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TEACHERS' ATTITUDES TOWARD GIFTED PRESCHOOLERS AND THEIR
KNOWLEDGE OF THE EARLY INTERVENTION FOR THE GIFTED

DISSertation

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
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* * * * *

The Ohio State University
1998

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ABSTRACT

It is through proper care and nurturance of each child, that his/her abilities can be maximized. This also includes young gifted children who have special needs based on their unique characteristics and learning styles. Preschool teachers should look beyond a narrow conception of giftedness and know how to use appropriate instructional strategies to educate gifted preschoolers. The purposes of this study are to identify American and Taiwanese gifted coordinators’ and regular preschool teachers’ attitudes toward gifted preschoolers and their knowledge of the early intervention strategies for these students. This study also attempts to investigate the relationships between attitudes toward gifted preschoolers, their knowledge of early intervention, and the following factors: (a) age, (b) experience with the gifted, (c) years teaching, (d) educational background, and (e) special education courses/workshops taken.

An instrument was developed by the researcher to collect data for this study. The instrument includes three parts: Part A – Demographics. Part B – Perceptions of Preschoolers, and Part C – Early Intervention for Gifted Preschoolers. Eighty preschool teachers were selected from Franklin County School Districts in Ohio and Taipei Municipality and Taipei County. Also, eighty gifted coordinators were selected throughout Central Ohio and Taipei Municipality and Taipei County.
The Statistical Analysis System (SAS) were employed to describe, summarize, and simplify the data, and to test all of the hypotheses of this study. To test the hypotheses, two-way ANOVAs, one-way MANOVAs, one-way ANOVAs, and Pearson’s product-moment correlation were employed.

The results indicated that overall Taiwanese and U.S. preschool teachers’ and gifted coordinators’ attitudes toward gifted preschoolers were positive. Taiwanese gifted coordinators’ and preschool teachers’ attitude scores were higher than that of U.S. gifted coordinators’ and preschool teachers. In the 54 items concerning knowledge of early intervention for gifted preschoolers, the majority of the respondents were in moderate to strong agreement. Overall gifted coordinators were more knowledgeable in terms of assessment and instructional interventions than preschool teachers and American gifted coordinators had highest knowledge scores. The relationship between attitudes and knowledge was positive in this study. The findings of this study suggest that three factors, different cultures, individual teacher’s values and attitudes and knowledge/professionalism regarding gifted preschoolers and early intervention for the gifted, are interrelated. Therefore, their unique combination will probably have a major impact on the lives of gifted preschoolers. In addition, the relationship between Taiwanese preschool teachers’ attitudes toward gifted preschoolers and their attitudes toward typically developing preschoolers was low, while the relationship between U.S. preschool teachers’ attitudes toward gifted preschoolers and their attitudes toward typically developing preschoolers was moderate.
Dedicated to my parents
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CHAPTER 1

INTRODUCTION

The most remarkable feature in the development of giftedness in children is that the exceptional behavior apparently starts very early in life (Robinson, 1987; Tannenbaum, 1992). Some studies of students considered gifted have discovered that children may show significant advanced and accelerated development in one or more domains in the pre-school years (Hildreth, 1938; Hollingworth, 1942; Lempers, Block, Scott, & Draper, 1987; Lupkowski, 1985; Montour, 1976; Piirto, 1994; Robinson, 1993; Robinson, Abbott, Berninger, & Busse, 1996; Roedell, Jackson, & Robinson, 1980; Shigaki & Wolf, 1982). Therefore, giftedness in young children is widely believed to be related to their precocity, and their rapid rate of development (Robinson, 1993). These precocious children perform at advanced levels of intelligence, creativity, academic and/or artistic abilities, and/or possess leadership when compared with other children of their age, experience, and surroundings. They have great information processing skills and are ready to learn in depth. Research supports that gifted children identified during the preschool age tend to stay ahead of other children over a period of years (Burns, Collins, & Paulsell, 1991; Durkin, 1966; Jackson, 1992; Mills & Jackson, 1990; Robinson & Robinson, 1992); and, in the long run, they continue to excel as well as fulfill outstanding
achievement if nurturance is well tailored (DeAngelis, 1990; Feldman, 1980; Fowler, 1983; Hollingworth, 1942; Terman & Oden, 1925, 1947, 1959; Whipple, 1924).

Today, more and more young children are sent to preschools and day-care centers due to the dramatic increase in two-parent working families and single-parent families. Another important reason parents select preschool programs for their young children is the acknowledgement that early childhood education is crucial to a child’s cognitive, physical, and social-emotional development. Consequently, some children’s primary stimulation comes within preschool settings. In preschool, all children are considered to be unique and to have differing potential. It is through proper care and nurturance of each child, that his/her abilities can be maximized. This also includes young gifted children who have special needs based on their unique characteristics and learning styles.

There is little information on what constitutes giftedness, especially in preverbal stages of development. Still, it is generally agreed that the interrelationship between nature and nurture is a very substantial factor for giftedness (Clark, 1992; Tannenbaum, 1992). Preschool teachers should look beyond a narrow conception of giftedness and use appropriate instructional strategies to educate all children. Ideally, teachers can use a differentiated curriculum to meet all children’s needs. The National Association for Gifted Children (1998) supports the belief that education must respect the uniqueness of all individuals, the broad range of cultural diversity, and the similarities and differences in learning characteristics. It also asserts that the best way to attain excellence and equity for all students is through differentiated educational opportunities, resources, and encouragement for all students.
The Gifted and Talented Children's Education Act of 1978 was the first federal law to recognize the needs of preschool gifted students in the US (Davis & Rimm, 1989). However, very few public school systems serve gifted children before they enter into kindergarten (Jenkins, 1979). Generally, programs for gifted preschoolers are funded through grants at state universities or at highly selective private schools by tuition (Burns, Mathews, & Mason, 1990). In Taiwan, there are private programs that have been developed for preschoolers with special interests and talents. However, they serve only a very small number of potentially gifted preschoolers. Most parents of gifted preschoolers have difficulty choosing a special program because well-organized programs that fully understand and nurture precocious children may be nonexistent in their communities. Regular preschools can also provide suitable settings and opportunities for gifted children. Nevertheless, with only limited resources and a general lack of teacher training, preschool teachers may find that they can only focus on the basic needs of children and are not able to make the necessary curriculum modifications that challenge gifted children. In Cramer's (1991) study of services for special populations of gifted children, including the handicapped, women, minorities, underachievers, preschoolers, and the highly gifted, was an acknowledged concern of experts. However, even though many experts and professionals in gifted education recognize the importance of serving gifted preschoolers, research reports that have studied this group are rare.
Statement of the Problem

The literature indicates that most educators in the field of early childhood and preschool gifted education have similar challenges and unresolved problems (Delahanty, 1984; Jenkins, 1979; Karnes, Schwedal, & Kemp, 1985; Kitano, 1985; Kitano, 1990; Mitchell, 1989; Robinson, Roedell, & Jackson, 1979). Critical issues in gifted preschool education are related to definition, screening and identification, programming, funding, administration, and teacher qualifications and training.

Because the teacher is the most significant influence on the learning environment at school (Mathews & Burns, 1992; Renzulli, 1968), his/her attitude toward gifted preschoolers and knowledge of early intervention means a great deal to the education of these young children. Researchers have some evidence that a significant proportion of underachievement is attributed to poor teaching, negative teacher-pupil attitudes, and curriculum that does not meet the needs of gifted children (Shaw & Alves, 1963; Thiel & Thiel, 1977; Watson, 1960).

Attitudes are influenced by many factors, such as knowledge, experience of contact with others, and personality (Jones & Guskin, 1984; Siller, 1976), and influence individual behaviors and interactions with others (Ellis, 1973; 1979). Parents, educators, and administrators have long recognized the characteristics and abilities that gifted students bring to primary and secondary schools as well as having more information about these students’ school experiences than that of gifted preschoolers. For example, research of teachers’ attitudes toward school age gifted students (e.g., Siegel & Moore, 1994) and perceptions of giftedness (e.g., Guskin, 1988) is well documented. Some
research indicates that teachers of gifted children tend to hold more positive attitudes than do regular classroom teachers (Mills & Berry 1979) and that regular classroom teachers make very few modifications in their instruction for gifted learners (Archambault et al., 1993; Westberg, Archambault, Dobyns, & Salvin, 1993). Many teachers state that single-size schooling (one-size-fits all instruction) is working and that there is little need for significant adjustment in curriculum and instruction for diverse learners in the regular classroom. These teachers “assume that all students need to learn the same information in the same way at the same time and over the same duration” (Tomlinson, 1995).

Moreover, some teachers feel that it is not fair to treat students in their classrooms with different instructional options (Tomlinson, 1995).

Present research has not yet systematically examined teachers' attitudes toward gifted preschoolers and their knowledge or concern(s) regarding early intervention for the gifted. Some writers believe that gifted preschoolers possess particular abilities, learning styles, interests, attitudes, and learning rates which create a special challenge when training teachers to serve them (Mathews & Burns, 1992; Renzulli, 1968). If true, then the practical implications for facilitating personnel preparation for gifted preschool education should be an important issue. Without an understanding of regular and gifted teachers' attitudes toward gifted preschoolers, preschool teacher training programs may not effectively meet the special needs of gifted preschoolers. Moreover, the lack of research on regular and gifted preschool teachers' attitudes toward the gifted, and knowledge of early intervention could be a barrier to promoting and establishing gifted preschool education. Since there are no gifted preschool teachers in either Ohio or Taiwan, surveying gifted coordinators should be an acceptable alternative since gifted
coordinators are in a position to offer advice and suggestions to parents and preschool teachers of young gifted children.

Purposes of the Study

The purposes of this study are to identify American and Taiwanese gifted coordinators’ and regular preschool teachers’ attitudes toward gifted preschoolers, and to better understand their knowledge of the early intervention strategies for these students. This study also attempts to determine the relationships between attitudes toward gifted preschoolers, their knowledge of early intervention, and the following setting factors: (a) age, (b) experience with the gifted, (c) years teaching, (d) educational background, and (e) special education courses/workshops taken.

Hypotheses

According to the purposes of this study, the following hypotheses are proposed:

Hypotheses:
H1: There are no significant differences between preschool teachers and gifted coordinators in the U.S. and Taiwan concerning attitudes toward gifted preschoolers.
H2: There are no significant differences between preschool teachers and gifted coordinators in the U.S. and Taiwan concerning knowledge of assessment and instructional interventions for gifted preschoolers.
H3: There are no significant differences in the mean scores of preschool teachers’ attitudes toward the gifted preschoolers by: (a) experience with the gifted preschooler, (b) special education courses/workshops taken, and (c) educational background in Taiwan.

H4: There are no significant differences in the mean scores of preschool teachers’ attitudes toward the gifted preschoolers by: (a) experience with the gifted preschooler, (b) special education courses/workshops taken, and (c) educational background in the U.S.

H5: There are no significant differences in the mean scores of preschool teachers’ knowledge of assessment and instructional interventions by: (a) experience with the gifted preschooler, (b) special education courses/workshops taken, and (c) educational background in Taiwan.

H6: There are no significant differences in the mean scores of preschool teachers’ knowledge of assessment and instructional interventions by: (a) experience with the gifted preschooler, (b) special education courses/workshops taken, and (c) educational background in the U.S.

H7: There are no relationships between the attitudes and knowledge of assessment and instructional interventions and selected independent variables in the demographic profile by preschool teachers in Taiwan.

H8: There are no relationships between the attitudes and knowledge of assessment and instructional interventions and selected independent variables in the demographic profile by preschool teachers in the U.S.
H9: There is no relationship between Taiwanese preschool teachers’ attitudes toward gifted preschoolers and their attitudes toward regular preschoolers.

H10: There is no relationship between U.S. preschool teachers’ attitudes toward gifted preschoolers and their attitudes toward regular preschoolers.

H11: There are no relationships between the attitudes and knowledge of assessment and instructional interventions and selected independent variables in the demographic profile by gifted coordinators in Taiwan.

H12: There are no relationships between the attitudes and knowledge of assessment and instructional interventions and selected independent variables in the demographic profile by gifted coordinators in the U.S.

**Definition of Terms**

**Attitudes toward gifted preschoolers**

Attitude is defined as “a persistent disposition to act either positively or negatively toward a person, group, object, situation, or value” (Webster’s Third New International Dictionary, 1976). Gifted preschoolers are defined as preschool students who show a rapid rate of development in one or more domains. A rule of thumb is very young children whose ability or abilities are ahead of their age peers by at least one-fourth to one-half their chronological age (Robinson, 1993). Attitudes toward gifted preschoolers can therefore be defined as either a positive or negative persistent disposition which a person takes toward preschool students who may be gifted. In this study, gifted coordinators’ and regular preschool teachers’ attitudes toward gifted preschoolers are
measured by their mean score on the "Perceptions of Gifted Preschoolers", developed by
the researcher. The scale employs a semantic differential technique and includes 18 bi-
polar adjective pairs. The higher the score a teacher has, the more positive attitudes the
teacher harbors, and vice versa.

**Knowledge of the early intervention for gifted preschoolers**

Knowledge is defined as “information and understanding about a subject which a
person has in his or her mind or which is shared by all human beings” (Collins Cobuild
English Language Dictionary, 1993). Early intervention for gifted preschoolers are
services provided for gifted preschoolers and their families to address their special needs.
In this study, gifted coordinators’ and regular preschool teachers’ knowledge of early
intervention are measured by the mean score on the “Early Intervention for Gifted
Preschoolers”, developed by the researcher. The scale includes 54 descriptions on issues
of assessment and educational program planning pertaining to the gifted preschoolers.
The higher the score a teacher has, the more knowledgeable about the assessment and
programming for the gifted preschoolers the teacher is regarded to be, and vice versa.

**Preschool teachers**

Preschool teachers are those who are presently employed in a preschool classroom.
In this study, preschool teachers are teachers who serve in regular classes in public and
private preschools for children ages 3-5 in both Taipei, Taiwan and Columbus, Ohio,
U.S.A.

**Gifted coordinators**

Gifted coordinators are those who are in the position of program leader or
coordinator of the gifted program. In this study, gifted coordinators are elementary gifted
directors/ coordinators in Taipei Municipality and Taipei County and gifted coordinators in Central Ohio. For the most part, gifted coordinators are former teachers of the gifted with substantial practical knowledge of the needs of gifted students.
CHAPTER 2

LITERATURE REVIEW

This chapter reviews theoretical and research literature on serving gifted preschoolers. The chapter will start with a summary of the research findings regarding the teachers' attitudes as well as teachers' attitudes toward gifted students. Knowledge of early intervention for gifted preschoolers focusing on assessment and program planning will then be discussed. An exploration of the characteristics and skills of teacher of the gifted will also be reviewed.

Teachers' Attitudes toward Gifted Students

An attitude is a stable predisposition to think, feel, and behave favorably or unfavorably toward a specific object, event, person, or construct. Attitudes have a specific focus and once formed, become functional and endure. Attitudes produce consistency in behavior (Henderson, 1997). A teacher's attitudes toward students often involve the level of expectation, and thus self-fulfilling prophecies occur (Aspy & Bahler, 1975; Rosenthal, 1968). Positive attitudes toward students involve higher expectations
for students and possibly lead to better accomplishments and growth of the students while
negative attitudes toward students involve lower expectations and may lead to poorer
(1992) states that “attitudes of teachers toward gifted students affect not only the students
and their performance but also the acceptance and effectiveness of the gifted program and
the morale of the school as a whole” (p. 141). Therefore, it is important to examine
teachers’ attitudes toward the gifted.

Negative attitudes of teachers toward the gifted have been found by some writers
and researchers (e.g., Rothney & Sanborn, 1968; Sister Josephina, 1961; Wiener, 1960).
The findings indicate that gifted students can be intimidating to their teachers,
challenging their authority and raising doubts about their knowledge.

In a study to assess the attitudes of kindergarten and first-grade teachers toward
academically gifted early entrants, it was found that the young gifted children were often
assigned the lowest ranks of all candidates being considered for the kindergarten and
studied the public’s attitudes toward the gifted and found that teachers and parents of
gifted children tended to hold more positive attitudes than did regular classroom teachers.
educational administrators, community leaders, and the general public. Teachers’
attitudes are more positive toward gifted students when compared to other students with
disabilities (Leyser & Abrams, 1982; Panda & Bartel, 1972; Parish, Menuey, & Knowles,
1993; Shiver, 1981; Siegel & Moore, 1994), but they show lower levels of concern for
gifted students (Siegel & Moore, 1994). After reviewing research, Wu (1996)
summarized the factors related to teachers’ attitudes toward gifted students. Teachers
with the following factors tend to hold positive attitudes toward gifted students: (1) a
gifted education background, (2) ten or more years of teaching experience, (3)
workshops/courses on exceptionalities, (4) male, and (5) knowledge of the identification
and placement for the gifted.

Identification of Gifted Preschoolers

In this section, literature and research are summarized in order to answer two
questions: (1) What characteristics of preschoolers indicate "Giftedness"?, and (2) How
can we identify these children?

Characteristics of Gifted and Talented Preschoolers

Young gifted children display some common characteristics in any of the following
areas singly, or in combination: intellectual, academic, creative, social and emotional, and
artistic areas. Some of these characteristics can also be demonstrated by children who are
not precocious later in life. The main point is these behaviors are mastered by very
young children and are an indication of accelerated development. A rule of thumb is that
these are very young children, ages 3 to 5, whose ability or abilities are ahead of their age
peers by at least one-fourth to one-half their age (Gallagher, 1985; Robinson, 1993).

1. Intellectual Characteristics

Intellectually gifted preschoolers learn more quickly and readily, reason with
advanced skills, remember with less effort, generalize more readily, understand cause and
effect, apply more broadly, grasp more complex classification and abstract concepts (e.g.,
metamorphosis). They are highly curious and ask many "what?", "why?", and "how?"
questions. They are alert, metacognitively more mature, more self-aware, better at managing their own learning, good at problem-solving, and better observers of their thinking than other children of their chronological age (Brown, 1973; Kanevsky, 1992; Lempers, Block, Scott, & Draper, 1987; Lupkowski, 1985; Robinson, 1993; Shigaki & Wolf, 1982).

2. Academic

Academically gifted preschoolers exhibit unusual and advanced understanding, knowledge, and skills in language, reading, math, and/or science (Karnes, 1983; Lupkowski, 1985; Robinson, 1987; Roedell, Jackson, & Robinson, 1980). For example, a gifted preschooler in mathematics is usually adept at counting, adding, subtracting, multiplying and dividing.

3. Creative

A high degree of imagination and risk-taking may be found in some gifted preschoolers. They often have many different and original ways to solve problems. Gifted preschoolers usually like elaborate games with rules and modify traditional play to meet their sophisticated cognitive and social needs. For example, they may change a solitary play event into highly social play. In addition, gifted preschoolers produce creative humor from information using teasing, joking, and rhyming (Hall, 1993; Hanninen, 1985; Karnes, 1983; Robinson, 1993).

4. Social and Emotional

Gifted preschoolers tend to care more about the rules of behavior and see the world from others' perspectives. They are empathetic, sensitive, perfectionistic, and like older friends with comparable ability. Some gifted preschoolers are popular and display
leadership capacity (e.g., direct activities and generate ideas). Evidence has shown that 
gifted children performed more activities related to personal independence and social 
responsibility at an earlier age (Douthitt, 1992; Karnes, 1983; Robinson, 1993). For 
example, the children set high standards for themselves, do their best with autonomy, 
assume responsibility, understand the rights and wrongs, and are often used as a resource 
by other children.

