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UNIVERSITY OF NORTHERN COLORADO

Greeley, CO

The Graduate School

ATTITUDES OF TAIWANESE EMPLOYEES TOWARD THEIR SUPPORTED  
CO-WORKERS WITH INTELLECTUAL DISABILITIES

A Dissertation Submitted in Partial Fulfillment  
of the Requirements of the Degree of  
Doctor of Philosophy

Tsu-Hsuan Hsu

College of Natural and Health Sciences  
School of Human Sciences  
Human Rehabilitation

May 2012

This Dissertation by: Tsu-Hsuan Hsu

Entitled: *Attitudes of Taiwanese Employees Toward Their Supported Co-workers With Intellectual Disabilities*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy in College of Natural and Health Sciences in School of Human Sciences, Program of Human Rehabilitation

Accepted by the Doctoral Committee

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## ABSTRACT

Tsu-Hsuan Hsu. *Attitudes of Taiwanese Employees Toward Their Supported Co-workers With Intellectual Disabilities*. Published Doctor of Philosophy dissertation, University of Northern Colorado, 2012.

Negative attitudes held by employers toward people with disabilities (PWDs) has been constantly regarded as one of the most influential factors that limits work opportunities for PWDs. However, unwilling or unfriendly attitudes toward working with employees with disabilities held by co-workers without disabilities can also have significant effects that may lead PWDs to fail or become unable to maintain their jobs. Yet, very limited research has been conducted to examine attitudes of Taiwanese employees toward their co-workers with disabilities. Therefore, the major objective of this study was to investigate the attitudes of Taiwanese employees without disabilities toward individuals and their supported co-workers with intellectual disabilities. There were 135 individuals who worked with their co-workers with intellectual disabilities that participated in this study.

The findings of the study indicated that the general attitudes of Taiwanese employees toward individuals with intellectual disabilities and their affective reactions toward their co-workers with intellectual disabilities were positive. These discoveries were contrary to the previous beliefs that Taiwanese people tended to have societal stigma toward people with intellectual disabilities and have negative attitude toward their co-workers with intellectual disabilities. In addition, the outcomes also showed that the

research participants who had longer work contact with their co-workers with intellectual disabilities tended to have more positive attitudes toward them. Promoting supported employment trainings and opportunities for qualified people with intellectual disabilities was recommended. Furthermore, the best predictor of the affective reactions to co-workers with intellectual disabilities was age and duration of work contact upon consideration of the results of the multiple regression analysis. Finally, propositions for further relevant research were provided in order to obtain a deeper understanding of perspectives of Taiwanese people toward PWDs in general and in the workplace.

## ACKNOWLEDGMENT

Completing this study and reaching toward a doctoral degree are demanding missions. Without receiving encouragement and support from people around me, including my family, academic advisor, dissertation committee members, and Taiwanese employment specialists who recruited research participants for supporting my study, I would not be able to reach these targets I set forth.

First, I would like say I appreciate my parents who have been providing me with psychological support. To my father, I thank for being patient while waiting for my return to our hometown, especially when you need care after suffering strokes three times. Your patience will definitely pay off.

In addition, I would like to thank my major academic advisor, Dr. Joseph N. Ososkie, and my dissertation committee members, Dr. Juliet H. Fried, Dr. Jill Bezyak, and Dr. Susan M. Collins, for your positive comments and enthusiastic support and patience. I thank all of you for believing in me, my research ideas, and in my ability to accomplish this project.

Furthermore, I want to thank Taiwanese employment specialists who supported me while I conducted this research for my final project. Your generous efforts helped me to complete this project, and your valuable comments also have provided me with further research ideas.

Finally, I thank my English Tutor, Mrs. Sharron Riesberg, for helping me go through my whole project and providing me with necessary comments and helps. Again, for all of you mentioned, thank you very much for your generous time and assistance.

