指尖撿起麵包屑或碗豆大小的東西嗎？

Without resting his arm or hand on the table, does your child pick up a crumb or Cheerio with the tip of his thumb and a finger?
4-12



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22. 寶寶能協助翻動書頁嗎？您可以提起書頁讓他抓住。

Does your child help turn the pages of a book? (You may lift a page for her to grasp.)
6-12

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18到24個月的幼兒請從這裡開始：

23. 孩子能自己翻書嗎？他可能一次不只翻一頁。

Does your child turn the pages of a book by himself? (He may turn more than one page at a time.)
6-16

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

精細動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

24. 當學著畫圖時，孩子能用蠟筆（原子筆或鉛筆）的筆尖在紙上畫出痕跡嗎？
Does your child make a mark on the paper with the tip of a crayon (or pencil or pen) when trying to draw?
5-14



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25. 孩子能將一個小積木或玩具（線團、小盒子或2.5公釐大小的玩具）疊在另一個的上面嗎？
Does your child stack a small block or toy on top of another one? (You could also use spools of thread, small boxes, or toys that are about 1 inch in size.)
4-14

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24到30個月的幼兒請從這裡開始：

26. 孩子會將電燈的開關打開及關掉嗎？
Does your child flip switches off and on?
5-22

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27. 寶寶能揮動手臂向前投擲小球嗎？如果他只是讓球從手中掉落，請回答「0」。
Does your child throw a small ball with a forward arm motion? (If he simply drops the ball, mark "not yet" for this item.)
5-12



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28. 孩子能自己將三個小積木或小的玩具一個接一個的疊起來嗎？
Does your child stack three small blocks or toys on top of each other by herself?
6-14

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29. 孩子能正面朝上的使用湯匙將食物送進嘴裡，而且多數時候食物不會灑出來嗎？
Does your child get a spoon into her mouth right side up so that the food usually doesn't spill?
6-18

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30到39個月的幼兒請從這裡開始：

30. 孩子能自己將六個小積木或小玩具一個接一個的疊起來嗎？（您也可以線團、小盒子或2.5公釐大小的玩具）
Does your child stack six small blocks or toys on top of each other by himself? (You could also use spools of thread, small boxes, or toys that are about 1 inch in size.)
5-20

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31. 當孩子試著轉門把、為玩具上發條、轉動陀螺或扭轉瓶蓋時，她的手能做出旋轉的動作嗎？
Does your child use a turning motion with her hand while trying to turn doorknobs, wind up toys, twist tops, or screw lids on and off jars?
6-20

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

精細動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

32. 翻動書頁時，孩子會一次翻一頁嗎？

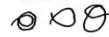
Does your child turn pages in a book, one page at a time?
6-30

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33. 您先示範畫一個圓圈，然後要您的孩子也畫一個一樣的圓圈。孩子不可以描您畫好的圓圈。孩子能模仿您畫一個圓圈嗎？

After your child watches you draw a single circle, ask him to make a circle like yours. Do not let him trace your circle. Does your child copy you by drawing a circle like yours?
5-30

請填寫「2」



請填寫「0」



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39到54個月的幼兒請從這裡開始：

34. 您先示範用鉛筆、蠟筆或原子筆在紙上由上到下畫一條線給孩子看，然後要他也畫一條跟您一樣的線。請不要讓孩子描您畫的那條線。孩子能模仿您在水平方向畫一條線嗎？

After your child watches you draw a line from the top of the paper to the bottom with a pencil, crayon, or pen, ask him to make a line like yours. Do not let your child trace your line. Does your child copy you by drawing a single line in a vertical direction?
3-27

請填寫「2」



請填寫「0」



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35. 您先示範用鉛筆、蠟筆或原子筆在紙上由一側到另一側畫一條線給孩子看，然後要他也畫一條一樣的線。請不要讓孩子描您畫的那條線。孩子能模仿您在平行方向畫一條線嗎？

After your child watches you draw a line from one side of the paper to the other side, ask her to make a line like yours. Do not let your child copy you by drawing a single line in a horizontal direction?
6-27

請填寫「2」



請填寫「0」



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36. 孩子能將中間有洞的小東西，如珠子等等，穿進一條繩子或鞋帶中嗎？

Can your child string small items such as beads, macaroni or pasta "wagon wheels", onto a string or shoelace?
6-22



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37. 孩子會試著用兒童安全剪刀剪紙嗎？她不需要真的剪紙，但必須一手拿著紙，一手讓剪刀刀口開合。（您可以示範如何使用剪刀給孩子看。當您的孩子使用剪刀時，請務必注意安全。）

Does your child try to cut paper with child-safe scissors? She does not need to cut the paper but must get the blades to open and close while holding the paper with the other hand. (You may show your child how to use scissors. Carefully watch your child's use of scissors for safety reasons.)
6-33



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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

精細動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

38. 孩子畫畫時，他能像大人一樣用拇指配何其他手指握住鉛筆、蠟筆或原子筆嗎？
When drawing, does your child hold a pencil, crayon, or pen between her fingers and thumb like an adult does?
6-36

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39. 孩子能夠拼好一個由五到七片可互相扣合的拼圖片組合而成的拼圖玩具嗎？（如果您沒有這樣的拼圖玩具，可以從雜誌上或廣告目錄上拿一張整頁圖畫，剪成六片，您的孩子可以正確的拼回去嗎？）
Does your child put together a five to seven piece interlocking puzzle? (If one is not available, take a full-page picture from a magazine or catalog and cut it into six pieces. Does your child put it back together correctly?)
5-42

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40. 孩子會解開一個或一個以上的鈕扣嗎？孩子可以解開自己衣服上的，也可以是玩具娃娃衣服上的。
Does your child unbutton one or more buttons? (Your child may use his own clothing or a doll's clothing.)
4-48

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41. 讓孩子看下列圖形，她能用鉛筆或蠟筆在一張大紙上畫出，而不是描出，至少三個圖形嗎？孩子畫的圖形可能與下方的非常相似，只在尺寸大小會有差別。
Using the shapes below to look at, does your child copy at least three shapes onto a large piece of paper using a pencil or crayon, without tracing? (Your child's drawings should look similar to the design of the shapes below, but they may be different in size.)
3-48

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42. 您的孩子畫人的時候，她能畫出下列人體組成部分中至少三項嗎？頭、眼睛、鼻子、嘴巴、脖子、頭髮、軀幹、手臂、手、兩條腿或兩隻腳。
Does your child draw pictures of people that have at least three of the following features: head, eyes, nose, mouth, neck, hair, trunk, arms, hands, legs, or feet?
5-48

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43. 孩子會用鈍的刀子將軟的食物切成小塊嗎？例如，孩子會用餐刀切香蕉或芒果。孩子使用刀子時，請在旁陪同注意安全。
Does your child cut up soft food into smaller pieces using a dull knife? For example, can your child use a butter knife to cut bananas or mangos? (Please supervise your child on this item.)
8p

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

精細動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

44. 孩子能用兒童安全剪刀，讓刀口一開一合的儘量按照直線方向將紙剪成兩半嗎？（孩子使用剪刀時，請務必注意安全）。



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Using child-safe scissors, does your child cut a paper in half on a more or less straight line, making the blades go up and down? (Carefully watch your child's use of scissors for safety reasons.)
2-48

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45. 孩子能手持至少五張以上的紙牌嗎？例如，孩子能將紙牌拿成扇子的形狀。

Can your child hold 5 or more playing cards? For example, can she hold the cards so they look like a fan?
4p

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46. 孩子能自己扣上大顆鈕扣（大於1公分以上）嗎？

Does your child button large size buttons (larger than 1/2 inch in size)?
6p

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47. 孩子坐車時能自己繫上安全帶嗎？

Can your child buckle a seat belt while riding a car?
12p

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48. 讓您的孩子用鉛筆描下方的直線。孩子能準確的描在線上並且描偏不超過兩次嗎？（如果孩子描偏了三次，請回答「1」。）

Ask your child to trace on the line below with a pencil. Does your child trace on the line without going off the line more than two times? (Mark "sometimes" if your child goes off the line three times.)
4-54



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49. 向孩子展示右圖，她能用蠟筆、鉛筆或原子筆在一張大紙上畫出，而不是描出相同的圖形嗎？孩子畫的圖應要與右圖相似，除了大小可能會有所不同。



Using the shape at right to look at, does your child copy it onto a large piece of paper using a pencil or crayon, without tracing? (Your child's drawing should look like the design of the shape, except it may be different in size.)
6-42

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

精細動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

50. 讓您的孩子在一張白紙上畫一個人。您可以要求孩子「畫個男生或女生。」如果您的孩子畫的人有頭、身體、手臂和腿，請回答「2」。如果您的孩子只畫出人的三個部位（頭、身體、手臂或腿其中之一），請回答「1」。如果您的孩子畫出兩個或以下的人體部位，請回答「0」。請將孩子畫圖的紙與本問卷訂在一起。

Ask your child to draw a picture of a person on a blank sheet of paper. You may ask your child to "Draw a picture of a girl or a boy." If your child draws a person with head, body, arms, and legs, mark "yes." If your child draws a person with only three parts (head, body, arms or legs), mark "sometimes." If your child draws a person with two or fewer parts (head, body, arms, or legs), mark "not yet." Be sure to attach the sheet of paper with your child's drawing to this questionnaire.
5-54

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51. 孩子在著色時，他能夠將大部分顏色都塗在著色本的線內或是您畫的5公分圓圈嗎？大部分的著色圖，孩子著的顏色應該都不會超過框線外0.6公分。

Does your child color mostly within the lines in a coloring book or within the lines of a 2 inch circle that you draw? (Your child should not go more than 1/4 inch outside the lines on most of the picture.)
6-48

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52. 在一張紙上畫一條橫跨兩側的線。孩子能用兒童安全剪刀，讓刀口一開一合的儘量按照直線方向將紙剪成兩半嗎？（孩子使用剪刀時，請務必注意安全）。

Draw a line across a piece of paper. Using child-safe scissors, does your child cut the paper in half on a more or less straight line, making the blades go up and down? (Carefully watch your child's use of scissors for safety reasons.)
6-54



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53. 孩子能在厚紙（如薄的紙板）剪10公分的直線嗎？

Can your child cut a 4" line across paper that is thick paper (such as light cardboard)?
2p

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54. 像孩子展示下列的圖形，孩子能用筆在下面的空白處照樣畫出，而不是描出這些圖形嗎？孩子畫出的圖形大小可能和原圖不同，但是形狀必須要下面的圖形相似。（如果孩子能照樣畫出所有三個圖形，請回答「2」，如果只能照樣畫出兩個，請回答「1」。

Using the shapes below to look at, does your child copy the shapes in the space below without tracing? (Your child's drawings should look similar to the design of the shapes below, but they may be different in size. Mark "yes" if she can copy all three shapes; mark "sometimes" if your child can copy two shapes.)
4-60



請畫在這裡：

小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

精細動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

55. 請以正體寫出孩子的名字。孩子能抄寫她的名字嗎？字體可能很大、上下左右顛倒，也不必管筆劃順序是否正確。如果孩子能完成抄寫一半或更多的字體，請回答「1」。

Print your child's first name. Can your child copy the letters? The letters may be large, backward, or reversed. (Mark "sometimes" if your child copies about half of the letters.)
6-60

成人書寫處：

孩子書寫處：

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56. 孩子會用叉子或湯匙邊緣將軟的食物（如香蕉、芒果）切成小塊嗎？
Does your child cut up soft food such as banana or mango into smaller pieces using the edge of a fork?
7p

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57. 給孩子一張20x25公分的白紙，並要他將白紙對折讓白紙較短的兩邊對齊。孩子能將白紙對折且邊緣對齊，誤差不超過1公分嗎？
Give your child an 8 1/2"x11" piece of paper and ask him to fold the short sides together. Does your child fold the paper so that the sides match up within a half inch?
10p

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58. 孩子能自己扣上衣服上大部分的鈕扣，包括小於1公分的鈕扣嗎？
Does your child button most buttons on her clothing, include small buttons less than 1/2 inch or less?
5p

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59. 讓孩子看以下的五個字母，她能照樣寫出，而不是描出這些字母嗎？您可以只留下正在抄寫的字母，而把其他的字母都遮住。如果孩子能照樣抄寫其中四個字母，而且您能辨認它們，請回答「2」。如果孩子只能抄寫其中兩個或三個字母，而且您能辨認它們，那麼請回答「1」。

Using the letters below to look at, does your child copy the letters without tracing? Cover up all of the letters except the letter being copied. (Mark "yes" if your child copies four of the letters, and you can read them. Mark "sometimes" if your child copies two or three letters, and you can read them.) (Copy letters here)
5-60

V H T C A

請把字母寫在這裡：

小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

精細動作能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

60. 在紙上畫一個十公分的圓圈。孩子能用兒童安全剪刀沿著線將圓圈剪下來嗎？（孩子使用剪刀時，請務必注意安全）。



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Draw a 4-inch circle on a piece of paper. Does your child use child-safe scissors to cut it out staying close to the lines?

1p

61. 孩子會一手拿筷子、一手拿湯匙的將食物夾到碗裡嗎？

Does your child cut up soft food such as banana or mango into smaller pieces using a dull knife in one hand and a fork in the other? (Adaptations are made for cultural appropriateness.)

9p

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62. 孩子能用鑰匙成功的打開鎖上的門嗎？

Does your child successfully use a key to unlock the door?

11p

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63. 孩子能自己將鞋帶綁成蝴蝶結嗎？

Can your child tie shoelaces making bow?

3p

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

年齡與進程檢核表

(適用於1到54個月大的嬰幼兒)

認知能力

填寫本檢核表時的注意事項：

1. 請先計算出孩子的年齡，並利用下方的表格找到開始作答的問題與頁數。
2. 請詳細閱讀每個問題，並在空格中填入「2 (經常是)」，「1 (有時是)」或「0 (很少或還沒有)」來代表孩子展現這些技能的頻率。
3. 除非您很確定孩子已經具備某項能力，或是您知道孩子尚未學會某項能力，請務必與孩子嘗試各項活動。

請注意：有些活動可能孩子曾經會做，但是之後被更進階的技能取代（例如：年紀大的孩子不會再將玩具放進嘴巴裡）。這些技能請您填寫「2 (經常是)」。

精細動作能力分測驗的起始點:		
如果孩子的年紀是:	開始作答的題號:	頁碼:
1 到 3 個月	1	2
3 到 6 個月	3	2
6 到 9 個月	6	2
9 到 12 個月	12	3
12 到 18 個月	17	4
18 到 24 個月	24	5
24 到 30 個月	28	5
30 到 36 個月	34	6
36 到 45 個月	39	7
45 到 54 個月	45	8

完成本檢核表的一些小技巧

- 您和孩子可試著以像玩有趣遊戲的方式完成本檢核表。
- 請確保孩子睡眠充足、吃飽並準備好和您一起玩。

認知能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1到3個月的嬰兒請從這裡開始：

1st 2nd 3rd 4th

1. 寶寶能看見20-25公分遠處的物體嗎？

Does your baby look at objects that are 8-10 inches away?
1-2

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2. 當您在寶寶面前約25公分處，將玩具慢慢的上下移動時。她的眼睛會跟著玩具移動嗎？

When you move a small toy up and down slowly in front of your baby's face (about 10 inches away), does your baby follow the toy with his eyes?
4-2

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3到6個月的嬰兒請從這裡開始：

3. 當您在寶寶面前約25公分處，將玩具慢慢的在他的兩側左右移動時，他的眼睛，有時候包括頭，會跟著玩具移動嗎？

When you move a toy slowly from side to side in front of your baby's face (about 10 inches away), does your baby follow the toy with her eyes, sometimes turning her head?
3-2

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4. 當您在寶寶周圍走動時，她的視線會跟著您移動嗎？

When you move around, does your baby follow you with his eyes?
2-2

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5. 當您將玩具放在寶寶手裡時，他會注視玩具嗎？

When you put a toy in her hand, does your baby look at it?
4-4

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6到9個月的嬰兒請從這裡開始：

6. 當您抱著寶寶坐著時，他會注視您放在他面前桌上或地板上的玩具（如杯子或博浪鼓大小）嗎？

When you hold your baby in a sitting position, does she look at a toy (about the size of a cup or rattle) that you place on the table or floor in front of her?
5-2

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7. 當您將玩具放在寶寶手裡時，她會將玩具放進嘴裡嗎？

When you put a toy in her hand, does your baby put the toy in his mouth?
5-4

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8. 當寶寶仰臥時，在她的上方晃動玩具，她會朝玩具揮動手臂嗎？

When you dangle a toy above your baby while he is lying on his back, does he wave his arms toward the toy?
6-2



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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

認知能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

9. 寶寶會拿起玩具並放進口中嗎？

Does your baby pick up a toy and put it in his mouth?
4-6



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10. 當寶寶仰臥時，如果玩具從她的手中掉落，她會轉頭去尋找玩具嗎？

如果她已經能撿起玩具，請回答「2」。

When your baby is on his back, does he turn his head to look for a toy when he drops it? (If he already picks it up, mark "yes" for this item)
2-6

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11. 當寶寶仰臥時，如果玩具從他的手中掉落在她眼前，她會試著撿起玩具嗎？

When your baby is on her back, does she try to get a toy she has dropped if she can see it?
3-6

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9到12個月的嬰兒請從這裡開始：

12. 寶寶會用玩具反覆上下敲擊桌子或地板嗎？

Does your baby play by banging a toy up and down on the floor or table?
6-6



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13. 當有玩具在寶寶面前時，他會伸出雙手去拿玩具嗎？

When a toy is in front of your baby, does she reach for it with both hands?
1-6

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14. 寶寶能將玩具從一隻手換到另一隻來回交替嗎？

Does your baby pass a toy back and forth from one hand to the other?
5-6



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15. 當寶寶一手拿著玩具時，她會用它敲擊桌上的另一個玩具嗎？

When holding a toy in his hand, does your baby bang it against another toy on the table?
6-8



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16. 寶寶能撿起兩個小玩具，一手拿著一個，並握著他們大約1分鐘嗎？

Does your baby pick up two small toys, one in each hand, and hold onto them for about 1 minute?
5-8



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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

認知能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

12到18個月的幼兒請從這裡開始：

17. 當寶寶看到您將一個小玩具藏在紙或布下面時，她能找到這
個玩具嗎？請確保玩具完全被遮蓋住。

After watching you hide a small toy under a piece of paper or cloth, does your child find it? (Be sure the toy is completely hidden.)
6-10

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18. 當寶寶兩手各拿著一個玩具時，他會將兩個玩具相互敲擊嗎？

While holding a small toy in each hand, does your child clap the toys together (like "Pat-a-cake")?
4-10

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19. 寶寶能用手指戳或設法拿到透明瓶子（如塑膠汽水瓶或奶瓶）裡的麵
包屑等碗豆大小的東西嗎？

Does your child poke at or try to get a crumb or Cheerio that is inside a clear bottle (such as a plastic soda-pop bottle or baby bottle)?
5-10

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20. 如果您將一個小玩具放進碗或盒子裡，即使寶寶可能抓著不讓玩具落
下，她能模仿您也將一個玩具放進去嗎？如果她已經鬆手把玩具放進
碗或盒子裡，請回答「2」。

If you put a small toy into a bowl or box, does your child copy you by putting in a toy, although she may not let go of it? (If she already lets go of the toy into a bowl or box, mark "yes" for this item.)
4-12

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21. 寶寶能把兩個玩具相繼丟入一個容器，如碗或盒子
裡嗎？（您可以示範給他看）

Does your child drop two small toys, one after the other, into a container like a bowl or box? (You may show him how to do it.)
5-12



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22. 如果您把瓶子、湯匙或鉛筆上下顛倒拿給孩子，她能將之翻轉回來並
正確的使用嗎？

If you give your child a bottle, spoon, or pencil upside down, does she turn it right side up so that she can use it properly?
4-20

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23. 當您用蠟筆或鉛筆、原子筆在紙上來回塗鴉之後，寶寶能模仿您也用
筆亂畫嗎？如果她已經能自己在紙上亂畫，請回答「2」。

After you scribble back and forth on paper with a crayon (or a pencil or pen), does your child copy you by scribbling? (If she already scribbles on her own, mark "yes" for this item.)
6-12

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

		1 st	2 nd	3 rd	4 th
<p>認知能力</p> <p style="text-align: right;">對於孩子在各問題的行為表現，請填寫： 2：經常是 1：有時是 0：很少或還沒有</p>					
18到24個月的幼兒請從這裡開始：					
<p>24. 孩子能把數個小玩具相繼丟入一個容器，如碗或盒子裡嗎？您可以示範給孩子看。 <small>Does your child drop several small toys, one after another, into a container like a bowl or box? (You may show her how to do it.) 5-14</small></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>25. 孩子能將一小片麵包屑、枸杞子或碗豆大小的東西丟進一個小兒透明的瓶子（如塑膠汽水瓶或嬰兒奶瓶）裡嗎？ <small>Can your child drop a crumb or Cheerio into a small, clear bottle (such as a plastic soda-pop bottle or baby bottle)? 4-14</small></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>26. 給孩子一隻蠟筆（或鉛筆、原子筆），您不示範，她能自己在紙上來回的亂畫嗎？ <small>Without your showing him how, does your child scribble back and forth when you give him a crayon (or pencil or pen)? 5-16</small></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>27. 先將一塊麵包屑或碗豆大小的東西丟進一個透明的瓶子裡，孩子會翻轉瓶子將東西倒出來嗎。您可以示範如何做給孩子看。 <small>After a crumb or Cheerio is dropped into a small, clear bottle, does your child turn the bottle upside down to dump it out? (You may show him how.) 6-16</small></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24到30個月的幼兒請從這裡開始：					
<p>28. 在您將麵包屑或是碗豆大小的東西倒進一個小而透明的瓶子後，您的孩子能將瓶子翻轉過來把東西倒出來嗎？請不要示範給孩子看。 <small>After a crumb or Cheerio is dropped into a small, clear bottle, does your child turn the bottle upside down to dump out the crumb or Cheerio? (Do not show her how.) 6-18</small></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>29. 如果您做下列的任何動作，您的孩子能模仿至少其中一個動作嗎？ <small>If you do any of the following gestures, does your child copy at least one of them? a. Open and close your mouth b. Blink your eyes c. Pull on your earlobe d. Pat your cheek 3-20</small></p> <p style="margin-left: 40px;"> a. 張開、閉上嘴巴 b. 眨眼睛 c. 拉耳垂 d. 拍臉頰 </p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>30. 孩子能將物品放到應該放的地方嗎？例如知道玩具應該放在玩具架子上，他的毯子應該放在床上，而盤子應該放在廚房裡。 <small>Does your child put things away where they belong? For example, does he know his toys belong on the toy shelf, his blanket goes on his bed, and dishes go in the kitchen? 4-24</small></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					小計 _____
當您連續填寫3個“0”之後，請記得停止作答。					

認知能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

31. 孩子能把一件物品裝成是另一件物品嗎？舉例來說，孩子將杯子拿到耳邊假裝打電話；將盒子蓋在頭上裝作一頂帽子；用積木或小玩具來攪拌食物。

Does your child pretend objects are something else? For example, does your child hold a cup to his ear, pretending it is a telephone? Does he put a box on his head, pretending it is a hat? Does he use a block or small toy to stir food?
3-22

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32. 您示範如何將四個物體如積木或小汽車排成一行給孩子看，他能模仿您將至少兩個積木排成一行嗎？（您也可以



用線團、小盒子或是其他玩具）
While your child watches, line up four objects like blocks or cars in a row. Does your child copy or imitate you and line up at least two blocks side by side? (You can also use spools of thread, small boxes, or other toys.)
5-20

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33. 如果孩子想要一個他拿不到的東西，他會找個椅子或箱子，站在上面拿嗎？

If your child wants something he cannot reach, does he find a chair or box to stand on to reach it (for example, to get a toy on a counter or to "help" you in the kitchen)?
6-20

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30到36個月的幼兒請從這裡開始：

34. 在您示範後，您的孩子能用一隻湯匙、一根小棍子或類似的工具來試著手臂不太構的到的小玩具嗎？



After you have shown your child how, does he try to get a small toy that is slightly out of reach by using a spoon, stick, or similar tool?
6-14

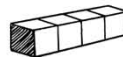
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35. 照鏡子時，您問「某某（孩子的名字）在哪裡？」，孩子會指著鏡子裡的自己嗎？

When looking in the mirror, ask "Where is _____?" (Use your child's name.) Does your child point to his image in the mirror?
3-27

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36. 您示範如何將四個物體如積木或小汽車排成一行給孩子看，他能模仿您將四個物體排成一行嗎？（您也可以



用線團、小盒子或是其他玩具）
While your child watches, line up four objects like blocks or cars in a row. Does your child copy or imitate you and line up four objects in a row? (You can also use spools of thread, small boxes, or other toys.)
6-24

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

認知能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

37. 按照右圖所示，示範如何用積木、盒子或罐子作成一座橋。

您的孩子能模仿您搭出這樣的橋嗎？

Show your child how to make a bridge with blocks, boxes, or cans, like the example. Does your child copy you by making one like it?
5-36



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38. 當您對孩子說：「說7、3」，孩子能按正確的順序說這兩個數字嗎？

不要重複說數字。必要的時候，可試另一對數字，說「說8、2」。您的孩子只需要重複其中一個數字串，您即可回答「2」。

When you say, "Say 'seven three,'" does your child repeat *just* the two numbers in the same order? *Do not repeat the numbers.* If necessary, try another pair of numbers and say, "Say 'eight two.'" Your child must repeat just one series of two numbers for you to answer "yes" to this question.
5-30

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36到45個月的幼兒請從這裡開始：

39. 孩子能把自己假扮或假想成某人或某樣東西嗎？舉例來說，您的孩子可能會穿上不同的衣服，並假裝自己是媽媽、爸爸或兄弟姊妹，或者是想像中的動物或人物。

Does your child dress up and "play-act," pretending to be someone or something else? For example, your child may dress up in different clothes and pretend to be a mommy, daddy, brother, or sister, or an imaginary animal or figure.
6-42

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40. 當你指著本題旁邊的圖畫問孩子：「這是什麼？」孩子

能說出代表人類的詞語嗎？類似「雪人」、「男孩」、「男人」、「女孩」、或「爸爸」都是正確答案。

When you point to the figure and ask your child, "What is this?" does your child say a word that means a person or something similar? (Mark "yes" for responses like "snowman," "boy," "man," "girl," "Daddy," "spaceman" and "monkey")
6-27



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請將您孩子的答案寫在這裡：

41. 在沒有手勢提示的情況下，孩子能完成「在...的下面」、「在...之間」以及「在...中間」這三個不同方位的指令嗎？舉例來說，您可以叫孩子把鞋子「放在沙發的下面」，然後要孩子把球「放在兩張椅子之間」以及把書「放在桌子的中間」。

Without your giving help by pointing, does your child follow three different directions using the words "under," "between," and "middle"? For example, ask your child to put a shoe "under the couch." Then ask her to put the ball "between the chairs" and the book "in the middle of the table."
3-48

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

認知能力

對於孩子在各問題的行為表現，請填寫：

- 2**：經常是
- 1**：有時是
- 0**：很少或還沒有

1st 2nd 3rd 4th

42. 當您說，「說5、8、3」，孩子能按照正確的順序說這三個數字嗎？不要重複說數字。必要的時候，可試另一串數數字並說：「說6、9、2」。您的孩子只需要重複其中一個數字串，您即可回答「2」。

When you say, "Say 'five eight three,'" does your child repeat *just* the three numbers in the same order? Do not repeat the numbers. If necessary, try another series of numbers and say, "Say 'six nine two.'" (Your child must repeat just one series of three numbers for you to answer "yes" to this question.)
6-36

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43. 孩子畫「畫」後，即使只是簡單的亂畫，她能告訴您他畫的是什麼嗎？您可以問，「告訴我你畫的是什麼？」或「這是什麼？」來提示她。

After your child draws a "picture," even a simple scribble, does she tell you what she drew? (You may say, "Tell me about your picture," or ask, "What is this?" to prompt her.)
6-30

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44. 孩子看您用蠟筆（鉛筆或原子筆）在紙上由上到下的畫一條線之後，她能模仿您在紙上畫一條任意方向的直線嗎？（如果只是來回亂畫，請回答「0」。）

After watching you draw a line from the top of the paper to the bottom with a crayon (or pencil or pen), does your child copy you by drawing a single line on the paper in any direction? (Mark "not yet" if your child scribbles back and forth.)
5-18

請填寫「2」



請填寫「0」



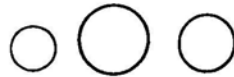
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45到54個月的幼兒請從這裡開始：

45. 您問孩子：「這三個圓圈哪個最小？」，她能指出最小的圓圈嗎？提問時請不要用手勢、眼神或其他肢體語言提示最小的圓圈。

When asked, "Which circle is the smallest?" does your child point to the smallest circle? (Ask this question without providing help by pointing, gesturing, or looking at the smallest circle.)
5-42

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46. 拿一些物品給您的孩子看，並問她：「這個是什麼顏色？」您的孩子能說出至少五種不同的顏色如紅色、藍色、黃色、橘色、黑色、白色或粉紅色嗎？請在孩子能正確用五種顏色回答問題的情況下才回答「2」。

When shown objects and asked, "What color is this?" does your child name five different colors like red, blue, yellow, orange, black, white, or pink? (Mark "yes" only if your child answers the question correctly using five colors.)
4-48

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小計 _____

當您連續填寫3個「0」之後，請記得停止作答。

認知能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

47. 如果您放置五項物品在孩子面前，孩子能按1、2、3、4、5的順序點數嗎？問問題時，請不要以手勢、其他肢體語言或說出名字來幫助孩子。

If you place five objects in front of your child, can he count them by saying, "one, two, three, four, five," in order? (Ask this question *without* providing help by pointing, gesturing, or naming.)
6-48

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48. 孩子能用斜體字的反義詞完成以下的句子嗎？舉例來說：「石頭是硬的，枕頭是軟的」。請將孩子的回答寫在橫線上。如果孩子4題中答對3題，請回答「2」。如果孩子4題中答對2題，請回答「1」。

Does your child finish the following sentences using a word that means the opposite of the word that is italicized? For example: "A rock is *hard*, and a pillow is *soft*." Please write your child's responses below: A cow is *big*, and a mouse is _____. Ice is *cold*, and fire is _____. We see stars at *night*, and we see the sun during the _____. When I throw the ball *up*, it comes _____. (Mark "yes" if she finishes three of four sentences correctly. Mark "sometimes" if she finishes two of four sentences correctly.)
4-60

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牛很大隻，老鼠很_____隻。
冰是冷的，火是_____的。
我們晚上看見星星，我們_____看見太陽。
當我向上拋球，球會往_____掉。

49. 孩子認識數字嗎？如果下面三個數字她都認識，請回答「2」。如果只認識其中兩個，請回答「1」。

Does your child know the names of numbers? (Mark "yes" if he identifies the three numbers below. Mark "sometimes" if he identifies two numbers.)
6-54