5. Artistic

Talented preschool age children may demonstrate rapid development of artistic 
skills (e.g., good composition in painting). Musically gifted children respond sensitively 
to the mood of music and show high interest in musical activities, such as singing, and 
playing instruments (Karnes, 1983; Tannenbaum, 1992).

Identification System for Gifted Preschoolers

Preschool programs especially adapted to the needs of gifted young children try to 
respond to both advanced and immature skills of individual children. These programs 
usually have their own identification systems in which directors and psychologists or 
other professionals look for cognitively gifted preschoolers in order to provide a 
differentiated curriculum to meet their learning needs. As for superior artistic abilities 
and talent potential, they need to be recognized and nurtured by professionals within the 
specific domain. A case study approach or a two-step process of broad screening 
followed by individual testing are the most common ways that have been used to identify 
precocious characteristics and abilities.
1. Case Study Approach

The child study team in a preschool program or psychologists who have training in this field decide the essential components of this assessment approach. For example, a questionnaire requesting comprehensive information about the child's development, one approach used from parents, plus observations of the child in both teacher-directed concept attainment tasks, child-selected activities in the classroom, and play (especially dramatic play and constructive play), plus individual testing. The team members consider and discuss the data from the various sources. A decision of precocity is always made on an individual basis. This approach usually tries to look for children who demonstrate advanced mental ability and behaviors beyond their years, which one would not expect to observe in preschoolers (e.g., a critical thinker, a problem solver) (Roedell, Jackson, & Robinson, 1980; Wright & Coulianow, 1991).

2. Two-step process of broad screening followed by individual testing

Screening

Screening combines several of the following techniques: (1) Parent and/or Teacher(s) Ratings/Checklists/Questionnaires/Interview; (2) Observation of the Child and Child's Products; (3) Nomination (e.g., professional judgments, peer judgments); and (4) Test (e.g., Hess School Readiness Scale).

Individual testing

The second step in the two-step process typically involves individual testing to identify the intellectually, academically, and/or creatively gifted preschooler. The following tests are widely used in assessing young children: (1) standardized measures of intelligence (e.g., Wechsler Preschool Primary Scale of Intelligence (1967), Stanford-
The identification phase is based on the specific cut-off scores or a matrix that is used to determine if the child meets defined eligibility criteria. In most cases, preschool-aged children need to demonstrate an IQ two or more standard deviations above the mean on a standardized intelligence test to qualify for placement in a preschool gifted program and/or demonstrate academic capabilities at the 95th percentile or more (Burns, Mathews, & Mason, 1990; Hall, 1993; Karnes, 1983; Sandel, McCallister, & Nash, 1993).

**Guidelines for Identifying Gifted Children in Preschool Programs**

Currently, there is no standard or accepted identification system for gifted preschoolers. The advantages of the step-by-step screening and testing identification approach include economic factors and explicit data. Qualified preschoolers need to meet all the identification criteria, including screening, individual testing, and
identification. But, the cutoff on any part of the screening and testing identification implies the possibility of making an imprecise decision in any stage and resulting in disqualification in the selection stage. The case study approach is more individualized. It is comprehensive and generally more expensive and time consuming. To more effectively and efficiently identify gifted preschoolers, one can combine two or more identification systems after considering time, money, staff, and educational regulations. Following are some doable and usable guidelines for identifying gifted preschoolers. One who is interested in identifying gifted/talented preschoolers and making special accommodations for them can follow these guidelines in order to reduce errors in the identification approach.

A review of the assessment literature for young gifted children results in the following recommendations:

(A) Use both formal and informal assessments

Because IQ scores of preschoolers are not very stable over time, other means of identifying this population are important to consider. These include behavioral checklists and rating scales, interviews with parents and students, direct observation and products. Make good use of both formal and informal measures that take into account a wide range of capabilities.

(B) Effective and proper identification procedures

When selecting identification procedures, it is important to think about the nature of the preschool population. Use reliable and valid measures and carefully apply them to young gifted children with limited experiences. Consider proper language of the
examiner and be sensitive to the characteristics of individual children and conditions surrounding the observational, testing or interview situation.

(C) Involve significant others

Parents, relatives, caregivers, and peers who are aware of the child's ability can be very helpful in identifying the gifted. The method of interviewing them and the content of questionnaires/rating scales/checklists should be carefully designed, so that the resultant data is objective and effective. If possible, train parents and caregivers to observe specific behaviors first, and then interview them.

(D) Account for all variables

Identification system should be flexible in order to identify various ethnic, racial, and socioeconomic young kids and children with disabilities. When sufficient information for a decision cannot be found, or when conflicting data are obtained, the cause should be explored, and further inquiries should be made.

(E) Use qualified professionals

Test scores earned by preschoolers tend to be changeable and some behaviors observed may be inconsistent due to fatigue, illness, nervousness, anxiety, short attention span, stress, or a playful nature. Therefore, the identification procedures for very young children must be undertaken under the guidance of professionals who are familiar with the testing and have background training and experience with gifted children. Tests should be administered individually and carried out by a licensed or certified psychologist accustomed to testing very young children.
(F) See the child as a whole

The gifted child generally evidences asynchronous development. Observers and examiners should maintain a view that gets a holistic picture of the child, and an attitude that leads to the best performance of the child.

(G) Identification goals match those of the programs

As for a gifted preschool program, ideally the identification procedures must match the goals of the program. Also, a diagnosis of the child's needs is necessary for designing a differentiated curriculum.

(H) Community education and awareness

Education of the public is very important for sound referrals at this point of time. Communities should be informed in various ways. Inform the general public of the characteristics of gifted preschool children and disseminate information regarding the critical importance of identifying gifted preschoolers.

Programming for the Gifted Preschoolers

Conceptual Models for Developing Gifted Preschool Programs

Only a few of the many models in gifted education have been used to serve gifted preschoolers. From the research and literature, there are five models which provide a framework, or guidelines, for establishing a gifted program for children ages 3 through 6. Several have undergone changes from their original versions.
1. Enrichment Triad Model

Enrichment Triad Model has been widely used for school age and preschool age gifted students since it was published in 1977 (Karnes, Kemp, & Williams, 1983). This model, according to Renzulli (1977), presents two primary program objectives for guiding the gifted education: (1) Due to the majority of time spent in the gifted programs, gifted students have an opportunity to pursue their own interests to whatever depth and breadth they want, and they are allowed to pursue these interests in a way that is consistent with their own learning styles; and (2) The fundamental role of each teacher in the program for gifted students is to provide each student with assistance in (a) identifying and forming realistic problems that are consistent with the student's interest, (b) acquiring the resources and skills that are necessary for solving these particular problems, and (c) finding appropriate outlets for student products.

Renzulli separates three types of enrichment which make up the Enrichment Triad Model. He illustrates Type I Enrichment (General Exploratory Activities) as experiences designed to give learners opportunities to encounter areas of study in which they may have or develop interest. These exploratory activities give both teachers and students opportunities to make decisions about the activities they want to pursue in Type II enrichment.

Type II Enrichment (Group Training Activities) has to do with methods, materials, and strategies that promote the thinking and feeling processes, such as divergent thinking, analysis, observation, classification, categorization, synthesis, hypothesizing, and evaluation. Renzulli states that both Bloom's taxonomy (1956) and Guilford's Structure
of the Intellect model (1967) provide helpful systems for organizing Type II enrichment activities.

Type III Enrichment (Individuals and Small Group Investigations of Real Problems) requires the students to become inquirers of a real problem and use appropriate techniques and methods to obtain the information they need.

2. Bloom’s Taxonomy

The use of questioning strategies with a gifted child is a tremendously important teaching skill. One of the best tools in working with the gifted child is known as Bloom’s Taxonomy (Horner & Rits, 1979). Bloom’s cognitive taxonomy (1956) is divided into six levels: knowledge, comprehension, application, analysis, synthesis, and evaluation. The taxonomy can be applied to a variety of content areas or units of study (Karnes, 1980). It is crucial for teachers to present learning at many levels to meet the needs of a variety of learners. Average and talented students need to have learning presented at all the six levels. However, opportunities to work at more advanced levels are important for the more talented student (Clark, 1992).

Bloom’s cognitive taxonomy is widely accepted and used in many academic areas for gifted and nongifted students in Taiwan. For gifted students, many learning opportunities involve problem solving, inferences, generalizations, predictions, and conclusions. The main difference between Taiwanese and U.S. schooling practices is that Taiwan’s is more knowledge-oriented even though the knowledge-level is the least advanced level in Bloom’s cognitive taxonomy. Since gifted students are eager to learn and retain more information, many teachers find that they need to provide a lot of advanced content for these students. Many activities regarding facts, observations,
definitions, and main ideas can also be fun and important for these students’ development.

3. Guilford’s Structure of the Intellect Model

Guilford’s Structure of the Intellect model (SOI) is represented by a cube that contains 120 cells of possible abilities. Guilford (1967) presents five general facets of intellectual operations: cognition, memory, divergent production, convergent production, and evaluation. The second dimension of the model, products, contains units, classes, relations, systems, transformations, and implications. The third dimension, content, is make up of figural, symbolic, semantic, and behavioral (See Gallagher, 1975, p. 233-243).

The Structure of the Intellect model has been used in classrooms for young gifted and talented children. Teachers make use of the model to stimulate the children’s creative, divergent, and evaluative thinking throughout the day. For example, each day, a teacher-directed lesson is taught to all students in small groups. Lessons (math, science, language, and reading) are scheduled to tap varied thinking skills each week. The lessons are designed in a format highly appealing to the young children and encourage participation. These lesson plans are based on the teacher’s knowledge of the model and the children. In addition to teaching lesson plans, teachers set up activities during free play, music, art, dance, and other less directed periods of the day that stimulate the children to think as well as enhance affective development (Karnes, Kemp. & Williams, 1983).
4. Kaplan's Curriculum Model

Kaplan's Grid model includes important components of a differentiated curriculum. The components of Kaplan's Grid are the theme, content, processes, and products. There are five steps to a differentiated curriculum: selecting theme, determining the extent and depth of content to be learned, choosing an array of processes to be developed, listing a variety of possible products, and individualizing a differentiated curriculum (Kaplan, 1986).

Kaplan (1986) suggests that the teacher plan a differentiated curriculum with a theme. A wide variety of interests and the ability to generalize and see relationships are more available to the students when themes are used (Clark, 1992). For young gifted children, a theme across curriculum areas allow them to explore broad content at their ability level. Kaplan lists some rules to consider in selecting content: (1) It should be referenced to the theme; (2) It should be multidisciplinary; (3) It should incorporate information that all students should learn; (4) It should be consistent with the needs, interests, and abilities of the gifted students, and of particular importance or interest to individual students or groups of students; (5) It should allow for the integration of content areas; and (6) It should admit a time perspective that relates past, present, and future.

Some of the processes Kaplan suggests are productive thinking skills, basic research skills, learning-to-learn skills, life skills, and the skills of technology. Kaplan also suggests the integration of various categories of processes into curriculum planning and implementation.
Product can be designed in visual, oral, and written formats and through a variety of production skills such as varied technology and materials. It is also important to identify formal and informal outlets to share the products.

5. Multi-Methods Model

Hall (1993) asserts the importance of preschool education for bright children and presents a Multi-Methods Model, with eight components, that focuses on the self-actualization of gifted preschoolers. The first part of the model, Prescriptive Instruction measures, assesses individual achievement and requires individual instruction plans designed for each child. Tests are given and the results are used in an individual educational program which guides the teacher in providing effective and appropriate instruction for the child. The next component in the model is Acceleration of Content. Unit lessons are designed according to individual needs. They are developed to provide advanced content that increases the depth, complexity, and abstractness. The third component is Building Self-Direction. Since personal independence is the desired result, students are taught to monitor their own progress. Creative Divergent Problem Solving is the fourth part of the model. Creative thinking and problem solving skills are developed with the use of strategies such as brainstorming and evaluation of the student's products. The fifth component is Affective Guidance. Journal writing and bibliotherapy are key elements for children, and are used to express and respond to their emotions. Cultivation of Reading is the next component. A great deal of reading is an essential factor in a differentiated curriculum for gifted children. In Experiential Opportunities, the seventh component, a variety of hands-on activities are used. Field trips and different activities such as cooking and experimenting are planned and carried out. The final component is...
Adult World Accomplishment. Children are taught to be sensitive and responsive to the world through activities directed toward working as a professional and helping to solve societal problems.

**Sample Programs for Gifted Preschoolers**

1. Gifted preschool

   The evidence in support of the positive effects of ability grouping for gifted children is substantial with increased achievement when these children are grouped and instructed at their own ability levels (Feldhusen & Moon, 1992; Rogers, 1993; VanTassel-Baska, Willis, & Meyer, 1989); many authors hold that it is instructionally proper to place children of advanced ability together to expedite the delivery of an appropriately challenging curriculum.

   A gifted preschool can be considered to be an early intervention strategy for gifted children. Positive anecdotal evidence about the joys of children enrolled in preschools for gifted children has been found as well as short-term gains in academic skills, self-esteem, and creativity which have been reported (Hanninen, 1984; Karnes. 1983 a, b).

   For example:

   (A) A gifted preschool program in the East Baton Rouge Parish School System

   The state of Louisiana was one of the first states in the U.S. to recognize the need to provide a differentiated curriculum for gifted preschoolers. Through the implementation of a state act, Louisiana school systems are mandated to assess three- and four-year-olds suspected of being gifted/talented and to provide free and appropriate public education to all eligible children. This has resulted in the development of a public
program in the East Baton Rouge Parish School System that serves approximately 80-90
gifted preschoolers per year.

Although each school system must use criteria mandated by the state of Louisiana
to identify preschoolers for a gifted program, school systems are allowed to establish
their own screening process and select instruments to assess children. In the East Baton
Rouge Parish School System, all potential candidates are administered an intelligence test
and standardized academic tests that measure the areas of reading and math. To qualify
for the preschool gifted program, children need to either: (1) attain an IQ three or more
standard deviations above the mean; or (2) possess an IQ two and one-half to three
standard deviations above the mean and demonstrate math capabilities at the 98th-99.9th
percentile.

The emphasis of the program is placed on engaging intellectually and academically
gifted children in seeing-and-doing activities (exposure and hands-on manipulation). In
this approach, children are taught to think creatively and critically through the use of
open-ended questions. Children are encouraged to evaluate alternatives, make
independent decisions, and set goals that enable them to work at their own pace. Inquiry
and problem solving are integral parts of the program in a safe atmosphere where
children are encouraged to take risks and make mistakes (Burns, Mathews & Mason,

(B) The Hollingworth Preschool at Teachers College, Columbia University

The Hollingworth Preschool was founded by Professors James Borland and Heidi
Jacobs to meet the special educational needs of intellectually precocious children. The
mission of the school is to provide an optimal match between the needs of the population
it serves and a responsive instructional program. Each child is expected to not only grow intellectually, emotionally, socially, and physically, but also to develop a love of learning and positive attitudes toward school. The goals of the preschool encompass the nurturance of the whole child. The developmentally appropriate, child-centered curriculum is designed and delivered to nurture the unique potential of each child. The teachers are required to observe keenly, and respond appropriately.

The identification process has three components: (1) An extensive parent questionnaire requesting comprehensive data about the child’s development supportable by specific examples of emerging or mastered behaviors; (2) An observation of the child participating in a teacher-directed concept attainment task and engaging in self-selected activities in the classroom; and (3) A formal assessment carried out by an independent testing agency. The final decision about each child’s placement is made on an individual basis by the child study team who employ a case study approach. Entry to the program is offered to those children who exhibit the greatest need for the learning environment.

The five major goals of the instructional program are: (1) to provide a warm, caring, responsive environment that fosters a sense of security, acceptance, and belonging; (2) to provide children with a conceptual knowledge of the world around them that can serve as a foundation for further understanding; (3) to facilitate the development of higher level thinking skills necessary to become critical thinkers and problem solvers; (4) to further the development of the children’s social interaction skills; and (5) to encourage the growth of the children’s physical development and coordination.

Embracing an interdisciplinary approach, a balance between child-selected and child-designed activities; and teacher-developed and teacher-guided activities is practiced
throughout the day. Each child has the opportunity to explore individual interests while gaining exposure to a wider variety of ideas. All curricular decisions are guided by the data collected during careful observations of the children. The data include the children’s interests, talents, and levels of development in each domain. Play is an essential part of the Hollingworth Preschool day and problem solving strategies are integrated throughout the units of study. The teachers observe classroom interactions and behaviors, respond to the children’s actions, guide conflict resolution, get involved in child-initiated activity, modify the environment, and provide necessary materials (Piirto, 1994; Wright & Coulianos, 1991).

(C) The Child Development Preschool at the University of Washington. Seattle, Washington

At the Child Development Preschool, some children qualify for the program by demonstrating generally advanced intellectual abilities; others qualify on the basis of advanced abilities in specific cognitive areas. Information is obtained from parent questionnaires and from testing the children.

The program is designed to offer a variety of learning experiences. Children are placed in small groups according to their competence levels to work with teachers on activities in language, reading, science, mathematics, social skills, art, drama, creative expression, and thinking skills. Physical skills are developed through activities involving large and small muscles. An attempt is made to match instructional activities with each child’s level of competence.

The Child Development Preschool recognizes that gifted preschool children are ready and eager to learn academic concepts not usually taught until an older age.
Therefore, activities are adapted to provide advanced content in a format acceptable to young children. In addition, five categories of social skills are emphasized: (1) Independence, (2) Assertiveness, (3) Social sensitivity, (4) Making friendship, and (5) Solving problems. These skills are taught via teacher guidance throughout the day and through lessons involving stories, puppets, and role-playing (Karnes, 1983; Piirto, 1994; Robinson & Robinson, 1992; Roedell, Jackson & Robinson, 1980).

(D) The Hunter College Elementary School

One of the oldest schools for academically gifted children in the U.S. is The Hunter College Campus Schools, which has been identifying and serving the academically gifted since 1941. The Hunter College Campus Schools are comprised of an elementary school (nursery through grade 6) and a high school (grades 7 through 12). They are public, chartered by the Board of Trustees of the City University of New York and administered by Hunter College.

Children aged 3 and 4 are tested using the Stanford-Binet Fourth Edition. These tests are used as the preliminary screening for admission, and potential students have to score two standard deviations above the mean in order to be in the screening pool. Annually, from a pool of about 600 to 800 young children who meet the cutoff score on the Stanford-Binet, 50 students are selected through a second round of testing conducted by consultants and teachers. This second round of testing includes divergent production tasks, similar to those on the Torrance Tests of Creative Thinking (TTCT), and memory and reasoning tasks. The young students are ranked according to their performance on these tasks.
At the nursery and kindergarten levels, curriculum is both enriched and accelerated. Basic content skills are introduced when the students demonstrate the readiness to read, write, and count. The development of listening and speaking skills are integrated into the curriculum. Music, art, technology, second language, physical education, and science enrich each week's lessons.

Thinking skills are also highlighted, including analysis and abstract reasoning. Children are instructed to organize information and generate ideas. Teachers stress the skills of classification and identification of relationships. In addition, teachers promote the idea that solutions to one situation can serve as sources of solutions to other new ideas. Research skills are introduced and career awareness is begun. Play is an integral part of the preschool curriculum for the academically gifted. Dramatic play is highly encouraged, and performances are presented to other classes throughout the year. Special projects such as a “Dinosaur Day” are also undertaken, with mathematics activities, writing activities, art activities, and songs about dinosaurs (Piirto, 1994).