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## CHAPTER I

### INTRODUCTION

Culture is a multifaceted concept that consists of varied elements. It can be interpreted as being composed of race, ethnicity, religion, belief, gender, language, value, attitude, occupation, and idea (Turnbull & Turnbull, 2001). For example, people from societies that are dominant in Chinese culture, including mainland China, Taiwan, and Hong Kong, are classified individually by spoken languages or social customs (Liu, 2005). Similarly, people from different regions of the same country, such as the United States, may also possess varied values, attitudes, or beliefs due to their diverse ethnicities (Crabtree, Royeen, & Benton, 2006). Therefore, it was obvious that a universal definition of culture could not be easily determined because of its complexity. Nevertheless, there were still many different definitions in relation to culture that have been given in varied disciplines, depending on the areas researchers would like to study (Hargie, 2006; Patterson, DeLaGarza, & Schaller, 2005).

Generally, each person is from a specific culture and his/her viewpoints and actions will be directed based on the culture in which he/she was born and lives. For instance, Misra (1994) stated that “culture is the collective beliefs and knowledge that govern social behavior. Culture includes the language of people, their standards and perceptions, the way in which they display anger or joy, and the gestures they use during a conversation” (p. 145). Correspondingly, Hunt and Marshall (2002) mentioned that “culture can be seen as a series of norms or tendencies that are shared, interpreted, and

adapted by a group of people” (p. 79). The relationship between a culture and an individual may be explained in different ways. Nevertheless, the above descriptions can be best used to explain how one’s beliefs, viewpoints, perceptions, and attitudes are shaped by the culture in which he/she is immersed.

When implementing this concept to examine one’s attitudes toward human disabilities and related issues, an understanding of a particular group’s specific attitudes toward people with disabilities (PWDs) may be uncovered. For instance, the attitudes of general Taiwanese people toward PWDs are very similar to the general Chinese population due to Taiwan’s geographic location, ethnic composition, and official language.

Taiwan, an oceanic nation consists of several major islands, located in the Western Pacific Ocean. Taiwan’s population consists of several major ethnic groups, including indigenous people, mainland Chinese who moved from China due to the civil war in the 1940s, and two groups of Taiwanese Chinese who immigrated to the island from China’s two coastal provinces, Fujian and Guangdong, in the 17th century (The Government Information Office, Republic of China, Taiwan, 2007). There are several spoken languages, such as indigenous languages, Holo, Hakka, and Mandarin, that can be found throughout Taiwan. Nonetheless, the official language of Taiwan is Mandarin, which is known as Chinese or Guoyo. The official spoken language between Taiwan and China is almost identical, except for the usage of idioms. The primary difference is that Taiwan uses traditional Chinese while China implements simplified Chinese in writing. From the above information, it is not difficult to realize that Taiwan is considered a Chinese dominant society.

As mentioned, Taiwan's population forces are mainly composed of mainland Chinese who immigrated to the island a few centuries ago. Thus, Taiwanese society and culture are considered as being established based on the general Chinese culture (Cooper, 1996). Consequently, the common viewpoints and attitudes of Taiwanese people toward PWDs are also very similar to those held by Chinese. For example, the general Chinese terms for PWDs are "canfei" or "canji," which means that individuals with disabilities are useless and/or have an illness (Liu, 2001). These two terms have been commonly used by Taiwanese and Chinese to describe PWDs. However, they have also been adopted to reflect the general negative attitudes held by Taiwanese people toward persons with disabilities or with other associated conditions.

Apart from the negative language usage to describe PWDs, Taiwanese people also possess similar perceptions regarding the causes of disabilities held by Chinese individuals. For example, the common attitudes toward PWDs held by Taiwanese people are deeply influenced by the concept of karma, which evolved from Buddhism. According to Obeyesekere (2002), karma meant that one's "intentional ethical action [will determine] the nature and place of rebirth [in his/her next life]" (p. 2). Although not all people from Chinese dominant societies regarded themselves as Buddhists, the notion of karma has been broadly spread. For instance, Liu (2001) mentioned that in many places of China, "disability is viewed as a punishment for the disabled person's parental or past-life sins" (p.8). Similarly, the results of a study clearly verified that the majority of Taiwanese mothers of children with disabilities deeply believed in the existence of karma, and they considered that "they might have done something bad in their previous

lives, which [led] their children to be born with disabilities” (Huang, Fried, & Hsu, 2009, p. 89).