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3 1 2

50. 孩子能認識名字的每一個嗎？指著孩子名字裡的某個字問他：「這個字是什麼？」請不要按照順序指每個字。

Does your child name at least four letters in her name? Point to the letters and ask, "What letter is this?" (Point to the letters out of order.)
6-60

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51. 孩子能告訴您說話的詞彙或書上的語詞使用同樣或不同的聲母與韻母嗎？舉例來說，「爸」跟「伯」使用的聲母相同。「媽」跟「花」使用相同的韻母。「飯」跟「汗」使用不同的聲母。「姊」跟「家」使用不同的韻母。

Does your child tell you if spoken or printed words have the same or different beginning and ending sounds? For example, CAR and CAKE have the same beginning sounds. BEG and DOG have the same end sounds. MAMA and LLAMA have different beginning sounds. TOP and TOY have different ending sounds. (*Adaptations are made based on language differences*)
31p

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

認知能力	對於孩子在各問題的行為表現，請填寫：			
	1 st	2 nd	3 rd	4 th
52. 孩子能正確的數到15嗎？如果可以，請回答「2」。如果孩子可以正確數到12，請回答「1」。 Does your child count up to 15 without making mistakes? If so, mark "yes." If your child counts to 12 without making mistakes, mark "sometimes." 5-54	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. 您問孩子下列東西哪一項最大，哪一項最小，然後說「房子」、「車子」以及「杯子」。孩子能告訴你哪項最大、哪項最小嗎？ Ask your child which of these is the biggest and which is the smallest. Then say, "a house," "a car," and "a cup." Can you child tell you which one is the biggest and smallest? 22p	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54. 讓孩子看37個注音符號。孩子能正確念出十個以上的注音符號嗎？如果孩子能念出七個，請填寫「1」。 Show the 26 printed letters to your child. Can your child correctly name more than 10 of them? If the child can name 7, mark "sometimes." (Adaptations are made based on language differences). 28p	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55. 孩子能正確的數到20嗎？ Does your child count up to 20? 9p	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56. 在孩子面前放一元、五元和十元硬幣。孩子能指出一元硬幣嗎？ Put a penny, nickel and dime in front of your child. Can your child point to the penny? 13p	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57. 孩子能將一週裡的天數依正確順序說出來嗎？ Does your child say the days of the week in the correct order? 14p	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58. 問孩子星期五的前一天和後一天是星期幾，他能正確回答您嗎？如果他能回答出其中一天，請回答「1」。 Ask your child what day comes before and after Friday, does your child answer correctly? Mark "sometimes" if your child can name one of the days. 15p	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59. 問孩子6減1，4減2和8減3等於多少，她能正確的將一個數字從另一個數字裡減去嗎？孩子可以用手指數數。 Ask your child what is 6 minus (or take away) 1, 4 minus 2, and 8 minus 3. Does your child correctly subtract one number from another? She can use her fingers to count. 16p	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
小計 _____				
當您連續填寫3個 "0" 之後，請記得停止作答。				

		1 st	2 nd	3 rd	4 th
<p>認知能力</p> <p>對於孩子在各問題的行為表現，請填寫： 2：經常是 1：有時是 0：很少或還沒有</p>					
<p>60. 孩子認得以下六個代表不同形狀的字嗎？舉例還說，當孩子指著一個箱子，他會說：「那是正方形。」如果她知道至少3種形狀，請回答「1」。</p> <p>Does your child know the following six words for shapes? For example, your child says, "That's a square," when pointing to a box. If she knows at least 3 shapes mark "sometimes". a. circle b. triangle c. diamond d. square e. rectangle f. star. 30p</p> <p style="text-align: center;">a. 圓形 b. 三角形 c. 菱形 d. 正方形 e. 長方形 f. 星星</p>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<p>61. 孩子能數數超過40嗎？ Can your child count past "40"? 10p</p>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<p>62. 孩子能正確發出注音符號的四個聲調嗎（一聲：陰平聲；二聲：陽平聲；三聲：上聲；和四聲：去聲）？ Does your child correctly spell 3-letter words? For example, "cat," "dog," "pen". (Adaptations are made based on language differences). 18p</p>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<p>63. 孩子能告訴你一年中的月份嗎？如果孩子能說出至少6個月份，請回答「1」。</p> <p>Can your child tell you the months of the year? Mark "Sometimes" if your child can tell you more than 6 months in a year. 19p</p>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<p>64. 問孩子4加2、3加5以及7加1等於多少。孩子能正確的把數字相加嗎？他可以用手指數數。 Ask your child what is 4 plus 2, 3 plus 5, 7 plus 1. Does your child correctly add the numbers? He can use his fingers to count. 17p</p>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<p>65. 孩子能以十為單位的數到一百嗎？ Can your child count to one hundred by tens? 11p</p>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
小計 _____					
當您連續填寫3個“0”之後，請記得停止作答。					

年齡與進程檢核表

(適用於1到54個月大的嬰幼兒)

社會與適應能力

填寫本檢核表時的注意事項：

1. 請先計算出孩子的年齡，並利用下方的表格找到開始作答的問題與頁數。
2. 請詳細閱讀每個問題，並在空格中填入「2（經常是）」，「1（有時是）」或「0（很少或還沒有）」來代表孩子展現這些技能的頻率。
3. 除非您很確定孩子已經具備某項能力，或是您知道孩子尚未學會某項能力，請務必與孩子嘗試各項活動。

請注意：有些活動可能孩子曾經會做，但是之後被更進階的技能取代（例如：較年長的孩子不再用奶瓶餵奶）。這些技能請您填寫「2（經常是）」。

社會與適應能力分測驗的起始點：

如果孩子的年紀是：	開始作答的題號：	頁碼：
1 到 3 個月	1	2
3 到 6 個月	5	2
6 到 9 個月	8	2
9 到 12 個月	11	3
12 到 18 個月	15	3
18 到 24 個月	21	4
24 到 30 個月	27	5
30 到 36 個月	31	5
36 到 45 個月	36	6
45 到 54 個月	41	6

完成本檢核表的一些小技巧

- 您和孩子可試著以像玩有趣遊戲的方式完成本檢核表。
- 請確保孩子睡眠充足、吃飽並準備好和您一起玩。

社會與適應能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1到3個月的嬰兒請從這裡開始：

1st 2nd 3rd 4th

1. 當寶寶餓了、尿布濕了、累了或想讓您抱的時候，他會哭嗎？
Does your baby cry when he is hungry, wet, tired, or wants to be held?
2-2

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2. 在沒有餵奶時，寶寶的嘴巴有時候也試著要吸吮嗎？
Does your baby sometimes try to suck, even when he's not feeding?
1-2

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3. 寶寶會對您微笑嗎？
Does your baby smile at you?
3-2


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4. 當您對寶寶微笑時，她會以微笑來回應您嗎？
When you smile at your baby, does he smile back?
4-2

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3到6個月的嬰兒請從這裡開始：

5. 當寶寶看見乳房或奶瓶時，她知道要餵奶了嗎？
When your baby sees the breast or bottle, does he seem to know he is about to be fed?
6-2

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6. 當寶寶看見您在附近時，她會在您對她微笑或說話前先對您微笑嗎？
Before you smile or talk to your baby, does he smile when he sees you nearby?
5-4

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7. 寶寶會看他自己的手嗎？
Does your baby watch her hands?
5-2 

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6到9個月的嬰兒請從這裡開始：

8. 當寶寶將手放在一起時，他會玩自己的手指嗎？
When your baby has her hands together, does she play with her fingers?
2-4

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9. 當寶寶面對一面大鏡子時，他會對鏡子裡的自己微笑或發出聲音嗎？
When in front of a large mirror, does your baby smile or coo at herself?
6-4 

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10. 當寶寶仰臥時，她會抓著腳玩嗎？
While lying on her back, does your baby play by grabbing her foot?
3-6 

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

社會與適應能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

9到12個月的嬰兒請從這裡開始：

11. 寶寶會設法去拿手構不到的玩具嗎？（他可能翻滾、以腹部為支點轉動或爬行以拿到玩具）

Does your baby try to get a toy that is out of reach? (She may roll, pivot on her tummy, or crawl to get it.)
6-6

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12. 用奶瓶幫寶寶餵奶時，他會不會立即用雙手扶著奶瓶？若是餵母乳，他會不會用空著的手扶著乳房？

Does your baby help hold the bottle with both hands at once, or when nursing, does she hold the breast with her free hand?
4-4

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13. 當寶寶面對一面大鏡子時，他會伸手去拍打鏡子嗎？

When in front of a large mirror, does your baby reach out to pat the mirror?
4-6



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14. 寶寶會餵自己吃硬餅乾或較軟的餅乾嗎？

Does your baby feed himself a cracker or a cookie?
6-8

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12到18個月的幼兒請從這裡開始：

15. 寶寶會從您拿著杯子裡喝水、果汁或牛奶嗎？

Does your baby drink water, juice, or formula from a cup while you hold it?
5-8

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16. 寶寶對陌生人和對您及其他所熟悉的人表現的行為是否不同？（對陌生人的反應可能是凝視、皺眉、躲避或哭叫等）

Does your baby act differently toward strangers than he does with you and other familiar people? (Reactions to strangers may include staring, frowning, withdrawing, or crying.)
2-6

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17. 當寶寶仰臥時，他會將自己的腳放進嘴裡嗎？

While your baby is on his back, does he put his foot in his mouth?
5-6



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18. 當您幫寶寶穿衣服時，他會在手臂開始伸進袖子裡時，接著將手臂穿過袖子嗎？

When you dress your child, does he push his arm through a sleeve once his arm is started in the hole of the sleeve?
5-10

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

社會與適應能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

19. 當您伸手向寶寶要他手裡的玩具時，即使不鬆手，他也會把玩具遞給您嗎？（如果她已經能鬆開手把玩具放在您手裡，請回答「2」）

When you hold out your hand and ask for her toy, does your child offer it to you even if she doesn't let go of it? (If she already lets go of the toy into your hand, mark "yes" for this item.)
4-10

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20. 當您伸手向寶寶要他手裡的玩具時，她能鬆開手將玩具放到您的手裡嗎？

When you hold out your hand and ask for her toy, does your child let go of it into your hand?
6-10

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18到24個月的幼兒請從這裡開始：

21. 寶寶會把一顆球滾回或扔回給您，以便您可以再把球還給她嗎？

Does your child roll or throw a ball back to you so that you can return it to him?
5-12

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22. 寶寶會抱著洋娃娃或動物布偶嗎？

Does your child play with a doll or stuffed animal by hugging it?
6-12

23. 當您替寶寶穿衣服時，他會抬腳以方便您穿鞋、穿襪子或是套上褲管嗎？

When you dress your child, does he lift his foot for his shoe, sock, or pant leg?
4-12

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24. 孩子能模仿您的動作，如將打翻的東西擦乾淨、掃地、刮鬍子或梳頭嗎？

Does your child copy the activities you do, such as wipe up a spill, sweep, shave, or comb hair?
6-18

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25. 孩子能推著嬰兒車、購物小推車或手推車繞過障礙物，並在無法轉彎時由角落倒退出來嗎？

Does your child push a little wagon, stroller, or other toy on wheels, steering it around objects and backing out of corners if she cannot turn?
6-22

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26. 即使孩子可能把食物灑出來，他會自己用湯匙吃飯嗎？

Does your child feed herself with a spoon, even though she may spill some food?
4-14

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

社會與適應能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

24到30個月的幼兒請從這裡開始：

27. 當孩子爲了吸引您的注意力或想讓您看什麼東西時，她會拉您的手或衣服嗎？
- Does your child get your attention or try to show you something by pulling on your hand or clothes?
6-14
28. 當孩子需要協助，如幫玩具上發條或打開瓶蓋時，他會找您幫忙嗎？
- Does your child come to you when she needs help, such as with winding up a toy or unscrewing a lid from a jar?
6-16
29. 孩子會自己用湯匙吃飯而只有一點點食物灑出來嗎？
- Does your child use a spoon to feed himself with little spilling?
2-30
30. 孩子喝水後將杯子放下時，只有一點點水灑出來嗎？
- Does your child drink from a cup or glass, putting it down again with little spilling?
5-18

30到36個月的幼兒請從這裡開始：

31. 如果您做下列的任何動作，您的孩子能模仿至少其中一個動作嗎？
- If you do any of the following gestures, does your child copy at least one of them? a. Open and close your mouth. b. Blink your eyes. c. Pull on your earlobe. d. Pat your cheek.
2-22
- a. 張開、閉上嘴巴 b. 眨眼睛
c. 拉耳垂 d. 拍臉頰
32. 孩子會幫忙脫自己的衣服，如脫下襪子、帽子、鞋子或連指手套等嗎？
- Does your child help undress herself by taking off clothes like socks, hat, shoes, or mittens?
5-14
33. 孩子會用叉子或筷子吃飯嗎？
- Does your child eat with a fork?
6-20
34. 您的孩子在輪到別的孩子或大人做某事時，是否會等待輪到自己？
- Does your child take turns by waiting while another child or adult takes a turn?
6-36
35. 當孩子玩洋娃娃或動物玩偶時，她會假裝搖晃它、餵它、替它換尿布或把它放到床上等等想像動作嗎？
- When playing with either a stuffed animal or doll, does your child pretend to rock it, feed it, change its diapers, put it to bed, and so forth?
5-20

小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

社會與適應能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

36到45個月的幼兒請從這裡開始：

36. 當孩子看著鏡子時，您問她：「鏡子裡是誰？」，她會回答「我」或「是某某（孩子的名字）」嗎？

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When your child is looking in a mirror and you ask, "Who is in the mirror?" does he say either "me" or his own name?
6-30

37. 當孩子在一面大鏡子裡看見自己時，他會把玩具遞給鏡子裡的自己嗎？

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While looking at himself in the mirror, does your child offer a toy to his own image?
4-16

38. 當您把一條寬鬆的褲子套在孩子的腳上時，他會將褲子完全拉上至腰部嗎？

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After you put on loose-fitting pants around his feet, does your child pull them completely up to his waist?
5-30

39. 孩子能在多數時候能使用「我」代表自己做主語和賓語，來替代使用自己的名字嗎？例如，說「我做的」多於說「某某（孩子的名字）做的」。

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Does your child call herself "I" or "me" more often than her own name? For example, "I do it," more often than "Juanita do it."
6-24

40. 請一字不差的使用本問題問您的孩子，「你是男生還是女生？」他能正確的回答嗎？

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Using these exact words, ask your child, "Are you a girl or a boy?" Does your child answer correctly?
6-33

45到54個月的幼兒請從這裡開始：

41. 孩子能自己用肥皂和水洗手，然後用毛巾擦乾，不需要別人的協助嗎？

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Does your child wash her hands using soap and water and dry off with a towel without help?
6-42

42. 一般情況下，孩子會和其他小朋友輪流從事某個活動，或是分享某些東西嗎？

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Does your child usually take turns and share with other children?
6-60

小計 _____

當您連續填寫3個 "0" 之後，請記得停止作答。

社會與適應能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

- | | | | | |
|---|----------------------|----------------------|----------------------|----------------------|
| 43. 在沒有您幫忙的情況下，孩子會自己穿或脫衣服（不包括扣扣子、扭扭扣或拉拉鍊。）
Does your child dress or undress herself without help (except for snaps, buttons, and zippers)?
6-48 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 44. 孩子能說出除了兄弟姊妹以外，兩個或兩個以上一起玩的朋友的名字嗎？問這個問題時，請不要提示夥伴或朋友的名字。
Does your child tell you the names of two or more playmates, not including brothers and sisters? (Ask this question without providing help by suggesting names of playmates or friends.)
4-48 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 45. 孩子會自己上廁所嗎？（包括自己走進廁所，坐在馬桶上，擦屁股，然後沖水。）即使他是在您提醒後才完成這些動作的，也請回答「2」。
Does your child use the toilet by himself? (He goes to the bathroom, sits on the toilet, wipes, and flushes.) Mark "yes" even if he does this after you remind him.
5-60 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 46. 孩子會自己穿上外套、夾克或襯衫嗎？
Does your child put on a coat, jacket, or shirt by himself?
6-27 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 47. 孩子能自己完成下列事項嗎？洗手、擤鼻涕、刷牙和梳頭。
Does your child do the following by himself? Wash hands, blow nose, brush teeth and comb/brush hair.
2ap | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 48. 當您和孩子一起過馬路時，她知道過馬路前要左右注意嗎？
When you cross the street with your child, does she know how to look both ways before crossing?
3ap | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 49. 孩子能將飲料從一個容器倒到另一個嗎？舉例來說，他能將果汁從小水壺裡倒到杯子裡。
Does your child pour liquid from one container to another? For example does he pour juice from a small pitcher into a cup?
8ap | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 50. 當您帶孩子到公眾場合去，她知道如何表現嗎？舉例來說，當您和她在圖書館、餐廳或是大賣場時。
Does your child know how to behave when you take her out to a public place? For example when you are at a library, church or grocery store?
11ap | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

社會與適應能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

51. 吃飯時，孩子會自己動手，用餐具把食物從一個容器移到另一個容器嗎？舉例來說，您的孩子會用大湯匙將蘋果泥從罐子取出放到碗裡。
Does your child serve herself, taking food from one container to another using utensils? For example, does your child use a large spoon to scoop applesauce from a jar into a bowl?
5-42
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|
52. 孩子會遠離危險的東西嗎？舉例來說，很燙的爐子或移動中的車子。
Does your child stay away from dangerous things? For example, hot stove or moving cars.
10ap
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|
53. 在下列問題中，孩子能回答至少其中四個嗎？請圈選您的孩子知道的項目。
Does your child tell you at least four of the following? Please mark the items your child knows. a. First name. b. Age. c. City she lives in. d. Last name. e. Boy or girl. f. Telephone
2-48
- a. 名字 b. 年齡 c. 居住的城市
d. 姓 e. 男孩或女孩 f. 電話號碼。
54. 當您的孩子與朋友之間相處有問題時，他會告訴大人嗎？
Does your child tell an adult when he is having trouble with a friend?
9sp
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|
55. 在沒有您幫忙的情況下，孩子會將牙膏擠到牙刷上，然後自己刷牙嗎？您可能還是需要檢查或重刷孩子的牙齒。
Does your child brush his teeth by putting toothpaste on the toothbrush and brushing all his teeth without help? (You may still need to check and re-brush your child's teeth.)
5-48
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|
56. 孩子能自己完成洗澡大部分的步驟嗎（在您的監督下）？她會自己脫掉衣服、跨進浴缸、清洗並擦乾身體嗎？
Does your child do most of the bath time routine by herself (with your supervision)? Does she take off clothes, get into the tub, clean her body and dry herself off?
9ap
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|
57. 當孩子玩坐著玩的遊戲，如紙上遊戲或紙牌時，他會和別人輪流嗎？
Does your child take turns when playing a sit down game such as board games or cards?
22sp
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|
58. 孩子會告訴您他喜歡和不喜歡什麼嗎？舉例來說，孩子會說：「我喜歡巧克力蛋糕」或「我不喜歡玩洋娃娃」。
Does your child tell you what he likes and does not like? For example, your child says, "I love chocolate cake," or "I don't like to play dolls."
15sp
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

社會與適應能力

對於孩子在各問題的行為表現，請填寫：

2：經常是

1：有時是

0：很少或還沒有

1st 2nd 3rd 4th

59. 不需大人提醒，孩子能自己開始玩玩具並且完成這項活動嗎？舉例來說，孩子會自己拿出拼圖，拼拼圖並收起來。

Does your child begin playing with toys and finish the activity without being told? For example, your child gets out a puzzle, puts it together, and puts it away.
11sp

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60. 孩子會自己穿或脫衣服，包括扣扣子、扭扭扣或拉拉鍊嗎？

Does your child dress and undress himself, including buttoning medium-size buttons and zipping front zippers?
6-54

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61. 孩子會試著解決和玩伴之間的衝突嗎？舉例來說，孩子可能會說：「我先玩球，再換你玩」。

Does your child try to solve a conflict with playmates? For example, your child might say, "I'll play with the ball first, and then it's your turn."
8sp

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62. 孩子會以拿回玩具或是說：「這是我的」的方式來宣告對玩具的所有權嗎？

Does your child claim a toy that belongs to him by taking the toy back or by saying, "That's mine!"
10sp

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63. 孩子對他完成的事情會感到驕傲嗎？舉例來說，她可能會展示她畫的圖給您看並說：「看我畫了什麼！」

Does your child feel proud of the things she is able to do? For example, she might show you a picture she drew and say, "Look at what I made!"
21sp

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64. 孩子能和其他小朋友一起參與在成人領導的大團體活動中至少10-15分鐘嗎？舉例來說，小朋友圍成圓圈（超過5個小朋友以上）坐在一起做活動。

Does your child take part in an adult-led large group activity with other children for at least 10-15 minutes? For example, circle time with more than 5 kids?
13sp

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65. 孩子知道緊急事件發生時要怎麼做嗎？舉例來說，他知道如何找大人幫忙，或是打110求助嗎？

Does your child know what to do in an emergency? For example, does he know how to call an adult or dial 911 for help?
13ap

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小計 _____

當您連續填寫3個“0”之後，請記得停止作答。

APPENDIX C

ASQ: INVENTORY ITEMS THAT PRESENTED DIF BETWEEN DIFFERENT
COMPLETION METHODS BY DOMAIN

Domain	Item #	In favor of	DIF items
Communication	47 (19p)	Paper-pencil	孩子問問題的時候，她的聲調在最後會上揚嗎？ Does your child make her voice go high at the end of a sentence that is a question?
	49 (21p)	On-line	孩子會談論未來將要發生的事情嗎？例如，孩子會說，「我們明天要去動物園玩。」 Does your child talk about things that are going to occur in the future? For example, your child says, "We are going to the zoo tomorrow."
	50 (4p)	On-line	當孩子講電話時，電話另一頭的人能理解他說什麼嗎？ When your child talks on the phone, can other people understand what she says?
	61 (36m6)	Paper-pencil	當您問，「你叫什麼名字？」時，孩子能正確的說出它的姓和名嗎？ When you ask, "What is your name?" does your child say both her first and last names?
	65 (60m4)	Paper-pencil	孩子會使用表示比較的意思的詞彙嗎？如較重或更重、較強壯或更強壯，較短或更短嗎？您可以問孩子這些問題，如「汽車很大台，但是巴士_____」（更大台；「貓的體重很重，但是人的體重_____」）更重；「電視體積很小，但是書_____」（更小）。 Does your child use comparison words, such as "heavier," "stronger," or "shorter"? Ask your child questions, such as "A car is big, but a bus is _____" (bigger); "A cat is heavy, but a man is _____" (heavier); "A TV is small, but a book is _____" (smaller).

Domain	Item #	In favor of	DIF items
Gross motor	30 (18m6)	On-line	<p>當您示範給孩子看如何踢一顆大球後，他會試著向前移動他的腿踢球或像走路一般的碰球來踢嗎？如果他已經會踢球了，請回答「2」。</p> <p>When you show your child how to kick a large ball, does he try to kick the ball by moving his leg forward or by walking into it? (If your child already kicks a ball, mark "yes" for this item.)</p>
	34 (22m6)	On-line	<p>不扶著任何東西支撐，孩子能向前擺動他的腿踢球嗎？</p> <p>Without holding onto anything for support, does your child kick a ball by swinging his leg forward?</p>
	37 (33m6)	On-line	<p>當孩子站著時，她能舉手過肩將球向前投擲出去嗎？（若球掉下或是投球時手不過肩，請回答「0」。）</p> <p>While standing, does your child throw a ball <i>overhand</i> by raising his arm to shoulder height and throwing the ball forward? (Dropping the ball or throwing the ball <i>underhand</i> should be scored as "not yet".)</p>
	41 (48m3)	On-line	<p>當孩子站著時，她能舉手過肩將球投向某個站在離他180公分之外的人嗎？要舉手過肩，您的孩子必須將手臂舉至肩膀高度並將球向前投擲。（若球掉下或是投球時手不過肩，請回答「0」。）</p> <p>While standing, does your child throw a ball <i>overhand</i> in the direction of a person standing at least 6 feet away? To throw <i>overhand</i>, your child must raise her arm to shoulder height and throw the ball forward. (Dropping the ball or throwing the ball <i>underhand</i> should be scored as "not yet".)</p>
	46 (17p)	Paper-pencil	<p>孩子能左右腳交替著走下樓梯嗎？</p> <p>Does your child walk down the stairs with alternating feet?</p>
	50 (12p)	Paper-pencil	<p>當您示範給孩子看如何以一腳腳跟放在另一腳腳趾前面的方式向前走，孩子能以這種方式至少向前走十步嗎？</p> <p>Show your child how to walk forwards by placing the heel of one foot right in front of the toe of her other foot. Can your child walk 10 or more steps forward?</p>

Domain	Item #	In favor of	DIF items
Gross motor (cont.)	56 (9p)	Paper-pencil	<p>要求您的孩子重複以下的連續動作，如跑、用力跳及蹦跳。您的孩子能完成全部三個動作至少兩次嗎？</p> <p>Ask your child to repeat a movement pattern, such as run, jump, and skip. Does your child do all three movements at least 2 times?</p>
	58 (13p)	Paper-pencil	<p>您示範給孩子看如何以一腳腳趾放在另一腳腳跟後面的方式倒退走。孩子能倒退走至少十步嗎？</p> <p>Show your child how to walk backwards by placing the toe of 1 foot in back of and touching the heel of the other. Can your child walk 10 or more steps backwards?</p>
	60 (5p)	On-line	<p>孩子能先單用右腳跳十下，再換用左腳跳十下嗎？</p> <p>Does your child skip 10 times from using her right foot and then her left foot?</p>
	63 (14p)	Paper-pencil	<p>孩子能自己盪鞦韆嗎？她必須前後移動雙腿推動鞦韆。</p> <p>Can your child swing on a swing by herself? She should move their legs back and forth to pump.</p>
	65 (16p)	On-line	<p>孩子會跳繩嗎？當繩子翻過她的頭頂和腳下時，她必須完成至少三次的跳躍。</p> <p>Can your child skip rope? She should jump at least three times while flipping the rope over her head and under her feet.</p>

Domain	Item #	In favor of	DIF items
Fine motor	32 (30m6)	On-line	<p>翻動書頁時，孩子會一次翻一頁嗎？</p> <p>Does your child turn pages in a book, one page at a time?</p>
	33 (30m5)	On-line	<p>您先示範畫一個圓圈，然後要您的孩子也畫一個一樣的圓圈。孩子不可以描您畫好的圓圈。孩子能模仿您畫一個圓圈嗎？</p> <p>After your child watches you draw a single circle, ask him to make a circle like yours. Do not let him trace your circle. Does your child copy you by drawing a circle?</p>
	39 (42m5)	Paper-pencil	<p>孩子能夠拼好一個由五到七片可互相扣合的拼圖片組合而成的拼圖玩具嗎？（如果您沒有這樣的拼圖玩具，可以從雜誌上或廣告目錄上拿一張整頁圖畫，剪成六片，您的孩子可以正確的拼回去嗎？）</p> <p>Does your child put together a five to seven piece interlocking puzzle? (If one is not available, take a full-page picture from a magazine or catalog and cut it into six pieces. Does your child put it back together correctly?)</p>
	47 (12p)	Paper-pencil	<p>孩子坐車時能自己繫上安全帶嗎？</p> <p>Can your child buckle a seat belt while riding a car?</p>
	50 (54m5)	On-line	<p>讓您的孩子在一張白紙上畫一個人。您可以要求孩子「畫個男生或女生。」如果您的孩子畫的人有頭、身體、手臂和腿，請回答「是」。如果您的孩子只畫出人的三個部位（頭、身體、手臂或腿其中之三），請回答「1」。如果您的孩子畫出兩個或以下的人體部位，請回答「0」。請將孩子畫圖的紙與本問卷訂在一起。</p> <p>Ask your child to draw a picture of a person on a blank sheet of paper. You may ask your child to “Draw a picture of a girl or a boy.” If your child draws a person with head, body, arms, and legs, mark “yes.” If your child draws a person with only three parts (head, body, arms, or legs), mark “sometimes.” If your child draws a person with two or fewer parts (head, body, arms, or legs), mark “not yet.” Be sure to include the sheet of paper with your child’s drawing with this questionnaire.</p>

Domain	Item #	In favor of	DIF items
Fine motor (cont.)	54 (60m4)	Paper-pencil	<p>像孩子展示下列的圖形，孩子能用筆在下面的空白處照樣畫出，而不是描出這些圖形嗎？孩子畫出的圖形大小可能和原圖不同，但是形狀必須要下面的圖形相似。（如果孩子能照樣畫出所有三個圖形，請回答「2」，如果只能照樣畫出兩個，請回答「1」。</p> <p>Using the shapes below to look at, does your child copy the shapes in the space below without tracing? (Your child's drawings should look similar to the design of the shapes below, but they may be different in size. Mark "yes" if she copies all three shapes; mark "sometimes" if your child copies two shapes.)</p>
	55 (60m6)	On-line	<p>請以正體寫出孩子的名字。孩子能抄寫她的名字嗎？字體可能很大、上下左右顛倒，也不必管筆劃順序是否正確。如果孩子能完成抄寫一半或更多的字體，請回答「1」。</p> <p>Print your child's first name. Can your child copy the letters? The letters may be large, backward, or reversed. (Mark "sometimes" if your child copies about half of the letters.) (Space for adult's printing) (Space for child's printing)</p>
	56 (7p)	Paper-pencil	<p>孩子會用叉子或湯匙邊緣將軟的食物（如香蕉、芒果）切成小塊嗎？</p> <p>Does your child cut up soft food such as banana or mango into smaller pieces using the edge of a fork?</p>
	63 (3p)	On-line	<p>孩子能自己將鞋帶綁成蝴蝶結嗎？</p> <p>Can your child tie shoelaces making bow?</p>

Domain	Item #	In favor of	DIF items
Problem solving	34 (14m6)	On-line	<p>在您示範後，您的孩子能用一隻湯匙、一根小棍子或類似的工具來試著手臂不太夠的到的小玩具嗎？</p> <p>After you have shown your baby how, does he try to get a small toy that is slightly out of reach by using a spoon, stick, or similar tool?</p>
	35 (27m3)	On-line	<p>照鏡子時，您問「某某（孩子的名字）在哪裡？」，孩子會指著鏡子裡的自己嗎？</p> <p>When looking in the mirror, ask “Where is _____?” (Use your child’s name.) Does your child point to her image in the mirror?</p>
	38 (30m5)	On-line	<p>當您對孩子說：「說 7、3」，孩子能按正確的順序說這兩個數字嗎？不要重複說數字。必要的時候，可試另一對數字，說「說 8、2」。您的孩子只需要重複其中一個數字串，您即可回答「2」。</p> <p>When you say, “Say 'seven three',” does your child repeat just the two numbers in the same order? Do not repeat the numbers. If necessary, try another pair of numbers and say, “Say 'eight two'.” Your child must repeat just one series of two numbers for you to answer “yes” to this question.</p>
	39 (42m6)	On-line	<p>孩子能把自己假扮或假想成某人或某樣東西嗎？舉例來說，您的孩子可能會穿上不同的衣服，並假裝自己是媽媽、爸爸或兄弟姊妹，或者是想像中的動物或人物。</p> <p>When you say, “Say 'five eight three',” does your child repeat just the three numbers in the same order? Do not repeat the numbers. If necessary, try another series of numbers and say, “Say 'six nine two'.” (Your child must repeat just one series of three numbers for you to answer “yes” to this question.</p>
	44 (18m5)	On-line	<p>孩子看您用蠟筆（鉛筆或原子筆）在紙上由上到下的畫一條線之後，她能模仿您在紙上畫一條任意方向的直線嗎？（如果只是來回亂畫，請回答「0」。）</p> <p>After watching you draw a line from the top of the paper to the bottom with a crayon (or pencil or pen), does your child copy you by drawing a single line on the paper in any direction? (Mark "not yet" if your child scribbles back and forth.)</p>

Domain	Item #	In favor of	DIF items
Problem solving (cont.)	47 (48m6)	Paper-pencil	如果您放置五項物品在孩子面前，孩子能按 1、2、3、4、5 的順序點數嗎？問問題時，請不要以手勢、其他肢體語言或說出名字來幫助孩子。 If you place five objects in front of your child, can he count them saying, "One, two, three, four, five," in order? (Ask the question without providing help by pointing, gesturing, or naming.)
	50 (60m6)	On-line	孩子能認識名字的每一個嗎？指著孩子名字裡的某個字問他：「這個字是什麼？」請不要按照順序指每個字。 Does your child name at least four letters in her name? Point to the letters and ask, "What letter is this?"(Point to the letters out of order.)
	51 (30p)	On-line	孩子能告訴您說話的詞彙或書上的語詞使用同樣或不同的聲母與韻母嗎？舉例來說，「爸」跟「伯」使用的聲母相同。「媽」跟「花」使用相同的韻母。「飯」跟「汗」使用不同的聲母。「姊」跟「家」使用不同的韻母。 Does your child tell you if spoken or printed words have the same or different beginning and ending sounds? For example, CAR and CAKE have the same beginning sounds. BEG and DOG have the same end sounds. MAMA and LLAMA have different beginning sounds. TOP and TOY have different ending sounds. (Adaptations are made based on language differences)
	52 (54m5)	Paper-pencil	孩子能正確的數到 15 嗎？如果可以，請回答「2」。如果孩子可以正確數到 12，請回答「0」。 Does your child count up to 15 without making mistakes? If so, mark "yes." If your child counts to 12 without making mistakes, mark "sometimes."
	54 (27p)	On-line	讓孩子看 37 個注音符號。孩子能正確念出十個以上的注音符號嗎？如孩子能念出七個，請填寫「1」。 Show the 26 printed letters to your child. Can your child correctly name more than 10 of them? If the child can name 7, mark "sometimes." (Adaptations are made based on language differences).
55 (9p)	Paper-pencil	孩子能正確的數到 20 嗎？ Does your child count up to 20?	