2. Inclusionary Preschool - Retrieval and Acceleration of Promising Young Handicapped and Talented Program (RAPYHT), Institute for Child Behavior and Development at the University of Illinois, Champaign-Urbana, Illinois

The RAPYHT Program uses two approaches for educating gifted disabled preschoolers: the open classroom and the structured classroom. In both kinds of classrooms, gifted disabled are integrated with children who have no disabilities and with nongifted disabled children to provide a type of inclusionary setting.

All children were administered the Torrance test, Thinking Creatively in Action and Movement (TCAM), and the subtest Magic Circle, Face Recognition, Gestalt
Closure, and Expressive Vocabulary from the Kaufman Assessment Battery for Children (K-ABC). The project’s identification process is also based on the talent checklists that are filled out by the teacher and parents for each child in the class.

In the open classroom, the teacher helps children acquire basic skills and designs an environment that encourages and nurtures special talents. The philosophy of the program is based on the assumption that children are the best judges of what, when, how, and at what pace they should learn. Children initiate their own learning and teachers serve as facilitators. Teachers base curricula on the children’s interests and needs and attempt to extend children’s learning in activities of their choice. A broad range of materials are always available to the children. Problems are discussed and resolved by teachers and children working closely together. The classroom schedule is flexible, and children may work alone or in small groups. During daily group meeting, all children and teachers meet to plan the activities.

In contrast with the open classroom approach, the RAPYHT Program includes a structured, teacher-directed classroom with a curriculum based on Guilford’s Structure of Intellect Model (SOI). The philosophy of this approach lies on the assumption that some children learn best through sequenced activities presented by teachers, each with specific and individualized instructional objectives. The SOI model provides a basis for planned programming to foster intellectual abilities, including convergent, divergent, and evaluative thinking. Math, language, and reading lessons are presented in a game format and music, art, dance, and activities designed to enhance social-emotional development are included. Learning activities are planned for individuals or for small groups of children with similar needs. Short periods of structured lessons alternate with children’s
own projects. Individualized Education Programs are designed for each child in areas of strength as well as in areas of deficit (Karnes, 1983; Piirto, 1994).

The Traits of the Teacher of the Gifted

Teachers of gifted students should have special characteristics and competencies. These characteristics and skills may serve as a basis for the selection of teachers of the gifted, as well as for the preservice and inservice training of teachers who wish to develop their skills in gifted education.

In Taiwan, many parents who have gifted children hope that teachers of the gifted have personal experiences to draw from in helping their children meet the problems they face. Research indicates that a teacher of the gifted may not be gifted, but should be intelligent and still growing in stimulating ways. Some authors believe that the personal-social characteristics of teachers are more important. Whitlock and Ducette (1989) developed and validated a model of the characteristics of outstanding teachers of the gifted by using a technique developed in industry. This technique requires intensive interviewing of current jobholders who have been nominated by peers as possessing exemplary characteristics. Ten outstanding and ten average teachers of the gifted were interviewed using this method. Characteristics that differentiated outstanding from average teachers of the gifted included enthusiasm, self-confidence, being a facilitator, being able to apply knowledge, having a strong achievement orientation, commitment to the role of gifted educator, and building program support for the gifted education program.
In the school setting, students' attitudes about quality should carry some weight and surveying children should be an alternative (Neugebauer, 1996). Bishop (1968) explored the characteristics of teachers identified as successful by their gifted pupils: emotional maturity, preference for teaching the gifted, intellectual superiority, enthusiasm about the subject, pursuit of literary and cultural interests, businesslike classroom behavior, and preference for special educational provisions for gifted students.

Feldhusen (1985) concluded that the following are basic characteristics of a "good" teacher of gifted students: (1) intelligent and knowledgeable in general, (2) broad interests, (3) hard working and achievement oriented, (4) well organized, (5) enthusiastic, (6) good sense of humor, (7) flexible, and (8) understands and accepts gifted students. Having additional aptitudes or abilities in the arts or other areas is also desirable. Consequently, a differentiated teacher training program is essential to prepare teachers to properly accommodate gifted children. He also pointed out that teachers serve as liaison to parent groups and civic organizations concerning gifted education.

Seeley (1979) reported the results of a national survey sent to universities, principals and teachers involved in gifted education asking respondents to rate the importance of a list of competencies. The following five competencies were judged as most important (response rate = .78):

1. Higher cognitive teaching and questioning techniques
2. Curriculum modification strategies
3. Special curriculum development strategies
4. Diagnostic prescriptive teaching skills
5. Student counseling strategies
A teacher certification regulation for gifted and talented was the intended outcome of this study. Basically, there were six recommendations emerging from this survey:

1. Teachers specifically assigned to teach gifted and talented children should hold a master's degree in the field.

2. State certification and endorsement standards should be mandatory, with provisions for a permissive phase-in until sufficient qualified professionals are available.

3. Information concerning gifted and talented children should be a part of every teacher's training.

4. One to two years of successful teaching experiences should be required of teachers before assignment to gifted and talented special programs.

5. Teachers of gifted and talented children should have a strong content area emphasis in their background.

6. Teachers should have a variety of special competencies for teaching gifted children.

The Project CITE-Gifted in Missouri (Altman, Faherty, & Patterson, 1978) highlighted the professional skills a teacher of the gifted should possess in order to create an appropriate learning environment for gifted students. The CITE researchers found that these teachers should be able to create an atmosphere of inquiry and problem solving, to integrate ideas, and to unify affective and cognitive domains. Teachers of the gifted should also stress thinking and questioning activities, concentrating on exploration of ideas rather than coverage of content. Many teachers could profit from training programs that would help them work effectively with gifted students. Leadership training that
would prepare administrators and teacher trainers is a strategy designed to adapt to the huge training needs with the limited available personnel to carry them out.

In Taiwanese and the U.S. preschools, the employment preferences for hiring well-educated and certified preschool teachers are the same. College-trained early childhood teachers are trained to demonstrate and apply an understanding of child development, to implement a developmentally appropriate curriculum, and to establish close relationships with families. The child-centered approach which provides a flexible environment for children to discover their own interests, pursue interesting projects, use materials and resources, and solve problems is an emphasis during preservice training. On the other hand, more teacher preparation in working with children with special learning and developmental needs has been recognized and supported by both special education and early childhood professionals.

Also, the frequent turnover and the increasing need for professional development for early childhood employees have forced preschools to provide inservice training for untrained and trained staff in both Taiwan and the U.S. Information based on early childhood theory and practice is the main focus of inservice training programs. In Taiwan, preschool education emphasizes content-oriented activities, while discovery learning is emphasized in the U.S. Taiwanese children often learn academic areas at an early age, especially language and math. Many parents expect that preschool teachers can offer academic experiences for young children which is the foundation for further learning in elementary schools.
CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes the research methodology utilized in this study. Each of the following research procedures is discussed in depth: subject selection, instrumentation, data collection, and data analysis.

Subject Selection

The target population for this study included gifted coordinators and regular preschool teachers in both Taiwan and America. A list of preschools in the areas near the Ohio State University was obtained from Dr. David Fernie, School of Teaching and Learning, and the Child Care Center at the Ohio State University. After the researcher visited these preschools during the second week of June, 1998, forty preschool teachers were enlisted to participate in this study. Forty randomly selected gifted coordinators from a mailing list of gifted coordinators for Central Ohio were obtained from Dr. Richard Howell at the Ohio State University in May, 1998. A listing of Taiwanese preschools was provided by Dr. Lu, Mei-Kuei, Taipei Municipal Teachers' College in March, 1998. After the researcher visited the preschools in the areas near Taipei
Municipal Teachers' College and Tamkang University, forty preschool teachers who were willing to complete the research instrument were purposely selected. In addition, forty randomly selected gifted coordinators were selected from a mailing list of elementary gifted coordinators for Taipei Municipality and Taipei County obtained from the Special Education Department, National Taiwan Normal University.

In conclusion, forty preschool teachers and forty gifted coordinators in the U.S. and forty preschool teachers and forty gifted coordinators in Taiwan were selected for participation in this study. Preschool teachers were selected from Franklin County School Districts in Ohio and Taipei Municipality and Taipei County. Gifted coordinators were selected from throughout Central Ohio and Taipei Municipality and Taipei County.

**Instrumentation**

An instrument was developed by the researcher to collect data for this study. The instrument includes three parts:

The first part of the instrument is participant demographics which includes: gender, age, teacher versus coordinator, experience with gifted preschoolers, experience with school-age gifted students, years teaching, special education courses/workshops taken, and educational background.

The second part, Perceptions of Gifted Preschoolers and Typically Developing Preschoolers, is an adaptation of Teachers' Attitudes Toward The Gifted Handicapped developed by Kuen-Shouh Wu (1996). The reliability of the original instrument is satisfactory (Cronbach alpha = .84).
There are two sections in the scale. The first section is designed for measuring attitudes toward gifted preschoolers, while the second section is to measure attitudes toward typically developing preschoolers. Each section uses the Osgood Semantic Differential technique and includes 18 bi-polar adjective pairs. These 18 pairs are friendly-unfriendly, kind-mean, neat-messy, talkative-noisy, creative-eccentric, healthy-unhealthy, cheerful-cranky, strong-weak, easy to get along with-hard to get along with, warm-aloof, independent-dependent, reliable-unreliable, sensitive-irritable, pleasing-troublesome, reasonable-unreasonable, active-inactive, assertive-passive, flexible-inflexible. The negative traits are assigned a score of 1, and the score for positive traits is 7. Therefore, the scores per adjective pair could range from 1 to 7.

The third part, Early Intervention for Gifted Preschoolers, is designed to assess the knowledge of early intervention strategies for gifted preschoolers. This part uses Likert-type statements with a six-point response scale. There are two dimensions and 54 items in the scale. The first dimension includes 25 items and is designed specifically for measuring the knowledge of assessment, while the second dimension contains 29 items and pertains to the knowledge of educational program planning concerning gifted preschoolers.

The following response scale is used in this six-point scale: (1) Disagree Very Strongly, (2) Disagree Strongly, (3) Disagree, (4) Agree, (5) Agree Strongly, (6) Agree Very Strongly. In the items of positive statements, 6 points are assigned for "Agree Very Strongly" and 1 point for "Disagree Very Strongly", whereas 6 points are assigned for "Disagree Very Strongly" and 1 point for "Agree Very Strongly" when the statements of items are negative.
Validity and Reliability

Validity is concerned with "the extent to which an instrument measures what one thinks it is measuring" (Ary, Jacobs, & Razavieh, 1990, p.256). The content validity of the survey instrument of this study was evaluated by a panel of experts (Appendix A). The experts were requested to determine if the items measure the intended content. Also, the experts were requested to assess: (1) the description on the cover page, (2) directions, (3) wording, and (4) format.

The face validity of the instrument was established by a field test that focused on the clarity and wording of statements and directions, length of the instrument, and format of the instrument. There were two stages. The first stage included two participants who were Taiwanese doctoral students at Ohio State University, one in early childhood education and the other in special education. The students were requested to make editorial and content changes that they thought were needed as well as to improve the translation quality and the equivalence of measurement. The second stage included four teachers who were purposely selected from a similar population of this study. This stage also sought feedback concerning the questionnaire.

The instrument was revised according to the participants' comments. Based on the revised instrument, a pilot test was conducted in August 1998 with 15 selected preschool teachers and gifted coordinators in order to assess the correctness and appropriateness of the instrument. The statistical reliability of the instrument, using Cronbach's alpha, was established through the pilot test. The reliability ratings of the Attitudes toward Gifted Preschoolers and Typically Developing Preschoolers are .88 and .84 respectively while the reliability ratings of the Knowledge of Assessment and Educational Program...
Planning for Gifted Preschoolers are .89 and .94 respectively. Table 1 shows these results. The panel of experts checked the validity once again before the final instrument was developed.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach’s Alpha</th>
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<tbody>
<tr>
<td>Attitude - Gifted Preschoolers</td>
<td>.88</td>
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<tr>
<td>Attitude - Regular Preschoolers</td>
<td>.84</td>
</tr>
<tr>
<td>Early Intervention for Gifted Preschoolers -</td>
<td>.89</td>
</tr>
<tr>
<td>Knowledge of Assessment</td>
<td></td>
</tr>
<tr>
<td>Knowledge of Program Planning</td>
<td>.94</td>
</tr>
</tbody>
</table>

n = 15

Table 1: Teachers’ Perceptions of Gifted Preschoolers and Early Intervention Strategies for the Gifted Reliability Coefficients (Pilot Test)

**Data Collection**

Data for the study were collected by mail questionnaire. An initial packet was mailed which included: 1) a cover letter which communicated the importance and the purposes of the study, 2) the research questionnaire, and 3) a pre-addressed, stamped return envelope. Mailing took place during the third week of August, 1998 in the U.S. and during the first week of September, 1998 in Taiwan. Two weeks after the initial
mailing, cards were mailed to non-respondents encouraging them to complete and return the questionnaire. A second mailing were sent one week later to all non-respondents in an effort to obtain more responses.

Fowler (1988) suggests that a 70% response rate is considered an acceptable rate of response for mailed surveys. In this study, a total of 160 questionnaires were mailed to the sample of gifted coordinators and preschool teachers. A total of 131 respondents returned the questionnaires. Of the 131 returned samples, 126 were valid responses. Some invalid responses have more than 5 missing data per survey, and some had the same response in each item. The response rate is 83% in Taiwan, and 75% in the U.S.

Data Analysis

In this study, data analysis was completed using a computer-based statistical package called the Statistical Analysis System (SAS). Statistical significance was set a priori at .05.

(1) Frequencies and percentages were used to report the demographic characteristics of the subjects.

(2) Means, standard deviations, and mode were used to answer the research questions. It included the specifications of the scale of teachers' attitudes and the scale of teachers' knowledge.

(3) Two-way analysis of variance (ANOVA) was employed to test for differences in mean scores of Taiwanese and American gifted coordinators' and preschool teachers' attitudes toward gifted preschoolers (Hypothesis 1).
(4) Two-way analysis of variance (ANOVA) was employed to test for differences of mean scores of Taiwanese and American preschool teachers' and gifted coordinators' knowledge of assessment and instructional interventions (Hypothesis 2).

(5) One-way analysis of variance (ANOVA) was employed to test for differences of mean scores of preschool teachers' attitudes toward gifted preschoolers in (a) experience with the gifted preschooler, (b) special education courses/workshops taken, and (c) educational background whether in the U.S. or Taiwan (Hypotheses 3 and 4).

(6) One-way multivariate analysis of variance (MANOVA) was employed to test for differences of mean scores of preschool teachers' knowledge of assessment and instructional interventions in (a) experience with the gifted preschooler, (b) special education courses/workshops taken, and (c) educational background whether in the U.S. or Taiwan (Hypotheses 5 and 6).

(7) Pearson's product-moment correlation was employed to determine if there were relationships between preschool teachers' attitudes and knowledge, and independent variables in the demographic profile in both America and Taiwan (Hypotheses 7 and 8).

(8) Pearson's product-moment correlation was employed to determine if there were relationships between preschool teachers' attitudes toward gifted preschoolers and their attitudes toward regular preschoolers in both America and Taiwan (Hypotheses 9 and 10).
(9) Pearson's product-moment correlation was employed to determine if there were relationships between gifted coordinators' attitudes and knowledge, and independent variables in the demographic profile in both America and Taiwan (Hypotheses 11 and 12).

General measures of association were described according to Davis' (1971) conventions:

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>.70 or higher</td>
<td>very strong relationship</td>
</tr>
<tr>
<td>.50 to .69</td>
<td>substantial relationship</td>
</tr>
<tr>
<td>.30 to .49</td>
<td>moderate relationship</td>
</tr>
<tr>
<td>.10 to .29</td>
<td>low relationship</td>
</tr>
<tr>
<td>.01 to .09</td>
<td>negligible relationship</td>
</tr>
</tbody>
</table>

**Rationale for Selecting ANOVA/MANOVA over ANCOVA/MANCOVA Analysis**

There are some assumptions that should be satisfied before using ANOVA and MANOVA: (a) The observations within each sample must be independent. (b) The populations from which the samples are selected must be normal. (c) The populations from which the samples are selected must have equal variances (homogeneity of variance).

In general, the assumption of normality is the less important, especially when the sample size is relatively large. Theoretically, when sample size is around 30 or more, it is relatively large. In most situations when sample size is around 30 or more, the
distribution is almost normal (Gravetter & Wallnau, 1992). In this study, there were 29 U.S. and 36 Taiwanese preschool teachers and 31 U.S. and 30 Taiwanese gifted coordinators. The homogeneity of variance assumption is considered more important here. After checking the data, the sample variances were very close. The Hartley's F-max test was used to test the variances, and the result (1.13 for nationality and 1.20 for teacher position) indicated the sample variances are similar.

The principle of ANCOVA and MANCOVA requires that the magnitude of the relationships among covariate and independent variables must be very low to avoid multicollinearity. At the same time, the magnitude of the relationships among covariate and dependent variables must be high (Lin, 1994). If this is the case, then there is a need to use ANCOVA or MANCOVA techniques. After carefully checking the data, there was no such confounding variable identified in this study. For these reasons, the ANOVA/MANOVA data analysis techniques were considered appropriate for this study.
CHAPTER 4

RESULTS

The purposes of this study are to identify American and Taiwanese gifted coordinators’ and regular preschool teachers’ attitudes toward gifted preschoolers and their knowledge of the early intervention strategies for these students. This study also attempts to determine the relationships between attitudes toward gifted preschoolers, their knowledge of early intervention, and the following setting factors: (a) age, (b) experience with the gifted, (c) years teaching, (d) educational background, and (e) special education courses/workshops taken.

This chapter presents response data and statistical results of the survey instrument. The purposes of this study and research questions are used to organize the findings presented in this chapter. Interpretations and implications of the results are presented in Chapter V. The survey instrument is found in Appendix B.

Demographic Characteristics of the Subjects

Table 2 provides a summary of subjects by nationality, teacher position, gender, age, experience with school-age gifted students, years with school-age gifted students,
experience with gifted preschoolers, years with gifted preschoolers, teacher status, years
teaching, special education courses/workshops taken, and educational background.

For the variable NATIONALITY

For the sample of 126 preschool teachers and gifted coordinators, 52 percent were
from Taiwan and 48 percent were from the U.S.

For the variable TEACHER POSITION

For the sample of 126 preschool teachers and gifted coordinators, 52 percent were
preschool teachers and 48 percent were gifted coordinators.

For the variable GENDER

It was found that 6 percent of subjects were male while 94 percent were female.

For the variable AGE

Subjects in the range of 18 through 32 years were the largest portion (47 %), 27
percent aged 33 to 46, and 26 percent aged over 46 (Frequency missing = 4). The mean
was 36.97 years.

For the variable EXPERIENCES WITH SCHOOL-AGE GIFTED STUDENTS

The data on experience with school-age gifted students indicated that 63 percent
had experiences with school-age students identified as gifted. In contrast, 37 percent
answered “no”.

For the variable YEARS WITH SCHOOL-AGE GIFTED STUDENTS

It was found that 63 percent have worked with students identified as gifted students
for 6 years or less, 23 percent have worked for 7 to 14 years, and 14 percent have worked
for 15 years or above (Frequency missing = 1). The mean was 5.62 years.
For the variable EXPERIENCES WITH GIFTED PRESCHOOLERS

57 percent had experiences with preschoolers who were perceived to be gifted by teachers or parents/guardians, while 43 percent had no experience with potentially gifted preschoolers.

For the variable YEARS WITH GIFTED PRESCHOOLERS

The data indicated that 76 percent have worked with gifted preschoolers for 2 years or less, 19 percent have worked with these preschoolers for 3 to 12 years, and the remaining 5 percent have worked for 13 years or above (Frequency missing = 5). The mean was 2.43 years.