Since the general Taiwanese population possesses negative attitudes toward the causes of disabilities, it is no doubt that those with disabilities had limited educational opportunities and rights. For instance, the self-contained public education for Taiwanese students with mental retardation was first available in the early 1960s. Yet, public education for all students with disabilities was not accessible until the passage of The Special Education Act in 1984 (The Government Information Office, Republic of China, Taiwan, 2007).

The Amendment of the Special Education Act of 1997 passed by the Taiwanese government can be considered as the landmark step in supporting Taiwanese students with disabilities in terms of their educational opportunities and rights. According to this law, a comprehensive special education system was outlined and designed, including: defining the goals and purposes of special education, providing equipment and materials for special education usage, implementing instructional methods that are specifically designed for students with disabilities, and extending the school age down to 3-years-old for those young children with disabilities who may need early intervention services (Ministry of Education, Republic of China, Taiwan, 1999). By implementing these significant pieces of education-related legislation, Taiwanese students with disabilities are provided with appropriate public educational opportunities.

While educational opportunities and rights for Taiwanese students with disabilities have been protected and provided through the above amendments, being able to live independently is regarded as one of the ultimate life goals for individuals who

have disabilities. To achieve this objective, assisting PWDs in employability is considered as the one of the major methods of rehabilitation. In fact, employment is an important part of one's life for people with or without disabilities (Mitchell, Adkins, & Kemp, 2006). For the population of individuals with disabilities, employment provides opportunities to become more financially independent, to be included in the communities in which they live, to establish their interpersonal relationships, and to become contributing members of society (Wehman, Brooke, & Revell, 2007). However, it is necessary to have long-term and well-laid plans to assist PWDs in acquiring and developing appropriate employment and communication skills in order for them to be able to work in the community.

As a result of this belief, several laws supporting PWDs in the area of career training and employment have been legislated by the Taiwanese government. For example, The Amendment of the Special Education Act of 1997 clearly requires that related vocational and transitional services should be available to Taiwanese students with disabilities (Lin, 1998). The goal of this act is to ensure that students with disabilities would be well-prepared for their employment. In addition, The Employment Services Act of 1992, amended in 2003, has explicitly regulated that employers cannot discriminate against job applicants or their current employees with disabilities (Laws and Regulations Database of the Republic of China, 2010a).

The most significant legislation to support employment rights for Taiwanese with disabilities was The Protection Act for the Handicapped and Disabled 1997, which was renamed The People with Disabilities Rights Protection Act in 2007. The 34th Article under this law distinguishes between sheltered employment and supported employment



and the qualifications of potential populations with disabilities who are eligible to participate in these programs (Laws and Regulations Database of the Republic of China, 2010b).

Most importantly, the 38th Article requires that any government agency, including public schools, must employ 3% of their workforce individuals with disabilities if they have 34 employees or more. Meanwhile, all private business organizations are required to have at least 1% of their employees consisting of individuals with disabilities if they have more than 67 employees (The Government Information Office, Republic of China, Taiwan, 2009). The government agencies and private businesses that did not comply with this law would receive a monthly fine which equals the salary of hiring an individual with a disability until they meet the requirements. The total amount of the monthly fine depends on how many employees with disabilities are supposed to be hired. The fine will be collected and used to support career training programs and related services for PWDs.

The above description indicates that the Taiwanese government has endeavored for the improvement of employment participation among PWDs by implementing a series of employment-related legislation. However, the employment rate of PWDs is consistently low. For instance, the employment rate of Taiwanese with disabilities, which reached the age of 15 and had the ability to work, was 20.9% in 2006 and 22.8% in 2007 (Council of Labor Affairs, Republic of China, Taiwan, 2009). A lower participation rate in the workforce among Taiwanese with disabilities was a common trend (Shieh & Huang, 2008; Yiu, 2004). Therefore, it was clear that employment-

related laws in supporting PWDs passed by the Taiwanese government did not significantly assist PWDs in increasing workforce participation as was expected.