Domain	Item #	In favor of	DIF items
Problem solving (cont.)	58 (15p)	Paper-pencil	<p>問孩子星期五的前一天和後一天是星期幾，他能正確回答您嗎？如果他能回答出其中一天，請回答「1」。</p> <p>Ask your child what day comes before and after Friday, does your child answer correctly? Mark "sometimes" if your child can name one of the days.</p>
	60 (29p)	Paper-pencil	<p>孩子認得以下六個代表不同形狀的字嗎？舉例來說，當孩子指著一個箱子，他會說：「那是正方形。」如果她知道至少3種形狀，請回答「有時候」。a. 圓形 b. 三角形 c. 菱形 d. 正方形 e. 長方形 f. 星星</p> <p>Does your child know the following six words for shapes ? For example, your child says, "That's a square," when pointing to a box. If she knows at least 3 shapes mark "sometimes". a. circle b. triangle c. diamond d. square e. rectangle f. star.</p>
	62 (18p)	Paper-pencil	<p>孩子能正確發出注音符號的四個聲調嗎（一聲：陰平聲；二聲：陽平聲；三聲：上聲；和四聲：去聲）？</p> <p>Does your child correctly spell 3-letter words? For example, "cat," "dog," "pen". (Adaptations are made based on language differences)</p>
	63 (19p)	Paper-pencil	<p>孩子能告訴你一年中的月份嗎？如果孩子能說出至少6個月份，請回答「1」。</p> <p>Can your child tell you the months of the year? Mark "Sometimes" if your child can tell you more than 6 months in a year.</p>
	64 (17p)	Paper-pencil	<p>問孩子4加2、3加5以及7加1等於多少。孩子能正確的把數字相加嗎？他可以用手指數數。</p> <p>Ask your child what is 4 plus 2, 3 plus 5, 7 plus 1. Does your child correctly add the numbers? He can use his fingers to count.</p>

Domain	Item #	In favor of	DIF items
Personal-social	33 (20m6)	On-line	孩子會用叉子或筷子吃飯嗎？ Does your child eat with a fork?
	34 (36m6)	On-line	您的孩子在輪到別的孩子或大人做某事時，是否會等待輪到自己？ Does your child take turns by waiting while another child or adult takes a turn?
	35 (20m5)	On-line	當孩子玩洋娃娃或動物玩偶時，她會假裝搖晃它，餵它，替它換尿布或把它放到床上等等想像動作嗎？ When playing with either a stuffed animal or doll, does your child pretend to rock it, feed it, change its diapers, put it to bed, and so forth?
	39 (24m6)	Paper-pencil	孩子能在多數時候能使用「我」代表自己做主語和賓語，來替代使用自己的名字嗎？例如，說「我做的」多於說「某某（孩子的名字）做的」。 Does your child call herself "I" or "me" more often than her own name? For example, "I do it," more often than "Juanita do it."
	43 (48m6)	On-line	在沒有您幫忙的情況下，孩子會自己穿或脫衣服（不包括扣扣子、扭扭扣或拉拉鍊。） Does your child dress or undress himself without help (except for snaps, buttons, and zippers)?
	46 (27m6)	On-line	孩子會自己穿上外套、夾克或襯衫嗎？ Does your child put on a coat, jacket, or shirt by himself?
	47 (2ap)	On-line	孩子能自己完成下列事項嗎？洗手、擤鼻涕、刷牙和梳頭。 Does your child do the following by himself? Wash hands, blow nose, brush teeth and comb/brush hair.
	56 (9ap)	On-line	孩子能自己完成洗澡大部分的步驟嗎（在您的監督下）？她會自己脫掉衣服、跨進浴缸、清洗並擦乾身體嗎？ Does your child do most of the bath time routine by herself (with your supervision)? Does she take off clothes, get into the tub, clean her body and dry herself off?

Domain	Item #	In favor of	DIF items
Personal-social (cont.)	58 (17sp)	Paper-pencil	<p>孩子會告訴您他喜歡和不喜歡什麼嗎？舉例來說，孩子會說：「我喜歡巧克力蛋糕」或「我不喜歡玩洋娃娃」。</p> <p>Does your child tell you what he likes and does not like? For example, your child says, "I love chocolate cake," or "I don't like to play dolls."</p>
	59 (9sp)	Paper-pencil	<p>不需大人提醒，孩子能自己開始玩玩具並且完成這項活動嗎？舉例來說，孩子會自己拿出拼圖，拼拼圖並收起來。</p> <p>Does your child begin playing with toys and finish the activity without being told? For example, your child gets out a puzzle, puts it together, and puts it away.</p>
	60 (54m6)	On-line	<p>孩子會自己穿或脫衣服，包括扣扣子、扭扭扣或拉拉鍊嗎？</p> <p>Does your child dress and undress himself including buttoning medium-size buttons and zipping front zippers?</p>
	62 (10sp)	Paper-pencil	<p>孩子會以拿回玩具或是說：「這是我的」的方式來宣告對玩具的所有權嗎？</p> <p>Does your child claim a toy that belongs to him by taking the toy back or by saying, "That's mine!"</p>
	63 (23sp)	Paper-pencil	<p>孩子對他能完成的事情會感到驕傲嗎？舉例來說，她可能會展示她畫的圖給您看並說：「看我畫了什麼！」</p> <p>Does your child feel proud of the things she is able to do? For example, she might show you a picture she drew and say, "Look at what I made!"</p>
	64 (15sp)	Paper-pencil	<p>孩子能和其他小朋友一起參與在成人領導的大團體活動中至少 10-15 分鐘嗎？舉例來說，小朋友圍成圓圈（超過 5 個小朋友以上）坐在一起做活動。</p> <p>Does your child take part in an adult-led large group activity with other children for at least 10-15 minutes? For example, circle time with more than 5 kids?</p>

APPENDIX D

IRT TABLES: TRADITIONAL CHINESE ASQ: INVENTORY

Table 38. Item difficulty and fit statistics of all Traditional Chinese ASQ: Inventory items in communication across age intervals

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
60	cm60m6	218	4.03	0.88	0.76
64	cm7p	218	4.00	0.85	0.70
62	cm10p	218	3.70	1.08	1.03
65	cm60m4	218	3.34	0.79	0.58
59	cm5p	218	3.16	1.01	0.93
54	cm2p	218	3.00	0.77	0.81
53	cm8p	218	2.97	0.82	0.75
58	cm17p	218	2.94	0.74	0.64
52	cm48m3	218	2.73	0.87	0.75
63	cm1p	218	2.68	0.71	0.60
47	cm19p	218	2.53	1.36	1.28
46	cm6p	218	2.43	1.20	1.17
57	cm20p	218	2.41	0.77	0.78
61	cm36m6	218	2.29	0.75	0.76
56	cm15p	218	2.24	0.60	0.53
55	cm42m6	218	2.18	0.69	0.97
50	cm4p	218	2.02	0.89	0.86
49	cm21p	218	2.00	1.08	0.80
51	cm54m6	218	2.00	0.91	0.75
48	cm14p	218	1.91	0.86	0.84
45	cm48m4	218	0.86	1.32	1.00
41	cm42m5	218	0.03	1.72	1.45
43	cm54m5	218	-0.45	0.89	0.80
44	cm48m1	218	-0.59	1.07	1.71
42	cm48m2	218	-0.60	1.60	2.68
40	cm27m5	218	-0.94	1.27	3.91
39	cm22m5	218	-2.07	1.22	1.04
37	cm30m6	218	-2.33	0.87	2.42

Table 38. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
38	cm33m6	218	-2.59	0.90	1.11
34	cm33m5	218	-2.73	1.62	9.90
36	cm18m6	218	-3.00	1.02	0.30
35	cm16m5	218	-3.20	1.58	1.13
32	cm27m6	218	-3.72	1.12	3.72
33	cm22m4	218	-3.88	1.12	0.12
30	cm16m6	218	-4.07	1.48	0.05
28	cm22m3	218	-4.42	0.75	0.04
25	cm14m5	218	-5.22	1.01	0.05
27	cm14m6	218	-5.22	1.01	0.05
29	cm18m5	218	-5.22	0.78	0.02
31	cm20m4	218	-5.22	1.19	0.31
Mean				1.03	1.20
S.D.				0.28	1.63

Note. Misfit items are in bold.

Table 39. Item difficulty and fit statistics for the 36 to 44 months age interval of the Traditional Chinese ASQ: Inventory items in communication domain

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
60	cm60m6	67	3.66	0.74	0.54
64	cm7p	67	3.36	0.91	0.70
62	cm10p	67	3.13	1.41	1.36
65	cm60m4	67	2.93	0.64	0.39
53	cm8p	67	2.69	0.91	0.90
54	cm2p	67	2.59	0.71	0.73
63	cm1p	67	2.42	0.61	0.35
59	cm5p	67	2.38	0.81	1.02
52	cm48m3	67	2.28	0.93	0.80
55	cm42m6	67	2.28	0.89	0.92
58	cm17p	67	2.23	0.51	0.42
57	cm20p	67	2.18	0.76	0.66
56	cm15p	67	1.97	0.57	0.46

Table 39. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
61	cm36m6	67	1.70	0.55	0.21
50	cm4p	67	1.62	0.81	0.67
49	cm21p	67	1.35	0.98	0.83
51	cm54m6	67	1.35	1.13	1.01
47	cm19p	67	1.31	1.00	1.06
48	cm14p	67	1.27	0.94	0.98
46	cm6p	67	1.10	1.14	1.08
45	cm48m4	67	0.71	1.39	1.12
41	cm42m5	67	-0.18	1.39	1.40
44	cm48m1	67	-0.51	1.22	1.01
40	cm27m5	67	-1.09	1.42	1.52
43	cm54m5	67	-1.13	0.71	0.40
42	cm48m2	67	-1.13	1.00	1.08
39	cm22m5	67	-1.56	1.49	0.93
37	cm30m6	67	-1.88	0.92	1.51
38	cm33m6	67	-2.25	1.07	1.08
36	cm18m6	67	-2.26	0.66	0.28
34	cm33m5	67	-2.42	2.24	7.61
35	cm16m5	67	-2.53	1.32	0.98
32	cm27m6	67	-2.70	1.55	3.86
33	cm22m4	67	-3.37	1.37	0.27
30	cm16m6	67	-3.48	1.31	0.08
25	cm14m5	67	-4.51	0.95	0.10
27	cm14m6	67	-4.51	0.95	0.10
28	cm22m3	67	-4.51	0.95	0.10
31	cm20m4	67	-4.51	1.22	0.49
Mean				1.03	1.00
S.D.				0.34	1.24

Note. Misfit items are in bold.

Table 40. Item difficulty and fit statistics for the 45 to 60 months age interval of the Traditional Chinese ASQ: Inventory items in communication domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
64	cm7p	151	2.60	0.83	0.70
60	cm60m6	151	2.52	0.97	0.88
62	cm10p	151	2.26	0.97	0.92
65	cm60m4	151	1.83	0.87	0.70
59	cm5p	151	1.81	1.03	0.87
58	cm17p	151	1.54	0.82	0.73
54	cm2p	151	1.49	0.81	0.81
53	cm8p	151	1.36	0.80	0.66
47	cm19p	151	1.34	1.33	1.30
46	cm6p	151	1.32	1.04	1.04
52	cm48m3	151	1.22	0.85	0.69
63	cm1p	151	1.08	0.76	0.79
61	cm36m6	151	0.85	0.83	1.00
57	cm20p	151	0.79	0.82	0.87
49	cm21p	151	0.59	1.12	0.81
51	cm54m6	151	0.59	0.78	0.57
56	cm15p	151	0.59	0.65	0.61
50	cm4p	151	0.50	0.95	1.01
48	cm14p	151	0.48	0.80	0.79
55	cm42m6	151	0.37	0.50	0.98
45	cm48m4	151	-1.05	1.31	0.96
41	cm42m5	151	-1.87	2.05	1.52
43	cm54m5	151	-1.99	0.77	1.11
42	cm48m2	151	-2.25	2.27	4.53
44	cm48m1	151	-2.82	0.78	3.58
40	cm27m5	151	-3.04	1.20	6.57
34	cm33m5	151	-6.04	1.46	9.90
37	cm30m6	151	-6.06	1.46	9.90
Mean				1.03	1.96
S.D.				0.39	2.57

Note. Misfit items are in bold.

Table 41. Item difficulty and fit statistics of all Traditional Chinese ASQ: Inventory items in gross motor across age intervals.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	gm16p	198	4.84	0.76	0.63
64	gm18p	198	4.60	0.99	0.86
62	gm60m5	198	4.04	0.81	1.46
61	gm20p	198	3.77	0.78	1.24
57	gm4p	198	3.51	0.86	1.32
55	gm19p	198	3.43	0.71	1.03
59	gm60m6	198	3.38	0.81	0.60
63	gm14p	198	3.26	1.10	0.86
60	gm5p	198	3.22	0.80	0.62
51	gm7p	198	3.17	0.82	0.72
58	gm13p	198	2.82	0.91	1.06
49	gm3p	198	2.71	1.28	1.57
54	gm48m5	198	2.56	0.92	1.18
52	gm8p	198	2.52	0.92	1.21
56	gm9p	198	2.36	0.99	1.40
50	gm12p	198	2.14	1.10	1.11
53	gm6p	198	2.01	0.80	0.96
47	gm48m6	198	1.45	0.83	1.04
48	gm48m4	198	1.32	0.94	0.75
46	gm17p	198	0.74	1.38	3.51
43	gm42m5	198	0.70	1.46	3.09
41	gm48m3	198	0.59	1.50	5.60
42	gm54m6	198	0.55	1.11	2.08
44	gm36m6	198	0.46	1.33	5.22
45	gm10p	198	0.37	1.06	6.73
37	gm33m6	198	-0.27	1.48	1.49
40	gm30m6	198	-0.57	0.97	1.18
39	gm27m5	198	-0.70	1.19	0.87
34	gm22m6	198	-1.01	1.16	0.77
33	gm20m5	198	-1.54	0.82	0.37
22	gm10m6	198	-1.71	0.36	0.01

Table 41. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
30	gm18m6	198	-1.94	0.91	0.34
36	gm22m5	198	-1.97	0.87	0.20
28	gm16m5	198	-2.11	0.61	0.05
29	gm16m6	198	-2.11	0.74	0.06
31	gm20m6	198	-2.11	0.82	0.47
16	gm8m5	198	-2.19	0.88	0.02
19	gm12m4	198	-2.19	0.88	0.02
20	gm10m5	198	-2.19	0.88	0.02
24	gm14m5	198	-2.19	0.88	0.02
27	gm14m6	198	-2.19	0.88	0.02
38	gm27m6	198	-2.68	0.72	0.09
13	gm6m5	198	-3.86	0.88	0.05
14	gm6m2	198	-3.86	0.88	0.05
17	gm6m6	198	-3.86	0.88	0.05
18	gm8m6	198	-3.86	0.88	0.05
21	gm10m4	198	-3.86	0.88	0.05
25	gm14m4	198	-3.86	0.83	0.04
26	gm12m6	198	-3.86	0.88	0.05
35	gm42m6	198	-3.86	1.02	0.15
Mean				0.94	1.05
S.D.				0.22	1.43

Note. Misfit items are in bold.

Table 42. Item difficulty and fit statistics for the 36 to 44 months age interval of the Traditional Chinese ASQ: Inventory items in gross motor domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	gm16p	58	4.43	0.84	0.87
64	gm18p	58	3.71	1.85	1.69
62	gm60m5	58	3.06	0.62	0.47
59	gm60m6	58	2.82	0.91	0.60
61	gm20p	58	2.76	0.53	0.37
55	gm19p	58	2.55	0.63	0.50

Table 42. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
63	gm14p	58	2.43	1.09	0.65
57	gm4p	58	2.37	0.74	0.59
60	gm5p	58	2.31	0.81	0.55
51	gm7p	58	2.24	0.88	0.59
52	gm8p	58	1.81	1.03	1.21
58	gm13p	58	1.72	0.78	0.59
49	gm3p	58	1.66	1.26	1.16
54	gm48m5	58	1.55	0.63	0.41
53	gm6p	58	1.48	1.14	1.41
56	gm9p	58	1.25	0.96	1.79
50	gm12p	58	0.95	1.12	1.05
48	gm48m4	58	0.48	1.04	0.97
47	gm48m6	58	0.33	0.75	1.73
42	gm54m6	58	-0.04	1.11	1.25
44	gm36m6	58	0.17	1.12	1.03
41	gm48m3	58	-0.23	1.33	2.17
46	gm17p	58	-0.29	1.35	1.69
43	gm42m5	58	-0.41	1.29	1.47
45	gm10p	58	-1.01	0.76	0.70
39	gm27m5	58	-1.20	1.56	1.47
40	gm30m6	58	-1.43	1.33	1.96
37	gm33m6	58	-1.73	2.03	3.34
33	gm20m5	58	-2.93	0.75	0.18
36	gm22m5	58	-2.93	0.75	0.18
34	gm22m6	58	-2.97	0.85	0.78
29	gm16m6	58	-3.22	0.47	0.08
30	gm18m6	58	-3.22	0.47	0.08
31	gm20m6	58	-3.22	0.61	1.56
22	gm10m6	58	-3.43	0.11	0.01
28	gm16m5	58	-3.51	0.67	0.15
38	gm27m6	58	-3.51	0.67	0.15

Table 42. (continued).

Item #	Item	n	Difficulty	Infit MNSQ	Outfit MNSQ
25	gm14m4	58	-4.44	0.42	0.03
Mean				0.93	0.93
S.D.				0.39	0.72

Note. Misfit items are in bold.

Table 43. Item difficulty and fit statistics for the 45 to 60 months age interval of the Traditional Chinese ASQ: Inventory items in gross motor domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	gm16p	137	4.60	0.74	0.49
64	gm18p	137	4.43	0.78	0.53
62	gm60m5	137	3.91	0.88	1.81
61	gm20p	137	3.64	0.84	1.61
57	gm4p	137	3.42	0.87	1.64
55	gm19p	137	3.27	0.71	1.29
59	gm60m6	137	3.12	0.79	0.62
63	gm14p	137	3.08	1.13	0.96
60	gm5p	137	3.04	0.82	0.65
51	gm7p	137	3.00	0.82	0.77
58	gm13p	137	2.77	0.92	1.22
49	gm3p	137	2.65	1.16	1.57
54	gm48m5	137	2.43	1.04	1.47
56	gm9p	137	2.30	0.98	1.29
52	gm8p	137	2.27	0.89	1.27
50	gm12p	137	2.18	0.95	0.96
53	gm6p	137	1.68	0.69	0.77
47	gm48m6	137	1.44	0.86	0.67
48	gm48m4	137	1.20	0.85	0.64
43	gm42m5	137	0.66	1.70	4.46
46	gm17p	137	0.66	1.40	3.81
45	gm10p	137	0.45	1.15	9.15
41	gm48m3	137	0.28	1.57	8.62
44	gm36m6	137	0.08	1.58	9.90

Table 43. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
42	gm54m6	137	-0.01	1.13	3.19
37	gm33m6	137	-0.35	1.25	0.69
34	gm22m6	137	-1.15	1.28	0.81
40	gm30m6	137	-1.19	0.79	0.08
30	gm18m6	137	-1.52	1.05	0.37
33	gm20m5	137	-1.52	0.87	0.39
16	gm8m5	137	-1.82	0.41	0.01
19	gm12m4	137	-1.82	0.41	0.01
20	gm10m5	137	-1.82	0.41	0.01
22	gm10m6	137	-1.82	0.41	0.01
24	gm14m5	137	-1.82	0.41	0.01
27	gm14m6	137	-1.82	0.41	0.01
28	gm16m5	137	-1.82	0.41	0.01
36	gm22m5	137	-2.13	0.74	0.11
39	gm27m5	137	-2.59	0.78	0.11
13	gm6m5	137	-3.33	0.75	0.04
14	gm6m2	137	-3.33	0.75	0.04
17	gm6m6	137	-3.33	0.75	0.04
18	gm8m6	137	-3.33	0.75	0.04
21	gm10m4	137	-3.33	0.75	0.04
26	gm12m6	137	-3.33	0.75	0.04
29	gm16m6	137	-3.33	0.98	0.11
31	gm20m6	137	-3.33	1.04	0.19
35	gm42m6	137	-3.33	0.98	0.11
38	gm27m6	137	-3.33	0.75	0.04
Mean				0.88	1.28
S.D.				0.30	2.24

Note. Misfit items are in bold.

Table 44. Item difficulty and fit statistics of all Traditional Chinese ASQ: Inventory items in fine motor across age intervals.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
63	fm3p	182	6.46	0.81	0.45
60	fm1p	182	5.60	0.81	0.55
55	fm60m6	182	5.52	0.99	9.90
61	fm9p	182	5.36	1.07	0.78
62	fm11p	182	5.25	0.83	0.58
59	fm60m5	182	4.98	0.73	0.52
57	fm10p	182	4.72	0.72	0.47
58	fm5p	182	4.66	0.86	6.25
53	fm2p	182	4.56	0.86	0.66
56	fm7p	182	4.32	0.93	5.82
50	fm54m5	182	4.32	0.91	5.23
54	fm60m4	182	4.28	0.72	0.53
45	fm4p	182	4.25	1.44	1.68
52	fm54m6	182	4.23	0.74	3.99
47	fm12p	182	4.23	1.64	1.61
51	fm48m6	182	3.97	0.78	2.75
42	fm48m5	182	3.95	1.23	3.51
48	fm54m4	182	3.92	0.78	2.13
44	fm48m2	182	3.88	0.83	2.99
46	fm6p	182	3.47	1.14	3.02
49	fm42m6	182	3.44	0.84	2.92
43	fm8p	182	3.27	1.26	2.46
41	fm48m3	182	3.15	1.00	0.87
39	fm42m5	182	3.05	1.52	2.62
37	fm33m6	182	2.74	1.11	1.61
40	fm48m4	182	2.56	1.09	1.50
38	fm36m6	182	2.47	0.97	1.48
35	fm27m6	182	2.11	1.22	1.33
36	fm22m6	182	2.03	1.49	3.28
34	fm27m3	182	1.95	0.97	1.14
33	fm30m5	182	1.02	1.08	0.75

Table 44. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
32	fm30m6	182	-0.05	0.82	0.93
30	fm20m5	182	-0.57	1.05	5.42
31	fm20m6	182	-0.65	0.83	2.02
1	fm2m4	182	-3.64	0.74	0.03
2	fm2m2	182	-3.64	0.74	0.03
3	fm2m5	182	-3.64	0.74	0.03
6	fm2m3	182	-3.64	0.74	0.03
7	fm4m5	182	-3.64	0.74	0.03
27	fm12m5	182	-3.80	0.81	3.09
29	fm18m6	182	-3.80	0.81	0.92
20	fm10m6	182	-3.95	0.66	0.05
25	fm14m4	182	-3.95	0.66	0.05
28	fm14m6	182	-3.95	0.83	4.94
5	fm2m6	182	-4.16	0.64	0.02
8	fm4m4	182	-4.16	0.64	0.02
9	fm6m1	182	-4.16	0.64	0.02
10	fm4m6	182	-4.16	0.64	0.02
11	fm6m6	182	-4.16	0.64	0.02
12	fm6m2	182	-4.16	0.64	0.02
13	fm6m4	182	-4.16	0.64	0.02
14	fm6m3	182	-4.16	0.64	0.02
15	fm6m5	182	-4.16	0.64	0.02
16	fm8m5	182	-4.16	0.64	0.02
17	fm8m6	182	-4.16	0.64	0.02
18	fm10m4	182	-4.16	0.64	0.02
19	fm10m5	182	-4.16	0.64	0.02
21	fm12m4	182	-4.16	0.64	0.02
22	fm12m6	182	-4.16	0.64	0.02
23	fm16m6	182	-4.16	0.88	0.06
24	fm14m5	182	-4.16	0.64	0.02
26	fm22m5	182	-4.16	0.64	0.02

Table 44. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
4	fm2m1	182	-5.95	0.65	0.30
Mean				0.98	1.46
S.D.				1.00	1.97

Note. Misfit items are in bold.

Table 45. Item difficulty and fit statistics for the 36 to 38 months age interval of the Traditional Chinese ASQ: Inventory items in fine motor domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
63	fm3p	23	5.31	0.30	0.04
55	fm60m6	23	5.16	0.66	9.90
59	fm60m5	23	5.04	0.64	0.27
60	fm1p	23	4.55	0.59	0.20
42	fm48m5	23	4.44	1.39	9.90
50	fm54m5	23	4.44	1.19	9.90
57	fm10p	23	4.44	0.54	0.22
58	fm5p	23	4.34	0.70	9.90
62	fm11p	23	4.23	0.49	0.26
53	fm2p	23	4.14	0.70	0.28
52	fm54m6	23	4.12	0.90	7.16
54	fm60m4	23	3.94	0.45	0.22
41	fm48m3	23	3.89	0.65	0.47
56	fm7p	23	3.83	0.84	8.30
61	fm9p	23	3.82	0.67	0.27
49	fm42m6	23	3.72	0.94	5.89
51	fm48m6	23	3.72	0.91	5.81
44	fm48m2	23	3.60	1.16	4.43
48	fm54m4	23	3.60	0.81	4.18
47	fm12p	23	3.32	1.31	1.99
45	fm4p	23	3.04	0.94	1.01
46	fm6p	23	2.77	1.05	5.20
43	fm8p	23	2.51	0.93	2.58
40	fm48m4	23	2.37	1.92	3.16

Table 45. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
38	fm36m6	23	1.96	0.66	2.29
37	fm33m6	23	1.95	1.34	3.46
39	fm42m5	23	1.83	1.89	3.94
36	fm22m6	23	1.61	1.59	2.13
34	fm27m3	23	1.21	0.88	1.14
35	fm27m6	23	1.09	1.32	1.58
33	fm30m5	23	0.86	0.71	0.81
1	fm2m4	23	-2.24	0.62	0.12
2	fm2m2	23	-2.24	0.62	0.12
3	fm2m5	23	-2.24	0.62	0.12
6	fm2m3	23	-2.24	0.62	0.12
7	fm4m5	23	-2.24	0.62	0.12
32	fm30m6	23	-2.59	0.65	0.37
20	fm10m6	23	-3.19	0.44	0.14
25	fm14m4	23	-3.19	0.44	0.14
27	fm12m5	23	-3.19	0.44	0.14
29	fm18m6	23	-3.19	0.44	0.14
31	fm20m6	23	-3.19	0.44	0.14
23	fm16m6	23	-3.49	0.86	0.19
5	fm2m6	23	-3.49	0.55	0.10
8	fm4m4	23	-3.49	0.55	0.10
9	fm6m1	23	-3.49	0.55	0.10
10	fm4m6	23	-3.49	0.55	0.10
11	fm6m6	23	-3.49	0.55	0.10
12	fm6m2	23	-3.49	0.55	0.10
13	fm6m4	23	-3.49	0.55	0.10
14	fm6m3	23	-3.49	0.55	0.10
15	fm6m5	23	-3.49	0.55	0.10
16	fm8m5	23	-3.49	0.55	0.10
17	fm8m6	23	-3.49	0.55	0.10
18	fm10m4	23	-3.49	0.55	0.10
19	fm10m5	23	-3.49	0.55	0.10

Table 45. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
21	fm12m4	23	-3.49	0.55	0.10
22	fm12m6	23	-3.49	0.55	0.10
24	fm14m5	23	-3.49	0.55	0.10
26	fm22m5	23	-3.49	0.55	0.10
28	fm14m6	23	-3.49	0.55	0.10
30	fm20m5	23	-3.49	0.55	0.10
4	fm2m1	23	-5.34	9.90	2.61
Mean				0.89	1.80
S.D.				1.19	2.85

Note. Misfit items are in bold.