For the variable TEACHER STATUS

52 percent were preschool teachers, 19 percent were gifted coordinators, and 29 percent served as both gifted teacher and gifted coordinator in school.

For the variable YEARS TEACHING

Years teaching ranged from 1 to 35 with a mean of 11.97 years. 40 percent have been in education for 1 to 7 years, 36 percent 8 to 19 years, and 24 percent 20 to 35 years (Frequency Missing = 4).

For the variable SPECIAL EDUCATION COURSES/WORKSHOPS TAKEN

Approximately half had taken courses/workshops pertaining to either gifted education or education of the disabled. 38 percent had taken courses/workshops pertaining to both gifted education and education of the disabled. 18 percent did not take special education courses/workshops (Frequency Missing = 1).
For the variable EDUCATIONAL BACKGROUND

The data on educational background indicated that 33 percent of subjects had completed master degrees or equivalent and Ph.D. degrees. 41 percent had completed bachelor degrees. The other 26 percent had completed high school and college degrees (Frequency Missing = 2).
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NATIONALITY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taiwan</td>
<td>66</td>
<td>52</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>60</td>
<td>48</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>126</td>
<td>100</td>
</tr>
<tr>
<td><strong>TEACHER POSITION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preschool Teacher</td>
<td>65</td>
<td>52</td>
</tr>
<tr>
<td>Gifted Coordinator</td>
<td>61</td>
<td>48</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>126</td>
<td>100</td>
</tr>
<tr>
<td><strong>GENDER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Female</td>
<td>119</td>
<td>94</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>126</td>
<td>100</td>
</tr>
<tr>
<td><strong>AGE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-32</td>
<td>57</td>
<td>47</td>
</tr>
<tr>
<td>33-46</td>
<td>33</td>
<td>27</td>
</tr>
<tr>
<td>47-75</td>
<td>32</td>
<td>26</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>122</td>
<td>100</td>
</tr>
<tr>
<td><strong>EXPERIENCES WITH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>THE GIFTED (SCHOOL-AGE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>80</td>
<td>63</td>
</tr>
<tr>
<td>No</td>
<td>46</td>
<td>37</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>126</td>
<td>100</td>
</tr>
<tr>
<td><strong>YEARS WITH THE GIFTED</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(SCHOOL-AGE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-6</td>
<td>79</td>
<td>63</td>
</tr>
<tr>
<td>7-14</td>
<td>29</td>
<td>23</td>
</tr>
<tr>
<td>15-25</td>
<td>17</td>
<td>14</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>125</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2: Demographic Characteristics of Subjects
Table 2 continued

| EXPERIENCES WITH THE GIFTED (PRESCHOOL) | Yes | 72  | 57 |
|                                        | No  | 54  | 43 |
|                                        | 126 | 100 |

| YEARS WITH THE GIFTED (PRESCHOOL) | 0-2  | 92  | 76 |
|                                   | 3-12 | 23  | 19 |
|                                   | 13-20 | 6   | 5  |
|                                   | 121 | 100 |

| TEACHER STATUS | Preschool Teacher | 65  | 52 |
|                | Gifted Coordinator | 25  | 19 |
|                | Gifted Teacher and Coordinator | 36  | 29 |
|                | 126 | 100 |

| YEARS TEACHING | 1-7 | 49  | 40 |
|                | 8-19 | 44  | 36 |
|                | 20-35 | 29  | 24 |
|                | 122 | 100 |

| COURSES/WORKSHOPS | Giftedness | 34  | 27 |
|                   | Disability | 21  | 17 |
|                   | Both       | 48  | 38 |
|                   | None       | 22  | 18 |
|                   | 125 | 100 |

| EDUCATION | High School Degree | 16  | 13 |
|          | Diploma           | 16  | 13 |
|          | Bachelor          | 51  | 41 |
|          | Master/Ph. D      | 41  | 33 |
|          | 124 | 100 |
The Specification of the Scales

The Scale of Teachers’ Perceptions of Gifted Preschoolers

Gifted coordinators’ and regular preschool teachers’ attitudes toward gifted preschoolers were measured by the mean score on the “Perceptions of Gifted Preschoolers.” The scale employed a semantic differential technique and included 18 bi-polar adjective pairs. For most questions, the higher the score a teacher had, the more positive attitudes the teacher harbored. The only exception are those scores in which the positive and negative valences were inverted. In these instances, the lower scores would indicate more positive attitudes - in all instances. These inverted responses are noted on the Tables that are referenced in this study (i.e., *=scoring inverted). Table 3 presents subjects’ responses to the scale. Most of the responses were positive such as friendly, kind, talkative, creative, healthy, independent, reliable, pleasing, sensitive, assertive, reasonable, active (Mean > 5). The grand mean for total items was 5.11, indicating a positive regard. Table 4 displays the Taiwanese top three responses on the scale and Table 5 displays the U.S. top three responses. Taiwanese teachers considered gifted preschoolers to be very assertive, creative, and sensitive and U.S. teachers considered them to be very independent, sensitive, and friendly.
<table>
<thead>
<tr>
<th>Items</th>
<th>Means</th>
<th>SDs</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Unfriendly – Friendly</td>
<td>5.15</td>
<td>1.31</td>
<td>6</td>
</tr>
<tr>
<td>Kind – Mean</td>
<td>5.06</td>
<td>1.27</td>
<td>6</td>
</tr>
<tr>
<td>Neat – Messy</td>
<td>4.46</td>
<td>1.52</td>
<td>4</td>
</tr>
<tr>
<td>Talkative – Noisy</td>
<td>5.34</td>
<td>1.50</td>
<td>7</td>
</tr>
<tr>
<td>Creative – Eccentric</td>
<td>5.63</td>
<td>1.27</td>
<td>6</td>
</tr>
<tr>
<td>Healthy – Unhealthy</td>
<td>5.39</td>
<td>1.19</td>
<td>6</td>
</tr>
<tr>
<td>*Cranky – Cheerful</td>
<td>4.69</td>
<td>1.26</td>
<td>4</td>
</tr>
<tr>
<td>*Weak – Strong</td>
<td>4.86</td>
<td>1.15</td>
<td>4</td>
</tr>
<tr>
<td>*Hard to get along with</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy to get along with</td>
<td>4.53</td>
<td>1.28</td>
<td>4</td>
</tr>
<tr>
<td>Warm – Aloof</td>
<td>4.84</td>
<td>1.36</td>
<td>4</td>
</tr>
<tr>
<td>Independent – Dependent</td>
<td>5.56</td>
<td>1.15</td>
<td>6</td>
</tr>
<tr>
<td>Reliable – Unreliable</td>
<td>5.18</td>
<td>1.22</td>
<td>4</td>
</tr>
<tr>
<td>Pleasing – Troublesome</td>
<td>5.21</td>
<td>1.25</td>
<td>4</td>
</tr>
<tr>
<td>Sensitive – Irritable</td>
<td>5.54</td>
<td>1.29</td>
<td>6</td>
</tr>
<tr>
<td>Assertive – Passive</td>
<td>5.50</td>
<td>1.26</td>
<td>4.6</td>
</tr>
<tr>
<td>Reasonable – Unreasonable</td>
<td>5.02</td>
<td>1.30</td>
<td>4</td>
</tr>
<tr>
<td>*Inactive – Active</td>
<td>5.32</td>
<td>1.19</td>
<td>6</td>
</tr>
<tr>
<td>Flexible – Inflexible</td>
<td>4.73</td>
<td>1.41</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Items                      | Mean = 5.11 |     |

Note. 1=Closely describes negative traits, 2=Moderately describes negative traits, 3=Slightly describes negative traits, 4=Neutral, 5=Slightly describes positive traits. 6=Moderately describes positive traits, 7=Closely describes positive traits
*Scoring Inverted

Table 3: Means, SDs, and Mode of Each Item on the Scale of Teachers’ Perceptions of Gifted Preschoolers (n = 126)
Table 4: Top Three Responses on Scale of Teachers' Perceptions of Gifted Preschoolers in Taiwan (n = 66)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Means</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 1 Response</td>
<td>6.09</td>
<td>Assertive-Passive</td>
</tr>
<tr>
<td>Top 2 Response</td>
<td>6.05</td>
<td>Creative-Eccentric</td>
</tr>
<tr>
<td>Top 3 Response</td>
<td>5.73</td>
<td>Sensitive-Irritable</td>
</tr>
</tbody>
</table>

Note. *Scoring Inverted

Table 5: Top Three Responses on Scale of Teachers' Perceptions of Gifted Preschoolers in the U.S. (n = 60)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Means</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 1 Response</td>
<td>5.48</td>
<td>Independent-Dependent</td>
</tr>
<tr>
<td>Top 2 Response</td>
<td>5.33</td>
<td>Sensitive-Irritable</td>
</tr>
<tr>
<td>Top 3 Response</td>
<td>5.23</td>
<td>*Unfriendly-Friendly</td>
</tr>
</tbody>
</table>

Note. *Scoring Inverted
The Scale of Teachers’ Perceptions of Typically Developing Preschoolers

Table 6 presents subjects’ responses to the scale of teachers’ perceptions of typically developing preschoolers. Most of the responses were positive such as friendly, kind, healthy, warm, pleasing (Mean > 5). Two items, passive and dependent, were slightly negative (Mean < 4). The grand mean for total items was 4.56. It was lower than the grand mean for gifted preschoolers (Mean = 5.11).

Table 7 presents the Taiwanese top three responses on the scale and Table 8 presents the U.S. top three responses. In general, Taiwanese teachers and U.S. teachers considered typically developing preschoolers to be very friendly.
<table>
<thead>
<tr>
<th>Items</th>
<th>Means</th>
<th>SDs</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Unfriendly – Friendly</td>
<td>5.10</td>
<td>1.28</td>
<td>4</td>
</tr>
<tr>
<td>Kind – Mean</td>
<td>5.08</td>
<td>1.07</td>
<td>4</td>
</tr>
<tr>
<td>Neat – Messy</td>
<td>4.09</td>
<td>1.23</td>
<td>4</td>
</tr>
<tr>
<td>Talkative – Noisy</td>
<td>4.10</td>
<td>1.26</td>
<td>4</td>
</tr>
<tr>
<td>Creative – Eccentric</td>
<td>4.61</td>
<td>.96</td>
<td>4</td>
</tr>
<tr>
<td>Healthy – Unhealthy</td>
<td>5.06</td>
<td>1.09</td>
<td>4</td>
</tr>
<tr>
<td>*Cranky – Cheerful</td>
<td>4.90</td>
<td>1.15</td>
<td>4</td>
</tr>
<tr>
<td>*Weak – Strong</td>
<td>4.56</td>
<td>1.02</td>
<td>4</td>
</tr>
<tr>
<td>*Hard to get along with</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy to get along with</td>
<td>4.78</td>
<td>1.14</td>
<td>4</td>
</tr>
<tr>
<td>Warm – Aloof</td>
<td>5.03</td>
<td>1.09</td>
<td>4</td>
</tr>
<tr>
<td>Independent – Dependent</td>
<td>3.83</td>
<td>1.35</td>
<td>4</td>
</tr>
<tr>
<td>Reliable – Unreliable</td>
<td>4.48</td>
<td>1.18</td>
<td>4</td>
</tr>
<tr>
<td>Pleasing – Troublesome</td>
<td>5.10</td>
<td>1.21</td>
<td>4</td>
</tr>
<tr>
<td>Sensitive – Irritable</td>
<td>4.37</td>
<td>.95</td>
<td>4</td>
</tr>
<tr>
<td>Assertive – Passive</td>
<td>3.86</td>
<td>1.33</td>
<td>4</td>
</tr>
<tr>
<td>Reasonable – Unreasonable</td>
<td>4.13</td>
<td>1.07</td>
<td>4</td>
</tr>
<tr>
<td>*Inactive – Active</td>
<td>4.66</td>
<td>1.27</td>
<td>4</td>
</tr>
<tr>
<td>Flexible – Inflexible</td>
<td>4.26</td>
<td>1.17</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Items Mean = 4.56

* Note. 1=Closely describes negative traits, 2=Moderately describes negative traits, 3=Slightly describes negative traits, 4=Neutral, 5=Slightly describes positive traits, 6=Moderately describes positive traits, 7=Closely describes positive traits.
  * Inverting scoring.

Table 6: Means, SDs, and Mode of Each Item on the Scale of Teachers’ Perceptions of Typically Developing Preschoolers (n = 126)
### Table 7: Top Three Responses on Scale of Teachers' Perceptions of Typically Developing Preschoolers in Taiwan (n = 66)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Means</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 1 Response</td>
<td>5.52</td>
<td>Pleasing-Troublesome</td>
</tr>
<tr>
<td>Top 2 Response</td>
<td>5.29</td>
<td>Kind-Mean</td>
</tr>
<tr>
<td>Top 3 Response</td>
<td>5.20</td>
<td>*Unfriendly-Friendly</td>
</tr>
</tbody>
</table>

*Note. *Scoring Inverted

### Table 8: Top Three Responses on Scale of Teachers' Perceptions of Typically Developing Preschoolers in the U.S. (n = 60)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Means</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 1 Response</td>
<td>5.13</td>
<td>*Inactive-Active</td>
</tr>
<tr>
<td>Top 2 Response</td>
<td>5.00</td>
<td>*Unfriendly-Friendly</td>
</tr>
<tr>
<td>Top 3 Response</td>
<td>4.92</td>
<td>Healthy-Unhealthy</td>
</tr>
</tbody>
</table>

*Note. *Scoring Inverted
The Scale of Knowledge of Assessment

Gifted coordinators' and regular preschool teachers' knowledge of early intervention for gifted preschoolers was measured by the mean score on the "Early Intervention for Gifted Preschoolers." It included two subscales: assessment and educational program planning. A Likert-type six-point scale was used in each subscale. Table 9 presents the means, standard deviations, and mode of the responses to the 25 statements related to teachers' knowledge of assessment. The majority of the items had a mean score of 4 and above and the grand mean was 4.60. Table 10 and 11 provide top 6 responses in both Taiwan and America. Three items (No. 2, 8, 25) had very high mean scores in both countries.
<table>
<thead>
<tr>
<th>Items</th>
<th>Means</th>
<th>SDs</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Early Identification</td>
<td>4.75</td>
<td>1.09</td>
<td>6</td>
</tr>
<tr>
<td>2. Parent Involvement</td>
<td>5.36</td>
<td>.81</td>
<td>6</td>
</tr>
<tr>
<td>3. Instrument and Training</td>
<td>4.91</td>
<td>1.02</td>
<td>6</td>
</tr>
<tr>
<td>4. Specific Assessment Tool</td>
<td>4.94</td>
<td>1.04</td>
<td>6</td>
</tr>
<tr>
<td>5. Multidisciplinary Team</td>
<td>5.21</td>
<td>.98</td>
<td>6</td>
</tr>
<tr>
<td>7. Observation</td>
<td>4.58</td>
<td>.93</td>
<td>4</td>
</tr>
<tr>
<td>8. Individual Difference</td>
<td>5.21</td>
<td>.80</td>
<td>6</td>
</tr>
<tr>
<td>9. Informal Measurement</td>
<td>5.02</td>
<td>.85</td>
<td>5</td>
</tr>
<tr>
<td>10. Underestimation</td>
<td>3.55</td>
<td>1.15</td>
<td>4</td>
</tr>
<tr>
<td>11. Ability Test</td>
<td>4.54</td>
<td>1.26</td>
<td>6</td>
</tr>
<tr>
<td>12. Achievement Test</td>
<td>4.08</td>
<td>1.34</td>
<td>3</td>
</tr>
<tr>
<td>13. Characteristic 1</td>
<td>4.43</td>
<td>1.08</td>
<td>4</td>
</tr>
<tr>
<td>14. Characteristic 2</td>
<td>4.72</td>
<td>.96</td>
<td>4</td>
</tr>
<tr>
<td>15. Characteristic 3</td>
<td>4.63</td>
<td>1.06</td>
<td>4</td>
</tr>
<tr>
<td>*16. Characteristic 4</td>
<td>3.81</td>
<td>1.11</td>
<td>4</td>
</tr>
<tr>
<td>17. Characteristic 5</td>
<td>4.13</td>
<td>1.30</td>
<td>4</td>
</tr>
<tr>
<td>18. Characteristic 6</td>
<td>4.47</td>
<td>1.06</td>
<td>4</td>
</tr>
<tr>
<td>19. Characteristic 7</td>
<td>4.17</td>
<td>1.12</td>
<td>4</td>
</tr>
<tr>
<td>20. Characteristic 8</td>
<td>4.44</td>
<td>.92</td>
<td>4</td>
</tr>
<tr>
<td>22. Characteristic 10</td>
<td>4.13</td>
<td>1.06</td>
<td>4</td>
</tr>
<tr>
<td>23. Data and Decisions</td>
<td>4.79</td>
<td>.97</td>
<td>4</td>
</tr>
<tr>
<td>24. Societal Value</td>
<td>4.40</td>
<td>1.11</td>
<td>4</td>
</tr>
<tr>
<td>25. Definition</td>
<td>5.33</td>
<td>.85</td>
<td>6</td>
</tr>
</tbody>
</table>

**Total Mean = 4.60**

*Note. 1=Disagree Very Strongly, 2=Disagree Strongly, 3=Disagree, 4=Agree, 5=Agree Strongly, 6=Agree Very Strongly
* = Scoring Inverted

Table 9: Means, SDs, and Mode of Each Item on the Scale of Teachers' Knowledge of Early Intervention for Gifted Preschoolers (Assessment) (n = 126)
<table>
<thead>
<tr>
<th>Rank</th>
<th>Item</th>
<th>Means</th>
<th>SDs</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>#5</td>
<td>5.32</td>
<td>.88</td>
<td>Identifying a gifted preschooler should involve different experts, including parents, teachers, gifted experts, and psychologists.</td>
</tr>
<tr>
<td>2</td>
<td>#6</td>
<td>5.21</td>
<td>1.00</td>
<td>It is appropriate to use a single test or a behavioral checklist to identify gifted preschoolers.*</td>
</tr>
<tr>
<td>3</td>
<td>#2</td>
<td>5.17</td>
<td>.90</td>
<td>Preschool teachers should help parents understand every young child’s potential.</td>
</tr>
<tr>
<td>4</td>
<td>#25</td>
<td>5.11</td>
<td>.88</td>
<td>A child can be gifted in many different ways.</td>
</tr>
<tr>
<td>5</td>
<td>#8</td>
<td>5.03</td>
<td>.84</td>
<td>It is possible for a preschooler to show advanced development in one or more areas when compared to their age-mates.</td>
</tr>
<tr>
<td>6</td>
<td>#9</td>
<td>4.98</td>
<td>.85</td>
<td>Preschool children’s daily performance and products play an important role in the identification of giftedness.</td>
</tr>
</tbody>
</table>

* = Scoring Inverted

Table 10: Top Six Responses of “Assessment” on Scale of Teachers’ Knowledge of Early Intervention for Gifted Preschoolers in Taiwan (n = 66)
<table>
<thead>
<tr>
<th>Rank</th>
<th>Item</th>
<th>Means</th>
<th>SDs</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>#25</td>
<td>5.58</td>
<td>.75</td>
<td>A child can be gifted in many different ways.</td>
</tr>
<tr>
<td>2</td>
<td>#2</td>
<td>5.57</td>
<td>.65</td>
<td>Preschool teachers should help parents understand every young child’s potential.</td>
</tr>
<tr>
<td>3</td>
<td>#8</td>
<td>5.42</td>
<td>.70</td>
<td>It is possible for a preschooler to show advanced development in one or more areas when compared to their age-mates.</td>
</tr>
<tr>
<td>4</td>
<td>#1</td>
<td>5.13</td>
<td>.91</td>
<td>Early identification of gifted preschoolers will help in their future development.</td>
</tr>
<tr>
<td>4</td>
<td>#3</td>
<td>5.13</td>
<td>1.10</td>
<td>Preschool teachers are able to identify gifted preschoolers more effectively when given appropriate instruments and training.</td>
</tr>
<tr>
<td>6</td>
<td>#5</td>
<td>5.08</td>
<td>1.08</td>
<td>Identifying a gifted preschooler should involve different experts, including parents, teachers, gifted experts, and psychologists.</td>
</tr>
</tbody>
</table>