To obtain a better understanding of the reasons that may cause PWDs to have a lower employment participation rate, the Taiwanese government has conducted related research. The results of their study identified that there were several major factors that could lead PWDs to have limited work opportunities or to be out of work (Council of Labor Affairs, Republic of China, Taiwan, 2009). They included the concerns held by employers about the adverse attitudes toward PWDs brought by the general public, being laid off, the lack of accessibility in workplaces, limited work competence and lower educational backgrounds, lower physical abilities to perform jobs, poor interpersonal relationships with non-disabled supervisors and co-workers, unfair treatment, lack of transportation, etc.

When examining these factors that could lead Taiwanese with disabilities to be unemployed or underemployed, it was clear that the adverse attitudes held by employers and/or co-workers without disabilities may be major reasons. Taiwanese with disabilities may not be able to perform their work due to the lack of job modifications and accommodations that could and should be provided by their employers. The concern of having poor interpersonal relationships between PWDs and their non-disabled supervisors and co-workers was also a significant factor that may cause them to withdraw from their jobs. Apart from those concerns, PWDs may also lack appropriate job competence to be qualified for their work positions. However, these problems experienced by Taiwanese with disabilities were not unique and have also been

recognized by many Western rehabilitation researchers (Fabian, Luecking, & Tilson, 1994; Freedman & Fesko, 1996; Lengnick-Hall & Gaunt, 2007).

To deal with employment challenges encountered by PWDs, many rehabilitation researchers have studied strategies in assisting PWDs to be employed based on the perspectives of employers or the population of individuals with disabilities. For example, experts who specialize in demand-side job development have focused their services in assisting employers to deal with their concerns in relation to hiring PWDs such as, job accommodation, work performance, and conflicts between workers with and without disabilities (Chan, Strauser, Gervey, & Lee, 2010; Gilbride & Stensrud, 1992, 2003). It was expected that employers would improve their hiring practices toward PWDs by working through these issues with assistance from rehabilitation professionals. Other specialists who emphasize the importance of supply-side job development approaches have worked hard in assisting PWDs in establishing their work and job-seeking skills (Ryan, 2004). Nevertheless, the ultimate goal of their efforts is similar, which is to assist PWDs in acquiring employment opportunities.

### **Statement of Problem**

Negative attitudes held by employers toward PWDs have been constantly regarded by many vocational rehabilitation experts as one of the most influential factors that limits work opportunities for PWDs. For instance, employers may be worried about the cost of accommodations and job competence of their workers with disabilities (Lengnick-Hall & Gaunt, 2007). In addition, employers may fear the lack of ongoing support and assistance after hiring PWDs (Gilbride & Hagner, 2005). The worry of rising health insurance expenditures for workers with poor health conditions was also a

concern (Hill, Livermore, & Houtenville, 2003). Furthermore, employers may have limited knowledge in designing job modifications for PWDs (Ainsworth & Baker, 2004). Finally, employers may have difficulties finding qualified PWDs who have the necessary skills for the jobs (Fabian et al., 1994).

While employers may impose adverse impacts on providing job opportunities for PWDs due to their specific concerns, other researchers found that unwilling or unfriendly attitudes toward working with employees with disabilities held by co-workers without disabilities could also have significant effects that may lead this population to fail or become unable to maintain their jobs. For example, Freedman and Fesko (1996) mentioned that negative attitudes of supervisors and employees could lead their co-workers with disabilities to face problems in keeping their jobs or seeking promotions. Negative attitudes held by employees without disabilities could also be a significant factor that influenced employers' decisions in providing accommodations, such as changing schedules or restructuring work for employees with disabilities (Colella, 2001).

Most significantly, employees felt uncomfortable or awkward interacting and/or working with their co-workers with disabilities; thus resulting in PWDs being excluded from establishing formal and/or informal work relationships with their non-disabled co-workers (Lengnick-Hall & Gaunt, 2007). Negative attitudes held by employees without disabilities toward their co-workers with disabilities mentioned above may ultimately lead their counterparts with disabilities to fail or withdraw from their jobs due to feelings of frustration, failure, social rejection, and unfairness. This may ultimately lead them to be expelled from their workplaces and remain unemployed.