Table 46. Item difficulty and fit statistics for the 39 to 60 months age interval of the Traditional Chinese ASQ: Inventory items in fine motor domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
63	fm3p	159	3.67	0.82	0.53
60	fm1p	159	2.80	0.81	0.59
55	fm60m6	159	2.69	1.02	0.67
61	fm9p	159	2.62	1.01	0.76
62	fm11p	159	2.47	0.82	0.60
59	fm60m5	159	2.11	0.75	0.57
57	fm10p	159	1.87	0.74	0.52
58	fm5p	159	1.81	0.89	0.65
53	fm2p	159	1.70	0.89	0.72
45	fm4p	159	1.50	1.41	1.73
56	fm7p	159	1.49	0.94	0.88
47	fm12p	159	1.44	1.64	1.64
54	fm60m4	159	1.43	0.76	0.59
50	fm54m5	159	1.42	0.89	0.69
52	fm54m6	159	1.38	0.73	0.62
51	fm48m6	159	1.11	0.78	0.67
48	fm54m4	159	1.06	0.79	0.64
44	fm48m2	159	1.04	0.80	0.56

Table 46. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
42	fm48m5	159	0.96	1.23	1.89
46	fm6p	159	0.66	1.16	1.17
49	fm42m6	159	0.51	0.83	0.62
43	fm8p	159	0.47	1.31	1.46
39	fm42m5	159	0.33	1.36	1.44
41	fm48m3	159	0.12	1.07	0.98
37	fm33m6	159	-0.06	1.04	0.93
40	fm48m4	159	-0.35	0.94	0.81
38	fm36m6	159	-0.40	1.05	0.94
35	fm27m6	159	-0.62	1.14	0.93
36	fm22m6	159	-0.78	1.54	3.76
34	fm27m3	159	-0.85	1.00	0.93
33	fm30m5	159	-2.08	1.34	0.82
32	fm30m6	159	-3.01	0.87	1.22
30	fm20m5	159	-3.65	1.21	7.37
31	fm20m6	159	-3.85	1.05	3.30
27	fm12m5	159	-7.00	1.27	9.90
28	fm14m6	159	-7.00	1.27	9.90
29	fm18m6	159	-7.00	1.27	5.65
Mean				1.04	1.83
S.D.				0.24	2.40

Note. Misfit items are in bold.

Table 47. Item difficulty and fit statistics of all Traditional Chinese ASQ: Inventory items in problem solving across age intervals.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	cg11p	192	4.60	0.76	0.47
59	cg16p	192	4.35	0.89	0.93
64	cg17p	192	4.17	0.55	0.32
63	cg19p	192	4.12	0.65	0.41
51	cg30p	192	3.99	2.11	2.97
58	cg15p	192	3.67	0.71	0.92
62	cg18p	192	3.54	0.90	0.59
61	cg10p	192	3.44	0.62	0.37
57	cg14p	192	3.26	0.68	0.61
60	cg29p	192	2.95	0.75	1.18
54	cg28p	192	2.61	1.67	1.70
56	cg13p	192	2.52	1.17	1.07
50	cg60m6	192	2.20	1.27	1.21
55	cg9p	192	1.91	0.92	1.22
52	cg54m5	192	1.67	1.02	2.37
48	cg60m4	192	1.64	1.05	1.06
53	cg22p	192	1.19	0.85	0.72
49	cg54m6	192	0.74	0.83	0.76
47	cg48m6	192	0.70	1.04	1.33
44	cg18m5	192	0.23	1.20	2.45
39	cg42m6	192	-0.05	1.30	2.28
46	cg48m4	192	-0.10	0.96	1.49
41	cg48m3	192	-0.14	0.98	9.90
45	cg42m5	192	-0.16	0.84	0.43
43	cg30m6	192	-0.52	0.76	0.79
42	cg36m6	192	-0.52	0.87	0.47
40	cg27m6	192	-0.71	0.84	1.27
38	cg30m5	192	-1.94	1.27	1.17
35	cg27m3	192	-1.96	1.11	0.22
36	cg24m6	192	-1.96	1.26	1.61
37	cg36m5	192	-2.08	1.01	2.63

Table 47. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
34	cg14m6	192	-2.31	0.96	0.72
30	cg24m4	192	-2.41	0.83	0.12
31	cg22m3	192	-2.73	0.99	0.93
33	cg20m6	192	-3.04	0.99	1.19
29	cg20m3	192	-3.48	1.05	1.79
21	cg12m5	192	-4.20	1.00	0.16
24	cg14m5	192	-4.20	1.00	0.16
25	cg14m4	192	-4.20	1.00	0.16
26	cg16m5	192	-4.20	1.06	3.51
27	cg16m6	192	-4.20	1.00	0.16
28	cg18m6	192	-4.20	1.00	0.16
32	cg20m5	192	-4.20	1.00	0.16
Mean				0.99	1.26
S.D.				0.27	1.56

Note. Misfit items are in bold.

Table 48. Item difficulty and fit statistics for the 36 to 44 months age interval of the Traditional Chinese ASQ: Inventory items in problem solving domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
64	cg17p	54	3.86	0.66	0.36
65	cg11p	54	3.75	1.00	0.62
59	cg16p	54	3.58	0.88	0.46
63	cg19p	54	3.50	0.87	0.44
58	cg15p	54	3.28	0.61	0.50
61	cg10p	54	3.18	0.71	0.37
57	cg14p	54	2.92	0.67	0.59
54	cg28p	54	2.69	1.48	1.17
51	cg30p	54	2.65	1.62	1.59
62	cg18p	54	2.46	0.69	0.31
60	cg29p	54	2.00	0.62	0.49
56	cg13p	54	1.99	1.39	1.27
50	cg60m6	54	1.39	1.55	1.35

Table 48. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
55	cg9p	54	1.24	0.97	1.15
52	cg54m5	54	0.84	0.83	0.93
48	cg60m4	54	0.71	1.07	1.06
44	cg18m5	54	0.33	1.26	2.27
53	cg22p	54	0.21	0.88	0.85
47	cg48m6	54	-0.05	0.82	0.55
49	cg54m6	54	-0.08	0.65	0.39
39	cg42m6	54	-0.44	1.36	2.29
41	cg48m3	54	-0.51	0.70	0.37
45	cg42m5	54	-0.60	0.90	0.52
42	cg36m6	54	-0.70	0.97	0.67
43	cg30m6	54	-0.94	0.86	1.10
40	cg27m6	54	-0.98	0.85	0.53
46	cg48m4	54	-1.03	0.84	2.41
38	cg30m5	54	-2.77	1.62	2.23
30	cg24m4	54	-2.91	0.74	0.29
34	cg14m6	54	-2.93	1.05	1.98
37	cg36m5	54	-2.93	1.00	0.51
35	cg27m3	54	-3.43	1.26	0.86
36	cg24m6	54	-3.43	0.91	0.59
26	cg16m5	54	-4.21	1.19	6.23
29	cg20m3	54	-4.21	1.19	6.23
31	cg22m3	54	-4.21	1.19	6.23
33	cg20m6	54	-4.21	1.19	6.23
Mean				1.00	1.51
S.D.				0.29	1.75

Note. Misfit items are in bold.

Table 49. Item difficulty and fit statistics for the 45 to 60 months age interval of the Traditional Chinese ASQ: Inventory items in problem solving domain

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	cg11p	135	4.52	0.70	0.41

Table 49. (continued).

Item #	Item	n	Difficulty	Infit MNSQ	Outfit MNSQ
59	cg16p	135	4.27	0.89	1.27
51	cg30p	135	4.08	2.20	4.02
63	cg19p	135	3.99	0.59	0.41
64	cg17p	135	3.98	0.54	0.32
62	cg18p	135	3.53	0.92	0.67
58	cg15p	135	3.49	0.77	1.28
61	cg10p	135	3.22	0.59	0.38
57	cg14p	135	3.02	0.71	0.61
60	cg29p	135	2.92	0.79	1.70
56	cg13p	135	2.38	1.04	0.80
54	cg28p	135	2.22	1.76	2.24
50	cg60m6	135	2.08	1.19	1.19
55	cg9p	135	1.77	0.91	1.31
52	cg54m5	135	1.64	1.05	3.46
48	cg60m4	135	1.63	0.95	0.99
53	cg22p	135	1.23	0.64	0.61
49	cg54m6	135	0.63	0.81	0.92
47	cg48m6	135	0.62	1.19	1.67
46	cg48m4	135	-0.14	1.01	1.19
39	cg42m6	135	-0.59	1.42	3.33
45	cg42m5	135	-0.62	0.88	0.42
44	cg18m5	135	-0.78	0.95	2.83
41	cg48m3	135	-0.81	1.25	9.90
43	cg30m6	135	-1.07	0.72	0.89
40	cg27m6	135	-1.55	0.88	2.86
42	cg36m6	135	-1.63	0.66	0.30
35	cg27m3	135	-1.80	0.76	0.05
36	cg24m6	135	-1.80	1.60	1.98
34	cg14m6	135	-2.19	0.83	0.07
31	cg22m3	135	-2.56	0.77	0.10
37	cg36m5	135	-2.56	1.01	5.01
33	cg20m6	135	-3.02	0.81	0.09

Table 49. (continued).

Item #	Item	n	Difficulty	Infit MNSQ	Outfit MNSQ
21	cg12m5	135	-3.76	0.95	0.10
24	cg14m5	135	-3.76	0.95	0.10
25	cg14m4	135	-3.76	0.95	0.10
27	cg16m6	135	-3.76	0.95	0.10
28	cg18m6	135	-3.76	0.95	0.10
29	cg20m3	135	-3.76	0.95	0.10
32	cg20m5	135	-3.76	0.95	0.10
38	cg30m5	135	-3.76	0.87	0.10
Mean				0.96	1.32
S.D.				0.31	1.82

Note. Misfit items are in bold.

Table 50. Item difficulty and fit statistics of all Traditional Chinese ASQ: Inventory items in personal-social across age intervals.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	ps13ap	187	3.69	0.91	0.96
56	ps9ap	187	3.51	1.06	1.08
61	ps8sp	187	2.99	0.70	0.69
57	ps22sp	187	2.96	0.84	0.81
60	ps54m6	187	2.89	0.79	0.79
55	ps48m5	187	2.73	1.14	1.13
48	ps3ap	187	2.70	0.98	0.93
50	ps11ap	187	2.61	0.99	1.08
54	ps9sp	187	2.58	0.98	0.96
59	ps11sp	187	2.52	0.93	1.12
64	ps15sp	187	2.51	0.81	0.77
62	ps10sp	187	2.50	1.07	1.23
63	ps23sp	187	2.43	0.85	0.71
37	ps16m4	187	2.16	2.08	2.99
58	ps17sp	187	2.11	0.83	0.87
51	ps42m5	187	2.09	0.85	0.83
53	ps48m2	187	2.00	0.90	1.20
52	ps10ap	187	1.94	0.71	0.61
49	ps8ap	187	1.91	0.90	0.74
46	ps27m6	187	1.60	1.01	0.86
47	ps2ap	187	1.49	0.93	0.82
45	ps60m5	187	1.40	1.07	1.27
43	ps48m6	187	1.11	0.88	0.84
42	ps60m6	187	1.09	1.17	1.09
44	ps48m4	187	0.90	1.17	1.44
33	ps20m6	187	0.54	1.86	2.89
41	ps42m6	187	0.11	0.94	1.05
40	ps33m6	187	0.07	0.99	1.81
34	ps36m6	187	-0.04	1.35	1.19
35	ps20m5	187	-0.18	1.67	1.09
39	ps24m6	187	-0.18	0.99	1.52

Table 50. (continued).

Item #	Item	n	Difficulty	Infit MNSQ	Outfit MNSQ
38	ps30m5	187	-0.36	0.92	1.64
30	ps18m5	187	-0.45	1.64	1.59
29	ps30m2	187	-0.51	0.92	0.50
36	ps30m6	187	-0.78	1.21	2.80
17	ps6m5	187	-1.01	0.86	0.05
32	ps14m5	187	-1.14	0.82	0.38
25	ps22m6	187	-1.36	0.80	0.42
22	ps12m6	187	-1.46	1.20	1.05
21	ps12m5	187	-1.52	0.51	0.03
24	ps18m6	187	-1.52	0.51	0.03
26	ps14m4	187	-1.62	1.03	0.57
27	ps14m6	187	-1.95	1.24	1.34
31	ps22m2	187	-1.95	1.04	0.42
9	ps4m6	187	-2.41	0.75	0.08
12	ps4m4	187	-2.41	0.75	0.08
13	ps6m4	187	-2.41	0.75	0.08
28	ps16m6	187	-2.41	0.75	0.08
6	ps4m5	187	-3.15	1.03	0.13
7	ps2m5	187	-3.15	1.03	0.13
8	ps4m2	187	-3.15	1.03	0.13
10	ps6m3	187	-3.15	1.03	0.13
11	ps6m6	187	-3.15	1.03	0.13
14	ps8m6	187	-3.15	1.03	0.13
16	ps6m2	187	-3.15	1.03	0.13
19	ps10m4	187	-3.15	1.03	0.13
20	ps10m6	187	-3.15	0.73	0.03
23	ps12m4	187	-3.15	1.03	0.13
Mean				1.00	0.82
S.D.				0.28	0.69

Note. Misfit items are in bold.

Table 51. Item difficulty and fit statistics for the 36 to 44 months age interval of the Traditional Chinese ASQ: Inventory items in personal-social domain

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	ps13ap	53	3.00	1.02	1.14
37	ps16m4	53	2.95	2.23	3.32
56	ps9ap	53	2.83	0.98	0.96
60	ps54m6	53	2.77	0.82	0.83
61	ps8sp	53	2.77	0.75	0.84
57	ps22sp	53	2.52	0.90	0.90
55	ps48m5	53	2.48	1.21	1.31
64	ps15sp	53	2.15	0.72	0.66
59	ps11sp	53	2.10	1.00	0.94
48	ps3ap	53	2.06	0.73	0.59
46	ps27m6	53	1.91	1.10	1.00
54	ps9sp	53	1.86	1.02	1.04
62	ps10sp	53	1.77	1.05	0.86
63	ps23sp	53	1.75	1.01	0.90
45	ps60m5	53	1.64	1.05	1.01
50	ps11ap	53	1.55	0.91	1.12
58	ps17sp	53	1.46	0.84	0.66
53	ps48m2	53	1.40	0.71	0.71
52	ps10ap	53	1.36	0.68	0.53
49	ps8ap	53	1.30	0.83	0.65
51	ps42m5	53	1.30	0.82	0.59
43	ps48m6	53	1.22	0.95	0.90
47	ps2ap	53	1.22	0.80	0.75
42	ps60m6	53	0.92	0.85	0.71
44	ps48m4	53	0.85	1.25	1.13
41	ps42m6	53	0.44	0.88	0.72
33	ps20m6	53	0.28	1.80	2.78
34	ps36m6	53	0.28	1.57	1.53
30	ps18m5	53	-0.07	1.91	2.16
40	ps33m6	53	-0.11	0.91	0.45
39	ps24m6	53	-0.39	0.76	1.64

Table 51. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
29	ps30m2	53	-0.41	1.01	0.77
17	ps6m5	53	-0.68	0.64	0.09
38	ps30m5	53	-0.79	0.76	2.08
35	ps20m5	53	-0.84	1.43	1.10
36	ps30m6	53	-0.94	1.49	4.74
25	ps22m6	53	-0.95	0.89	0.71
32	ps14m5	53	-0.95	0.88	0.66
22	ps12m6	53	-1.12	1.20	1.28
21	ps12m5	53	-1.20	0.40	0.06
24	ps18m6	53	-1.20	0.40	0.06
9	ps4m6	53	-1.80	0.67	0.16
12	ps4m4	53	-1.80	0.67	0.16
13	ps6m4	53	-1.80	0.67	0.16
26	ps14m4	53	-1.80	1.15	0.68
27	ps14m6	53	-1.80	1.30	1.83
28	ps16m6	53	-1.80	0.67	0.16
31	ps22m2	53	-1.80	1.25	0.89
6	ps4m5	53	-2.59	1.04	0.25
7	ps2m5	53	-2.59	1.04	0.25
8	ps4m2	53	-2.59	1.04	0.25
10	ps6m3	53	-2.59	1.04	0.25
11	ps6m6	53	-2.59	1.04	0.25
14	ps8m6	53	-2.59	1.04	0.25
16	ps6m2	53	-2.59	1.04	0.25
19	ps10m4	53	-2.59	1.04	0.25
20	ps10m6	53	-2.59	0.65	0.07
23	ps12m4	53	-2.59	1.04	0.25
Mean				0.99	0.88
S.D.				0.33	0.82

Note. Misfit items are in bold.

Table 52. Item difficulty and fit statistics for the 45 to 60 months age interval of the Traditional Chinese ASQ: Inventory items in personal-social domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	ps13ap	130	2.70	0.87	0.80
56	ps9ap	130	2.48	1.02	0.97
57	ps22sp	130	1.84	0.83	0.75
61	ps8sp	130	1.82	0.68	0.61
50	ps11ap	130	1.80	0.80	0.87
60	ps54m6	130	1.65	0.84	0.84
54	ps9sp	130	1.64	0.88	0.84
62	ps10sp	130	1.59	0.95	1.06
48	ps3ap	130	1.59	1.07	1.02
55	ps48m5	130	1.58	1.19	1.06
63	ps23sp	130	1.45	0.67	0.53
59	ps11sp	130	1.42	0.90	1.24
64	ps15sp	130	1.42	0.92	0.83
51	ps42m5	130	1.17	0.71	0.71
58	ps17sp	130	1.15	0.76	0.83
53	ps48m2	130	1.00	0.93	1.27
49	ps8ap	130	0.92	0.79	0.78
52	ps10ap	130	0.92	0.66	0.63
37	ps16m4	130	0.08	2.52	3.37
47	ps2ap	130	-0.01	1.03	0.87
42	ps60m6	130	-0.35	1.45	1.32
45	ps60m5	130	-0.43	1.19	1.77
44	ps48m4	130	-0.68	1.19	1.78
46	ps27m6	130	-0.68	0.95	0.89
33	ps20m6	130	-0.81	2.01	4.68
43	ps48m6	130	-1.08	0.90	0.92
34	ps36m6	130	-1.30	1.18	1.21
41	ps42m6	130	-1.30	1.08	1.90
35	ps20m5	130	-1.31	1.13	1.31
39	ps24m6	130	-1.31	1.14	1.86
40	ps33m6	130	-1.36	1.02	7.73

Table 52. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
38	ps30m5	130	-1.72	1.41	1.85
29	ps30m2	130	-2.74	0.92	0.49
36	ps30m6	130	-2.74	0.92	0.49
26	ps14m4	130	-3.47	1.06	0.92
27	ps14m6	130	-3.47	1.06	0.92
30	ps18m5	130	-3.47	1.06	0.92
Mean				1.05	1.37
S.D.				0.35	1.32

Note. Misfit items are in bold.

APPENDIX E

IRT TABLES: ENGLISH ASQ: INVENTORY

Table 53. Item difficulty and fit statistics of all English ASQ: Inventory items in communication across age intervals.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
64	cm7p	130	4.42	0.97	0.87
65	cm60m4	130	4.36	1.28	1.23
62	cm10p	130	4.22	1.27	1.23
63	cm1p	130	4.16	1.14	1.49
61	cm36m6	130	3.82	1.36	1.24
60	cm60m6	130	3.70	0.98	0.88
59	cm5p	130	3.65	1.01	0.96
58	cm17p	130	3.19	0.88	0.58
57	cm20p	130	3.09	1.04	1.03
53	cm8p	130	2.95	0.85	0.53
56	cm15p	130	2.88	0.88	0.61
54	cm2p	130	2.81	0.98	0.93
47	cm19p	130	2.67	1.48	1.64
51	cm54m6	130	2.67	0.88	0.64
46	cm6p	130	2.61	1.27	1.99
55	cm42m6	130	2.51	0.79	0.71
52	cm48m3	130	2.49	0.68	0.57
48	cm14p	130	2.40	1.23	0.78
50	cm4p	130	2.36	1.22	1.39
45	cm48m4	130	2.29	0.95	0.76
49	cm21p	130	2.27	1.41	0.87
44	cm48m1	130	1.72	0.80	0.90
41	cm42m5	130	1.23	1.00	0.89
42	cm48m2	130	1.18	1.01	0.87
37	cm30m6	130	0.85	1.14	0.65
43	cm54m5	130	0.75	0.72	0.41
39	cm22m5	130	0.59	0.88	0.51
38	cm33m6	130	0.58	1.81	0.97

Table 53. (continued).

Item #	Item	n	Difficulty	Infit MNSQ	Outfit MNSQ
40	cm27m5	130	0.13	0.53	0.21
34	cm33m5	130	0.07	1.28	0.67
32	cm27m6	130	-0.92	1.07	0.26
36	cm18m6	130	-1.00	0.64	0.16
35	cm16m5	130	-1.09	1.27	9.90
24	cm14m3	130	-1.41	1.19	1.60
27	cm14m6	130	-1.41	0.50	0.68
28	cm22m3	130	-1.66	0.62	0.12
31	cm20m4	130	-1.66	0.90	0.12
33	cm22m4	130	-1.91	1.75	0.13
18	cm10m4	130	-2.06	0.35	0.02
20	cm12m5	130	-2.24	0.40	0.04
21	cm10m5	130	-2.24	0.40	0.04
17	cm4m3	130	-2.26	0.93	9.90
23	cm12m6	130	-2.26	0.65	0.51
26	cm20m5	130	-2.26	0.42	0.05
29	cm18m5	130	-2.26	0.62	0.14
19	cm14m4	130	-2.53	0.95	0.06
30	cm16m6	130	-2.53	1.17	0.11
1	cm2m1	130	-2.68	1.84	7.53
2	cm2m6	130	-2.82	1.23	1.13
4	cm4m4	130	-2.82	1.23	1.13
6	cm2m3	130	-2.82	1.16	0.04
12	cm6m2	130	-2.82	1.19	1.13
13	cm8m5	130	-2.82	1.13	0.12
15	cm6m6	130	-2.82	0.65	0.04
25	cm14m5	130	-2.82	1.77	0.31
8	cm4m6	130	-3.70	0.92	0.04
9	cm6m3	130	-3.70	0.92	0.04
10	cm6m4	130	-3.70	0.92	0.04
14	cm6m5	130	-3.70	0.86	0.04

Table 53. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
22	cm10m6	130	-3.70	0.86	0.04
Mean				1.00	1.04
S.D.				0.34	1.93

Note. Misfit items are in bold.

Table 54. Item difficulty and fit statistics for the 36 to 44 months age interval of the English ASQ: Inventory items in communication domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
64	cm7p	71	4.65	0.75	0.48
65	cm60m4	71	4.32	1.22	1.07
63	cm1p	71	4.21	1.05	1.36
62	cm10p	71	3.97	0.98	0.93
61	cm36m6	71	3.89	1.32	1.08
60	cm60m6	71	3.87	0.93	0.75
59	cm5p	71	3.63	1.11	1.19
57	cm20p	71	3.26	1.01	1.15
58	cm17p	71	3.23	0.80	0.51
56	cm15p	71	3.10	0.97	0.72
53	cm8p	71	2.80	0.96	0.57
51	cm54m6	71	2.76	0.99	0.79
55	cm42m6	71	2.59	0.72	0.98
54	cm2p	71	2.58	1.08	1.13
45	cm48m4	71	2.54	1.01	2.17
47	cm19p	71	2.53	1.49	1.94
52	cm48m3	71	2.51	0.74	0.64
50	cm4p	71	2.43	1.19	0.95
46	cm6p	71	2.41	1.14	0.77
48	cm14p	71	2.29	1.10	0.57
49	cm21p	71	2.19	1.45	1.06
44	cm48m1	71	1.55	0.81	0.78
42	cm48m2	71	1.29	1.26	1.16
41	cm42m5	71	1.12	1.20	1.08

Table 54. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
37	cm30m6	71	0.91	1.36	0.80
43	cm54m5	71	0.72	0.67	0.32
39	cm22m5	71	0.57	1.04	0.70
38	cm33m6	71	0.36	1.96	1.11
40	cm27m5	71	-0.04	0.40	0.15
34	cm33m5	71	-0.97	1.29	0.86
36	cm18m6	71	-1.08	0.50	0.20
35	cm16m5	71	-1.80	1.89	9.90
31	cm20m4	71	-1.96	0.44	0.11
28	cm22m3	71	-2.14	0.80	0.20
33	cm22m4	71	-2.35	2.12	0.24
17	cm4m3	71	-2.47	1.04	9.90
32	cm27m6	71	-2.53	1.07	0.31
27	cm14m6	71	-2.63	0.41	0.03
26	cm20m5	71	-3.15	0.45	0.06
29	cm18m5	71	-3.15	0.88	0.28
19	cm14m4	71	-3.43	1.52	0.13
20	cm12m5	71	-3.43	0.24	0.02
21	cm10m5	71	-3.43	0.24	0.02
23	cm12m6	71	-3.48	0.59	0.06
24	cm14m3	71	-3.48	0.59	0.06
30	cm16m6	71	-3.48	1.69	0.17
18	cm10m4	71	-3.93	0.29	0.02
25	cm14m5	71	-4.41	2.94	2.42
12	cm6m2	71	-4.73	0.93	0.04
14	cm6m5	71	-4.73	0.93	0.04
15	cm6m6	71	-4.73	0.70	0.03
22	cm10m6	71	-4.73	0.93	0.04
Mean				1.02	1.00
S.D.				0.49	1.87

Note. Misfit items are in bold.

Table 55. Item difficulty and fit statistics for the 45 to 60 months age interval of the English ASQ: Inventory items in communication domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
62	cm10p	59	3.63	1.47	1.50
65	cm60m4	59	3.51	1.36	1.46
64	cm7p	59	3.38	1.27	1.34
63	cm1p	59	3.28	1.25	1.77
59	cm5p	59	2.81	0.88	0.70
61	cm36m6	59	2.79	1.47	1.38
60	cm60m6	59	2.54	1.10	1.12
54	cm2p	59	2.26	0.76	0.48
58	cm17p	59	2.26	1.05	0.70
53	cm8p	59	2.25	0.63	0.43
47	cm19p	59	2.03	1.45	1.07
46	cm6p	59	1.97	1.32	2.40
57	cm20p	59	1.93	1.19	0.76
51	cm54m6	59	1.69	0.78	0.30
48	cm14p	59	1.64	1.41	0.92
52	cm48m3	59	1.58	0.63	0.48
49	cm21p	59	1.55	1.38	0.57
56	cm15p	59	1.49	0.75	0.42
55	cm42m6	59	1.43	0.97	0.76
50	cm4p	59	1.22	1.39	1.64
44	cm48m1	59	1.14	0.78	1.38
45	cm48m4	59	0.65	0.82	0.23
34	cm33m5	59	0.57	0.86	0.21
41	cm42m5	59	0.37	0.82	0.80
38	cm33m6	59	-0.11	1.87	0.74
32	cm27m6	59	-0.26	0.91	0.08
24	cm14m3	59	-0.46	3.11	0.55
43	cm54m5	59	-0.65	0.92	0.39
42	cm48m2	59	-0.65	0.75	0.26
37	cm30m6	59	-0.79	0.95	0.41
39	cm22m5	59	-0.79	0.81	0.23

Table 55. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
40	cm27m5	59	-0.95	0.93	0.22
2	cm2m6	59	-1.25	0.98	0.25
4	cm4m4	59	-1.25	0.98	0.25
13	cm8m5	59	-1.25	0.39	0.05
23	cm12m6	59	-1.25	1.03	0.37
1	cm2m1	59	-1.42	2.90	1.02
17	cm4m3	59	-1.42	0.88	0.25
27	cm14m6	59	-1.42	0.91	0.42
6	cm2m3	59	-1.85	0.16	0.01
18	cm10m4	59	-1.85	0.16	0.01
19	cm14m4	59	-1.85	0.16	0.01
35	cm16m5	59	-1.85	0.16	0.01
8	cm4m6	59	-2.42	0.36	0.02
9	cm6m3	59	-2.42	0.36	0.02
10	cm6m4	59	-2.42	0.36	0.02
12	cm6m2	59	-2.42	2.05	0.74
15	cm6m6	59	-2.42	0.36	0.02
20	cm12m5	59	-2.42	0.36	0.02
21	cm10m5	59	-2.42	0.36	0.02
26	cm20m5	59	-2.42	0.36	0.02
28	cm22m3	59	-2.42	0.36	0.02
29	cm18m5	59	-2.42	0.36	0.02
36	cm18m6	59	-2.42	0.36	0.02
Mean				0.93	0.54
S.D.				0.60	0.55

Note. Misfit items are in bold.

Table 56. Item difficulty and fit statistics of all English ASQ: Inventory items in gross motor across age intervals.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	gm16p	185	6.18	1.11	0.59
64	gm18p	185	5.77	1.23	2.47
63	gm14p	185	5.21	0.98	1.00
60	gm5p	185	4.55	0.90	1.06
61	gm20p	185	4.42	0.90	0.72
62	gm60m5	185	4.20	0.86	0.77
58	gm13p	185	4.06	0.72	0.56
57	gm4p	185	4.00	0.69	0.48
55	gm19p	185	3.93	0.80	0.85
59	gm60m6	185	3.88	1.29	1.25
51	gm7p	185	3.87	0.74	0.57
53	gm6p	185	3.79	0.81	0.65
50	gm12p	185	3.65	0.69	0.64
56	gm9p	185	3.62	0.84	0.97
52	gm8p	185	3.59	0.96	0.80
49	gm3p	185	3.43	0.67	0.48
45	gm10p	185	3.36	1.30	1.85
46	gm17p	185	3.26	0.74	0.76
54	gm48m5	185	2.70	1.32	1.27
47	gm48m6	185	2.34	1.09	1.53
48	gm48m4	185	2.20	1.08	1.13
44	gm36m6	185	1.53	0.83	0.73
43	gm42m5	185	1.32	1.21	1.35
41	gm48m3	185	1.17	1.34	4.57
38	gm27m6	185	1.00	1.41	3.22
42	gm54m6	185	0.94	0.86	1.19
40	gm30m6	185	0.69	0.75	0.89
35	gm42m6	185	0.52	0.99	1.22
37	gm33m6	185	0.46	1.55	3.30
39	gm27m5	185	-0.05	0.93	0.58
34	gm22m6	185	-0.21	0.96	0.64

Table 56. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
30	gm18m6	185	-0.29	0.93	3.87
36	gm22m5	185	-0.47	1.43	6.00
32	gm18m5	185	-0.64	2.30	3.88
29	gm16m6	185	-0.65	1.04	0.35
31	gm20m6	185	-0.65	0.91	0.13
33	gm20m5	185	-1.51	1.64	0.71
22	gm10m6	185	-1.79	2.99	1.90
24	gm14m5	185	-1.79	0.66	0.47
21	gm10m4	185	-2.03	9.90	9.90
26	gm12m6	185	-2.03	0.04	0.00
25	gm14m4	185	-2.41	0.73	0.24
27	gm14m6	185	-2.41	0.75	0.43
28	gm16m5	185	-2.41	1.68	0.67
1	gm2m1	185	-3.35	0.36	0.01
2	gm2m4	185	-3.35	0.36	0.01
3	gm2m6	185	-3.35	0.36	0.01
4	gm2m3	185	-3.35	0.36	0.01
5	gm2m5	185	-3.35	0.36	0.01
6	gm2m2	185	-3.35	0.36	0.01
7	gm4m5	185	-3.35	0.36	0.01
8	gm4m3	185	-3.35	0.36	0.01
9	gm4m6	185	-3.35	0.36	0.01
10	gm6m1	185	-3.35	0.36	0.01
11	gm4m4	185	-3.35	0.36	0.01
12	gm6m4	185	-3.35	0.36	0.01
13	gm6m5	185	-3.35	0.36	0.01
14	gm6m2	185	-3.35	0.36	0.01
15	gm6m3	185	-3.35	0.36	0.01
16	gm8m5	185	-3.35	0.36	0.01
17	gm6m6	185	-3.35	0.36	0.01
18	gm8m6	185	-3.35	0.36	0.01
19	gm12m4	185	-3.35	0.36	0.01

Table 56. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
20	gm10m5	185	-3.35	1.63	1.08
23	gm12m5	185	-3.35	0.36	0.01
Mean				0.99	1.04
S.D.				1.22	1.63

Note. Misfit items are in bold.