Table 11: Top Six Responses of “Assessment” on Scale of Teachers’ Knowledge of Early Intervention for Gifted Preschoolers in the U.S. (n = 60)
The Scale of Knowledge of Educational Program Planning

Table 12 presents the means, standard deviations, and mode of the responses to the 29 statements related to teachers’ knowledge of educational program planning. The majority of the items had a mean score of 4 and above and the grand mean was 4.82. Table 13 provides top 6 responses of “Educational Program Planning” for gifted preschoolers in Taiwan and Table 14 provides top 6 responses in the U.S. It was found that items 9, 10, 11, and 22 were top responses in both Taiwan and America.
<table>
<thead>
<tr>
<th>Items</th>
<th>Means</th>
<th>SDs</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Early Childhood Education</td>
<td>4.98</td>
<td>.99</td>
<td>6</td>
</tr>
<tr>
<td>*2. The Same vs. Differentiated</td>
<td>4.12</td>
<td>1.57</td>
<td>4</td>
</tr>
<tr>
<td>3. Curriculum Modifications</td>
<td>5.06</td>
<td>.92</td>
<td>6</td>
</tr>
<tr>
<td>4. Individualized Opportunities</td>
<td>4.53</td>
<td>1.12</td>
<td>4</td>
</tr>
<tr>
<td>5. Strengths and Weaknesses</td>
<td>5.10</td>
<td>.94</td>
<td>6</td>
</tr>
<tr>
<td>*6. Special Services</td>
<td>4.78</td>
<td>1.15</td>
<td>6</td>
</tr>
<tr>
<td>7. Preservice Training</td>
<td>5.19</td>
<td>.94</td>
<td>6</td>
</tr>
<tr>
<td>8. Inservice Training</td>
<td>5.25</td>
<td>.88</td>
<td>6</td>
</tr>
<tr>
<td>9. Understanding and Support</td>
<td>5.49</td>
<td>.75</td>
<td>6</td>
</tr>
<tr>
<td>10. Self-Concept</td>
<td>5.50</td>
<td>.76</td>
<td>6</td>
</tr>
<tr>
<td>11. Parent Involvement</td>
<td>5.43</td>
<td>.76</td>
<td>6</td>
</tr>
<tr>
<td>12. In-depth/Advanced</td>
<td>4.56</td>
<td>1.22</td>
<td>6</td>
</tr>
<tr>
<td>13. Readiness</td>
<td>5.23</td>
<td>.87</td>
<td>6</td>
</tr>
<tr>
<td>14. Problem Solving</td>
<td>5.12</td>
<td>.89</td>
<td>6</td>
</tr>
<tr>
<td>15. Flexible Grouping</td>
<td>3.88</td>
<td>1.34</td>
<td>4</td>
</tr>
<tr>
<td>16. Ability Grouping</td>
<td>4.33</td>
<td>1.17</td>
<td>4</td>
</tr>
<tr>
<td>17. Sharing Opportunities</td>
<td>5.23</td>
<td>.80</td>
<td>6</td>
</tr>
<tr>
<td>18. Complex Investigations</td>
<td>4.90</td>
<td>.98</td>
<td>6</td>
</tr>
<tr>
<td>19. Faster Pace</td>
<td>4.83</td>
<td>1.03</td>
<td>6, 6</td>
</tr>
<tr>
<td>*20. Quantity vs. Quality</td>
<td>3.61</td>
<td>1.59</td>
<td>4</td>
</tr>
<tr>
<td>21. Higher-Level</td>
<td>4.79</td>
<td>.95</td>
<td>4</td>
</tr>
<tr>
<td>*22. Interpersonal Skills</td>
<td>5.39</td>
<td>1.00</td>
<td>6</td>
</tr>
<tr>
<td>23. Independent Learners</td>
<td>4.96</td>
<td>.98</td>
<td>6</td>
</tr>
<tr>
<td>24. Potential Interest</td>
<td>5.19</td>
<td>.88</td>
<td>6</td>
</tr>
<tr>
<td>25. Early School Entrance</td>
<td>4.34</td>
<td>1.28</td>
<td>4</td>
</tr>
<tr>
<td>26. Special Environments</td>
<td>4.40</td>
<td>1.13</td>
<td>4</td>
</tr>
<tr>
<td>27. Leadership</td>
<td>4.28</td>
<td>1.21</td>
<td>4</td>
</tr>
<tr>
<td>28. Different Expectation</td>
<td>4.85</td>
<td>1.23</td>
<td>6</td>
</tr>
<tr>
<td>29. More Gifted</td>
<td>4.41</td>
<td>1.18</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total**  **Mean = 4.82**

*Note. 1=Disagree Very Strongly, 2=Disagree Strongly, 3=Disagree, 4=Agree, 5=Agree Strongly, 6=Agree Very Strongly
*Scoring Inverted*

Table 12: Means, SDs, and Mode of Each Item on the Scale of Teachers' Knowledge of Early Intervention for Gifted Preschoolers (Educational Program Planning) (n = 126)
<table>
<thead>
<tr>
<th>Rank</th>
<th>Item #</th>
<th>Means</th>
<th>SDs</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>5.36</td>
<td>.80</td>
<td>It is very important to help gifted preschoolers develop a positive self-concept.</td>
</tr>
<tr>
<td>2</td>
<td>11</td>
<td>5.35</td>
<td>.79</td>
<td>Preschool teachers should work with parents of gifted children to assist in the child’s development.</td>
</tr>
<tr>
<td>2</td>
<td>22</td>
<td>5.35</td>
<td>1.05</td>
<td>Teachers of gifted preschoolers don’t need to help the child develop interpersonal skills.*</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td>5.30</td>
<td>.82</td>
<td>Gifted preschoolers need parents’ and teachers’ understanding and support.</td>
</tr>
<tr>
<td>5</td>
<td>8</td>
<td>5.23</td>
<td>.86</td>
<td>Inservice training is helpful for preschool teachers to gain the necessary knowledge and strategies for teaching gifted preschoolers.</td>
</tr>
<tr>
<td>5</td>
<td>13</td>
<td>5.23</td>
<td>.89</td>
<td>The curriculum for gifted preschoolers should contain the knowledge and skills that the children are ready to learn.</td>
</tr>
</tbody>
</table>

*Scoring Inverted

Table 13: Top Six Responses of “Educational Program Planning” on Scale of Teachers’ Knowledge of Early Intervention for Gifted Preschoolers in Taiwan. (n = 66)
<table>
<thead>
<tr>
<th>Rank</th>
<th>Item #</th>
<th>Means</th>
<th>SDs</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9</td>
<td>5.70</td>
<td>.59</td>
<td>Gifted preschoolers need parents’ and teachers’ understanding and support.</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>5.65</td>
<td>.68</td>
<td>It is very important to help gifted preschoolers develop a positive self-concept.</td>
</tr>
<tr>
<td>3</td>
<td>11</td>
<td>5.52</td>
<td>.72</td>
<td>Preschool teachers should work with parents of gifted children to assist in the child’s development.</td>
</tr>
<tr>
<td>4</td>
<td>24</td>
<td>5.50</td>
<td>.75</td>
<td>Gifted preschoolers need to be exposed to a number of areas of potential interest.</td>
</tr>
<tr>
<td>5</td>
<td>22</td>
<td>5.43</td>
<td>.96</td>
<td>Teachers of gifted preschoolers don’t need to help the child develop interpersonal skills.*</td>
</tr>
<tr>
<td>6</td>
<td>17</td>
<td>5.38</td>
<td>.74</td>
<td>The preschool teacher should provide opportunities such that gifted children can verbalize and share their thoughts.</td>
</tr>
</tbody>
</table>

*=Scoring Inverted

Table 14: Top Six Responses of “Educational Program Planning” on Scale of Teachers’ Knowledge of Early Intervention for Gifted Preschoolers in the U.S. (n = 60)
Comparisons and Relationships

Hypothesis 1:  There are no significant differences between preschool teachers and gifted coordinators concerning attitudes toward gifted preschoolers.

A two-way ANOVA, summarized in Table 16, was used to determine main effects and interactions of the nationality and teacher position on attitude scores. The results showed a significant main effect for nationality, $F(1,122) = 11.29, p < .001$. In Table 15, it indicated that Taiwanese teachers' attitudes were higher ($M = 5.32$) than that of U.S. teachers ($M = 4.88$).
<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nationality</td>
<td>1</td>
<td>6.5364</td>
<td>6.5364</td>
<td>11.29</td>
<td>.0010*</td>
</tr>
<tr>
<td>Position</td>
<td>1</td>
<td>.6824</td>
<td>.6824</td>
<td>1.18</td>
<td>.2798</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>.1296</td>
<td>.1296</td>
<td>.22</td>
<td>.6371</td>
</tr>
<tr>
<td>Error</td>
<td>122</td>
<td>70.6462</td>
<td>.5791</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>77.9946</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(p < .001)*

Table 15: Means and SDs of Attitude Scores by Nationality and Teacher Position

Table 16: Two-Way ANOVA of Attitude Scores by Nationality and by Teacher Position
Hypothesis 2: There are no significant differences between preschool teachers and gifted coordinators concerning knowledge of assessment and instructional interventions for gifted preschoolers.

A two-way ANOVA, summarized in Table 18, was used to determine main effects and interactions of the nationality and teacher position on knowledge scores of assessment and instructional interventions for gifted preschoolers. The F value revealed a significant teacher position effect, $F(1,122) = 21.73$, $p < .001$. The interaction between nationality and teacher position was significant, $F(1,122) = 4.00$, $p < .05$. In Table 17, the results indicated that American gifted coordinators had highest knowledge scores. Overall gifted coordinators were more knowledgeable about the assessment and instructional interventions than preschool teachers.

<table>
<thead>
<tr>
<th>Nationality</th>
<th>Preschool Teacher</th>
<th>Gifted Coordinator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Taiwan</td>
<td>4.58</td>
<td>.53</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>4.45</td>
<td>.39</td>
</tr>
</tbody>
</table>

Table 17: Means and SDs of Knowledge Scores by Nationality and Teacher Position

68
<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nationality</td>
<td>1</td>
<td>.0513</td>
<td>.0513</td>
<td>.22</td>
<td>.6430</td>
</tr>
<tr>
<td>Position</td>
<td>1</td>
<td>5.0728</td>
<td>5.0728</td>
<td>21.36</td>
<td>.0001**</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>.9502</td>
<td>.9502</td>
<td>4.00</td>
<td>.0477*</td>
</tr>
<tr>
<td>Error</td>
<td>122</td>
<td>28.9764</td>
<td>.2375</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>125</td>
<td>35.0507</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(* p < .05) **( p < .0001)

Table 18: Two-Way ANOVA of Knowledge Scores by Nationality and by Teacher Position
Hypothesis 3: There are no significant differences in the mean scores of preschool teachers' attitudes toward the gifted preschoolers by: (a) experience with gifted preschoolers, (b) special education courses/workshops taken, and (c) educational background in Taiwan.

One-way ANOVA was employed to test for any differences. Table 19 summarizes the means and standard deviations by experience with gifted preschoolers, special education courses/workshops taken, and educational background. No significant differences were found in all three One-way ANOVAs (See Tables 20, 21, and 22).
<table>
<thead>
<tr>
<th>Experience</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>5.45</td>
<td>.77</td>
</tr>
<tr>
<td>No</td>
<td>5.03</td>
<td>.77</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Courses</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giftedness</td>
<td>5.58</td>
<td>.80</td>
</tr>
<tr>
<td>Disability</td>
<td>5.38</td>
<td>.50</td>
</tr>
<tr>
<td>Both</td>
<td>5.22</td>
<td>.48</td>
</tr>
<tr>
<td>None</td>
<td>4.81</td>
<td>1.03</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Educational Background</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Degree</td>
<td>5.18</td>
<td>1.12</td>
</tr>
<tr>
<td>College Diploma</td>
<td>5.36</td>
<td>.91</td>
</tr>
<tr>
<td>Bachelor</td>
<td>5.20</td>
<td>.53</td>
</tr>
<tr>
<td>Master</td>
<td>5.15</td>
<td>.57</td>
</tr>
</tbody>
</table>

Table 19: Means and SDs of Preschool Teachers' Attitude Scores by Experience with Gifted Preschoolers, Special Education Courses/Workshops Taken, and Educational Background (in Taiwan)
<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>1</td>
<td>1.5712</td>
<td>1.5712</td>
<td>2.64</td>
</tr>
<tr>
<td>Error</td>
<td>34</td>
<td>20.2644</td>
<td>.5960</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>21.8356</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

p > .05

Table 20: ANOVA of Preschool Teachers' Attitude Scores by Experience with Gifted Preschoolers (in Taiwan)

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses</td>
<td>3</td>
<td>3.2092</td>
<td>1.0697</td>
<td>1.84</td>
</tr>
<tr>
<td>Error</td>
<td>32</td>
<td>18.6265</td>
<td>.5821</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>21.8356</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

p > .05

Table 21: ANOVA of Preschool Teachers' Attitude Scores by Special Education Courses/Workshops Taken (in Taiwan)
Table 22: ANOVA of Preschool Teachers' Attitude Scores by Educational Background (in Taiwan)

Hypothesis 4: There are no significant differences in the mean scores of preschool teachers' attitudes toward the gifted preschoolers by: (a) experience with the gifted preschooler, (b) special education courses/workshops taken, and (c) educational background in the U.S.

To determine if the differences with group were significant, One-way ANOVA was performed. Table 23 presents the means and standard deviations on attitudes by experience with gifted preschoolers, special education courses/workshops taken, and educational background. No significant differences were revealed among groups in all three One-way ANOVAs (See Tables 24, 25, and 26).
<table>
<thead>
<tr>
<th>Experience</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4.84</td>
<td>.86</td>
</tr>
<tr>
<td>No</td>
<td>4.80</td>
<td>.61</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Courses</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giftedness</td>
<td>4.53</td>
<td>.35</td>
</tr>
<tr>
<td>Disability</td>
<td>4.77</td>
<td>.96</td>
</tr>
<tr>
<td>Both</td>
<td>4.83</td>
<td>.57</td>
</tr>
<tr>
<td>None</td>
<td>5.02</td>
<td>.94</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Educational Background</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Degree</td>
<td>5.02</td>
<td>.47</td>
</tr>
<tr>
<td>College Diploma</td>
<td>5.02</td>
<td>1.15</td>
</tr>
<tr>
<td>Bachelor</td>
<td>4.96</td>
<td>.85</td>
</tr>
<tr>
<td>Master</td>
<td>4.50</td>
<td>.36</td>
</tr>
</tbody>
</table>

Table 23: Means and SDs of Preschool Teachers’ Attitude Scores by Experience with Gifted Preschoolers, Special Education Courses/Workshops Taken, and Educational Background (in the U.S.)
Table 24: ANOVA of Preschool Teachers' Attitude Scores by Experience with Gifted Preschoolers (in the U.S.)

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>1</td>
<td>.0070</td>
<td>.0070</td>
<td>.01</td>
</tr>
<tr>
<td>Error</td>
<td>27</td>
<td>18.6336</td>
<td>.6901</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>18.6407</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

p > .05

Table 25: ANOVA of Preschool Teachers' Attitude Scores by Special Education Courses/Workshops Taken (in the U.S.)

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses</td>
<td>3</td>
<td>.5597</td>
<td>.1866</td>
<td>.26</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>17.3604</td>
<td>.7234</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>17.9201</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

p > .05

Table 24: ANOVA of Preschool Teachers' Attitude Scores by Experience with Gifted Preschoolers (in the U.S.)

Table 25: ANOVA of Preschool Teachers' Attitude Scores by Special Education Courses/Workshops Taken (in the U.S.)
Hypothesis 5: There are no significant differences in the mean scores of preschool teachers’ knowledge of assessment and instructional interventions by: (a) experience with the gifted preschooler, (b) special education courses/workshops taken, and (c) educational background in Taiwan.

The comparison of knowledge scores of assessment and educational program planning by selected variables was determined by conducting multivariate analysis of variance (MANOVA).

Table 27 summarizes the means and standard deviations of preschool teachers’ knowledge scores by experience with gifted preschoolers, special education courses/workshops taken, and educational background in Taiwan.

The results of MANOVA, employing Wilk’s Lambda, were presented in Tables 28, 29, and 30. The overall knowledge scores were not statistically significantly different. Also, a univariate analysis of variance did not reveal differences between groups.
<table>
<thead>
<tr>
<th>Group</th>
<th>Assessment M</th>
<th>Assessment SD</th>
<th>Program Planning M</th>
<th>Program Planning SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4.57</td>
<td>.53</td>
<td>4.62</td>
<td>.56</td>
</tr>
<tr>
<td>No</td>
<td>4.48</td>
<td>.55</td>
<td>4.66</td>
<td>.58</td>
</tr>
<tr>
<td>Courses:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Giftedness</td>
<td>4.59</td>
<td>.59</td>
<td>4.72</td>
<td>.58</td>
</tr>
<tr>
<td>Disability</td>
<td>4.71</td>
<td>.47</td>
<td>4.80</td>
<td>.57</td>
</tr>
<tr>
<td>Both</td>
<td>4.25</td>
<td>.50</td>
<td>4.14</td>
<td>.35</td>
</tr>
<tr>
<td>None</td>
<td>4.39</td>
<td>.54</td>
<td>4.63</td>
<td>.56</td>
</tr>
<tr>
<td>Education:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Degree</td>
<td>4.41</td>
<td>.44</td>
<td>4.63</td>
<td>.58</td>
</tr>
<tr>
<td>College Diploma</td>
<td>4.44</td>
<td>.59</td>
<td>4.56</td>
<td>.70</td>
</tr>
<tr>
<td>Bachelor</td>
<td>4.64</td>
<td>.58</td>
<td>4.67</td>
<td>.50</td>
</tr>
<tr>
<td>Master</td>
<td>4.53</td>
<td>.58</td>
<td>4.69</td>
<td>.68</td>
</tr>
</tbody>
</table>

Table 27: Means and SDs of Preschool Teachers’ Knowledge of Assessment and Educational Program Planning by Groups (in Taiwan)
<table>
<thead>
<tr>
<th>MANOVA</th>
<th>Univariate</th>
<th>Univariate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilk's</td>
<td>ANOVA</td>
<td>ANOVA</td>
</tr>
<tr>
<td>( \Lambda )</td>
<td>( F )</td>
<td>( F )</td>
</tr>
</tbody>
</table>

**Knowledge**  
- \( .95 \)
- Assessment  \( .26 \)
- Program Planning  \( .05 \)

\( p > .05 \)

Table 28: MANOVA of Preschool Teachers' Knowledge Scores by Experience with Gifted Preschoolers (in Taiwan)

<table>
<thead>
<tr>
<th>MANOVA</th>
<th>Univariate</th>
<th>Univariate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilk's</td>
<td>ANOVA</td>
<td>ANOVA</td>
</tr>
<tr>
<td>( \Lambda )</td>
<td>( F )</td>
<td>( F )</td>
</tr>
</tbody>
</table>

**Knowledge**  
- \( .77 \)
- Assessment  \( 1.22 \)
- Program Planning  \( 1.75 \)

\( p > .05 \)

Table 29: MANOVA of Preschool Teachers' Knowledge Scores by Special Education Courses/Workshops Taken (in Taiwan)
Table 30: MANOVA of Preschool Teachers’ Knowledge Scores by Educational Background (in Taiwan)

<table>
<thead>
<tr>
<th>MANOVA</th>
<th>Univariate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilk’s Lambda</td>
<td>ANOVA F</td>
</tr>
</tbody>
</table>

| Knowledge | .92 |
| Assessment| .41 |
| Program Planning | .07 |

p > .05

Hypothesis 6: There are no significant differences in the mean scores of preschool teachers’ knowledge of assessment and instructional interventions by: (a) experience with the gifted preschooler, (b) special education courses/workshops taken, and (c) educational background in the U.S.