The above studies have mentioned that the attitudes of non-disabled employees toward their co-workers with disabilities could be negative. Individuals with intellectual disabilities were more unaccepted by the general public and/or non-disabled workers compared to people with physical or developmental disabilities (Corrigan et al., 2000; Gordon, Tantillo, Feldman, & Perrone, 2004). Wang, Thomas, Chan, and Cheing (2003) also discovered that both American and Taiwanese students had a preference for interacting with people with physical disabilities rather than those who had developmental and mental disabilities.

This negative stereotype toward persons with intellectual disabilities could also be found in various studies that were conducted to examine employees' attitudes toward their supported co-workers with intellectual disabilities. For example, researchers discovered that interactions between workers with and without intellectual disabilities were primarily associated with job-related tasks rather than activities after work (Shafer, Rice, Metzler, & Haring, 1989). Correspondingly, another study illustrated that workers with intellectual disabilities were not being integrated socially in their work settings (Chadsey-Rusch, Gonzalez, Tines, & Johnson, 1989). Most significantly, the results of a study indicated that Taiwanese transition specialists perceived workers with mental retardation were not only viewed by the community as individuals who were emotionally unstable and might display challenging behaviors but were also considered as employees who had limited job competence by their non-disabled co-workers (Hsu, Ososkie, & Huang, 2009).

The results of the studies mentioned above indicated that the negative attitudes of employees without disabilities toward those who had disabilities could play an influential

role that prevented persons with intellectual disabilities from working in the community successfully. Therefore, it was clear that, while many rehabilitation professionals focus their efforts on solving employers' concerns in relation to the issue of hiring PWDs, examining attitudes of employees without disabilities toward their supported co-workers with intellectual disabilities should be emphasized as well. Otherwise, the conflicts between workers with and without disabilities will lead the efforts made by employment specialists and related professionals in supporting PWDs in terms of their work opportunity to be vacated. This will ultimately lead to worse employment participation rates of individuals with disabilities.

### **Purpose of Study**

Research has indicated that attitudes of employees toward their co-workers with disabilities could have significant impacts on job performance and job retention rates among the population of individuals with disabilities (Colella, 2001; Freedman & Fesko, 1996; Hsu et al., 2009). However, very limited research has been conducted to examine attitudes of Taiwanese employees toward their co-workers with disabilities. Therefore, the major objective of this study was to investigate the attitudes of Taiwanese employees without disabilities toward their supported co-workers with intellectual disabilities.

Two specific objectives were also developed under this study. First, the primary objective was to examine the general attitudes of non-disabled Taiwanese employees toward individuals with intellectual disabilities. The secondary objective was to explore the affective reactions of non-disabled employees toward working with their supported co-workers with intellectual disabilities. These affective reactions included attitudes of non-disabled employees toward the issues of work reactions, accommodations, and equal

treatment of their co-workers with intellectual disabilities in the workplace (Copeland, Chan, Bezyak, & Fraser, 2009). These opinions offered by Taiwanese employees without disabilities who had experience interacting and working with their co-workers with intellectual disabilities allowed the researcher to obtain a better understanding of how Taiwanese workers view PWDs in the workplace.

### **Significance of the Study**

Studies have pointed out that negative attitudes toward people with intellectual disabilities may create barriers that lead them to display avoidant behaviors or feel discomfort when they are required to work with individuals who are identified with these disabilities (Chadsey-Rusch et al., 1989; Ferguson, McDonnell, & Drew, 1993; Shafer et al., 1989). This may lead persons with intellectual disabilities to withdraw from their jobs due to the feeling of social rejection and frustration. However, efforts made by employment specialists could vanish simply due to non-disabled employees' negative attitudes rather than employers' perceptions of whether they should hire PWDs.

While the attitudes of non-disabled employees toward their co-workers with intellectual disabilities could be a significant factor in determining whether PWDs could work in the community successfully, there was little research that had been conducted to investigate attitudes of Taiwanese employees without disabilities toward their supported co-workers with intellectual disabilities. Related research conducted to examine similar issues was only based on the perspectives of Taiwanese transition specialists rather than from non-disabled workers themselves (Hsu et al., 2009). Therefore, the researcher believed that it was necessary to directly examine the attitudes of non-disabled Taiwanese employees toward their supported co-workers with intellectual disabilities. This allowed

for an exploration of the true viewpoints and feelings of Taiwanese employees without disabilities toward their co-workers with intellectual disabilities. The results of the study also allowed the researcher to examine whether it was necessary to promote disability awareness among Taiwanese employees without disabilities.