Table 57. Item difficulty and fit statistics for the 36 to 44 months age interval of the English ASQ: Inventory items in gross motor domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	gm16p	81	3.68	1.14	0.37
64	gm18p	81	3.45	0.82	0.97
63	gm14p	81	2.88	0.90	0.78
60	gm5p	81	2.52	0.83	0.84
62	gm60m5	81	2.17	0.95	0.66
61	gm20p	81	2.17	0.95	0.63
55	gm19p	81	2.06	0.91	0.67
58	gm13p	81	2.04	0.76	0.51
51	gm7p	81	1.99	0.64	0.37
53	gm6p	81	1.99	0.88	0.74
57	gm4p	81	1.94	0.73	0.42
50	gm12p	81	1.77	0.77	0.78
59	gm60m6	81	1.64	1.07	1.06
52	gm8p	81	1.49	1.07	0.92
49	gm3p	81	1.49	0.71	0.57
56	gm9p	81	1.46	0.94	1.18
46	gm17p	81	1.25	0.81	0.88
45	gm10p	81	1.13	1.42	2.94
54	gm48m5	81	0.69	1.18	1.17
47	gm48m6	81	0.28	1.22	1.60
48	gm48m4	81	0.10	1.17	1.25
44	gm36m6	81	-0.44	0.93	0.81
43	gm42m5	81	-0.77	1.30	1.33

Table 57. (continued).

Item #	Item	n	Difficulty	Infit MNSQ	Outfit MNSQ
42	gm54m6	81	-1.00	0.91	1.49
38	gm27m6	81	-1.02	1.36	1.94
41	gm48m3	81	-1.08	1.29	2.16
35	gm42m6	81	-1.17	0.97	1.25
40	gm30m6	81	-1.51	0.79	0.61
37	gm33m6	81	-1.77	1.43	1.84
36	gm22m5	81	-1.86	1.04	0.84
39	gm27m5	81	-2.26	0.85	0.69
32	gm18m5	81	-2.57	1.22	4.38
34	gm22m6	81	-2.57	0.93	1.00
31	gm20m6	81	-2.60	0.90	0.19
29	gm16m6	81	-2.63	1.10	0.42
30	gm18m6	81	-2.63	0.87	0.12
33	gm20m5	81	-3.61	1.03	0.46
25	gm14m4	81	-4.34	1.02	0.43
28	gm16m5	81	-4.34	1.02	0.43
Mean				1.00	1.02
S.D.				0.20	0.79

Note. Misfit items are in bold.

Table 58. Item difficulty and fit statistics for the 45 to 60 months age interval of the English ASQ: Inventory items in gross motor domain.

Item #	Item	n	Difficulty	Infit MNSQ	Outfit MNSQ
65	gm16p	104	6.06	1.05	0.66
64	gm18p	104	5.56	1.37	4.70
63	gm14p	104	5.02	0.97	1.08
60	gm5p	104	4.21	0.96	1.28
61	gm20p	104	4.21	0.81	0.72
62	gm60m5	104	3.85	0.81	0.87
59	gm60m6	104	3.72	1.35	1.39
58	gm13p	104	3.72	0.71	0.57

Table 58. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
57	gm4p	104	3.66	0.66	0.54
55	gm19p	104	3.50	0.76	1.10
51	gm7p	104	3.41	0.85	0.86
56	gm9p	104	3.40	0.67	0.70
52	gm8p	104	3.28	0.86	0.70
53	gm6p	104	3.28	0.79	0.63
50	gm12p	104	3.19	0.65	0.47
45	gm10p	104	3.17	1.07	1.01
49	gm3p	104	3.02	0.65	0.43
46	gm17p	104	2.90	0.69	0.73
54	gm48m5	104	2.34	1.54	1.45
47	gm48m6	104	1.94	0.96	1.43
48	gm48m4	104	1.93	0.98	1.07
44	gm36m6	104	1.06	0.70	0.89
41	gm48m3	104	1.05	1.42	4.40
43	gm42m5	104	1.02	1.13	1.60
38	gm27m6	104	0.59	1.65	6.05
40	gm30m6	104	0.53	0.68	1.34
37	gm33m6	104	0.32	1.75	3.76
42	gm54m6	104	0.29	0.83	0.87
34	gm22m6	104	-0.18	0.97	0.38
36	gm22m5	104	-0.22	2.06	9.90
39	gm27m5	104	-0.26	1.23	0.59
30	gm18m6	104	-0.30	1.02	4.65
35	gm42m6	104	-1.11	0.70	0.11
33	gm20m5	104	-1.26	2.14	0.68
22	gm10m6	104	-1.42	3.04	1.16
24	gm14m5	104	-1.42	0.68	0.28
29	gm16m6	104	-1.42	0.68	0.28
27	gm14m6	104	-1.72	0.79	0.29
21	gm10m4	104	-1.75	9.90	7.95
26	gm12m6	104	-1.75	0.04	0.00

Table 58. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
31	gm20m6	104	-1.75	0.04	0.00
32	gm18m5	104	-1.75	9.90	7.95
1	gm2m1	104	-2.78	0.30	0.01
2	gm2m4	104	-2.78	0.30	0.01
3	gm2m6	104	-2.78	0.30	0.01
4	gm2m3	104	-2.78	0.30	0.01
5	gm2m5	104	-2.78	0.30	0.01
6	gm2m2	104	-2.78	0.30	0.01
7	gm4m5	104	-2.78	0.30	0.01
8	gm4m3	104	-2.78	0.30	0.01
9	gm4m6	104	-2.78	0.30	0.01
10	gm6m1	104	-2.78	0.30	0.01
11	gm4m4	104	-2.78	0.30	0.01
12	gm6m4	104	-2.78	0.30	0.01
13	gm6m5	104	-2.78	0.30	0.01
14	gm6m2	104	-2.78	0.30	0.01
15	gm6m3	104	-2.78	0.30	0.01
16	gm8m5	104	-2.78	0.30	0.01
17	gm6m6	104	-2.78	0.30	0.01
18	gm8m6	104	-2.78	0.30	0.01
19	gm12m4	104	-2.78	0.30	0.01
20	gm10m5	104	-2.78	1.94	0.82
23	gm12m5	104	-2.78	0.30	0.01
25	gm14m4	104	-2.78	0.30	0.01
28	gm16m5	104	-2.78	1.94	0.82
Mean				1.09	1.19
S.D.				1.67	2.05

Note. Misfit items are in bold.

Table 59. Item difficulty and fit statistics for all English ASQ: Inventory items in fine motor domain by age intervals.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
63	fm3p	114	4.07	0.74	0.53
61	fm9p	114	3.77	0.80	0.62
60	fm1p	114	3.73	0.55	0.40
62	fm11p	114	3.71	0.76	0.71
58	fm5p	114	3.64	1.46	1.57
57	fm10p	114	3.47	1.20	1.01
56	fm7p	114	3.37	0.94	0.72
59	fm60m5	114	3.27	0.68	0.67
54	fm60m4	114	3.19	0.95	0.91
55	fm60m6	114	2.98	0.74	0.63
53	fm2p	114	2.88	0.94	0.93
50	fm54m5	114	2.87	0.96	0.92
51	fm48m6	114	2.67	0.92	0.82
52	fm54m6	114	2.58	0.71	0.73
48	fm54m4	114	2.53	0.84	0.77
49	fm42m6	114	2.51	0.65	0.55
45	fm4p	114	2.46	0.94	1.14
43	fm8p	114	2.44	1.28	1.75
46	fm6p	114	2.42	1.02	1.16
47	fm12p	114	2.40	1.18	1.55
42	fm48m5	114	2.24	0.89	0.90
44	fm48m2	114	2.22	0.84	0.69
41	fm48m3	114	2.12	1.00	0.86
38	fm36m6	114	2.07	1.33	1.91
40	fm48m4	114	1.89	1.52	2.33
39	fm42m5	114	1.58	1.38	1.19
37	fm33m6	114	1.22	1.27	1.41
35	fm27m6	114	0.85	1.05	0.86
34	fm27m3	114	0.84	1.10	0.95
36	fm22m6	114	0.78	1.02	0.93
33	fm30m5	114	0.53	0.67	0.36

Table 59. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
27	fm12m5	114	-0.98	0.88	1.56
4	fm2m1	114	-1.11	1.19	0.21
30	fm20m5	114	-1.59	1.30	4.26
32	fm30m6	114	-1.59	1.20	1.03
31	fm20m6	114	-1.82	0.96	0.97
28	fm14m6	114	-2.16	2.23	9.90
25	fm14m4	114	-2.28	0.90	3.03
29	fm18m6	114	-2.28	0.90	3.03
2	fm2m2	114	-2.45	0.76	0.19
3	fm2m5	114	-2.45	0.76	0.19
5	fm2m6	114	-2.45	0.76	0.19
6	fm2m3	114	-2.45	0.76	0.19
7	fm4m5	114	-2.45	0.76	0.19
9	fm6m1	114	-2.45	0.76	0.19
13	fm6m4	114	-2.45	0.76	0.19
14	fm6m3	114	-2.45	0.76	0.19
15	fm6m5	114	-2.45	0.76	0.19
16	fm8m5	114	-2.45	0.76	0.19
17	fm8m6	114	-2.45	0.76	0.19
18	fm10m4	114	-2.45	0.76	0.19
20	fm10m6	114	-2.45	0.76	0.19
26	fm22m5	114	-2.45	0.76	0.19
22	fm12m6	114	-2.66	0.83	0.21
1	fm2m4	114	-2.94	0.02	0.00
8	fm4m4	114	-2.94	0.02	0.00
10	fm4m6	114	-2.94	0.02	0.00
11	fm6m6	114	-2.94	0.02	0.00
12	fm6m2	114	-2.94	0.02	0.00
19	fm10m5	114	-2.94	0.02	0.00
21	fm12m4	114	-2.94	0.02	0.00
23	fm16m6	114	-2.94	0.02	0.00
24	fm14m5	114	-2.94	0.02	0.00

Table 59. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
Mean				0.82	0.91
S.D.				0.42	1.40

Note. Misfit items are in bold.

Table 60. Item difficulty and fit statistics for the 36 to 38 months age interval of the English ASQ: Inventory items in fine motor domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
60	fm1p	18	3.01	0.92	0.38
61	fm9p	18	3.01	0.92	0.38
62	fm11p	18	3.01	0.92	0.38
63	fm3p	18	3.01	0.92	0.38
59	fm60m5	18	2.18	0.77	0.36
57	fm10p	18	1.89	0.63	0.21
55	fm60m6	18	1.80	0.50	0.22
56	fm7p	18	1.80	0.86	1.01
54	fm60m4	18	1.69	1.06	0.98
58	fm5p	18	1.50	0.69	0.23
53	fm2p	18	0.42	2.02	2.06
50	fm54m5	18	0.34	0.73	0.69
52	fm54m6	18	0.26	1.00	0.93
48	fm54m4	18	0.20	0.90	0.85
49	fm42m6	18	0.20	0.94	0.88
42	fm48m5	18	0.08	0.99	0.87
51	fm48m6	18	0.08	1.15	1.02
43	fm8p	18	0.01	1.62	1.62
41	fm48m3	18	-0.07	1.62	1.45
44	fm48m2	18	-0.46	0.77	0.52
46	fm6p	18	-0.57	0.73	0.97
47	fm12p	18	-0.57	0.73	0.97
45	fm4p	18	-0.68	0.56	0.34
38	fm36m6	18	-1.03	1.05	0.89

Table 60. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
40	fm48m4	18	-1.33	1.25	0.79
39	fm42m5	18	-1.36	1.82	2.59
35	fm27m6	18	-1.47	0.93	0.74
37	fm33m6	18	-1.66	0.47	0.24
34	fm27m3	18	-1.75	0.96	0.93
36	fm22m6	18	-2.00	2.18	1.81
30	fm20m5	18	-2.36	1.12	1.17
32	fm30m6	18	-2.55	0.64	0.56
33	fm30m5	18	-2.69	0.38	0.21
31	fm20m6	18	-3.91	1.42	1.32
Mean				1.01	0.85
S.D.				0.42	0.55

Note. Misfit items are in bold.

Table 61. Item difficulty and fit statistics for the 39 to 60 months age interval of the English ASQ: Inventory items in fine motor domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
63	fm3p	96	3.96	0.76	0.58
61	fm9p	96	3.64	0.85	0.66
60	fm1p	96	3.58	0.56	0.42
62	fm11p	96	3.57	0.80	0.73
58	fm5p	96	3.57	1.54	1.71
57	fm10p	96	3.34	1.29	1.12
56	fm7p	96	3.26	0.98	0.74
59	fm60m5	96	3.06	0.71	0.67
54	fm60m4	96	3.03	0.96	0.95
50	fm54m5	96	2.87	1.00	0.95
53	fm2p	96	2.84	0.82	0.83
5	fm60m6	96	2.77	0.77	0.68
51	fm48m6	96	2.64	0.87	0.78
45	fm4p	96	2.55	0.90	1.02
52	fm54m6	96	2.52	0.69	0.73

Table 61. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
46	fm6p	96	2.49	1.01	1.14
48	fm54m4	96	2.48	0.85	0.77
49	fm42m6	96	2.47	0.62	0.52
47	fm12p	96	2.46	1.21	1.51
43	fm8p	96	2.38	1.28	1.74
44	fm48m2	96	2.20	0.84	0.68
38	fm36m6	96	2.15	1.34	1.84
42	fm48m5	96	2.14	0.90	0.94
40	fm48m4	96	2.02	1.53	2.04
41	fm48m3	96	1.99	0.93	0.80
39	fm42m5	96	1.63	1.29	1.05
37	fm33m6	96	1.26	1.42	1.37
34	fm27m3	96	0.80	1.13	0.89
36	fm22m6	96	0.78	0.86	0.79
35	fm27m6	96	0.73	1.07	0.90
33	fm30m5	96	0.59	0.74	0.36
32	fm30m6	96	0.00	1.05	1.06
27	fm12m5	96	-0.81	0.84	1.31
4	fm2m1	96	-0.96	1.21	0.19
30	fm20m5	96	-1.63	1.40	4.77
31	fm20m6	96	-1.80	0.92	0.88
28	fm14m6	96	-2.12	2.36	8.61
25	fm14m4	96	-2.24	0.94	2.58
29	fm18m6	96	-2.24	0.94	2.58
2	fm2m2	96	-2.43	0.81	0.18
3	fm2m5	96	-2.43	0.81	0.18
5	fm2m6	96	-2.43	0.81	0.18
6	fm2m3	96	-2.43	0.81	0.18
7	fm4m5	96	-2.43	0.81	0.18
9	fm6m1	96	-2.43	0.81	0.18
13	fm6m4	96	-2.43	0.81	0.18
14	fm6m3	96	-2.43	0.81	0.18

Table 61. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
15	fm6m5	96	-2.43	0.81	0.18
16	fm8m5	96	-2.43	0.81	0.18
17	fm8m6	96	-2.43	0.81	0.18
18	fm10m4	96	-2.43	0.81	0.18
20	fm10m6	96	-2.43	0.81	0.18
26	fm22m5	96	-2.43	0.81	0.18
22	fm12m6	96	-2.46	0.88	0.21
1	fm2m4	96	-3.06	0.01	0.00
8	fm4m4	96	-3.06	0.01	0.00
10	fm4m6	96	-3.06	0.01	0.00
11	fm6m6	96	-3.06	0.01	0.00
12	fm6m2	96	-3.06	0.01	0.00
19	fm10m5	96	-3.06	0.01	0.00
21	fm12m4	96	-3.06	0.01	0.00
23	fm16m6	96	-3.06	0.01	0.00
24	fm14m5	96	-3.06	0.01	0.00
Mean				0.83	0.87
S.D.				0.43	1.27

Note. Misfit items are in bold.

Table 62. Item difficulty and fit statistics for all English ASQ: Inventory items in problem solving domain by age intervals.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	cg11p	109	5.24	0.93	9.90
63	cg19p	109	5.03	1.04	9.90
61	cg10p	109	4.99	1.06	0.74
64	cg17p	109	4.96	0.95	9.90
62	cg18p	109	4.91	0.91	0.88
60	cg29p	109	4.83	1.03	1.28
58	cg15p	109	4.74	0.91	5.41
59	cg16p	109	4.72	1.07	0.99
57	cg14p	109	4.38	1.06	1.11
56	cg13p	109	4.37	1.24	9.90
55	cg9p	109	4.36	1.09	7.80
54	cg28p	109	4.26	1.03	1.02
53	cg22p	109	4.09	1.32	1.23
51	cg30p	109	4.09	1.21	9.90
52	cg54m5	109	2.69	0.86	1.18
50	cg60m6	109	2.65	0.87	1.94
49	cg54m6	109	1.95	1.01	1.02
48	cg60m4	109	1.75	1.13	1.15
47	cg48m6	109	1.03	1.06	0.69
46	cg48m4	109	0.91	0.65	0.36
45	cg42m5	109	0.86	1.32	0.88
44	cg18m5	109	0.78	1.19	0.59
40	cg27m6	109	0.67	1.38	2.01
41	cg48m3	109	0.46	0.98	1.47
42	cg36m6	109	0.32	1.34	1.72
43	cg30m6	109	0.10	1.15	0.97
39	cg42m6	109	-0.42	0.80	0.25
38	cg30m5	109	-0.75	0.60	0.12
34	cg14m6	109	-0.81	1.17	0.56
35	cg27m3	109	-0.88	0.65	0.07
30	cg24m4	109	-0.95	0.96	0.38

Table 62. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
37	cg36m5	109	-0.98	0.76	0.34
18	cg10m4	109	-1.59	0.70	0.19
21	cg12m5	109	-1.59	0.70	0.19
25	cg14m4	109	-1.59	0.80	0.21
28	cg18m6	109	-1.59	0.54	0.07
33	cg20m6	109	-1.59	0.96	0.39
7	cg4m5	109	-1.99	0.80	0.26
9	cg6m4	109	-2.03	0.80	0.26
16	cg8m5	109	-2.03	0.55	0.06
20	cg12m4	109	-2.03	0.55	0.06
22	cg20m4	109	-2.03	1.26	0.16
24	cg14m5	109	-2.03	1.40	0.34
27	cg16m6	109	-2.03	0.55	0.06
29	cg20m3	109	-2.03	0.68	0.09
31	cg22m3	109	-2.09	0.50	0.15
32	cg20m5	109	-2.09	0.63	0.17
36	cg24m6	109	-2.09	0.64	0.17
14	cg6m5	109	-2.34	1.95	1.02
15	cg8m6	109	-2.34	1.95	1.02
19	cg10m5	109	-2.34	0.35	0.03
2	cg2m4	109	-2.53	0.34	0.02
3	cg2m3	109	-2.53	4.39	0.02
12	cg6m6	109	-2.53	0.34	2.19
17	cg10m6	109	-2.53	0.34	0.02
23	cg12m6	109	-2.53	0.34	0.02
26	cg16m5	109	-2.53	0.55	0.02
1	cg2m1	109	-2.66	0.55	0.04
4	cg2m2	109	-2.66	0.55	0.04
5	cg4m4	109	-2.66	0.55	0.04
6	cg2m5	109	-2.66	0.55	0.04
8	cg2m6	109	-2.66	0.55	0.04
10	cg6m2	109	-2.66	0.55	0.04

Table 62. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
11	cg6m3	109	-2.66	0.55	0.04
13	cg6m1	109	-2.66	0.55	0.04
Mean				0.92	1.43
S.D.				0.56	2.72

Note. Misfit items are in bold.

Table 63. Item difficulty and fit statistics for the 36 to 44 months age interval of the English ASQ: Inventory items in problem solving domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
62	cg18p	48	5.73	0.91	0.13
65	cg11p	48	5.69	0.81	0.14
61	cg10p	48	5.65	1.08	1.05
59	cg16p	48	5.57	1.07	1.06
64	cg17p	48	5.27	1.03	0.45
63	cg19p	48	5.23	1.09	9.90
60	cg29p	48	4.96	1.51	2.94
58	cg15p	48	4.84	0.67	0.30
54	cg28p	48	4.71	1.13	1.36
57	cg14p	48	4.71	1.17	1.45
53	cg22p	48	4.38	1.31	1.02
55	cg9p	48	4.38	0.96	1.56
56	cg13p	48	4.15	1.01	4.89
51	cg30p	48	4.11	1.07	3.87
50	cg60m6	48	3.01	0.95	1.12
52	cg54m5	48	2.80	0.95	0.94
49	cg54m6	48	2.17	1.15	1.23
48	cg60m4	48	1.64	0.95	0.82
47	cg48m6	48	1.18	1.03	0.81
46	cg48m4	48	1.04	0.56	0.25
45	cg42m5	48	0.99	1.28	0.98
44	cg18m5	48	0.82	1.32	0.88

Table 63. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
40	cg27m6	48	0.43	1.10	0.44
41	cg48m3	48	0.42	0.77	0.74
43	cg30m6	48	0.21	1.03	0.81
39	cg42m6	48	0.09	0.71	0.28
42	cg36m6	48	-0.37	0.99	0.70
30	cg24m4	48	-0.55	1.34	0.65
37	cg36m5	48	-0.73	0.86	0.48
38	cg30m5	48	-0.81	0.58	0.18
34	cg14m6	48	-0.91	0.89	0.96
35	cg27m3	48	-0.91	0.58	0.10
18	cg10m4	48	-1.41	0.79	0.33
21	cg12m5	48	-1.41	0.79	0.33
25	cg14m4	48	-1.41	0.95	0.37
33	cg20m6	48	-1.78	1.31	0.87
36	cg24m6	48	-1.78	0.73	0.26
32	cg20m5	48	-1.94	0.85	0.35
31	cg22m3	48	-1.94	0.59	0.31
7	cg4m5	48	-2.12	0.96	0.57
9	cg6m4	48	-2.12	0.96	0.57
16	cg8m5	48	-2.12	0.54	0.08
20	cg12m4	48	-2.12	0.54	0.08
22	cg20m4	48	-2.12	1.75	0.30
24	cg14m5	48	-2.12	1.98	0.74
27	cg16m6	48	-2.12	0.54	0.08
28	cg18m6	48	-2.12	0.54	0.08
29	cg20m3	48	-2.12	0.77	0.15
14	cg6m5	48	-2.17	3.21	2.55
15	cg8m6	48	-2.17	3.21	2.55
19	cg10m5	48	-2.17	0.32	0.04
2	cg2m4	48	-2.64	0.06	0.00
3	cg2m3	48	-2.64	0.06	0.00
12	cg6m6	48	-2.64	9.90	9.90

Table 63. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
17	cg10m6	48	-2.64	0.06	0.00
23	cg12m6	48	-2.64	0.06	0.00
26	cg16m5	48	-2.64	0.06	0.00
1	cg2m1	48	-3.35	0.25	0.02
4	cg2m2	48	-3.35	0.25	0.02
5	cg4m4	48	-3.35	0.25	0.02
6	cg2m5	48	-3.35	0.25	0.02
8	cg2m6	48	-3.35	0.25	0.02
10	cg6m2	48	-3.35	0.25	0.02
11	cg6m3	48	-3.35	0.25	0.02
13	cg6m1	48	-3.35	0.25	0.02
Mean				1.01	0.97
S.D.				1.26	1.83

Note. Misfit items are in bold.

Table 64. Item difficulty and fit statistics for the 45 to 60 months age interval of the English ASQ: Inventory items in problem solving domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	cg11p	61	4.95	0.98	9.90
63	cg19p	61	4.81	1.04	9.90
64	cg17p	61	4.70	0.96	9.90
61	cg10p	61	4.68	1.05	0.67
60	cg29p	61	4.62	0.89	0.64
62	cg18p	61	4.55	0.94	1.15
58	cg15p	61	4.54	1.00	9.90
59	cg16p	61	4.37	1.09	1.08
56	cg13p	61	4.32	1.25	9.90
55	cg9p	61	4.19	1.13	9.90
57	cg14p	61	4.11	1.04	1.06
54	cg28p	61	3.95	1.03	1.00
51	cg30p	61	3.93	1.23	9.90

Table 64. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
53	cg22p	61	3.85	1.32	1.43
52	cg54m5	61	2.52	0.80	1.74
50	cg60m6	61	2.18	0.90	2.50
48	cg60m4	61	1.77	1.23	1.47
49	cg54m6	61	1.65	0.97	1.13
40	cg27m6	61	0.95	1.86	2.53
42	cg36m6	61	0.91	1.51	1.65
47	cg48m6	61	0.65	1.42	0.76
44	cg18m5	61	0.52	1.07	0.44
41	cg48m3	61	0.34	1.28	1.77
46	cg48m4	61	0.27	0.77	0.37
37	cg36m5	61	0.21	0.58	0.21
45	cg42m5	61	0.19	1.37	0.76
43	cg30m6	61	-0.43	1.23	0.89
34	cg14m6	61	-0.94	1.65	0.36
38	cg30m5	61	-0.94	0.68	0.07
35	cg27m3	61	-1.14	0.88	0.06
28	cg18m6	61	-1.22	0.41	0.05
30	cg24m4	61	-1.22	0.41	0.05
31	cg22m3	61	-1.22	0.41	0.05
32	cg20m5	61	-1.22	0.41	0.05
33	cg20m6	61	-1.22	0.41	0.05
39	cg42m6	61	-1.22	0.41	0.05
1	cg2m1	61	-2.17	0.50	0.03
2	cg2m4	61	-2.17	0.50	0.03
3	cg2m3	61	-2.17	0.50	0.03
4	cg2m2	61	-2.17	0.50	0.03
5	cg4m4	61	-2.17	0.50	0.03
6	cg2m5	61	-2.17	0.50	0.03
7	cg4m5	61	-2.17	0.50	0.03
8	cg2m6	61	-2.17	0.50	0.03
9	cg6m4	61	-2.17	0.50	0.03

Table 64. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
10	cg6m2	61	-2.17	0.50	0.03
11	cg6m3	61	-2.17	0.50	0.03
12	cg6m6	61	-2.17	0.50	0.03
13	cg6m1	61	-2.17	0.50	0.03
14	cg6m5	61	-2.17	0.50	0.03
15	cg8m6	61	-2.17	0.50	0.03
16	cg8m5	61	-2.17	0.50	0.03
17	cg10m6	61	-2.17	0.50	0.03
18	cg10m4	61	-2.17	0.50	0.03
19	cg10m5	61	-2.17	0.50	0.03
20	cg12m4	61	-2.17	0.50	0.03
21	cg12m5	61	-2.17	0.50	0.03
22	cg20m4	61	-2.17	0.50	0.03
23	cg12m6	61	-2.17	0.50	0.03
24	cg14m5	61	-2.17	0.50	0.03
25	cg14m4	61	-2.17	0.50	0.03
26	cg16m5	61	-2.17	0.50	0.03
27	cg16m6	61	-2.17	0.50	0.03
29	cg20m3	61	-2.17	0.50	0.03
36	cg24m6	61	-2.17	0.50	0.03
Mean				0.77	1.45
S.D.				0.36	3.00

Note. Misfit items are in bold.

Table 65. Item difficulty and fit statistics for all English ASQ: Inventory items in personal social domain by age intervals.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	ps13ap	199	3.76	1.36	1.48
61	ps8sp	199	3.32	0.94	0.80
64	ps15sp	199	3.28	0.92	0.68
63	ps23sp	199	3.25	0.90	0.67
62	ps10sp	199	3.17	0.90	1.45
58	ps17sp	199	2.76	1.14	1.07
57	ps22sp	199	2.72	0.97	1.19
59	ps11sp	199	2.70	1.15	0.89
60	ps54m6	199	2.70	0.83	0.92
56	ps9ap	199	2.60	0.99	0.82
49	ps8ap	199	2.54	1.34	1.71
48	ps3ap	199	2.34	1.00	0.97
50	ps11ap	199	2.30	1.04	1.27
52	ps10ap	199	2.20	1.29	1.89
47	ps2ap	199	2.17	0.88	0.65
37	pm16m4	199	1.85	1.13	1.23
55	ps48m5	199	1.85	0.85	0.92
51	ps42m5	199	1.75	1.17	1.10
54	ps9sp	199	1.60	1.23	1.57
46	ps27m6	199	1.43	0.77	0.58
53	ps48m2	199	1.40	1.19	1.48
45	ps60m5	199	1.31	1.24	1.30
43	ps48m6	199	1.25	1.16	1.03
42	ps60m6	199	0.95	1.18	1.15
44	ps48m4	199	0.84	1.25	1.19
41	ps42m6	199	0.83	1.02	0.85
35	ps20m5	199	0.71	1.09	1.09
34	ps36m6	199	0.47	0.97	1.00
39	ps24m6	199	0.15	1.25	2.32
40	ps33m6	199	0.10	1.01	0.61
38	ps30m5	199	-0.11	0.84	0.65

Table 65. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
33	ps20m6	199	-0.52	0.83	0.62
32	ps14m5	199	-0.59	0.77	0.38
25	ps22m6	199	-0.60	1.25	0.59
29	ps30m2	199	-0.63	0.79	0.44
30	ps18m5	199	-0.63	1.06	0.79
36	ps30m6	199	-0.76	1.07	0.62
26	ps14m4	199	-0.78	0.77	0.41
16	ps6m2	199	-0.87	0.98	0.35
19	ps10m4	199	-1.05	0.75	0.42
24	ps18m6	199	-1.12	0.56	0.23
22	ps12m6	199	-1.18	0.93	0.43
27	ps14m6	199	-1.18	1.10	1.70
20	ps10m6	199	-1.45	0.78	0.43
21	ps12m5	199	-1.47	0.98	0.59
17	ps6m5	199	-1.52	0.86	0.57
23	ps12m4	199	-1.52	0.83	0.31
13	ps6m4	199	-1.55	0.74	0.68
18	ps10m5	199	-1.55	0.86	0.32
9	ps4m6	199	-1.57	0.67	0.34
1	ps2m2	199	-1.66	0.65	0.02
7	ps2m5	199	-1.66	0.65	0.02
28	ps16m6	199	-1.73	0.96	0.71
31	ps22m2	199	-1.73	0.96	0.76
8	ps4m2	199	-1.98	0.81	0.36
4	ps2m4	199	-2.73	0.80	0.07
10	ps6m3	199	-2.73	1.11	1.63
15	ps8m5	199	-2.73	0.99	0.65
3	ps2m3	199	-3.45	0.86	0.05
5	ps2m6	199	-3.45	0.94	0.09
6	ps4m5	199	-3.45	0.86	0.05
11	ps6m6	199	-3.45	1.06	1.24
12	ps4m4	199	-3.45	1.06	1.24

Table 65. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
14	ps8m6	199	-3.45	1.06	1.24
Mean				0.97	0.83
S.D.				0.18	0.50

Note. Misfit items are in bold.