The means and standard deviations of U.S. preschool teachers’ knowledge scores by groups were presented in Table 31. The results of MANOVA by using Wilk’s Lambda were presented in Table 32, 33, and 34. The mean vectors of the groups were not significantly different. The univariate analysis of variance also indicated that no one variable was significantly different among groups.
<table>
<thead>
<tr>
<th>Group</th>
<th>Assessment</th>
<th>Program Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Experience:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4.23</td>
<td>.45</td>
</tr>
<tr>
<td>No</td>
<td>4.32</td>
<td>.43</td>
</tr>
<tr>
<td>Courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Giftedness</td>
<td>4.06</td>
<td>.03</td>
</tr>
<tr>
<td>Disability</td>
<td>4.16</td>
<td>.39</td>
</tr>
<tr>
<td>Both</td>
<td>4.23</td>
<td>.56</td>
</tr>
<tr>
<td>None</td>
<td>4.38</td>
<td>.45</td>
</tr>
<tr>
<td>Education:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Degree</td>
<td>4.33</td>
<td>.37</td>
</tr>
<tr>
<td>College Diploma</td>
<td>4.48</td>
<td>.39</td>
</tr>
<tr>
<td>Bachelor</td>
<td>4.03</td>
<td>.50</td>
</tr>
<tr>
<td>Master</td>
<td>4.48</td>
<td>.03</td>
</tr>
</tbody>
</table>

Table 31: Means and SDs of Knowledge of Assessment and Educational Program Planning by Groups (in The U.S.)
### Table 32: MANOVA of Preschool Teachers’ Knowledge Scores by Experience with Gifted Preschoolers (in the U.S.)

<table>
<thead>
<tr>
<th>MANOVA</th>
<th>Univariate</th>
<th>Wilk’s ANOVA</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment</td>
<td>.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program Planning</td>
<td>.98</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p > .05*

### Table 33: MANOVA of Preschool Teachers’ Knowledge Scores by Special Education Courses/Workshops Taken (in the U.S.)

<table>
<thead>
<tr>
<th>MANOVA</th>
<th>Univariate</th>
<th>Wilk’s ANOVA</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment</td>
<td>.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program Planning</td>
<td>.67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p > .05*
Table 34: MANOVA of Preschool Teachers' Knowledge Scores by Educational Background (in the U.S.)

<table>
<thead>
<tr>
<th>MANOVA</th>
<th>Univariate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilk’s Λ</td>
<td>ANOVA F</td>
</tr>
<tr>
<td>Knowledge</td>
<td>.78</td>
</tr>
<tr>
<td>Assessment</td>
<td>2.04</td>
</tr>
<tr>
<td>Program Planning</td>
<td>.24</td>
</tr>
<tr>
<td>p &gt; .05</td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis 7: There is no relationship between the attitudes and knowledge of assessment and instructional interventions and selected independent variables in the demographic profile by preschool teachers in Taiwan.

The comparison of relationships among attitudes, knowledge, and selected variables was determined by Pearson’s product-moment correlation coefficient. Table 35 summarizes the intercorrelation among preschool teachers’ attitudes, knowledge, age, years with school-age gifted students, years with gifted preschoolers, and years teaching in Taiwan. There is a low positive association ($r = -.20$) between preschool teachers’ attitudes and knowledge. The relationships between attitudes and age, attitudes and years with school-age gifted students, attitudes and years with gifted preschoolers, and attitudes and years teaching were all low ($r = +.15, r = +.21, r = +.16, r = +.17$ respectively).
Direction and magnitude of the relationship between knowledge and years teaching was - .16.

<table>
<thead>
<tr>
<th></th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>Means</th>
<th>SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.23</td>
<td>.79</td>
</tr>
<tr>
<td>X2</td>
<td>.20</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.48</td>
<td>.53</td>
</tr>
<tr>
<td>X3</td>
<td>.15</td>
<td>-.07</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td>30.74</td>
<td>7.59</td>
</tr>
<tr>
<td>X4</td>
<td>.21</td>
<td>.02</td>
<td>-.04</td>
<td>1.00</td>
<td></td>
<td></td>
<td>.36</td>
<td>.93</td>
</tr>
<tr>
<td>X5</td>
<td>.16</td>
<td>-.08</td>
<td>.37</td>
<td>-.01</td>
<td>1.00</td>
<td></td>
<td>1.57</td>
<td>3.70</td>
</tr>
<tr>
<td>X6</td>
<td>.17</td>
<td>-.16</td>
<td>.68</td>
<td>-.10</td>
<td>.59</td>
<td>1.00</td>
<td>6.22</td>
<td>5.04</td>
</tr>
</tbody>
</table>

**Note.** X1=Attitudes X2=Knowledge X3=Age X4=Years with school-age gifted students X5=Years with gifted preschoolers X6=Years teaching

Table 35: Intercorrelation among Attitudes, Knowledge, Age, Years with School-Age Gifted Students, Years with Gifted Preschoolers, and Years Teaching (Preschool Teachers in Taiwan)
Hypothesis 8: There is no relationship between the attitudes and knowledge of assessment and instructional interventions and selected independent variables in the demographic profile by preschool teachers in the U.S.

Table 36 summarizes the intercorrelation among U.S. preschool teachers’ attitudes, knowledge, age, years with school-age gifted students, years with gifted preschoolers, and years teaching. There is a low-to-moderately positive association ($r = .37$) between preschool teachers’ attitudes and knowledge. The trend appears to be that the higher the attitude scores, the higher the knowledge scores among respondents.

<table>
<thead>
<tr>
<th></th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>Means</th>
<th>SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.83</td>
<td>.82</td>
</tr>
<tr>
<td>X2</td>
<td>.37</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.45</td>
<td>.39</td>
</tr>
<tr>
<td>X3</td>
<td>.05</td>
<td>-.04</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td>31.55</td>
<td>11.00</td>
</tr>
<tr>
<td>X4</td>
<td>-.07</td>
<td>.08</td>
<td>.51</td>
<td>1.00</td>
<td></td>
<td></td>
<td>2.68</td>
<td>4.93</td>
</tr>
<tr>
<td>X5</td>
<td>.02</td>
<td>.04</td>
<td>.42</td>
<td>.89</td>
<td>1.00</td>
<td></td>
<td>3.36</td>
<td>5.04</td>
</tr>
<tr>
<td>X6</td>
<td>-.03</td>
<td>-.02</td>
<td>.68</td>
<td>.58</td>
<td>.61</td>
<td>1.00</td>
<td>6.38</td>
<td>5.18</td>
</tr>
</tbody>
</table>

Note. X1=Attitudes X2=Knowledge X3=Age X4=Years with school-age gifted students X5=Years with gifted preschoolers X6=Years teaching

Table 36: Intercorrelation among Attitudes, Knowledge, Age, Years with School-Age Gifted Students, Years with Gifted Preschoolers, and Years Teaching (Preschool Teachers in the U.S.)
Hypothesis 9: There is no relationship between Taiwanese preschool teachers’ attitudes toward gifted preschoolers and their attitudes toward regular preschoolers.

Table 37 provides the correlation coefficient between preschool teachers’ attitudes toward gifted preschoolers and their attitudes toward regular preschoolers. The relationship is low ($r = +.10$).

<table>
<thead>
<tr>
<th></th>
<th>AGP</th>
<th>ARP</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGP</td>
<td>1.00</td>
<td>.10</td>
<td>5.23</td>
<td>.79</td>
</tr>
<tr>
<td>ARP</td>
<td>.10</td>
<td>1.00</td>
<td>4.59</td>
<td>.58</td>
</tr>
</tbody>
</table>

*Note. AGP=Attitudes toward gifted preschoolers, ARP=Attitudes toward typically developing preschoolers*

Table 37: Correlation between Attitudes toward Gifted Preschoolers and Attitudes toward Typically Developing Preschoolers (Taiwanese Preschool Teachers)

Hypothesis 10: There is no relationship between U.S. preschool teachers’ attitudes toward gifted preschoolers and their attitudes toward typically developing preschoolers.

Table 38 provides the correlation coefficient between U.S. preschool teachers’ attitudes toward gifted preschoolers and their attitudes toward regular preschoolers. The relationship is moderate ($r = -.48$). U.S. preschool teachers who have higher scores on attitudes toward typically developing preschoolers tend to score higher on attitudes toward gifted preschoolers. Teachers who have lower scores on attitudes toward
typically developing preschoolers tend to score lower on attitudes toward gifted preschoolers.

<table>
<thead>
<tr>
<th></th>
<th>AGP</th>
<th>ARP</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGP</td>
<td>1.00</td>
<td>.48</td>
<td>4.83</td>
<td>.82</td>
</tr>
<tr>
<td>ARP</td>
<td>.48</td>
<td>1.00</td>
<td>4.50</td>
<td>.55</td>
</tr>
</tbody>
</table>

**Note.** AGP=Attitudes toward gifted preschoolers, ARP=Attitudes toward typically developing preschoolers

Table 38: Correlation between Attitudes toward Gifted Preschoolers and Attitudes toward Typically Developing Preschoolers (U.S. Preschool Teachers)
Hypothesis 11: There is no relationship between the attitudes and knowledge of assessment and instructional interventions and selected independent variables in the demographic profile by gifted coordinators in Taiwan.

Table 39 summarizes the intercorrelation among Taiwanese gifted coordinators' attitudes, knowledge, age, years with school-age gifted students, years with gifted preschoolers, and years teaching. There is a low positive association ($r = +.21$) between gifted coordinators' attitudes and knowledge. Also, the relationships between attitudes and age, attitudes and years with gifted preschoolers, and attitudes and years teaching are all low ($r = +.23$, $r = +.21$, $r = +.18$ respectively).
<table>
<thead>
<tr>
<th></th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>Means</th>
<th>SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.44</td>
<td>.75</td>
</tr>
<tr>
<td>X2</td>
<td>.21</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.81</td>
<td>.58</td>
</tr>
<tr>
<td>X3</td>
<td>.23</td>
<td>-.05</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td>36.28</td>
<td>7.97</td>
</tr>
<tr>
<td>X4</td>
<td>.01</td>
<td>-.00</td>
<td>.55</td>
<td>1.00</td>
<td></td>
<td></td>
<td>8.03</td>
<td>4.81</td>
</tr>
<tr>
<td>X5</td>
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<td>-.15</td>
<td>.24</td>
<td>.30</td>
<td>1.00</td>
<td></td>
<td>2.40</td>
<td>3.83</td>
</tr>
<tr>
<td>X6</td>
<td>.18</td>
<td>-.05</td>
<td>.96</td>
<td>.58</td>
<td>.37</td>
<td>1.00</td>
<td>14.90</td>
<td>7.80</td>
</tr>
</tbody>
</table>

**Note.** X1=Attitudes X2=Knowledge X3=Age X4=Years with school-age gifted students X5=Years with gifted preschoolers X6=Years teaching

Table 39: Intercorrelation among Attitudes, Knowledge, Age, Years with School-Age Gifted Students, Years with Gifted Preschoolers, and Years Teaching (Gifted Coordinators in Taiwan)
Hypothesis 12: There is no relationship between the attitudes and knowledge of assessment and instructional interventions and selected independent variables in the demographic profile by gifted coordinators in the U.S.

Table 40 summarizes the intercorrelation among U.S. gifted coordinators' attitudes, knowledge, age, years with school-age gifted students, years with gifted preschoolers, and years teaching. There is a moderate positive association ($r = -.38$) between gifted coordinators' attitudes and knowledge. Gifted coordinators who have better knowledge of assessment and instructional interventions tend to exhibit more positive attitudes toward gifted preschoolers. In addition, the relationships between attitudes and years with school-age gifted students, and attitudes and years with gifted preschoolers are moderate ($r = +.35$ and $r = +.33$). The direction and magnitude of the relationships between attitudes and age, between attitudes and years teaching, and between knowledge and years with gifted preschoolers are $+.25$, $+.19$, $+.13$ respectively, indicating a low association. There is a low negative association between knowledge and years teaching ($r = -.25$). In the U.S., the more years of teaching a gifted coordinator has, the lower the knowledge scores he or she tends to have.
<table>
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<td>.54</td>
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Note. X1=Attitudes X2=Knowledge X3=Age X4=Years with school-age gifted students X5=Years with gifted preschoolers X6=Years teaching

Table 40: Intercorrelation among Attitudes, Knowledge, Age, Years with School-Age Gifted Students, Years with Gifted Preschoolers, and Years Teaching (Gifted Coordinators in the U.S.)
CHAPTER 5

DISCUSSION

This chapter presents a summary and interpretations of the results presented in Chapter 4. First, an overview of the purpose and definition is presented, followed by findings and interpretations. Finally, implications for practice and recommendations for further investigation are discussed.

Summary

Purpose

The purposes of this study are to identify American and Taiwanese gifted coordinators' and regular preschool teachers' attitudes toward gifted preschoolers, and to better understand their knowledge of the early intervention strategies for these students. This study also attempts to determine the relationships between attitudes toward gifted preschoolers, their knowledge of early intervention, and the following setting factors: (a) age, (b) experience with the gifted, (c) years teaching, (d) educational background, and (e) special education courses/workshops taken.
Definition

Attitude is defined as “a persistent disposition to act either positively or negatively toward a person, group, object, situation, or value” (Webster’s Third New International Dictionary, 1976). Gifted preschoolers are defined as preschool students who show a rapid rate of development in one or more domains. A rule of thumb is very young children whose ability or abilities are ahead of their age peers by at least one-fourth to one-half their chronological age (Robinson, 1993). Attitudes toward gifted preschoolers can therefore be defined as either a positive or negative persistent disposition which a person takes toward preschool students who may be gifted. In this study, gifted coordinators’ and regular preschool teachers’ attitudes toward gifted preschoolers are measured by their mean score on the “Perceptions of Gifted Preschoolers”, developed by the researcher. The scale employs a semantic differential technique and includes 18 bipolar adjective pairs. The higher the score a teacher has, the more positive attitudes the teacher harbors.

Knowledge is defined as “information and understanding about a subject which a person has in his or her mind or which is shared by all human beings” (Collins Cobuild English Language Dictionary, 1993). Early intervention for gifted preschoolers usually involves services provided for gifted preschoolers and their families to address their special needs. In this study, gifted coordinators’ and regular preschool teachers’ knowledge of early intervention are measured by their mean score on the “Early Intervention for Gifted Preschoolers”, developed by the researcher. The scale includes 54 descriptions on issues of assessment and educational program planning pertaining to
gifted preschoolers. The higher the score a teacher has, the more knowledgeable about
the assessment and programming for the gifted preschoolers the teacher is regarded to be.

Preschool teachers are those who are presently employed in a preschool classroom. In this study, preschool teachers are teachers who serve in regular classes in public and private preschools for children ages 3-5 in both Taipei, Taiwan and Columbus, Ohio, U.S.A.

Gifted coordinators are those who are in the position of program leader or coordinator of the gifted program. In this study, gifted coordinators are elementary gifted directors/coordinators in Taipei Municipality and Taipei County and gifted coordinators in Central Ohio. For the most part, gifted coordinators are former teachers of the gifted with substantial practical knowledge of the needs of gifted students.

Interpretation

Teachers' Attitudes toward Gifted Preschoolers

In general, Taiwanese and U.S. preschool teachers' and gifted coordinators' attitudes toward gifted preschoolers were positive (M = 5.11 out of a possible 7.0). Gifted preschoolers were friendly, kind, talkative, creative, healthy, independent, reliable, pleasing, sensitive, assertive, reasonable, and active from teachers' and coordinators' viewpoints. In Taiwan, teachers and coordinators considered gifted preschoolers very assertive, creative, and sensitive. In the U.S., teachers and coordinators regarded gifted preschoolers as very independent, sensitive, and friendly. Sensitivity was regarded as the main trait of gifted preschoolers in both countries. Similar conclusions were drawn by
who found that gifted preschoolers tended to have exceptional sensitivity. This means that they care for others and understand the feelings and viewpoints of others at an early age. In addition, Taiwanese and U.S. teachers and coordinators all agreed on the common traits of independence and creativity for gifted preschoolers. This was consistent with the findings of the other studies of the characteristics of gifted preschoolers (Douthitt, 1992; Hall, 1993). Taiwanese teachers and coordinators felt that gifted preschoolers were quite assertive (M = 6.09), however, U.S. teachers and coordinators were more neutral about this trait (M = 4.35). This might be because gifted preschoolers' assertion is more obvious when compared to nongifted children for Taiwanese teachers in a more authoritarian child rearing society such as Taiwan.

There were significant differences between Taiwanese and U.S. gifted coordinators and preschool teachers concerning their attitudes toward gifted preschoolers. A significant main effect for nationality on attitude scores was found, F(1,122) = 11.29, p < .001. Taiwanese gifted coordinators and preschool teachers' attitude scores were higher (M = 5.32) than that of U.S. teachers and coordinators (M = 4.88) (See Hypothesis 1, p. 66-67). This might reflect the different cultural attitudes toward young gifted children. Taiwanese tend to value the gifted and focus intervention efforts on them, especially to the academically gifted (Lai, 1994; Wu, 1989). To a lesser degree, U.S. teachers and other school personnel seem to have less positive attitudes toward gifted students (Clark, 1992). Gallagher (1985) has stated that, in the U.S., schools provide far better opportunities for the physically talented than for students whose talents lie in intellectual, artistic, or leadership areas.
In this study, there were no significant differences between gifted coordinators and preschool teachers concerning their attitudes toward gifted preschoolers although the gifted coordinators' mean attitude scores ($M = 5.17$) were slightly higher than the preschool teachers' scores ($M = 5.05$) in Taiwan and the U.S. (See Hypothesis 1, p. 66-67). This might imply that the professional knowledge of gifted coordinators has minimal impact on their attitudes toward gifted preschoolers.

After further exploring the relationships between Taiwanese and U.S. preschool teachers' attitudes toward gifted preschoolers and several variables in the demographic profile, the results indicated that there were no substantial relationships between either Taiwanese or U.S. preschool teachers' attitudes and the following setting factors: (a) age, (b) experience with gifted preschoolers, (c) years with gifted preschoolers, (d) years with school-age gifted students, (e) years teaching, (f) special education courses/workshops taken, and (g) educational background. As for gifted coordinators, the relationships between U.S. gifted coordinators' attitudes toward gifted preschoolers and years with school-age gifted students and years with gifted preschoolers were low-to-moderate ($r = +.35$ and $r = +.33$) (See Hypothesis 12, p. 89-90). U.S. gifted coordinators who had more years working with school-age gifted students and gifted preschoolers exhibited slightly more positive attitudes toward gifted preschoolers than those who had less years working with school-age and preschool-age gifted preschoolers, but these relationships were low for Taiwanese gifted coordinators (See Hypothesis 11, p. 87-88). This means that gifted professionalism plus experience with gifted young children can somewhat improve and enhance attitudes toward gifted preschoolers.
In conclusion, Taiwanese teachers (both preschool teachers and gifted coordinators) take more positive attitudes toward gifted preschoolers when compared with U.S. teachers and coordinators. The main reason may come from the differences in cultural values, regarding the gifted. In addition to cultural attitudes, individual teacher's viewpoints and professionalism/knowledge plus working experience regarding gifted preschoolers are also influential factors related to teachers' attitudes toward gifted preschoolers.