Apart from the reason above, the research indicated that the general attitudes toward PWDs held by employers may be positive while their hiring practices may not (Hernandez, Keys, & Balcazar, 2000). Similarly, a study indicated that people who had interaction experiences with individuals with intellectual disabilities who became employed may change their attitudes toward them positively. On the contrary, workers without disabilities may have opposite perspectives after they had work interaction experiences with PWDs (Hsu et al., 2009). Therefore, it was necessary to examine both general and work attitudes held by Taiwanese non-disabled employees toward individuals with intellectual disabilities and their co-workers with intellectual disabilities. This allowed the researcher to determine whether environmental contexts would have effects on people's perspectives toward PWDs.

Finally, as previously mentioned, Taiwanese people usually held negative attitudes toward PWDs and related issues due to the influence of Chinese culture (Chang & McConkey, 2008; Liu, 2001). However, a recent study showed that Taiwanese people may have changed their attitudes toward PWDs in a more positive direction because of improvement of social and human services (Huang, Ososkie, & Hsu, 2011). Yet, the above study was only based on the perspectives of Taiwanese mothers who had a child with a disability rather than from the general public who may not have relatives with



disabilities. Therefore, the researcher considered that conducting this study also provided another opportunity to examine attitudes of Taiwanese people toward PWDs.

### **Research Questions**

The primary objective of this study was to examine the attitudes of Taiwanese employees toward their supported co-workers with intellectual disabilities. Two specific research questions were addressed in this study:

- Q1     What is the relationship between general attitudes of Taiwanese employees without disabilities toward individuals with intellectual disabilities and their affective reactions toward their co-workers with intellectual disabilities?
  
- Q2     How do gender, age, educational attainment, duration of work contact, and types of contact influence the affective reactions of Taiwanese employees toward their supported co-workers with intellectual disabilities?

### **Delimitations**

The major function of delimitation of research is to intentionally limit the range of a study (Creswell, 2003). This assists researchers to focus on specific variables and to restrict the research population for the purpose of obtaining proper information to meet the objectives of the study. To obtain appropriate information in relation to this study, four delimitations were established and as described as follows.

First of all, this study was conducted in order to examine attitudes of Taiwanese employees without disabilities toward individuals with intellectual disabilities and their supported co-workers with intellectual disabilities. Therefore, participants must not have a disability. Thus, their reflections toward PWDs were based on the perspectives of workers without disabilities. Second, participants must be Taiwanese so they could better describe their attitudes and work experiences toward their supported co-workers with intellectual disabilities based on Taiwanese perspectives. Third, participants must have

worked with their supported co-workers who were identified with intellectual disabilities by the time the study was conducted. This allowed the research participants to provide up-to-date experiences and information regarding the issues that were emphasized in this study. Finally, participants were asked to provide their opinions only toward their supported co-workers who were identified with intellectual disabilities. Participants were not required to provide their reflections toward their co-workers with other disabilities. This ensured that the objectives of the study could be reached.

Apart from the qualifications of the research participants, two survey instruments were chosen to be used in this study. The first survey instrument, the Mental Retardation Attitude Inventory-Revised (MRAI-R), was implemented to collect information in order to examine general attitudes toward people with intellectual disabilities held by research participants. The Affective Reactions Subscale of the Disability Questionnaire was the second survey tool that was applied to study attitudes and affective reactions of Taiwanese employees toward the related issues of working with their co-workers with intellectual disabilities. The descriptions of these two survey instruments are provided in the research method section.

### **Assumptions of the Study**

Five assumptions of this study were:

1. Two survey instruments used in this study were appropriate to measure the general and affective attitudes toward supported employees held by their counterparts without disabilities.
2. A high percentage of the research participants completed these two surveys due to the assistance provided by Taiwanese supported employment specialists.

3. The research participants answered survey questions truthfully since they were not required to provide their identities on the survey sheets.