Table 66. Item difficulty and fit statistics for the 36 to 44 months age interval of the English ASQ: Inventory items in personal-social domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	ps13ap	96	3.37	1.20	1.65
63	ps23sp	96	2.95	0.81	0.49
64	ps15sp	96	2.95	0.82	0.49
61	ps8sp	96	2.93	0.77	0.43
62	ps10sp	96	2.88	0.84	0.54
60	ps54m6	96	2.37	0.78	0.84
58	ps17sp	96	2.31	1.36	1.49
59	ps11sp	96	2.22	1.26	1.05
57	ps22sp	96	2.19	1.04	0.79
49	ps8ap	96	2.05	1.33	1.46
56	ps9ap	96	2.04	1.06	0.81
48	ps3ap	96	1.88	1.08	1.09
50	ps11ap	96	1.84	1.09	1.29
47	ps2ap	96	1.68	0.96	0.79
52	ps10ap	96	1.53	1.49	2.30
37	pm16m4	96	1.33	1.09	1.23
55	ps48m5	96	1.27	0.83	0.78
51	ps42m5	96	1.13	1.32	1.42
46	ps27m6	96	0.98	0.86	0.71
54	ps9sp	96	0.94	1.18	1.40
45	ps60m5	96	0.84	1.26	1.56
53	ps48m2	96	0.63	1.06	1.20
42	ps60m6	96	0.63	1.20	1.14

Table 66. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
43	ps48m6	96	0.63	1.10	0.99
41	ps42m6	96	0.51	0.99	0.87
44	ps48m4	96	0.31	1.30	1.56
34	ps36m6	96	0.19	0.92	0.87
35	ps20m5	96	-0.04	1.01	0.67
40	ps33m6	96	-0.15	0.86	0.68
39	ps24m6	96	-0.19	1.03	1.97
38	ps30m5	96	-0.73	0.80	0.54
33	ps20m6	96	-0.77	0.78	0.73
25	ps22m6	96	-0.85	1.15	0.69
36	ps30m6	96	-1.06	0.85	0.26
30	ps18m5	96	-1.13	1.22	1.20
32	ps14m5	96	-1.16	0.76	0.38
29	ps30m2	96	-1.16	0.77	0.36
26	ps14m4	96	-1.27	0.81	0.53
19	ps10m4	96	-1.33	0.68	0.62
21	ps12m5	96	-1.72	0.86	0.75
20	ps10m6	96	-1.72	0.79	0.61
16	ps6m2	96	-1.78	0.92	0.13
24	ps18m6	96	-1.78	0.62	0.08
18	ps10m5	96	-1.81	1.03	0.12
22	ps12m6	96	-1.81	1.11	0.25
27	ps14m6	96	-1.81	1.37	3.49
17	ps6m5	96	-1.99	0.79	0.70
23	ps12m4	96	-1.99	0.82	0.22
28	ps16m6	96	-2.32	1.04	0.99
13	ps6m4	96	-2.76	0.99	1.33
31	ps22m2	96	-2.76	0.99	0.84
8	ps4m2	96	-3.49	0.93	0.14
9	ps4m6	96	-3.49	0.93	0.14

Table 66. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
10	ps6m3	96	-3.49	1.08	2.61
Mean				1.00	0.93
S.D.				0.20	0.64

Note. Misfit items are in bold.

Table 67. Item difficulty and fit statistics for the 45 to 60 months age interval of the English ASQ: Inventory items in personal-social domain.

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
65	ps13ap	103	3.48	1.51	1.54
61	ps8sp	103	3.04	1.09	1.14
64	ps15sp	103	2.95	1.02	0.82
63	ps23sp	103	2.90	1.00	0.78
62	ps10sp	103	2.82	0.99	2.36
57	ps22sp	103	2.58	0.89	1.97
58	ps17sp	103	2.52	0.97	0.71
59	ps11sp	103	2.50	1.06	0.77
56	ps9ap	103	2.49	0.92	0.80
49	ps8ap	103	2.35	1.37	1.97
60	ps54m6	103	2.34	0.91	1.07
52	ps10ap	103	2.20	1.05	1.08
48	ps3ap	103	2.10	0.94	0.89
50	ps11ap	103	2.08	1.02	1.31
47	ps2ap	103	1.96	0.82	0.52
34	ps36m6	103	1.89	1.01	1.08
55	ps48m5	103	1.76	0.87	1.03
51	ps42m5	103	1.70	0.97	0.76
37	pm16m4	103	1.68	1.21	1.25
54	ps9sp	103	1.60	1.25	1.44
53	ps48m2	103	1.52	1.23	1.75
43	ps48m6	103	1.26	1.21	1.12
46	ps27m6	103	1.14	0.68	0.47

Table 67. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
45	ps60m5	103	1.05	1.28	1.12
35	ps20m5	103	0.84	1.07	1.00
44	ps48m4	103	0.51	1.17	0.94
41	ps42m6	103	0.18	1.15	0.99
33	ps20m6	103	-0.09	0.86	0.53
42	ps60m6	103	-0.10	1.15	1.16
38	ps30m5	103	-0.17	0.91	0.72
16	ps6m2	103	-0.60	1.62	0.37
32	ps14m5	103	-0.72	0.79	0.39
36	ps30m6	103	-0.72	1.12	0.75
40	ps33m6	103	-0.72	0.98	0.50
39	ps24m6	103	-0.83	1.71	2.85
29	ps30m2	103	-0.94	0.85	0.50
30	ps18m5	103	-1.00	0.80	0.39
19	ps10m4	103	-1.01	0.67	0.29
20	ps10m6	103	-1.01	0.67	0.29
9	ps4m6	103	-1.23	0.45	0.30
13	ps6m4	103	-1.23	0.45	0.30
24	ps18m6	103	-1.23	0.45	0.30
26	ps14m4	103	-1.23	0.70	0.31
22	ps12m6	103	-1.34	0.77	0.53
27	ps14m6	103	-1.34	0.77	0.53
21	ps12m5	103	-1.37	1.02	0.40
8	ps4m2	103	-1.37	0.64	0.32
18	ps10m5	103	-1.37	0.64	0.32
25	ps22m6	103	-1.37	1.01	0.40
31	ps22m2	103	-1.37	0.97	0.61
1	ps2m2	103	-1.47	0.48	0.01
7	ps2m5	103	-1.47	0.48	0.01
4	ps2m4	103	-1.87	0.50	0.05
15	ps8m5	103	-1.87	1.00	0.49
17	ps6m5	103	-1.87	1.00	0.49

Table 67. (continued).

Item #	Item	<i>n</i>	Difficulty	Infit MNSQ	Outfit MNSQ
23	ps12m4	103	-1.87	0.84	0.48
28	ps16m6	103	-1.87	0.84	0.48
3	ps2m3	103	-2.67	0.65	0.04
5	ps2m6	103	-2.67	0.87	0.07
6	ps4m5	103	-2.67	0.65	0.04
10	ps6m3	103	-2.67	1.22	1.00
11	ps6m6	103	-2.67	1.22	1.00
12	ps4m4	103	-2.67	1.22	1.00
14	ps8m6	103	-2.67	1.22	1.00
Mean				0.95	0.78
S.D.				0.27	0.56

Note. Misfit items are in bold.

APPENDIX F

MISFIT ITEMS IN TRADITIONAL AND ENGLISH ASQ: INVENTORY

Table 68. Misfit items from the Traditional Chinese ASQ: Inventory.

Domain	Item	Misfit	Skills
Communication	#44 (48m1)	Outfit	Say things from a common category.
	#42 (48m2)	Outfit	Answer questions about when feeling hungry or tired.
	#40 (27m5)	Outfit	Say three- or four-word sentences.
	#37 (30m6)	Outfit	Tell about what is happening in the picture of a picture book.
	#34 (33m5)	Outfit	Comprehension of directions after modeling (move a zipper up and down)
	#36 (18m6)	Outfit	Combine words representing different ideas.
	#35 (16m5)	Infit	Imitate two-word sentences.
Gross motor	#49 (3p)	Outfit	Kick a ball while running and changing directions.
	#46 (17p)	Outfit	Walk down stairs with alternating feet.
	#43 (42m5)	Outfit	Catch a large ball with both hands from five feet away.
	#41 (48m3)	Outfit	Throw a ball overhand to a person standing at least six feet away.
	#42 (54m6)	Outfit	Walk on tiptoes for 15 feet.
	#44 (36m6)	Outfit	Jump forward at least six inches with both feet leaving the ground at the same time.
	#45 (10p)	Outfit	Walk forward on a straight line for 10 or more steps.
Fine motor	#63 (3p)	Outfit	Tie shoelaces making bow.
	#55 (60m6)	Outfit	Copy letters in his/her first name.
	#57 (10p)	Outfit	Fold the short side of an 8 ½” x 11” piece of paper together.
	#58 (5p)	Outfit	Button most buttons on clothing (including small buttons less than ½ inch)
	#56 (7p)	Outfit	Cut up soft food using the edge of a fork.
	#50 (54m5)	Outfit	Draw a picture of a person with at least four body parts.
	#45 (4p)	Outfit	Hold five or more playing cards.

Table 68. (continued).

Domain	Item	Misfit	Skills
Fine motor	#52 (54m6)	Outfit	Copy shapes: Cross, square, and triangle.
	#47 (12p)	Outfit, infit	Buckle a seat belt while riding a car.
	#51 (48m6)	Outfit	Color mostly within the lines and go no more than ¼ inch outside.
	#42 (48m5)	Outfit	Draw pictures of people have at least three body features.
	#48 (54m4)	Outfit	Trace on a straight line.
	#44 (48m2)	Outfit	Use child-safe scissors to cut a paper in half on a straight line.
	#46 (6p)	Outfit	Button large size buttons (larger than ½ inch).
	#49 (42m6)	Outfit	Look at the picture of a cross and draw on a piece of paper.
	#43 (8p)	Outfit	Cut up soft food using a dull knife.
	#39 (42m5)	Outfit	Put together a five to seven piece interlocking puzzle.
	#37 (33m6)	Outfit	Try to cut with child-safe scissors.
	#36 (22m6)	Outfit	String small items onto a string or shoelace.
	#30 (20m5)	Outfit	Stack six small blocks or toys on top of each other.
	#31 (20m6)	Outfit	Use a turning motion.
Problem solving	#65 (11p)	Outfit	Count to one hundred by tens.
	#64 (17p)	Outfit	Simple one-digit addition.
	#63 (19p)	Outfit	Tell the months of the year.
	#51 (31p)	Outfit	Tell if spoken words have the same or different beginning and ending sounds.
	#61 (10p)	Outfit	Know six words for shapes: Circle, triangle, diamond, square, rectangle, and star.
	#54 (28p)	Outfit	Correctly recognize at least 10 words from the Taiwanese pronunciation system.
	#52 (54m5)	Outfit	Correctly count up to 15
	#44 (18m5)	Outfit	Copy by drawing a single line on the paper in any direction after modeling.
	#39 (42m6)	Outfit	Dress up and do pretend play.
	#41 (48m3)	Outfit	Follow three different directions using position words.

Table 68. (continued).

Domain	Item	Misfit	Skills
Problem solving	#45 (42m5)	Outfit	Compare between different sizes and recognize the smallest picture.
	#42 (36m6)	Outfit	Repeat three numbers in the same order.
Personal-social	#37 (16m4)	Outfit, infit	Offer a toy to the self image in a mirror.
	#40 (33m6)	Outfit	Know his/her gender.
	#39 (24m6)	Outfit	Call self "I" or "me" more often than his/her own name.
	#38 (30m5)	Outfit	Pull up the loose-filling pants around his/her feet to the waist.
	#36 (30m6)	Outfit	Will say his/her own name when looking into the mirror and being asked who the child is.

Table 69. Misfit items from the English ASQ: Inventory.

Domain	Item	Misfit	Skills
Communication	#47 (19p)	Outfit	Make voice go high at the end of a question.
	#46 (6p)	Outfit	Try to use new words in conversation after hearing them.
	#43 (54m5)	Outfit	Use four- and five-word sentences.
	#38 (33m6)	Infit	Correctly say his/her first name or nickname.
	#40 (27m5)	Outfit	Say three- or four-word sentences.
	#36 (18m6)	Outfit	Combine words representing different ideas.
	#35 (16m5)	Outfit	Imitate two-word sentences.
Gross motor	#64 (18p)	Outfit	Ride and steer a two-wheel bicycle without training wheels for at least 20 feet.
	#57 (4p)	Outfit	Jump forward a distance of 3 feet from a standing position.
	#49 (3p)	Outfit	Kick a ball while running and changing directions.
	#45 (10p)	Outfit	Walk forward on a straight line for 10 or more steps.
	#47 (48m6)	Outfit	Stand on one foot for at least 5 seconds.
	#41 (48m3)	Outfit	Throw a ball overhand to a person standing at least six feet away.

Table 69. (continued).

Domain	Item	Misfit	Skills
Fine motor	#60 (1p)	Outfit	Use child-safe scissors to cut a four-inch circle on a piece of paper.
	#58 (5p)	Outfit	Button most buttons on clothing (including small buttons less than ½ inch)
	#43 (8p)	Outfit	Cut up soft food using a dull knife.
	#47 (12p)	Outfit	Buckle a seat belt while riding a car.
	#38 (36m6)	Outfit	Hold a pen between fingers and thumb.
	#40 (48m4)	Outfit, infit	Unbutton one or more buttons.
	#33 (30m5)	Outfit	Draw a circle after modeling.
Problem solving	#30 (20m5)	Outfit	Stack six small blocks or toys on top of each other.
	#65 (11p)	Outfit	Count to one hundred by tens.
	#63 (19p)	Outfit	Tell the months of the year.
	#64 (17p)	Outfit	Simple one-digit addition.
	#58 (15p)	Outfit	Know what day comes before and after Friday.
	#56 (13p)	Outfit	Recognize penny, nickel and dime.
	#55 (9p)	Outfit	Count up to 20.
	#51 (30p)	Outfit	Tell if spoken words have the same or different beginning and ending sounds.
	#50 (60m6)	Outfit	Recognize at least four letters in his/her name.
	#46 (48m4)	Outfit	Recognize at least five different colors.
Personal-social	#42 (36m6)	Outfit	Repeat three numbers in the same order.
	#39 (42m6)	Outfit	Dress up and do pretend play.
	#52 (10ap)	Outfit	Stay away from dangerous things.
	#54 (9sp)	Outfit	Tell an adult when having trouble with a friend.
	#39 (24m6)	Outfit	Call self “I” or “me” more often than his/her own name.

APPENDIX G

TEST RESULTS ON THE HOMOGENEITY-OF-SLOPES ASSUMPTION IN ONE-WAY ANCOVA FOR COMPUTING KNOWN-GROUPS VALIDITY

Traditional Chinese Version: Communication Domain

Levene's Test of Equality of Error Variances ^{a,b}

Dependent Variable: CMTOTAL

F	df1	df2	Sig.
13.462	1	226	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept+SPED * AGE+SPED+AGE

b. LANGUAGE = 1

Tests of Between-Subjects Effects ^b

Dependent Variable: CMTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	8008.058 ^a	3	2669.353	9.287	.000	.111
Intercept	6251.567	1	6251.567	21.751	.000	.089
SPED * AGE	629.286	1	629.286	2.189	.140	.010
SPED	274.496	1	274.496	.955	.329	.004
AGE	26.281	1	26.281	.091	.763	.000
Error	64380.622	224	287.413			
Total	2963191.000	228				
Corrected Total	72388.680	227				

a. R Squared = .111 (Adjusted R Squared = .099)

b. LANGUAGE = 1

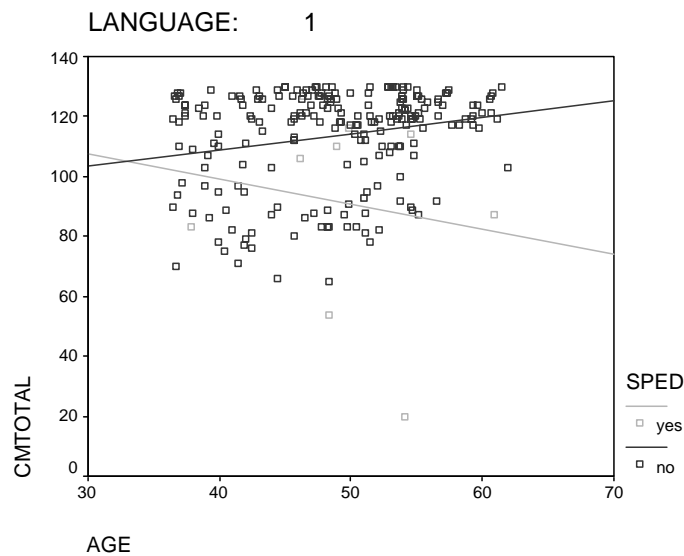


Figure 6. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA in communication of the Traditional Chinese ASQ: Inventory.

Traditional Chinese Version: Gross Motor Domain

Levene's Test of Equality of Error Variances ^{a,b}

Dependent Variable: GMTOTAL

F	df1	df2	Sig.
2.869	1	202	.092

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design: Intercept+SPED * AGE+SPED+AGE
- b. LANGUAGE = 1

Tests of Between-Subjects Effects ^b

Dependent Variable: GMTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5469.071 ^a	3	1823.024	10.158	.000	.132
Intercept	4844.122	1	4844.122	26.990	.000	.119
SPED * AGE	492.191	1	492.191	2.742	.099	.014
SPED	326.052	1	326.052	1.817	.179	.009
AGE	11.520	1	11.520	.064	.800	.000
Error	35895.101	200	179.476			
Total	2357953.000	204				
Corrected Total	41364.172	203				

a. R Squared = .132 (Adjusted R Squared = .119)

b. LANGUAGE = 1

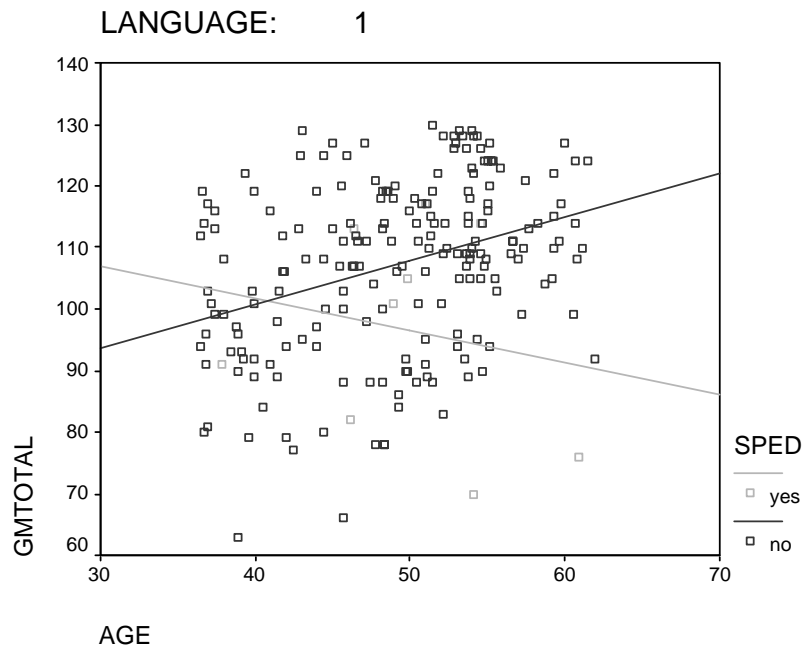


Figure 7. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA in gross motor of the Traditional Chinese ASQ: Inventory.

Traditional Chinese Version: Fine Motor Domain

Levene's Test of Equality of Error Variances ^{a,b}

Dependent Variable: FMTOTAL

F	df1	df2	Sig.
.749	1	189	.388

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design: Intercept+SPED * AGE+SPED+AGE
- b. LANGUAGE = 1

Tests of Between-Subjects Effects ^b

Dependent Variable: FMTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	21024.212 ^a	3	7008.071	21.740	.000	.259
Intercept	809.095	1	809.095	2.510	.115	.013
SPED * AGE	397.666	1	397.666	1.234	.268	.007
SPED	253.440	1	253.440	.786	.376	.004
AGE	1407.364	1	1407.364	4.366	.038	.023
Error	60280.960	187	322.358			
Total	1821268.000	191				
Corrected Total	81305.173	190				

- a. R Squared = .259 (Adjusted R Squared = .247)
- b. LANGUAGE = 1

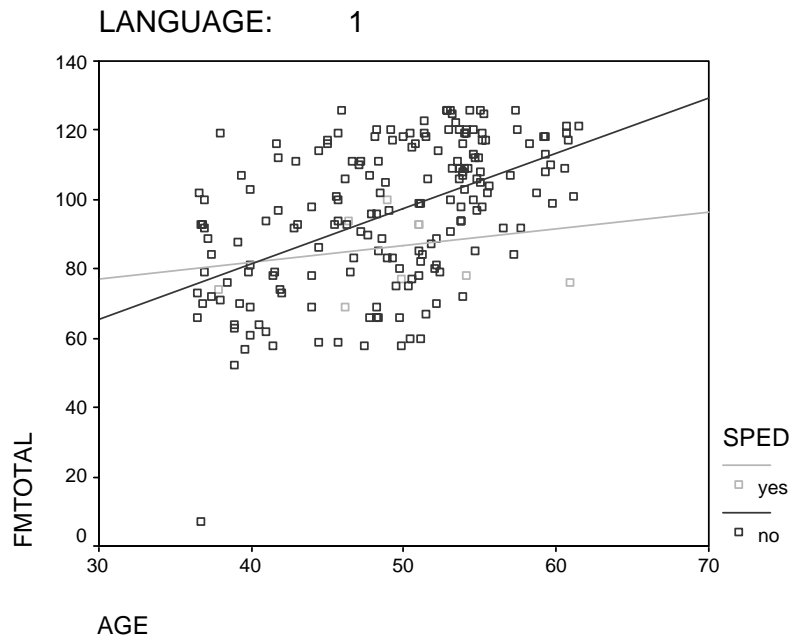


Figure 8. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA in fine motor of the Traditional Chinese ASQ: Inventory.

Traditional Chinese Version: Problem Solving (Cognitive) Domain

Levene's Test of Equality of Error Variances ^{a,b}

Dependent Variable: CGTOTAL

F	df1	df2	Sig.
2.754	1	196	.099

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design: Intercept+SPED * AGE+SPED+AGE
- b. LANGUAGE = 1

Tests of Between-Subjects Effects ^b

Dependent Variable: CGTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	8316.063 ^a	3	2772.021	17.126	.000	.209
Intercept	2285.155	1	2285.155	14.118	.000	.068
SPED * AGE	70.750	1	70.750	.437	.509	.002
SPED	8.788	1	8.788	.054	.816	.000
AGE	611.695	1	611.695	3.779	.053	.019
Error	31400.710	194	161.859			
Total	2296999.000	198				
Corrected Total	39716.773	197				

- a. R Squared = .209 (Adjusted R Squared = .197)
- b. LANGUAGE = 1

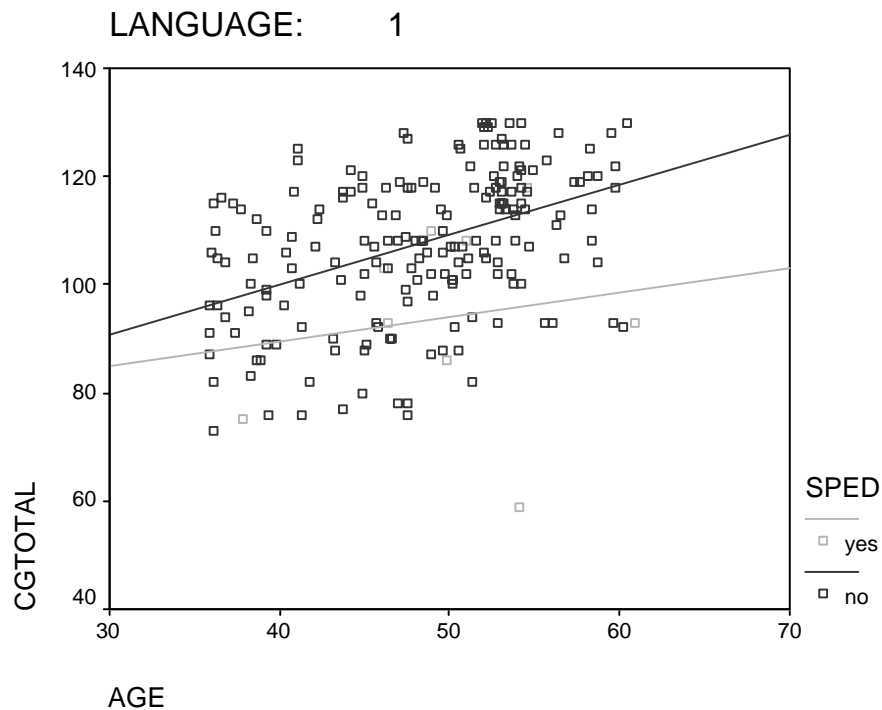


Figure 9. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA in problem solving of the Traditional Chinese ASQ: Inventory.

Traditional Chinese Version: Personal-social Domain

Levene's Test of Equality of Error Variances ^{a,b}

Dependent Variable: PSTOTAL

F	df1	df2	Sig.
5.818	1	190	.017

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design: Intercept+SPED * AGE+SPED+AGE
- b. LANGUAGE = 1

Tests of Between-Subjects Effects ^b

Dependent Variable: PSTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	8869.079 ^a	3	2956.360	15.688	.000	.200
Intercept	3642.604	1	3642.604	19.329	.000	.093
SPED * AGE	318.157	1	318.157	1.688	.195	.009
SPED	118.577	1	118.577	.629	.429	.003
AGE	218.720	1	218.720	1.161	.283	.006
Error	35428.234	188	188.448			
Total	2467552.000	192				
Corrected Total	44297.313	191				

- a. R Squared = .200 (Adjusted R Squared = .187)
- b. LANGUAGE = 1

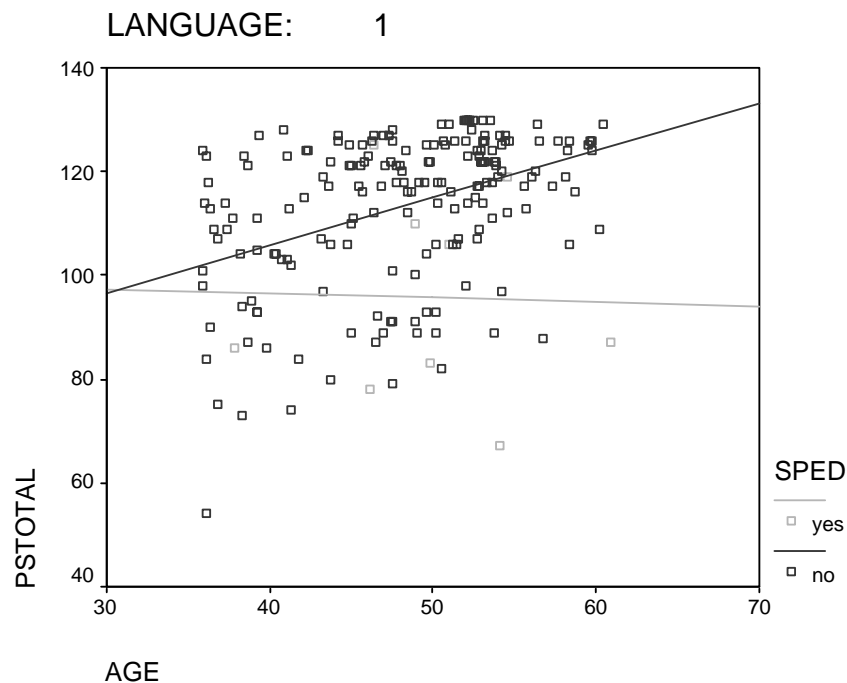


Figure 10. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA in personal-social of the Traditional Chinese ASQ: Inventory.

English Version: Communication Domain

Levene's Test of Equality of Error Variances ^{a,b}

Dependent Variable: CMTOTAL

F	df1	df2	Sig.
.718	1	148	.398

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design: Intercept+SPED * AGE+SPED+AGE
- b. LANGUAGE = 2

Tests of Between-Subjects Effects ^b

Dependent Variable: CMTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	11395.004 ^a	3	3798.335	11.908	.000	.197
Intercept	3457.647	1	3457.647	10.840	.001	.069
SPED * AGE	526.385	1	526.385	1.650	.201	.011
SPED	1007.856	1	1007.856	3.160	.078	.021
AGE	4168.884	1	4168.884	13.070	.000	.082
Error	46570.469	146	318.976			
Total	1922357.000	150				
Corrected Total	57965.473	149				

- a. R Squared = .197 (Adjusted R Squared = .180)
- b. LANGUAGE = 2

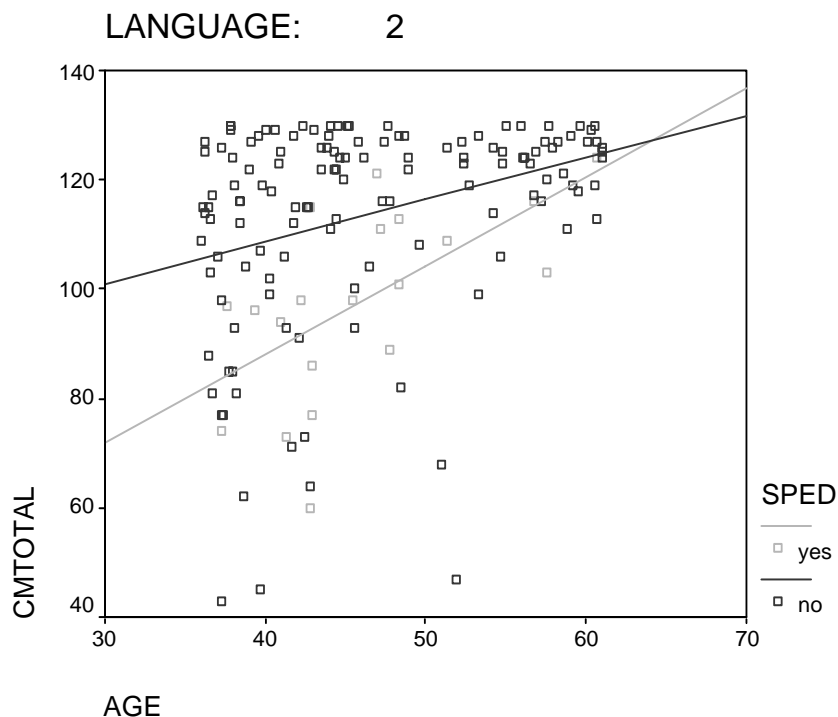


Figure 11. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA in communication of the English ASQ: Inventory.