**Teachers' Knowledge of Early Intervention for Gifted Preschoolers**

In the 25 items concerning assessment, the majority of the respondents were in moderate to strong agreement (M = 4.60 out of a possible 6.0). In both Taiwan and the U.S., the top concerns about assessment of gifted preschoolers were: (1) Identifying a gifted preschooler should involve different experts, including parents, teachers, gifted experts, and psychologists; (2) Preschool teachers should help parents understand every young child's potential; (3) It is possible for a preschooler to show advanced development in one or more areas when compared to their age-mates; and (4) A child can be gifted in many different ways.

It was noted that the U.S. and Taiwanese teachers and coordinators strongly agreed that a child can be gifted in different ways. This provides support for a more diverse view of giftedness and reflects that the trend is toward a broader conceptualization in many countries. Additionally, the U.S. and Taiwanese teachers and coordinators slightly agreed that when one ability is considered important to society, it is often noticed and recognized as giftedness (M = 4.15 and M = 4.64).
In Taiwan, two additional concerns about assessment were: (1) It is not appropriate to use a single test or a behavioral checklist to identify gifted preschoolers; and (2) preschool children’s daily performance and products play an important role in the identification of giftedness. In the U.S., two additional concerns were: (1) Early identification of gifted preschoolers will help in their future development; and (2) preschool teachers are able to identify gifted preschoolers more effectively when given appropriate instruments and training.

Since teacher nomination is one of the important ways to identify gifted children, it is important to understand the value systems of teachers regarding young children’s giftedness. For most Taiwanese teachers and coordinators, the following characteristics were indicators of gifted preschoolers: superior reasoning (M = 4.74), impressive memory (M = 4.67), creativity (M = 4.65), resemblance to older children (M = 4.64), and a longer attention span (M = 4.41). Most U.S. teachers and coordinators felt that the following characteristics were indicators: impressive memory (M = 4.25), creativity (M = 4.22), ability for self-direction (M = 4.22), and resemblance to older children (M = 4.20). Interestingly, Taiwanese teachers and coordinators agreed with the statements that gifted preschoolers are clearly superior to nongifted children in their ability to reason as well as having a longer attention span being two of the common characteristics of gifted preschoolers (M = 4.74 and M = 4.41); U.S. teachers and coordinators somewhat disagreed these statements (M = 3.47 and M = 3.92). Most Taiwanese and U.S. teachers and coordinators agreed that a bright preschooler understands ideas, while a gifted preschooler is able to develop abstractions; and that a bright preschooler absorbs information, while a gifted child manipulates information. Taiwanese teachers and
coordinators somewhat disagreed that a bright child enjoys straightforward information while a gifted child thrives on complexity, but U.S. teachers and coordinators slightly agreed with this statement.

Preschool teachers' and gifted coordinators' mean program planning scores \( (M = 4.82) \) were slightly higher than their mean assessment scores \( (M = 4.60) \). In the 29 items concerning educational program planning, the main concerns about educational program planning of gifted preschoolers in both Taiwan and the U.S. were: (1) It is very important to help gifted preschoolers develop a positive self-concept; (2) Preschool teachers should work with parents of gifted children to assist in the child’s development; (3) Gifted preschoolers need parents’ and teachers’ understanding and support; (4) Teachers of gifted preschoolers need to help the child develop interpersonal skills.

Learning is also influenced by emotions and feelings (Treffinger, Borgers, Render & Hoffman, 1976). Roedell (1984) suggests that gifted children are vulnerable to a variety of adjustment difficulties and that social adjustment, emotional maturity, and a healthy self-concept depend greatly on environmental support. Based on the main concerns in both Taiwan and the U.S., teachers and coordinators were aware of the social-emotional needs of the gifted preschoolers and put an emphasis on providing environmental support for them.

In Taiwan, two additional concerns about program planning were: (1) Inservice training is helpful for preschool teachers to gain the necessary knowledge and strategies for teaching gifted preschoolers; and (2) The curriculum for gifted preschoolers should contain the knowledge and skills that the children are ready to learn. In the U.S., two additional concerns were: (1) Gifted preschoolers need to be exposed to a number of
areas of potential interest; and (2) The preschool teacher should provide opportunities where gifted children can verbalize and share their thoughts.

Cultural values profoundly influence the support given to gifted programs and educational practices. The answers to items 26, 27, 28, and 29 were highly dependent on the values of Taiwanese and U.S. cultures. Findings indicated that Taiwanese (M = 4.97) and U.S. (M = 4.71) teachers and coordinators were positive that it is acceptable to treat different children with different expectations (Item 28). Nevertheless, Taiwanese teachers and coordinators agreed more strongly with statements pertaining to nurturance of giftedness than U.S. teachers and coordinators. In items 26 and 27, Taiwanese teachers and coordinators agreed more firmly that it is possible to create special learning environments to increase the total number of children who could be called gifted and that gifted children will be the leaders of tomorrow if they are properly nurtured from birth. A difference was also found regarding the statement that gifted children can be made more gifted (Mean = 4.83 in Taiwan, Mean = 3.93 in the U.S.).

Findings of this study indicated that there were significant differences between gifted coordinators and preschool teachers concerning knowledge of assessment and instructional interventions for gifted preschoolers, F(1,122) = 21.73, p < .001 (See Hypothesis 2, p. 68-69). Overall gifted coordinators were more knowledgeable in terms of assessment and instructional interventions than preschool teachers. Moreover, the interaction between nationality and teacher position was significant, F(1,122) = 4, p < .05 (See Hypothesis 2, p. 68-69), indicating American gifted coordinators had the highest knowledge scores. One of the possible explanations could be the fact that most American gifted coordinators hold a master’s degree or a Ph.D. degree in the field. In this study,
most Taiwanese gifted coordinators are those who serve as both gifted coordinator/director and gifted teacher in elementary school. Few of them hold a master’s degree in gifted education, and some of them have never taken gifted education courses/workshops, or only took special education courses/workshops. Only at the high school level in Taiwan, do gifted coordinators have to hold a master’s degree or a Ph.D. degree. The findings support the importance of sufficient qualified professionals in gifted education. However, a main effect of nationality on knowledge scores was not found (See Hypothesis 2, p. 68-69). This means that there were no significant differences between Taiwanese and U.S. teachers’ (preschool teachers’ and gifted coordinators’) knowledge of early intervention. One possible explanation is that the schooling practices are somewhat similar in Taiwan and the U.S. Many Taiwanese educators and decision-makers are interested in learning from other countries’ latest research and experiences, including the U.S.

After exploring the relationships between Taiwanese and U.S. preschool teachers’ and gifted coordinators’ knowledge and several variables in the demographic profile, the results indicated that there were no substantial relationships between either Taiwanese or U.S. teachers’ and coordinators knowledge and the variables in the demographic profile.

In conclusion, gifted coordinators are more knowledgeable in terms of assessment and instructional interventions than preschool teachers in both countries. American gifted coordinators were the most knowledgeable in this study. One possible explanation is that there are insufficient professionals in Taiwanese gifted education. In elementary school, many gifted coordinators do not hold a master’s degree in gifted education. This might affect the implementation and dissemination of preschool gifted education in
Taiwan, and inhibit the use of “best practices” with gifted preschoolers. In contrast to Taiwan, there are more resources including knowledgeable gifted professionals in the U.S. It is through these professionals’ efforts that the public comes to understand and support the education of gifted preschoolers.

In this study, teachers’ knowledge of early intervention for gifted preschoolers was strongly related to their levels of professionalism and training. Also, this study suggests that different cultural values to gifted programming and early intervention and individual teacher’s value systems about gifted preschoolers and their education have some impact on teachers’ knowledge of early intervention for gifted preschoolers.

**Teachers’ Attitudes toward Gifted Preschoolers and Knowledge of Early Intervention for Gifted Preschoolers**

The relationship between attitudes and knowledge was positive even though it was not strong. In Taiwan, there were low positive associations between preschool teachers’ attitudes and their knowledge \( r = +.20 \) (See Hypothesis 7, p. 82-83) and between gifted coordinators’ attitudes and knowledge \( r = +.21 \) (See Hypothesis 11, p. 87-88). In the U.S., there were moderately positive associations between preschool teachers’ attitudes and their knowledge \( r = +.37 \) (See Hypothesis 8, p. 84) and between gifted coordinators’ attitudes and their knowledge \( r = +.38 \) (See Hypothesis 12, p. 89-90). This result is consistent with the work by Morris (1987). The trend appears to be that teachers who are more knowledgeable tend to take more positive attitudes toward gifted preschoolers. When comparing this result with previous findings, it was found that the different culture, individual teacher’s values and attitudes and knowledge/professionalism regarding gifted preschoolers and early intervention are interrelated.
Preschool Teachers’ Attitudes toward Gifted Preschoolers and Typically Developing Preschoolers

In general, teachers’ and coordinators’ mean attitude scores toward gifted preschoolers (M = 5.11) were slightly higher than mean attitude scores toward typically developing preschoolers (M = 4.56). Regular preschoolers were perceived as friendly, kind, healthy, warm, and pleasing by teachers and coordinators. Besides, they were more passive and dependent than gifted preschoolers. In Taiwan, teachers and coordinators regarded typically developing preschoolers as very pleasing, kind, and friendly. In the U.S., teachers and coordinators regarded them as very active, friendly, and healthy.

In this study, the relationship between Taiwanese preschool teachers’ attitudes toward gifted preschoolers and their attitudes toward typically developing preschoolers was low (r = +.10) (See Hypothesis 9, p. 85), while the relationship between U.S. preschool teachers’ attitudes toward gifted preschoolers and their attitudes toward typically developing preschoolers was moderate (r = -.48) (See Hypothesis 10, p. 85-86). U.S. preschool teachers who have higher scores on attitudes toward typically developing preschoolers tend to score higher on attitudes toward gifted preschoolers. Teachers who have lower scores on attitudes toward typically developing preschoolers tend to score lower on attitudes toward gifted preschoolers. This means that preschool teachers who enjoy preschoolers tend to also enjoy gifted preschoolers in the U.S.
Conclusion

The needs of gifted preschoolers have been an area of increasing interest to educators in recent years. And while all children deserve a learning environment that is stimulating and responsive; gifted children require even more stimulating and responsive environments. Additionally, it is during this time that teachers' and parents' guidance and personal acceptance are crucial for a child's potential development. Teachers need to provide meaningful and appropriate experiences in their instruction so that very young children maintain their passion for learning. They must simultaneously facilitate social interactions so that children learn to be respected and to give respect to others. Present research has not yet systematically examined teachers' attitudes toward gifted preschoolers and their knowledge regarding early intervention for the gifted. The findings of this study suggest that three factors, different cultures, individual teacher's values and attitudes and knowledge/professionalism regarding gifted preschoolers and early intervention for the gifted, are interrelated (See Figure 1). Therefore, their unique combination will probably have a major impact on the lives of gifted preschoolers.
Figure 1. Factors related to teachers' attitudes and knowledge
Implications for Practice

1. This study suggests that there is both consensus and disagreement among American and Taiwanese teachers. The design and implementation of gifted teacher training programs should be based on both international trends and particular culture values.

2. This study suggests that teachers and parents can better assist in the gifted preschooler's development through parent involvement. Parents of gifted children should be involved in identification, placement, parent education, counseling, and gifted education advocacy.

3. This study found that there is positive association between teachers' attitudes toward gifted children and knowledge of early intervention. When providing gifted teacher training, knowledge and attitudes should be equally important.

4. This study indicates that overall gifted coordinators were more knowledgeable in terms of assessment and instructional interventions than preschool teachers. Regular preschool teachers should take not only early childhood education courses, but also courses in early childhood special education, including gifted education. Well designed preservice and inservice training programs are helpful for preschool teachers to gain the necessary knowledge and strategies for teaching gifted preschoolers.

5. This study indicates that more emphasis should be put on the social-emotional needs of the gifted preschooler in addition to the cognitive and physical needs. Counseling and affective guidance should begin early and extend throughout the school experience.
6. For sound referrals, the characteristics of gifted preschoolers should be informed by school and community. Also, teachers and parents of the gifted may not be able to help gifted children in their development, if they do not know the characteristics, personalities, behaviors these children manifest.

7. Teachers who specifically serve young gifted children should hold a master's degree in the field and teaching experience with gifted preschoolers is desirable.

8. A multidisciplinary team including parents, teachers, gifted experts, and psychologists is needed when identifying gifted preschoolers. Also, it is important to use appropriate formal and informal assessments instead of a single test.

9. Gifted preschoolers are children first and gifted second. The education of gifted preschoolers requires an interdisciplinary approach that integrates the concepts of developmentally appropriate practices and individualized instruction.

Limitations of the Study

One limitation of this study is the non-random sampling techniques used. Eighty preschool teachers were selected based primarily on their willingness to participate in this study. Another limitation of this study involved the socio-economic status of the subjects. Eighty gifted coordinators were randomly selected from the mailing lists of gifted coordinators for Central Ohio and Taipei. All of them were from the higher socioeconomic residential areas around the urban schools they served. Furthermore, there are English and Chinese questionnaires and some experts checked the two versions
before data collection. However, the translation from English to Chinese proved difficult and there are minor inconsistencies between versions.

**Recommendations for Further Investigation**

1. Further research should be conducted to find additional variables that might also affect teachers' perceptions of gifted preschoolers, for example, location, type of school, personality, and characteristics such as interpersonal skills, personal success, organization, and information-handling skills.

2. Conducting a qualitative study might be useful in order to ask questions pertaining to teachers' perceptions of gifted preschoolers and/or observe teachers' behaviors and the interaction between teachers and gifted preschoolers. It is important to understand what kind of gifted preschoolers' behaviors tend to result in teachers' negative/positive responses as well as the impacts of teachers' responses on gifted preschoolers.

3. The unique problems for gifted disabled preschoolers and gifted minority preschoolers should be explored in detail. Very often these children are considered to be more difficult to teach, as well as to identify, because teachers tend to focus on deficits or weaknesses rather than talents and strengths. Further research should be conducted to determine if teachers' perceptions of gifted preschoolers like those in this study remain constant for gifted disabled preschoolers and gifted minority preschoolers.
BIBLIOGRAPHY


Columbus Group. (1991, July). Unpublished transcript of the meeting of the Columbus Group, Columbus, OH.


Hallahan, D., & Kauffman, J. (1994). From mainstreaming to collaborative consultation. In J. Kauffman & D. Hallahan (Eds.), The illusion of full inclusion (pp. 3-17). Austin, TX: Pro-Ed.


Plomin, R., & Daniels, D. (1987). Why are children within the family so different from each other? The Brain and Behavioral Sciences, 10, 1-16.


Appendix A

Panel of experts
Panel of Experts

Dr. Richard Howell
Dr. David Fernie
Dr. Diane Sainato
Dr. Susan Amidon
Dr. Kuen-Shouh Wu

Professor of National Tainan Teachers College

Tainan, Taiwan
Appendix B

Cover letter and questionnaire

(English)
SURVEY INSTRUMENT

Perceptions of Gifted Preschoolers and Early Intervention

Strategies for the Gifted

The Ohio State University
July 28, 1998

Dear Coordinator/Teacher:

We would like to ask a favor of you. It concerns a group of children who may have enormous potential for achievements in the arts, sciences, or other areas of human endeavor. Unfortunately, we know very little about their early development, their identification, or the delivery of services. The enclosed survey attempts to define some of the issues involved with finding and serving very young gifted and talented children.

Dr. Richard Howell of The Ohio State University (OSU) and Ms. Wen-Ling Wang, a doctoral student at The Ohio State University (OSU), are investigating teachers' perspectives for developing programs for gifted preschoolers. You have been selected as one of the professionals with whom we would like to communicate regarding these gifted children. We are particularly interested in surveying your perceptions and attitudes concerning any available assessment and services for young gifted talented children.

We want to assure you that your identity will not be revealed in any form as a result of your participation and that there will be no adverse outcomes associated with your responses. Questions and comments concerning this study are welcome. Messages may be left by calling (614) 688-9114 or via electronic mail: wang.333@osu.edu. If you are
interested in the results of this study, please leave your name and address at the bottom of this sheet. I will send the results to you as soon as they are available.

We hope you will consent to participate in this unique opportunity to better understand services to these young children.

Thank you very much for your consideration of this request.

Sincerely,

__________________________  __________________________
Richard D. Howell, Ph.D.      Wen-Ling Wang, Doctoral Student
The Ohio State University     The Ohio State University
Perceptions of Gifted Preschoolers and Early Intervention Strategies for the Gifted

DESCRIPTION:

In this study, gifted preschoolers are defined as preschool students who show a rapid rate of development in one or more cognitive or affective domains. A rule of thumb is that these are very young children ages 3 to 5 whose ability or abilities are ahead of their age peers by at least one-fourth to one-half their chronological age.

Example:

- Helen, a four-year-old child, is at least a year to two ahead in math.
- Kevin is five years old and his reading scores (e.g., informal reading inventory, standardized test) are at the second grade level.
- Jeff is three years old and his IQ score is 165.
- Ingrid, a three-and-a-half-year-old child, likes to change a solitary play into highly social play.
- George, a four-and-a-half-year-old child, shows intensive interest and talent in musical activities, such as singing, playing instruments.

All of them might be called gifted preschoolers.
Part A: Participant Demographics

DIRECTIONS: Please respond to the following demographic questions by placing a check (√) in the space by each of the following descriptors. All information is confidential.

1. What is your gender?
   ___ male
   ___ female

2. In what year were you born?
   19___

3. Have you had any experiences with school-age students identified as gifted or talented?
   ___yes
   ___ no

3(a). How much time (in months or years) have you worked with students identified as gifted or talented?
   ___

4. Have you had experience with preschoolers who were perceived to be gifted by you or parents/guardians?
   ___yes
   ___ no
4(a). How much time (in months or years) have you worked with gifted preschoolers? 

____

5. What is your current position?

___ preschool teacher

___ regular education classroom teacher

___ teacher of the gifted and talented

___ gifted coordinator

___ other: ____________________(please specify)

6. How many years have you been in education?

___ years

7. Have you taken any special education courses/workshops?

___ courses/workshops pertaining to gifted education

___ courses/workshops pertaining to education of the handicapped

___ both of the above

___ none of the above

8. What is your highest level of education?

___ high school diploma

___ college diploma

___ bachelors degree

___ master or equivalent

___ Ph.D./Ed.D.

___ Other: ____________________
PART B: Perceptions of Gifted Preschoolers and Typically Developing Preschoolers

DIRECTION: The purpose of this part is to measure your personal perceptions of gifted preschoolers and typically developing preschoolers. There are 18 descriptive scales below, and each scale is based on two concepts, such as "friendly" and "unfriendly." Please place one check (✓) within each scale to indicate how the concepts match your perceptions of gifted preschoolers and typically developing preschoolers. There are no "right" or "wrong" answers. The only right answer is the one which best reflects your belief about the description of gifted preschoolers and typically developing preschoolers.