English Version: Gross Motor Domain

Levene's Test of Equality of Error Variances ^{a,b}

Dependent Variable: GMTOTAL

F	df1	df2	Sig.
.951	1	196	.331

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design: Intercept+SPED * AGE+SPED+AGE
- b. LANGUAGE = 2

Tests of Between-Subjects Effects ^b

Dependent Variable: GMTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9785.211 ^a	3	3261.737	9.659	.000	.130
Intercept	7501.415	1	7501.415	22.215	.000	.103
SPED * AGE	300.958	1	300.958	.891	.346	.005
SPED	33.747	1	33.747	.100	.752	.001
AGE	422.678	1	422.678	1.252	.265	.006
Error	65509.678	194	337.679			
Total	2157788.000	198				
Corrected Total	75294.889	197				

- a. R Squared = .130 (Adjusted R Squared = .117)
- b. LANGUAGE = 2

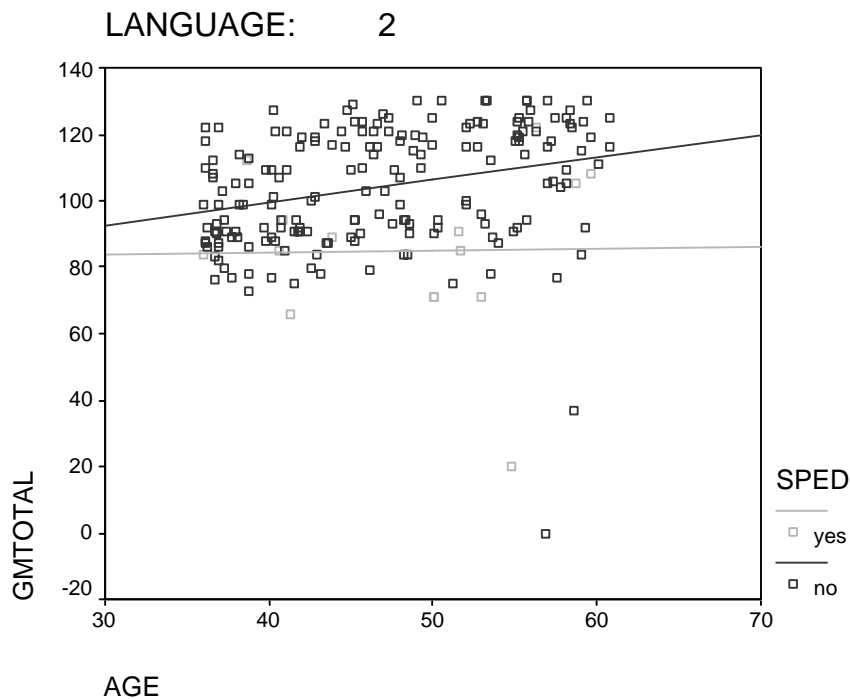


Figure 12. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA in gross motor of the English ASQ: Inventory.

English Version: Fine Motor Domain

Levene's Test of Equality of Error Variances ^{a,b}

Dependent Variable: FMTOTAL

F	df1	df2	Sig.
2.085	1	140	.151

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design: Intercept+SPED * AGE+SPED+AGE
- b. LANGUAGE = 2

Tests of Between-Subjects Effects ^b

Dependent Variable: FMTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9748.846 ^a	3	3249.615	9.160	.000	.166
Intercept	3207.483	1	3207.483	9.042	.003	.061
SPED * AGE	327.761	1	327.761	.924	.338	.007
SPED	801.571	1	801.571	2.260	.135	.016
AGE	5340.252	1	5340.252	15.054	.000	.098
Error	48955.351	138	354.749			
Total	1370450.000	142				
Corrected Total	58704.197	141				

a. R Squared = .166 (Adjusted R Squared = .148)

b. LANGUAGE = 2

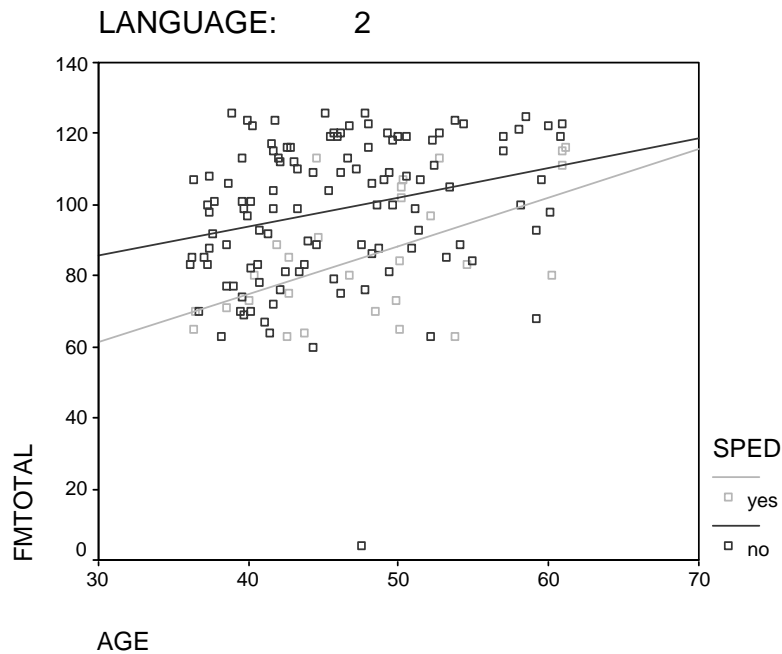


Figure 13. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA in fine motor of the English ASQ: Inventory.

English Version: Problem Solving (Cognitive) Domain

Levene's Test of Equality of Error Variances ^{a,b}

Dependent Variable: CGTOTAL

F	df1	df2	Sig.
1.215	1	117	.273

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept+SPED * AGE+SPED+AGE

b. LANGUAGE = 2

Tests of Between-Subjects Effects ^b

Dependent Variable: CGTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	8033.486 ^a	3	2677.829	16.285	.000	.298
Intercept	3509.669	1	3509.669	21.343	.000	.157
SPED * AGE	555.711	1	555.711	3.379	.069	.029
SPED	217.914	1	217.914	1.325	.252	.011
AGE	99.267	1	99.267	.604	.439	.005
Error	18910.447	115	164.439			
Total	1197623.000	119				
Corrected Total	26943.933	118				

a. R Squared = .298 (Adjusted R Squared = .280)

b. LANGUAGE = 2

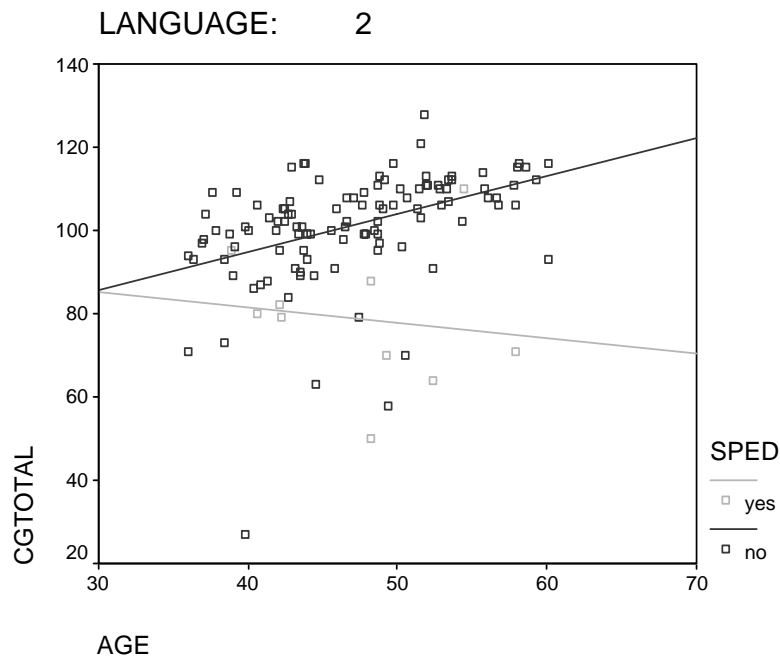


Figure 14. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA in problem solving of the English ASQ: Inventory.

English Version: Personal-social Domain

Levene's Test of Equality of Error Variances ^{a,b}

Dependent Variable: PSTOTAL

F	df1	df2	Sig.
.864	1	228	.354

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design: Intercept+SPED * AGE+SPED+AGE
- b. LANGUAGE = 2

Tests of Between-Subjects Effects ^b

Dependent Variable: PSTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	10205.738 ^a	3	3401.913	11.443	.000	.132
Intercept	11104.453	1	11104.453	37.354	.000	.142
SPED * AGE	40.519	1	40.519	.136	.712	.001
SPED	8.773	1	8.773	.030	.864	.000
AGE	2509.965	1	2509.965	8.443	.004	.036
Error	67185.136	226	297.279			
Total	2688665.000	230				
Corrected Total	77390.874	229				

- a. R Squared = .132 (Adjusted R Squared = .120)
- b. LANGUAGE = 2

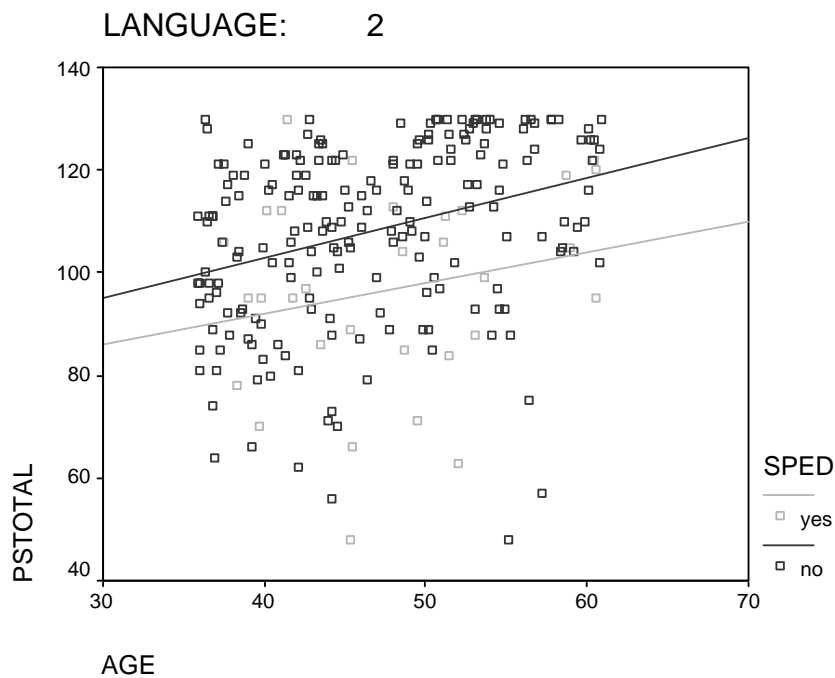


Figure 15. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA in personal-social of the English ASQ: Inventory.

APPENDIX H

UNADJUSTED AND ADJUSTED MEANS BY DISABILITY STATUS, DOMAIN
AND LANGUAGE VERSION

Table 70. Adjusted and unadjusted disability status means and variability for communication total score of the Traditional Chinese ASQ: Inventory using age as a covariate.

Disability status	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
No	218	113.59	16.35	113.62	1.15
Yes	10	91.00	32.54	90.46	5.38

Table 71. One-way ANCOVA for communication total score of the Traditional Chinese ASQ: Inventory as a function of disability status, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	2498.76	8.65	.00*	.04
Sped (disability status)	1	5119.82	17.72	.00*	.07
Error	225	288.93			
Total	228				

**p* < .05

Table 72. Adjusted and unadjusted disability status means and variability for gross motor total score of the Traditional Chinese ASQ: Inventory using age as a covariate.

Disability status	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
No	195	107.03	13.99	107.05	0.96
Yes	9	96.56	17.52	95.96	4.49

Table 73. One-way ANCOVA for gross motor total score of the Traditional Chinese ASQ: Inventory as a function of disability status, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	4033.80	22.28	.00*	.10
Sped (disability status)	1	1057.74	5.84	.02*	.03
Error	225	181.03			
Total	228				

**p* < .05

Table 74. Adjusted and unadjusted disability status means and variability for fine motor total score of the Traditional Chinese ASQ: Inventory using age as a covariate.

Disability status	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
No	181	95.93	20.92	96.02	1.34
Yes	10	86.70	13.99	85.12	5.69

Table 75. One-way ANCOVA for fine motor total score of the Traditional Chinese ASQ: Inventory as a function of disability status, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	19819.54	61.41	.00*	.25
Sped (disability status)	1	1124.62	3.48	.06	.02
Error	188	322.76			
Total	191				

**p* < .05

Table 76. Adjusted and unadjusted disability status means and variability for problem solving total score of the Traditional Chinese ASQ: Inventory using age as a covariate.

Disability status	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
No	189	107.39	13.72	107.46	0.92
Yes	9	93.89	18.58	92.37	4.24

Table 77. One-way ANCOVA for problem solving total score of the Traditional Chinese ASQ: Inventory as a function of disability status, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	6680.23	41.39	.00*	.18
Sped (disability status)	1	1950.37	12.09	.00*	.06
Error	195	161.39			
Total	198				

**p* < .05

Table 78. Adjusted and unadjusted disability status means and variability for personal-social total score of the Traditional Chinese ASQ: Inventory using age as a covariate.

Disability status	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
No	183	113.16	14.54	113.24	1.02
Yes	9	95.67	19.93	94.13	4.59

Table 79. One-way ANCOVA for personal-social total score of the Traditional Chinese ASQ: Inventory as a function of disability status, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	5924.69	31.33	.00*	.14
Sped (disability status)	1	3122.22	16.51	.00*	.08
Error	189	189.13			
Total	192				

**p* < .05

Table 80. Adjusted and unadjusted disability status means and variability for communication total score of the English ASQ: Inventory using age as a covariate.

Disability status	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
No	130	113.60	19.27	113.56	1.57
Yes	20	97.75	17.31	98.03	4.00

Table 81. One-way ANCOVA for communication total score of the English ASQ: Inventory as a function of disability status, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	6514.10	20.33	.00*	.12
Sped (disability status)	1	4180.06	13.05	.00*	.08
Error	147	320.39			
Total	150				

**p* < .05

Table 82. Adjusted and unadjusted disability status means and variability for gross motor total score of the English ASQ: Inventory using age as a covariate.

Disability status	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
No	183	104.00	18.45	104.08	1.36
Yes	15	84.93	24.40	83.94	4.75

Table 83. One-way ANCOVA for gross motor total score of the English ASQ: Inventory as a function of disability status, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	4444.30	13.17	.00*	.06
Sped (disability status)	1	5606.83	16.61	.00*	.08
Error	195	337.49			
Total	198				

**p* < .05

Table 84. Adjusted and unadjusted disability status means and variability for fine motor total score of the English ASQ: Inventory using age as a covariate.

Disability status	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
No	114	98.64	20.23	99.06	1.77
Yes	28	85.52	18.03	84.11	3.58

Table 85. One-way ANCOVA for fine motor total score of the English ASQ: Inventory as a function of disability status, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	5727.25	16.15	.00*	.10
Sped (disability status)	1	4938.32	13.93	.00*	.09
Error	139	354.56			
Total	142				

**p* < .05

Table 86. Adjusted and unadjusted disability status means and variability for problem solving total score of the English ASQ: Inventory using age as a covariate.

Disability status	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
No	109	101.05	13.59	101.08	1.24
Yes	10	78.90	16.73	78.59	4.10

Table 87. One-way ANCOVA for problem solving total score of the English ASQ: Inventory as a function of disability status, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	2985.51	17.79	.00*	.13
Sped (disability status)	1	4631.17	27.60	.00*	.19
Error	116	167.81			
Total	119				

**p* < .05

Table 88. Adjusted and unadjusted disability status means and variability for personal-social total score of the English ASQ: Inventory using age as a covariate.

Disability status	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
No	199	108.09	17.74	108.21	1.22
Yes	31	96.71	19.69	95.93	3.10

Table 89. One-way ANCOVA for personal-social total score of the English ASQ: Inventory as a function of disability status, using age as a covariate.

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	eta ²
Age	1	6694.28	22.60	.00*	.09
Sped (disability status)	1	4032.50	13.62	.00*	.06
Error	227	296.15			
Total	230				

**p* < .05

APPENDIX I

TEST RESULTS ON THE HOMOGENEITY-OF-SLOPES ASSUMPTION IN ONE-WAY ANCOVA FOR COMPARING BETWEEN LANGUAGE VERSIONS

Communication Domain

Levene's Test of Equality of Error Variances ^a

Dependent Variable: CMTOTAL

F	df1	df2	Sig.
.191	1	346	.662

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept+LANGUAGE * AGE+LANGUAGE+AGE

Tests of Between-Subjects Effects

Dependent Variable: CMTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	7833.788 ^a	3	2611.263	9.161	.000	.074
Intercept	52020.086	1	52020.086	182.493	.000	.347
LANGUAGE * AGE	209.060	1	209.060	.733	.392	.002
LANGUAGE	148.968	1	148.968	.523	.470	.002
AGE	7754.580	1	7754.580	27.204	.000	.073
Error	98058.083	344	285.053			
Total	4596409.000	348				
Corrected Total	105891.871	347				

a. R Squared = .074 (Adjusted R Squared = .066)

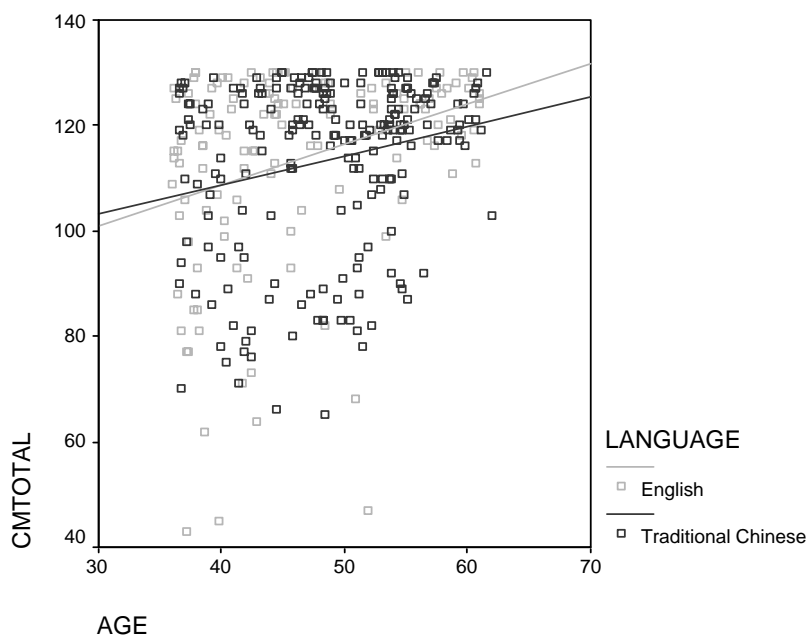


Figure 16. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA between two language versions in communication.

Gross Motor Domain

Levene's Test of Equality of Error Variances ^a

Dependent Variable: GMTOTAL

F	df1	df2	Sig.
10.936	1	376	.001

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept+LANGUAGE * AGE+LANGUAGE+AGE

Tests of Between-Subjects Effects

Dependent Variable: GMTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	10041.030 ^a	3	3347.010	13.800	.000	.100
Intercept	41098.705	1	41098.705	169.451	.000	.312
LANGUAGE * AGE	2.513	1	2.513	.010	.919	.000
LANGUAGE	.243	1	.243	.001	.975	.000
AGE	9153.755	1	9153.755	37.741	.000	.092
Error	90710.071	374	242.540			
Total	431284.000	378				
Corrected Total	100751.101	377				

a. R Squared = .100 (Adjusted R Squared = .092)

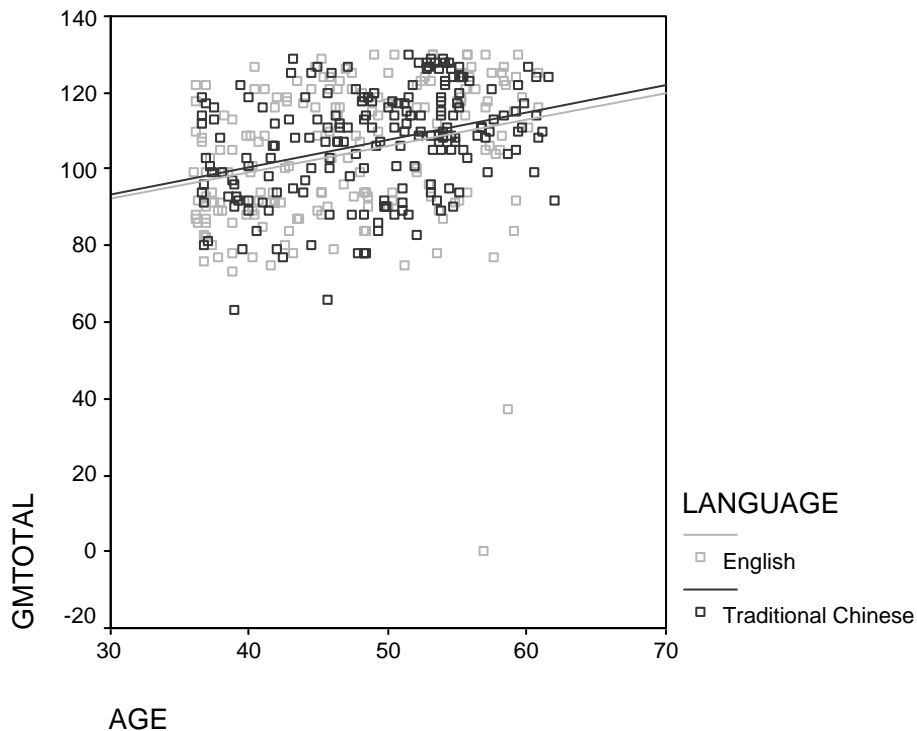


Figure 17. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA between two language versions in gross motor.

Fine Motor Domain

Levene's Test of Equality of Error Variances ^a

Dependent Variable: FMTOTAL

F	df1	df2	Sig.
.515	1	293	.473

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept+LANGUAGE * AGE+LANGUAGE+AGE

Tests of Between-Subjects Effects

Dependent Variable: FMTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	24028.852 ^a	3	8009.617	22.973	.000	.191
Intercept	8367.153	1	8367.153	23.999	.000	.076
LANGUAGE * AGE	1858.797	1	1858.797	5.331	.022	.018
LANGUAGE	2559.494	1	2559.494	7.341	.007	.025
AGE	17943.224	1	17943.224	51.465	.000	.150
Error	101455.982	291	348.646			
Total	2899782.000	295				
Corrected Total	125484.834	294				

a. R Squared = .191 (Adjusted R Squared = .183)

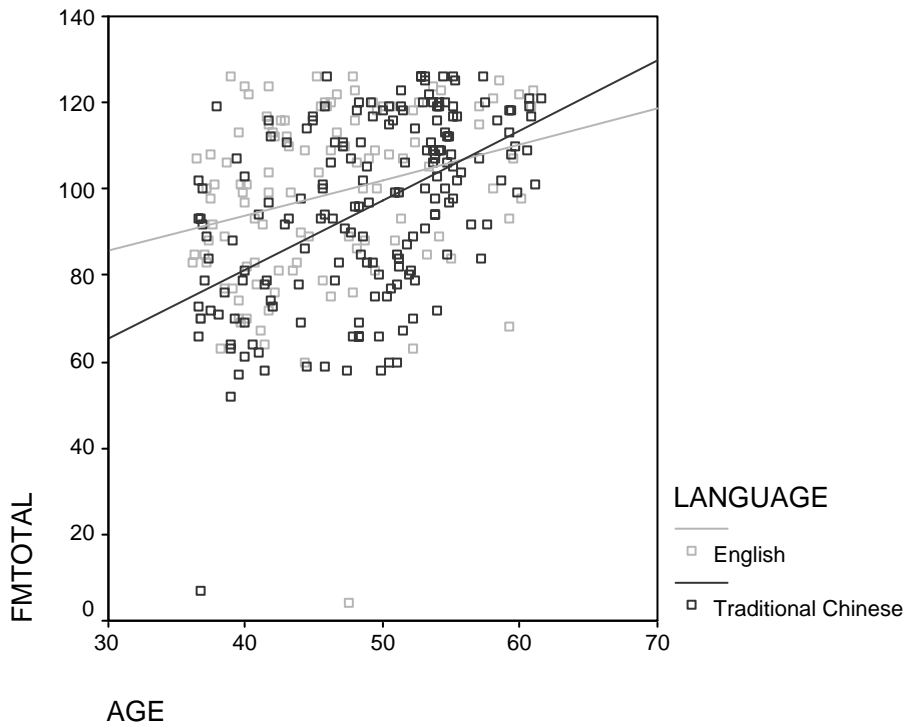


Figure 18. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA between two language versions in fine motor.

Problem Solving (Cognitive) Domain

Levene's Test of Equality of Error Variances ^a

Dependent Variable: CGTOTAL

F	df1	df2	Sig.
4.617	1	296	.032

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept+LANGUAGE * AGE+LANGUAGE+AGE

Tests of Between-Subjects Effects

Dependent Variable: CGTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	12951.474 ^a	3	4317.158	28.111	.000	.223
Intercept	17349.878	1	17349.878	112.973	.000	.278
LANGUAGE * AGE	.190	1	.190	.001	.972	.000
LANGUAGE	27.694	1	27.694	.180	.671	.001
AGE	9197.643	1	9197.643	59.890	.000	.169
Error	45151.184	294	153.575			
Total	3347754.000	298				
Corrected Total	58102.658	297				

a. R Squared = .223 (Adjusted R Squared = .215)

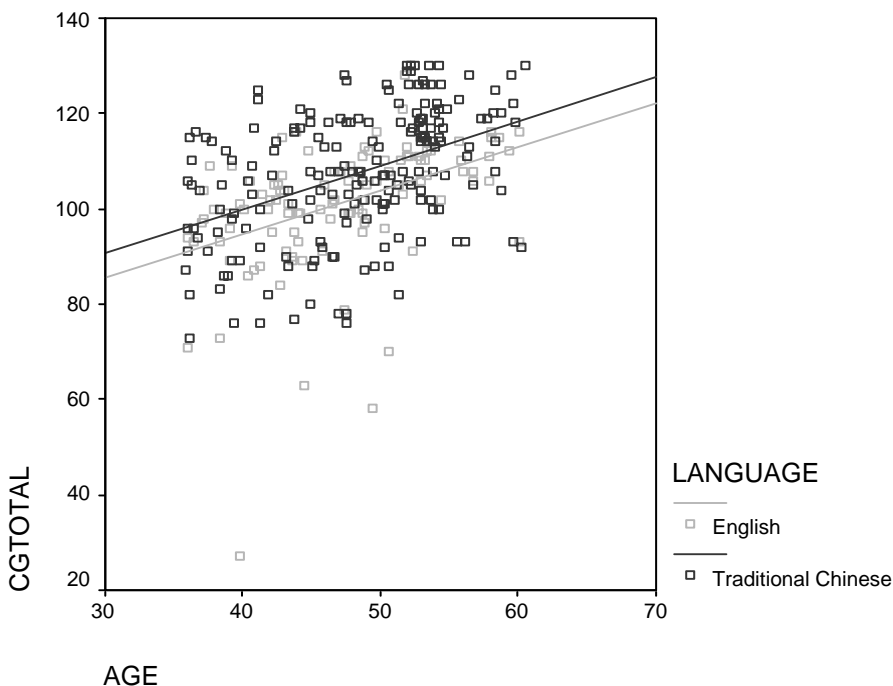


Figure 19. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA between two language versions in problem solving.

Personal-social Domain

Levene's Test of Equality of Error Variances ^a

Dependent Variable: PSTOTAL

F	df1	df2	Sig.
10.786	1	380	.001

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept+LANGUAGE * AGE+LANGUAGE+AGE

Tests of Between-Subjects Effects

Dependent Variable: PSTOTAL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	14885.069 ^a	3	4961.690	21.228	.000	.144
Intercept	37627.119	1	37627.119	160.985	.000	.299
LANGUAGE * AGE	78.827	1	78.827	.337	.562	.001
LANGUAGE	11.590	1	11.590	.050	.824	.000
AGE	12355.920	1	12355.920	52.864	.000	.123
Error	88350.303	378	233.731			
Total	4769098.000	382				
Corrected Total	103235.372	381				

a. R Squared = .144 (Adjusted R Squared = .137)

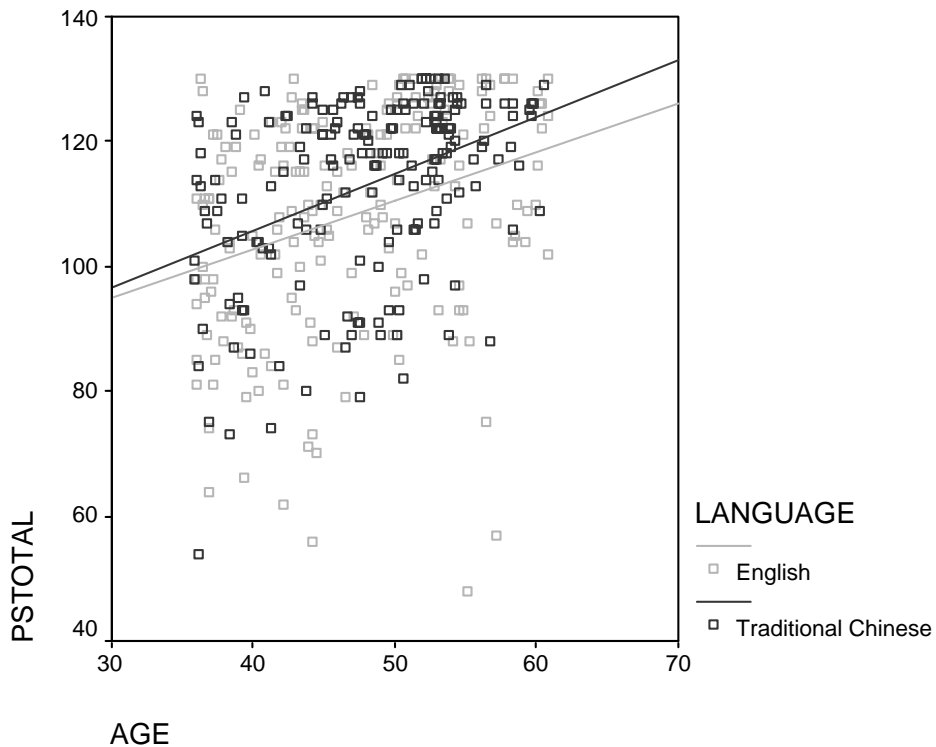


Figure 20. Test result of the homogeneity-of-slopes assumption of one-way ANCOVA between two language versions in personal-social.

APPENDIX J

UNADJUSTED AND ADJUSTED MEANS BY DOMAIN AND
LANGUAGE VERSION

Table 90. Adjusted and unadjusted language means and variability for communication total score of the ASQ: Inventory using age as a covariate.

Version	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
Traditional Chinese	218	113.59	16.35	113.21	1.15
English	130	113.60	19.27	114.70	1.15

Table 91. Adjusted and unadjusted language means and variability for the gross motor total score of ASQ: Inventory using age as a covariate.

Version	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
Traditional Chinese	195	107.03	13.99	106.27	1.12
English	183	104.00	18.45	104.81	1.16

Table 92. Adjusted and unadjusted language means and variability for problem solving total score of the ASQ: Inventory using age as a covariate.

Version	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
Traditional Chinese	189	107.39	13.72	106.98	0.90
English	109	101.05	13.59	101.75	1.19

Table 93. Adjusted and unadjusted language means and variability for the personal-social total score of ASQ: Inventory using age as a covariate.

Version	<i>N</i>	Unadjusted		Adjusted	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
Traditional Chinese	183	113.16	14.54	112.56	1.13
English	199	108.09	17.74	108.64	1.09

APPENDIX K

ITEMS THAT DEMONSTRATED NOTEWORTHY ORDER CHANGES ACROSS
DOMAINS IN TRADITIONAL CHINESE AND ENGLISH ASQ: INVENTORY

Table 94. Items that demonstrated noteworthy changes in item order.

Domain	Original order	New order	Item #	Item
Traditional Chinese				
Communication	65	60	cm60m6	Does your child repeat the sentences shown below back to you, without any mistakes? (Read the sentences one at a time. You may repeat each sentence one time. Mark "yes" if your child repeats both sentences without mistakes or "sometimes" if your child repeats one sentence without mistakes.) Jane hides her shoes for Maria to find. Al read the blue book under his bed.
	60	54	cm2p	Does your child use 5 words to describe how things feel? For example, does she use words like soft, hard, bumpy, rough, smooth, shimmy, or scratchy?
	59	53	cm8p	Does your child use at least 5 words to describe position? For example, does she use words such as "above," "across," "around," "between," "below," "near," "over," and "through."
	57	52	cm48m3	Does your child tell you at least two things about common objects? For example, if you say to your child, "Tell me about your ball," does he say something like, "It's round. I throw it. It's big"?
	56	63	cm1p	Can your child tell you all the steps in a family routine? For example, if you ask her to tell you all the steps to wash her hands, your child says, "I turn on the water, get some soap, wash my hands, turn off the water and dry my hands."

Table 94. (continued).

Domain	Original order	New order	Item #	Item
Traditional Chinese				
Communication	55	47	cm19p	Does your child make her voice go high at the end of a sentence that is a question?
	54	46	cm6p	After hearing new words, does your child try to use them in conversation?
	52	61	cm36m6	When you ask, "What is your name?" does your child say both her first and last names?
	51	56	cm15p	Does your child use words to talk about how things are different from one another? For example, your child says, "I have the biggest bowl of ice cream," "My car is best," or "She is the strongest."
	50	55	cm42m6	Does your child use all of the words in a sentence (for example, "a," "the," "am," "is," and "are") to make complete sentences, such as "I am going to the park," or "Is there a toy to play with?" or "Are you coming, too?" (Adaptations are made based on language differences)
Gross motor	60	55	gm19p	Can your child catch a small ball (such as a tennis ball) that is thrown from 5-6 feet away?
	58	63	gm14p	Can your child swing on a swing by herself? She should move their legs back and forth to pump.
	56	51	gm7p	Does your child hop on one foot for a distance of 2 feet?
Fine motor	63	55	fm60m6	Print your child's first name. Can your child copy the letters? The letters may be large, backward, or reversed. (Mark "sometimes" if your child copies about half of the letters.) (Space for adult's printing) (Space for child's printing)

Table 94. (continued).

Domain	Original order	New order	Item #	Item
Traditional Chinese				
Fine motor	55	50	fm54m5	Ask your child to draw a picture of a person on a blank sheet of paper. You may ask your child to “Draw a picture of a girl or a boy.” If your child draws a person with head, body, arms, and legs, mark “yes.” If your child draws a person with only three parts (head, body, arms, or legs), mark “sometimes.” If your child draws a person with two or fewer parts (head, body, arms, or legs), mark “not yet.” Be sure to include the sheet of paper with your child’s drawing with this questionnaire.
	53	45	fm4p	Can your child hold 5 or more playing cards? For example, can she hold the cards so they look like a fan?
	49	42	fm48m5	Does your child draw pictures of people that have at least three of the following features: head, eyes, nose, mouth, neck, hair, trunk, arms, hands, legs, or feet?
Problem solving	64	59	cg16p	Ask your child what is 6 minus (or take away) 1, 4 minus 2, and 8 minus 3. Does your child correctly subtract one number from another? She can use her fingers to count.
	61	51	cg30p	Does your child tell you if spoken or printed words have the same or different beginning and ending sounds? For example, CAR and CAKE have the same beginning sounds. BEG and DOG have the same end sounds. MAMA and LLAMA have different beginning sounds. TOP and TOY have different ending sounds. <i>(Adaptations are made based on language differences)</i>

Table 94. (continued).

Domain	Original order	New order	Item #	Item
Traditional Chinese				
Problem solving	45	39	cg42m6	When you say, "Say 'five eight three'," does your child repeat just the three numbers in the same order? Do not repeat the numbers. If necessary, try another series of numbers and say, "Say 'six nine two'." (Your child must repeat just one series of three numbers for you to answer "yes" to this question.
Personal-social	64	56	ps9ap	Does your child do most of the bath time routine by herself (with your supervision)? Does she take off clothes, get into the tub, clean her body and dry herself off?
	62	57	ps22sp	Does your child take turns when playing a sit down game such as board games or cards?
	60	55	ps48m5	Does your child brush her teeth by putting toothpaste on the toothbrush and brushing all her teeth without help? (You may still need to check and rebrush your child's teeth.)
	59	48	ps3ap	When you cross the street with your child, does she know how to look both ways before crossing?
	58	50	ps11ap	Does your child know how to behave when you take her out to a public place? For example when you are at a library, church or grocery store?
	55	64	ps15sp	Does your child take part in an adult-led large group activity with other children for at least 10-15 minutes? For example, circle time with more than 5 kids?
	54	62	ps10sp	Does your child claim a toy that belongs to him by taking the toy back or by saying, "That's mine!"

Table 94. (continued).

Domain	Original order	New order	Item #	Item
Traditional Chinese				
Personal-social	53	63	ps23sp	Does your child feel proud of the things she is able to do? For example, she might show you a picture she drew and say, "Look at what I made!"
	52	37	ps16m4	While looking at himself in the mirror, does your child offer a toy to his own image?
	51	58	ps17sp	Does your child tell you what he likes and does not like? For example, your child says, "I love chocolate cake," or "I don't like to play dolls."
English				
Communication	53	47	cm19p	Does your child make her voice go high at the end of a sentence that is a question?
	51	46	cm6p	After hearing new words, does your child try to use them in conversation?
	50	55	cm42m6	Does your child use all of the words in a sentence (for example, "a," "the," "am," "is," and "are") to make complete sentences, such as "I am going to the park," or "Is there a toy to play with?" or "Are you coming, too?"
Gross motor	47	54	gm48m5	Does your child jump forward a distance of 20 inches from a standing position, starting with her feet together?
Fine motor	48	43	fm8p	Does your child cut up soft food into smaller pieces using a dull knife? For example, can your child use a butter knife to cut bananas or mangos? (Please supervise your child on this item.)
Personal-social	55	49	ps8ap	Does your child pour liquid from one container to another? For example does he pour juice from a small pitcher into a cup?

Table 94. (continued).

Domain	Original order	New order	Item #	Item
English				
Personal-social	54	48	ps3ap	When you cross the street with your child, does she know how to look both ways before crossing?
	50	37	ps16m4	While looking at himself in the mirror, does your child offer a toy to his own image?
	49	55	ps48m5	Does your child brush her teeth by putting toothpaste on the toothbrush and brushing all her teeth without help? (You may still need to check and rebrush your child's teeth.)
	47	54	ps11sp	Does your child tell you at least four of the following? Please mark the items your child knows. a. First name. b. Age. c. City she lives in. d. Last name. e. Boy or girl. f. Telephone number. Please circle the items your child knows.
	45	53	ps48m2	Does your child tell you at least four of the following? Please mark the items your child knows. a. First name. b. Age. c. City she lives in. d. Last name. e. Boy or girl. f. Telephone number. Please circle the items your child knows.

APPENDIX L

ASQ: INVENTORY ITEMS THAT PRESENTED DIF BETWEEN DIFFERENT
LANGUAGE VERSIONS BY DOMAIN

Domain	Item #	In favor of	DIF items
Communication	40 (27m5)	English	孩子能說由 3-4 個詞構成的句子嗎？ Does your child make sentences that are three or four words long?
	47 (19p)	English	孩子問問題的時候，她的聲調在最後會上揚嗎？ Does your child make her voice go high at the end of a sentence that is a question?
	49 (21p)	English	孩子會談論未來將要發生的事情嗎？例如，孩子會說，「我們明天要去動物園玩。」 Does your child talk about things that are going to occur in the future? For example, your child says, "We are going to the zoo tomorrow."
	52 (48m3)	English	孩子能說出常見物品至少兩個特徵嗎？舉例來說，如果您問孩子：「告訴我妳的球特別的地地方。」她會回答類似「它是圓的。我丟球。它是大的。」等答案。 Does your child tell you at least two things about common objects? For example, if you say to your child, "Tell me about your ball," does he say something like, "It's round. I throw it. It's big"?
	53 (8p)	English	孩子會用至少五個詞來描述位置嗎？例如，她會用「上面」、「對面」、「附近」、「之間」、「下面」、「周圍」及「穿過」等詞。 Does your child use at least 5 words to describe position? For example, does she use words such as "above," "across," "around," "between," "below," "near," "over," and "through".
	54 (2p)	English	孩子會用至少五個詞來描述東西摸起來的感覺嗎？例如，她會用「軟」、「硬」、「凹凸」、「粗」、「柔順」或「癢」等詞。 Does your child use 5 words to describe how things feel? For example, does she use words like soft, hard, bumpy, rough, smooth, or scratchy?

Domain	Item #	In favor of	DIF items
Communication (cont.)	60 (60m6)	English	<p>孩子能對您重複以下的句子而不犯錯嗎？每個句子您都可以再重複一次。如果您的孩子可以重複兩個句子而不犯任何錯誤，請勾選「是」，或是勾選「有時」如果孩子只有正確重複一個句子。</p> <p>「小紅藏起小麗的鞋子讓她找」。 「小明讀了他床底下那本藍色的書」。</p> <p>Does your child repeat the sentences shown below back to you, without any mistakes? (Read the sentences one at a time. You may repeat each sentence one time. Mark "yes" if your child repeats both sentences without mistakes or "sometimes" if your child repeats one sentence without mistakes.)</p> <p>Jane hides her shoes for Maria to find. Al read the blue book under his bed.</p>
	61 (36m6)	Traditional Chinese	<p>當您問，「你叫什麼名字？」時，孩子能正確的說出它的姓和名嗎？</p> <p>When you ask, "What is your name?" does your child say both her first and last names?</p>
	63 (1p)	Traditional Chinese	<p>孩子能正確告訴您家裡常做的事情的步驟嗎？例如，如果您問她洗手的步驟，孩子會說：「把手弄濕、用肥皂、搓搓手、沖一沖、把水關掉，然後把手擦乾。」</p> <p>Can your child tell you all the steps in a family routine? For example, if you ask her to tell you all the steps to wash her hands, your child says, "I turn on the water, get some soap, wash my hands, turn off the water and dry my hands.</p>
	65 (60m4)	Traditional Chinese	<p>孩子會使用表示比較的意思的詞彙嗎？如較重或更重、較強壯或更強壯，較短或更短嗎？您可以問孩子這些問題，如「汽車很大台，但是巴士_____」（更大台；「貓的體重很重，但是人的體重_____」）更重；「電視體積很小，但是書_____」（更小）。</p> <p>Does your child use comparison words, such as "heavier," "stronger," or "shorter"? Ask your child questions, such as "A car is big, but a bus is _____" (bigger); "A cat is heavy, but a man is _____" (heavier); "A TV is small, but a book is _____" (smaller).</p>

Domain	Item #	In favor of	DIF items
Gross motor	32 (18m5)	Traditional Chinese	如果您牽著孩子的一隻手，她能走下樓梯嗎？（您可以在商店、遊樂設施處或是家裏觀察） Does your child walk down stairs if you hold onto one of her hands? She may also hold onto the railing or wall. (You can look for this at a store, on a playground, or at home.)
	35 (42m6)	Traditional Chinese	孩子能夠不靠別人幫忙，自己爬上溜滑梯的梯子，並且滑下來嗎？ Does your child climb the rungs of a ladder of a playground slide and slide down without help?
	38 (27m6)	Traditional Chinese	孩子能左右腳交替著，一次只有一隻腳在一階樓梯上的上樓梯嗎？他可能會扶著樓梯扶手或牆壁。（您可以在商店裡、遊樂設施處或家裏觀察） Does your child walk up stairs, using only one foot on each stair? (The left foot is on one step, and the right foot is on the next.) He may hold onto the railing or wall.
	41 (48m3)	English	當孩子站著時，她能舉手過肩將球投向某個站在離他180公分之外的人嗎？要舉手過肩，您的孩子必須將手臂舉至肩膀高度並將球向前投擲。（若球掉下或是投球時手不過肩，請回答「0」。） While standing, does your child throw a ball overhand in the direction of a person standing at least 6 feet away? To throw overhand, your child must raise her arm to shoulder height and throw the ball forward. (Dropping the ball or throwing the ball underhand should be scored as "not yet".)
	42 (54m6)	English	孩子能用腳尖走4.5公尺（大約一輛轎車的長度）嗎？您可以示範給孩子看。 Does your child walk on his tiptoes for 15 feet (about the length of a large car)? (You may show him how to do this.)
	43 (42m5)	English	孩子能夠用雙手接住大顆的球嗎？請您站在離孩子150公分的地方丟球給她，而且可以讓孩子嘗試2-3次。 Does your child catch a large ball with both hands? (You should stand about 5 feet away and give your child two or three tries before you mark the answer.)

Domain	Item #	In favor of	DIF items
Gross motor (cont.)	45 (10p)	English	孩子能向前走一直線至少 10 步以上嗎？ Does your child walk forward on a straight line for 10 or more steps?
	46 (17p)	English	孩子能左右腳交替著走下樓梯嗎？ Does your child walk down the stairs with alternating feet?
	49 (3p)	English	孩子能一邊跑步並變換方向，一邊踢球嗎？例如踢足球時？ Does your child kick a ball while running and changing directions? For example, while playing soccer?
	50 (12p)	Traditional Chinese	當您示範給孩子看如何以一腳腳跟放在另一腳腳趾前面的方式向前走，孩子能以這種方式至少向前走十步嗎？ Show your child how to walk forwards by placing the heel of one foot right in front of the toe of her other foot. Can your child walk 10 or more steps forward?
	51 (7p)	English	孩子能以單腳跳至少 60 公分的距離嗎？ Does your child hop on one foot for a distance of 2 feet?
	53 (6p)	Traditional Chinese	孩子能在原地單腳跳三次嗎？ Does your child hop in place on one foot for 3 times?
	54 (48m5)	English	孩子能從站姿開始，接著雙腳同時離地，向前跳至少 50 公分遠嗎？ Does your child jump forward a distance of 20 inches from a standing position, starting with her feet together?
	55 (19p)	English	孩子能接住從 150-180 公分外丟過來的小顆球（約網球大小）嗎？ Can your child catch a small ball (such as a tennis ball) that is thrown from 5-6 feet away?

Domain	Item #	In favor of	DIF items
Gross motor (cont.)	57 (4p)	English	<p>孩子能從站姿，雙腳向前跳至少 90 公分嗎？開始跳的時候必須雙腳併攏。</p> <p>Does your child jump forward a distance of 3 feet (36 inches) from a standing position? She should start with her feet together.</p>
	59 (60m6)	English	<p>孩子能兩隻腳交替著跳著走嗎？您可以示範給孩子看。</p> <p>Does your child skip using alternating feet? (You may show her how to do this.)</p>
	61 (20p)	English	<p>孩子能投小顆球並打中約 150-180 公分外的目標嗎？</p> <p>Can your child throw a small ball and hit a target that is 5-6 feet away?</p>
	62 (60m5)	English	<p>孩子能單腳向前跳 120-180 公分嗎？左右腳您各可以給孩子兩次嘗試的機會。如果僅一隻腳能完成，請填寫「1」。</p> <p>Does your child hop forward on one foot for a distance of 4-6 feet without putting down the other foot? (You may give him two tries on each foot. Mark “sometimes” if he can hop on one foot only.)</p>
	63 (14p)	Traditional Chinese	<p>孩子能自己盪鞦韆嗎？她必須前後移動雙腿推動鞦韆。</p> <p>Can your child swing on a swing by herself? She should move their legs back and forth to pump.</p>
	65 (16p)	Traditional Chinese	<p>孩子會跳繩嗎？當繩子翻過她的頭頂和腳下時，她必須完成至少三次的跳躍。</p> <p>Can your child skip rope? She should jump at least three times while flipping the rope over her head and under her feet.</p>

Domain	Item #	In favor of	DIF items
Fine motor	30 (20m5)	Traditional Chinese	<p>孩子能自己將六個小積木或小玩具一個接一個的疊起來嗎？（您也可以用線團、小盒子或 2.5 公釐大小的玩具）</p> <p>Does your child stack six small blocks or toys on top of each other by himself? (You could also use spools of thread, small boxes, or toys that are about 1 inch in size.)</p>
	31 (20m6)	Traditional Chinese	<p>當孩子試著轉門把、為玩具上發條、轉動陀螺或扭轉瓶蓋時，她的手能做出旋轉的動作嗎？</p> <p>Does your child use a turning motion with her hand while trying to turn doorknobs, wind up toys, twist tops, or screw lids on and off jars?</p>
	38 (36m6)	Traditional Chinese	<p>孩子畫畫時，他能像大人一樣用拇指配何其他手指握住鉛筆、蠟筆或原子筆嗎？</p> <p>When drawing, does your child hold a pencil, crayon, or pen between her fingers and thumb like an adult does?</p>
	40 (48m4)	Traditional Chinese	<p>孩子會解開一個或一個以上的鈕扣嗎？孩子可以解開自己衣服上的，也可以是玩具娃娃衣服上的。</p> <p>Does your child unbutton one or more buttons? (Your child may use his own clothing or a doll's clothing.)</p>
	42 (48m5)	English	<p>您的孩子畫人的時候，她能畫出下列人體組成部分中至少三項嗎？頭、眼睛、鼻子、嘴巴、脖子、頭髮、軀幹、手臂、手、兩條腿或兩隻腳。</p> <p>Does your child draw pictures of people that have at least three of the following features: head, eyes, nose, mouth, neck, hair, trunk, arms, hands, legs, or feet?</p>
	45 (4p)	English	<p>孩子能手持至少五張以上的紙牌嗎？例如，孩子能將紙牌拿成扇子的形狀。</p> <p>Can your child hold 5 or more playing cards? For example, can she hold the cards so they look like a fan?</p>

Domain	Item #	In favor of	DIF items
Fine motor (cont.)	49 (42m6)	Traditional Chinese	<p>向孩子展示右圖，她能用蠟筆、鉛筆或原子筆在一張大紙上畫出，而不是描出相同的圖形嗎？孩子畫的圖應要與右圖相似，除了大小可能會有所不同。</p> <p>Using the shape at right to look at, does your child copy it onto a large piece of paper using a pencil or crayon, without tracing? (Your child's drawing should look like the design of the shape, except it may be different in size.)</p>
	55 (60m6)	English	<p>請以正體寫出孩子的名字。孩子能抄寫她的名字嗎？字體可能很大、上下左右顛倒，也不必管筆劃順序是否正確。如果孩子能完成抄寫一半或更多的字體，請回答「1」。</p> <p>Print your child's first name. Can your child copy the letters? The letters may be large, backward, or reversed. (Mark "sometimes" if your child copies about half of the letters.) (Space for adult's printing) (Space for child's printing)</p>
	56 (7p)	Traditional Chinese	<p>孩子會用叉子或湯匙邊緣將軟的食物（如香蕉、芒果）切成小塊嗎？</p> <p>Does your child cut up soft food such as banana or mango into smaller pieces using the edge of a fork?</p>
	58 (5p)	Traditional Chinese	<p>孩子能自己扣上衣服上大部分的鈕扣，包括小於1公分的鈕扣嗎？</p> <p>Does your child button most buttons on her clothing, include small buttons less than 1/2 inch or less?</p>
	63 (3p)	English	<p>孩子能自己將鞋帶綁成蝴蝶結嗎？</p> <p>Can your child tie shoelaces making bow?</p>

Domain	Item #	In favor of	DIF items
Problem solving	12 (6m6)	Traditional Chinese	<p>寶寶會用玩具反覆上下敲擊桌子或地板嗎？</p> <p>Does your baby play by banging a toy up and down on the floor or table?</p>
	14 (6m5)	Traditional Chinese	<p>寶寶能將玩具從一隻手換到另一隻來回交替嗎？</p> <p>Does your baby pass a toy back and forth from one hand to the other?</p>
	15 (8m6)	Traditional Chinese	<p>當寶寶一手拿著玩具時，她會用它敲擊桌上的另一個玩具嗎？</p> <p>When holding a toy in his hand, does your baby bang it against another toy on the table?</p>
	39 (42m6)	English	<p>孩子能把自己假扮或假想成某人或某樣東西嗎？舉例來說，您的孩子可能會穿上不同的衣服，並假裝自己是媽媽、爸爸或兄弟姊妹，或者是想像中的動物或人物。</p> <p>When you say, "Say 'five eight three'," does your child repeat just the three numbers in the same order? Do not repeat the numbers. If necessary, try another series of numbers and say, "Say 'six nine two'." (Your child must repeat just one series of three numbers for you to answer "yes" to this question.</p>
	47 (48m6)	English	<p>如果您放置五項物品在孩子面前，孩子能按 1、2、3、4、5 的順序點數嗎？問問題時，請不要以手勢、其他肢體語言或說出名字來幫助孩子。</p> <p>If you place five objects in front of your child, can he count them saying, "One, two, three, four, five," in order? (Ask the question without providing help by pointing, gesturing, or naming.)</p>

Domain	Item #	In favor of	DIF items
Problem solving (cont.)	48 (60m4)	English	<p>孩子能用斜體字的反義詞完成以下的句子嗎？舉例來說：「石頭是硬的，枕頭是軟的」。請將孩子的回答寫在橫線上。如果孩子 4 題中答對 3 題，請回答「2」。如果孩子 4 題中答對 2 題，請回答「1」。牛很大隻，老鼠很_____隻。冰是冷的，火是_____的。我們晚上看見星星，我們_____看見太陽。當我向上拋球，球會往_____掉。</p> <p>Does your child finish the following sentences using a word that means the opposite of the word that is italicized? For example: "A rock is <i>hard</i>, and a pillow is <i>soft</i>." Please write your child's responses below: A cow is big, and a mouse is _____. Ice is <i>cold</i>, and fire is _____. We see stars at night, and we see the sun during the _____. When I throw the ball up, it comes _____. (Mark "yes" if she finishes three of four sentences correctly. Mark "sometimes" if she finishes two of four sentences correctly.)</p>
	50 (60m6)	English	<p>孩子能認識名字的每一個嗎？指著孩子名字裡的某個字問他：「這個字是什麼？」請不要按照順序指每個字。</p> <p>Does your child name at least four letters in her name? Point to the letters and ask, "What letter is this?"(Point to the letters out of order.)</p>
	53 (21p)	Traditional Chinese	<p>您問孩子下列東西哪一項最大，哪一項最小，然後說「房子」、「車子」以及「杯子」。孩子能告訴你哪項最大、哪項最小嗎？</p> <p>Ask your child which of these is the biggest and which is the smallest. Then say, "a house," "a car," and "a cup." Can you child tell you which one is the biggest and smallest?</p>
	54 (27p)	On-line	<p>讓孩子看 37 個注音符號。孩子能正確念出十個以上的注音符號嗎？如孩子能念出七個，請填寫「1」。</p> <p>Show the 26 printed letters to your child. Can your child correctly name more than 10 of them? If the child can name 7, mark "sometimes." (Adaptations are made based on language differences).</p>
	55 (9p)	Paper-pencil	<p>孩子能正確的數到 20 嗎？</p> <p>Does your child count up to 20?</p>

Domain	Item #	In favor of	DIF items
Problem solving (cont.)	56 (13p)	Traditional Chinese	<p>在孩子面前放一元、五元和十元硬幣。孩子能指出一元硬幣嗎？</p> <p>Put a penny, nickel and dime in front of your child. Can your child point to the penny?</p>
	59 (16p)	English	<p>問孩子 6 減 1，4 減 2 和 8 減 3 等於多少，她能正確的將一個數字從另一個數字裡減去嗎？孩子可以用手指數數。</p> <p>Ask your child what is 6 minus (or take away) 1, 4 minus 2, and 8 minus 3. Does your child correctly subtract one number from another? She can use her fingers to count.</p>
	60 (29p)	Traditional Chinese	<p>孩子認得以下六個代表不同形狀的字嗎？舉例來說，當孩子指著一個箱子，他會說：「那是正方形。」如果她知道至少 3 種形狀，請回答「有時候」。a. 圓形 b. 三角形 c. 菱形 d. 正方形 e. 長方形 f. 星星</p> <p>Does your child know the following six words for shapes ? For example, your child says, "That's a square," when pointing to a box. If she knows at least 3 shapes mark "sometimes". a. circle b. triangle c. diamond d. square e. rectangle f. star.</p>
	64 (17p)	English	<p>問孩子 4 加 2、3 加 5 以及 7 加 1 等於多少。孩子能正確的把數字相加嗎？他可以用手指數數。</p> <p>Ask your child what is 4 plus 2, 3 plus 5, 7 plus 1. Does your child correctly add the numbers? He can use his fingers to count.</p>

Domain	Item #	In favor of	DIF items
Personal-social	33 (20m6)	English	孩子會用叉子或筷子吃飯嗎？ Does your child eat with a fork?
	34 (36m6)	Traditional Chinese	您的孩子在輪到別的孩子或大人做某事時，是否會等待輪到自己？ Does your child take turns by waiting while another child or adult takes a turn?
	41 (42m6)	Traditional Chinese	孩子能自己用肥皂和水洗手，然後用毛巾擦乾，不需要別人的協助嗎？ Does your child wash his hands using soap and water and dry off with a towel without help?
	46 (27m6)	English	孩子會自己穿上外套、夾克或襯衫嗎？ Does your child put on a coat, jacket, or shirt by himself?
	48 (3ap)	English	當您和孩子一起過馬路時，她知道過馬路前要左右注意嗎？ When you cross the street with your child, does she know how to look both ways before crossing?
	49 (8ap)	Traditional Chinese	孩子能將飲料從一個容器倒到另一個嗎？舉例來說，他能將果汁從小水壺裡倒到杯子裡。 Does your child pour liquid from one container to another? For example does he pour juice from a small pitcher into a cup?
	50 (11ap)	English	當您帶孩子到公眾場合去，她知道如何表現嗎？舉例來說，當您和她在圖書館、餐廳或是大賣場時。 Does your child know how to behave when you take her out to a public place? For example when you are at a library, church or grocery store?
	51 (42m5)	English	吃飯時，孩子會自己動手，用餐具把食物從一個容器移到另一個容器嗎？舉例來說，您的孩子會用大湯匙將蘋果泥從罐子取出放到碗裡。 Does your child serve herself, taking food from one container to another using utensils? (For example, does your child use a large spoon to scoop applesauce from a jar into a bowl?)

Domain	Item #	In favor of	DIF items
Personal-social (cont.)	53 (48m2)	English	<p>在下列問題中，孩子能回答至少其中四個嗎？請圈選您的孩子知道的項目。 a. 名字 b. 年齡 c. 居住的城市 d. 姓 e. 男孩或女孩 f. 電話號碼。</p> <p>Does your child tell you at least four of the following? Please mark the items your child knows. a. First name. b. Age. c. City she lives in. d. Last name. e. Boy or girl. f. Telephone number. Please circle the items your child knows.</p>
	54 (11sp)	English	<p>當您的孩子與朋友之間相處有問題時，他會告訴大人嗎？</p> <p>Does your child tell an adult when he or she is having trouble with a friend?</p>
	55 (48m5)	English	<p>在沒有您幫忙的情況下，孩子會將牙膏擠到牙刷上，然後自己刷牙嗎？您可能還是需要檢查或重刷孩子的牙齒。</p> <p>Does your child brush her teeth by putting toothpaste on the toothbrush and brushing all her teeth without help? (You may still need to check and rebrush your child's teeth.)</p>
	56 (9ap)	English	<p>孩子能自己完成洗澡大部分的步驟嗎（在您的監督下）？她會自己脫掉衣服、跨進浴缸、清洗並擦乾身體嗎？</p> <p>Does your child do most of the bath time routine by herself (with your supervision)? Does she take off clothes, get into the tub, clean her body and dry herself off?</p>
	58 (17sp)	Traditional Chinese	<p>孩子會告訴您他喜歡和不喜歡什麼嗎？舉例來說，孩子會說：「我喜歡巧克力蛋糕」或「我不喜歡玩洋娃娃」。</p> <p>Does your child tell you what he likes and does not like? For example, your child says, "I love chocolate cake," or "I don't like to play dolls."</p>
	61 (8sp)	Traditional Chinese	<p>孩子會試著解決和玩伴之間的衝突嗎？舉例來說，孩子可能會說：「我先玩球，再換你玩」。</p> <p>Does your child try to solve a conflict with playmates? For example, your child might say, "I'll play with the ball first, and then it's your turn."</p>

Domain	Item #	In favor of	DIF items
Personal-social (cont.)	63 (23sp)	Traditional Chinese	<p>孩子對他能完成的事情會感到驕傲嗎？舉例來說，她可能會展示她畫的圖給您看並說：「看我畫了什麼！」</p> <p>Does your child feel proud of the things she is able to do? For example, she might show you a picture she drew and say, "Look at what I made!"</p>
	64 (15sp)	Traditional Chinese	<p>孩子能和其他小朋友一起參與在成人領導的大團體活動中至少 10-15 分鐘嗎？舉例來說，小朋友圍成圓圈（超過 5 個小朋友以上）坐在一起做活動。</p> <p>Does your child take part in an adult-led large group activity with other children for at least 10-15 minutes? For example, circle time with more than 5 kids?</p>
	65 (13ap)	Traditional Chinese	<p>孩子知道緊急事件發生時要怎麼做嗎？舉例來說，他知道如何找大人幫忙，或是打 110 求助嗎？</p> <p>Does your child know what to do in an emergency? For example, does he know how to call an adult or dial 911 for help?</p>

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