For example, if the concepts given are "friendly" and "unfriendly" and you feel "friendly" closely describes gifted preschoolers, place your check as follows:

unfriendly ___:___:___:___:___:✓ friendly

If you feel "unfriendly" moderately describes gifted preschoolers, place your check as follows:

unfriendly ✓:___:___:___:___:___ friendly

If you feel "friendly" slightly describes gifted preschoolers, place your check as follows:

unfriendly ___:___:___:✓:___:___ friendly

If both concepts seem equally associated to gifted preschoolers, or if you consider the concepts to be neutral, then place your check in the center.

unfriendly ___:___:___:✓:___:___ friendly
Gifted preschoolers are:

unfriendly ___:::___:::___:::___ friendly

kind ___:::___:::___:::___ mean

neat ___:::___:::___:::___ messy

talkative ___:::___:::___:::___ noisy

creative ___:::___:::___:::___ eccentric

healthy ___:::___:::___:::___ unhealthy

cranky ___:::___:::___:::___ cheerful

weak ___:::___:::___:::___ strong

hard to get along with ___:::___:::___:::___ easy to get along with
aloof  • ----•-----•-----•----------------

dependent ___:____:____:____:____:____ dependent

unreliable ___:____:____:____:____:____ unreliable

troublesome ___:____:____:____:____:____ troublesome

irritable ___:____:____:____:____:____ irritable

passive ___:____:____:____:____:____ passive

unreasonable ___:____:____:____:____:____ unreasonable

active ___:____:____:____:____:____ active

inflexible ___:____:____:____:____:____ inflexible
Typically developing preschoolers are:

unfriendly ___:___:___:___:___ friendly

kind ___:___:___:___:___ mean

neat ___:___:___:___:___ messy

talkative ___:___:___:___:___ noisy

creative ___:___:___:___:___ eccentric

healthy ___:___:___:___:___ unhealthy

cranky ___:___:___:___:___ cheerful

weak ___:___:___:___:___ strong

hard to get along with ___:___:___:___:___ easy to get along with

warm ___:___:___:___:___ aloof

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independent ____________ dependent

reliable ____________ unreliable

pleasing ____________ troublesome

sensitive ____________ irritable

assertive ____________ passive

reasonable ____________ unreasonable

inactive ____________ active

flexible ____________ inflexible
PART C: Early Intervention for Gifted Preschoolers

**DIRECTION:** This part looks at your beliefs and opinions regarding assessment and programming for gifted preschoolers. Please use the following response scale and circle the number to best express your belief about each statement.

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Disagree Strongly</td>
<td>2</td>
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<tr>
<td>Disagree</td>
<td>3</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
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<tr>
<td>Agree Strongly</td>
<td>5</td>
</tr>
<tr>
<td>Agree Very Strongly</td>
<td>6</td>
</tr>
</tbody>
</table>

Example:

Preschool teachers should help parents understand every young child’s potential.  1 2 3 4 5 6

If you agree very strongly to this statement, please circle 6.
I. Assessment:

<table>
<thead>
<tr>
<th>Key</th>
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<tr>
<td>2=Disagree Strongly</td>
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<tr>
<td>3=Disagree</td>
</tr>
</tbody>
</table>

1. Early identification of gifted preschoolers will help in their future development.  

2. Preschool teachers should help parents understand every young child’s potential. 

3. Preschool teachers are able to identify gifted preschoolers more effectively when given appropriate instruments and training. 

4. When identifying gifted preschoolers, it is necessary to use assessment tools which have been designed specifically for them. 

5. Identifying a gifted preschooler should involve different experts, including parents, teachers, gifted experts, and psychologists.
6. It is appropriate to use a single test or a behavioral checklist to identify gifted preschoolers.

7. Naturalistic observation of children is a valuable way to assess preschoolers' ability.

8. It is possible for a preschooler to show advanced development in one or more areas when compared to their age-mates.

9. Preschool children's daily performance and products play an important role in the identification of giftedness.

10. Gifted preschoolers are likely to be distracted and not demonstrate their best performance while being tested.

11. When deciding to administer individual ability tests such as an IQ test to preschoolers, it must be done by a licensed psychologist.

12. When deciding to administer achievement tests such as formal tests of reading and mathematics skills to preschoolers, it must be done by a licensed psychologist.

13. Gifted preschooler's behaviors often resemble that of older children in their special ability area(s).

14. A bright preschooler understands ideas, while a gifted preschooler is able to develop abstractions.
15. A bright preschooler absorbs information, while a gifted preschooler manipulates information.

16. A bright preschooler thrives on complexity, while a gifted preschooler enjoys straightforward information.

17. Gifted preschoolers are clearly superior to same-age nongifted children in their ability to reason.

18. An impressive memory is one of the common characteristics of gifted preschoolers.

19. A longer attention span is one of the common characteristics of gifted preschoolers.

20. Demonstrated creativity in areas of interest is one of the common characteristics of gifted preschoolers.

21. Gifted preschoolers tend to be self-directed.

22. Gifted preschoolers tend to be self-critical.

23. Effective programming for gifted preschoolers requires accurate assessment data which is relevant to the instructional decisions to be made.

24. When one ability is important for the demands of society, it is noticed and recognized as giftedness.

25. A child can be gifted in many different ways.
II. Educational Program Planning:

<table>
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<th>Key</th>
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<td>2=Disagree Strongly</td>
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<tr>
<td>3=Disagree</td>
</tr>
<tr>
<td>4=Agree</td>
</tr>
<tr>
<td>5=Agree Strongly</td>
</tr>
<tr>
<td>6=Agree Very Strongly</td>
</tr>
</tbody>
</table>

1. Early childhood education is very important to ensure
the potential development of gifted children.

2. It is appropriate for a preschool teacher to provide the
same curriculum to all children.

3. Preschool teachers should make curriculum
modifications in their instruction for gifted learners
according to children’s unique learning style and
characteristics.

4. Gifted preschoolers need more individualized learning
opportunities for the development of cognitive, physical,
and social skill areas.

5. Designing a gifted preschool educational plan should
take into consideration the gifted child’s strengths and
weaknesses.
6. Gifted preschoolers take care of themselves and do not need special services. 1 2 3 4 5 6

7. Preservice training is helpful for preschool teachers to gain the necessary knowledge and strategies for teaching gifted preschoolers. 1 2 3 4 5 6

8. Inservice training is helpful for preschool teachers to gain the necessary knowledge and strategies for teaching gifted preschoolers. 1 2 3 4 5 6

9. Gifted preschoolers need parents’ and teachers’ understanding and support. 1 2 3 4 5 6

10. It is very important to help gifted preschoolers develop a positive self-concept. 1 2 3 4 5 6

11. Preschool teachers should work with parents of gifted children to assist in the child’s development. 1 2 3 4 5 6

12. Preschool gifted education should emphasize both in-depth study and advanced content. 1 2 3 4 5 6

13. The curriculum for gifted preschoolers should contain the knowledge and skills that the children are ready to learn. 1 2 3 4 5 6

14. The teacher in the program for gifted preschoolers should help the student acquire investigative skills necessary for solving problems. 1 2 3 4 5 6
15. Preschool teachers should group gifted children in special groups within the regular preschool to facilitate the delivery of an appropriately challenging curriculum.

16. A gifted child thrives best when placed in a classroom with ability peers.

17. The preschool teacher should provide opportunities such that gifted children can verbalize and share their thoughts.

18. The preschool teacher should help gifted students choose themes and content that allow for more complex investigations.

19. Gifted preschoolers should be allowed to maintain a faster pace of learning than typically developing children.

20. The needs of the young gifted child are met by giving them more quantity of activities from regular curriculum.

21. Teachers of gifted preschoolers should integrate higher-level content and processes that develop greater abstraction and reasoning skills.

22. Teachers of gifted preschoolers don’t need to help the child develop interpersonal skills.

23. Teachers of gifted preschoolers should help them acquire the skills needed to become independent learners.
24. Gifted preschoolers need to be exposed to a number of areas of potential interest.

25. Early school entrance provides a beneficial educational option for preschoolers who are intellectually advanced and socially mature.

26. It is possible to create special learning environments to increase the total number of children that we could call gifted.

27. Gifted children will be the leaders of tomorrow if they are properly nurtured from birth.

28. It is acceptable to treat different children with different expectation.

29. Gifted children can be made more gifted.

~ Thank you very much ~

Please return this form in the attached envelope to:

Wen-Ling Wang
101 Curl Dr. #1391 Jones Tower
The Ohio State University
Columbus, OH 43210
Appendix C

Cover letter and questionnaire

(Chinese)
教師對學前資優兒童及其教育的認知

美國俄亥俄州立大學
在這個研究中，學前資優兒童是指在一個或一個以上領域，表現出極優異潛能或快速發展的學前兒童。通常是指比同年齡兒童超前至少四分之一至二分之一的年齡。

舉例來說：

海倫是一位四歲小朋友，她的數學是六歲的程度。

小凱在語言及閱讀方面已有小學三年級的程度，而他只有五歲。

啓文是一位三歲小朋友，他的智商是165。

惠安在幼稚園裡喜歡將單人遊戲改為多人互動的遊戲，樂在其中，另一位--大明，則表現出對音樂強烈的興趣和才能。

這些小朋友，都被稱為學前資優兒童。
第一部份：個人基本資料

作答說明：請在以下問題的空白處勾選出(✓)有關您個人的基本資料。所有資料將不會對外公開。

1. 您的性別？
   __男
   __女

2. 您出生於哪一年？
   19__年

3. 您是否曾接觸過被小學及中學鑑定為資優的學生？
   __是
   __否

3(a). 您接觸資優學生的時間共約多久？
   __年__月

4. 您是否曾接觸過被您或是家長認為是資優的學前兒童？
   __是
   __否

4(a). 您接觸學前資優兒童的時間共約多久？
   __年__月
5. 您目前的職務？
   ___幼教教師
   ___普通班教師
   ___資優班教師
   ___資優班主任／資優教育專案主持人
   ___其他：__________________(請說明)

6. 您在教育界服務多久？
   ___年

7. 您曾參加任何特殊教育課程／研習會？
   ___有關於資優教育的課程／研習會
   ___有關特殊教育的課程／研習會
   ___以上二者皆有
   ___以上皆無

8. 您的最高學歷？
   ___中學
   ___專科
   ___學士
   ___碩士或研究所四十學分班
   ___博士
   ___其他：__________________
第二部份：老師對學前兒童的態度

作答說明：這一部份主要是在瞭解您個人對學前資優兒童和一般兒童的態度。這個量表共有十八對描述性語句，每一對描述性語句將呈現兩個概念。例如“友善的”和“不友善的”。請在每一對語句上勾選出（✓）最能反應您看法的字。每個問題都沒有“對”或“錯”的回答。真正表達您個人對學前兒童的看法即是所謂“對”的回答。

例如，在“友善的”和“不友善的”二個概念中，如果您覺得“友善的”最能描述學前資優兒童，則請您勾選如下:

不友善的 ___:___:___:___:___:✓ 友善的

如果您覺得“不友善的”過度描述學前資優兒童，則請您勾選如下:

不友善的 ___:✓:___:___:___:友善的

如果您覺得“友善的”稍微描述學前資優兒童，則請您勾選如下:

不友善的 ___:___:___:✓:___:友善的

如果這二個概念對您來說是相等的，同樣能描述學前資優兒童，則請您勾選如下:

不友善的 ___:___:___:✓:___:友善的

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＊ 請從這裏開始 ＊

學前資優兒童是:

不友善的 __：___：___：___：___：___ 友善的

親切的 __：___：___：___：___：___ 苛刻的

整潔的 __：___：___：___：___：___ 紊亂的

健談的 __：___：___：___：___：___ 吵鬨的

有創造力的 __：___：___：___：___：___ 怪異的

健康的 __：___：___：___：___：___ 不健康的

乖張的 __：___：___：___：___：___ 令人快樂的

虛弱的 __：___：___：___：___：___ 強壯的

難以相處的 __：___：___：___：___：___ 容易相處的

熱誠的 __：___：___：___：___：___ 冷淡的

獨立的 __：___：___：___：___：___ 依賴的
可信賴的 可信賴的 不可信賴的

可愛的 討厭的

敏感的 過度反應的

有主見的 順從的

明理的 不明理的

不積極的 穩極的

有彈性的 無彈性的
一般學前兒童是:

不友善的__:__:__:__:__:__友善的

親切的__:__:__:__:__苛刻的

整潔的__:__:__:__:__紊亂的

健談的__:__:__:__:__吵鬧的

有創造力的__:__:__:__:__怪異的

健康的__:__:__:__:__不健康的

乖張的__:__:__:__:__令人快樂的

虛弱的__:__:__:__:__強壯的

難以相處的__:__:__:__:__容易相處的

熱誠的__:__:__:__:__冷淡的

獨立的__:__:__:__:__依賴的

可信賴的__:__:__:__:__不可信賴的

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可愛的 __:__:__:__:__:__ 討厭的

敏感的 __:__:__:__:__:__ 過度反應的

有主見的 __:__:__:__:__:__ 順從的

明理的 __:__:__:__:__:__ 不明理的

不積極的 __:__:__:__:__:__ 積極的

有彈性的 __:__:__:__:__:__ 無彈性的
第三部份：老師對學前資優兒童的知識

作答說明：這一部份主要是在瞭解您對學前資優兒童的評鑑及教育計畫的看法。請用以下的量尺並圈選出最能表達您個人看法的對應數字。

<table>
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<tr>
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<td>不同意</td>
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<tr>
<td>同意</td>
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</tr>
<tr>
<td>中度同意</td>
<td>5</td>
</tr>
<tr>
<td>非常同意</td>
<td>6</td>
</tr>
</tbody>
</table>

舉例來說，"幼教教師應協助家長們瞭解每一位幼兒的潛能"，這一題，如果您覺得非常強烈同意，請圈選6。
I. 評鑑：

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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2=中度不同意</td>
<td>5=中度同意</td>
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<td></td>
</tr>
<tr>
<td>3=不同意</td>
<td>6=非常同意</td>
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</tr>
</tbody>
</table>

1. 及早鑑定出學前資優兒童將有助於他們未來的發展。 1 2 3 4 5 6
2. 幼教教師應協助家長們理解每一位幼兒的潛能。 1 2 3 4 5 6
3. 透過適當的能力評鑑工具及操作訓練，幼教教師將更有效的鑑定出學前資優兒童。 1 2 3 4 5 6
4. 當鑑定學前資優兒童時，使用專門設計來衡量學前資優能力的測驗工具是必要的。 1 2 3 4 5 6
5. 學前資優兒童的鑑定應邀請家長、教師、資優教育專家及心理學家等來自不同專業領域人員的參與。

6. 只使用單一測驗或單一行為檢核表來鑑定學前資優兒童是合宜的。

7. 對於學前兒童才能的評估，自然觀察是一有價值的方法。

8. 一位學前兒童在某一或某些領域表現出比同齡兒童超前的發展是可能的。

9. 學前兒童平時的表現和作品，在鑑定資優過程中扮演重要的角色。

10. 在智力和非智力測驗的過程中，學前資優兒童易於分心且無法表現出最佳的能力。

11. 當決定對學前兒童使用個人能力測驗，例如智力測驗時，必須由合格的心理學家來執行。

12. 當決定對學前兒童使用成就測驗，例如正式的數學能力測驗時，必須由合格的心理學家來執行。
13. 學前資優兒童在其特殊能力方面的
行為表現，往往相似於年紀較大的兒
童。

14. 聰明的兒童易於理解各種觀念，但
學前資優兒童更能產生抽象思考。

15. 聰明的兒童易於吸收各種資訊，但
學前資優兒童更能巧妙地處理各種資
訊。

16. 聰明的兒童喜歡複雜性高的問題，
但學前資優兒童喜歡較直接了當的問
題。

17. 學前資優兒童在推理能力方面比同
齡非資優兒童明顯地優異。

18. 令人印象深刻的好記憶力是學前資
優兒童的一共同特質。

19. 較長的專注時間是學前資優兒童的
一共同特質。

20. 對於有興趣的事情表現出創造力是
學前資優兒童的一共同特質。
21. 學前資優兒童傾向於自我管理與自我指導。

22. 學前資優兒童傾向於完美主義和自我批評。

23. 有效的學前資優兒童教學設計，必須依據與教學安置有關的正確鑑定資料。

24. 當一種能力被社會視為重要時，在這方面表現非常優異的學生便會被注意為資優生。

25. 孩子可以用各種不同方式表現其資優。
II. 教育計畫：

<table>
<thead>
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<th>量尺</th>
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<tbody>
<tr>
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<td>5=中度同意</td>
</tr>
<tr>
<td>3=不同意</td>
<td>6=非常同意</td>
</tr>
</tbody>
</table>

1. 幼兒時期教育對確保資優兒童潛能的發展是非常重要的。 1 2 3 4 5 6
2. 幼教教師對每位兒童給予相同的課程是合宜的。 1 2 3 4 5 6
3. 在教導資優兒童時，幼教教師應根據兒童獨特的學習方式和特質來修正一般課程。 1 2 3 4 5 6
4. 學前資優兒童需要較個別化的教學來幫助其認知、社會及體能的成長。 1 2 3 4 5 6
5. 在設計學前資優兒童的教育方案時應考慮個別兒童的優缺點。 1 2 3 4 5 6
6. 學前資優兒童都能自己照顧自己，不需要特別的幫助。 1 2 3 4 5 6

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7. 職前訓練有助於幼教教師獲得教導
學前資優兒童所需的知識和技巧。

8. 在職訓練有助於幼教教師獲得教導
學前資優兒童所需的知識和技巧。

9. 學前資優兒童需要父母及教師的瞭
解和支持。

10. 協助學校資優兒童發展正面的自我
g概念是非常重要的。

11. 幼教教師應和資優兒童的父母一起
合作來協助資優兒童的健全發展。

12. 學前資優教育應兼顧加深及加快的
學習內容。

13. 學前資優課程必須配合兒童心智所
能接受的知識與技術。

14. 執行學前資優教育計畫的教師應幫
助兒童獲得解決問題所需要的探索方
法。

15. 在一般幼稚園裡，幼教教師應將資
優兒童們安置在特別的團體活動中，
以利於提供適當且富挑戰性的課程。
16. 學前資優兒童與能力、興趣相當的兒童在同一班級學習時，最能表現其能力。

17. 幼教教師應提供資優兒童機會，以表達及分享他們的想法。

18. 幼教教師應幫助資優學生挑選適合他們的主題和內容，以從事較複雜的探索。

19. 學前資優兒童應被容許維持比一般兒童更快的學習速度。

20. 滿足學前資優兒童的學習需要，即是对他們提供較多的一般程度課程。

21. 學前資優兒童的教師應整合較高層次的課程內容和過程方法，以發展較佳的抽象及邏輯思考能力。

22. 學前資優兒童的教師不需要協助兒童培養人際關係的技巧。

23. 學前資優兒童的教師應協助他們獲得獨立學習的技巧。

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24. 學前資優兒童需要被帶領到有可能產生興趣的各個領域。
25. 提早入學對心智較為成熟的學前兒童，提供一有利的教育方案。
26. 設計良好的學習環境以增加我們所謂資優兒童的人數是可能的。
27. 若是從出生開始便給予適當的培育，資優兒童將是未來的領導者。
28. 對不同兒童持不同期望是可以被接受的。
29. 資優兒童可以被培育成更資優。

~ 非常感謝您 ~
Appendix D

Permission of using questionnaire
Dear Wen-Ling,

Thank you for your letter describing your interest in my survey instrument that measures teachers' perceptions of gifted handicapped students. I am enclosing the instrument used to survey the subjects, which you are welcome to use and adapt.

I would be happy to receive a copy of your instrument and your results after you have used the instrument in Taiwan and America.

Best wishes for your continued success.

Cordially,

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