4. Participants only provided their opinions toward their supported co-workers who were identified with intellectual disabilities rather than with other disabilities since a clear description with the survey instruments was provided.

### **Definitions**

*Adaptive behavior.* This is defined in American Association on Intellectual and Developmental Disabilities' (AAIDD) 2010 manual of Intellectual Disability as “the collection of conceptual, social, and practical skills that have been learned and are performed by people in their everyday lives” (AAIDD, 2010b, p. 217).

*Affective reactions.* This was defined as “individuals’ affective reactions to working with [others] with disabilities” (Popovich, Scherbaum, Scherbaum, Polinko, 2003).

*American Association on Intellectual and Developmental Disabilities (AAIDD).* This organization changed its name from the American Association of Mental Retardation (AAMR) to AAIDD in 2007 (AAIDD, 2010a).

*Attitude.* Attitudes can be described as one’s bodily posture, manner, and disposition that show mood, feelings, thoughts, and opinions (Agnes & Laird, 2002). In this study, attitudes were emphasized based upon one’s opinions toward his/her co-workers with intellectual disabilities.

*Demand-side job development.* The main focus of demand-side job development is to provide direct services, such as counseling and consultation, directly to employers in order to solve their concerns in relation to hiring PWDs (Gilbride & Stensrud, 1992).

*Employee.* An individual who is “employed by another for a wage or salary” (Cawood, 1975, p. 22).

*Intellectual disabilities.* Intellectual disability “is characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills. This disability originates before age 18” (AAIDD, 2010b, p. 5). While the term of intellectual disability was adopted to replace mental retardation in the AAIDD’s latest 2010 manual, it was important to recognize that individuals with some developmental disabilities may or may not have intellectual disabilities, including Autism, cerebral palsy, epilepsy, and Down syndrome.

*Sheltered workshop.* A segregated or controlled work setting that allows individuals with severe disabilities, including intellectual disabilities, to acquire job skills and to earn wages.

*Social competence.* According to Vergason (1990), social competence could be defined as “the ability to function adequately in society” (p. 153). Social competence could also be described as skills of interpersonal problem solving ability, grooming, self-control, and social graces (Reynolds & Fletcher-Janzen, 2002; Vergason, 1990).

*Supply-side job development.* This approach emphasizes the importance of assisting PWDs to be employed by evaluating their career interests, developing work abilities, and improving job seeking skills (Gilbride & Stensrud, 2003).

*Supported employment.* The notion of supported employment is to provide PWDs with employment opportunities in competitive (ordinary) workplaces. Unlike sheltered employment, supported employment offers PWDs job opportunities in integrated settings and provides ongoing support for them through assistance from job coaches, employment

coordinators, placement specialists, and non-disabled co-workers (Arnold, 1992; Rusch & Hughes, 1990).

*Work or vocational competence.* It represents one's work productivity, work independence, and his/her ability of acquiring new job skills (Shafer et al., 1989). According to Harrington (2004), "work competencies consist of work habits and physical, mental, and social skills . . . and are shaped by feedback on one's strengths and limitations" (p. 34).

### **Summary**

This chapter included the descriptions of the reasons that led Taiwanese people to hold negative attitudes toward PWDs and related issues. Disability-related legislation in supporting Taiwanese with disabilities in the areas of their education and employment was also discussed briefly. While several major factors can lead PWDs to remain unemployed and/or underemployed, the literature focused on the impacts of negative attitudes held by employees without disabilities toward their co-workers with in the workplaces, specifically for individuals with intellectual disabilities. As a result, the necessity of conducting this study was explained in a comprehensive manner.

## CHAPTER II

### LITERATURE REVIEW

#### **Introduction**

This literature review chapter covers several important issues that are related to the present study. These topics included an overview of intellectual disabilities, employment options for people with intellectual disabilities (PWDs), employment legislation and barriers for Taiwanese with disabilities, attitudes toward individuals with intellectual disabilities, employees' attitudes toward their co-workers with intellectual disabilities, impacts of demographic variables on attitudes toward PWDs, measuring attitudes toward individuals with intellectual disabilities, and supply-side and demand-side job development approaches for PWDs. The information of these subjects provided rich knowledge to realize the importance of this study as well as understand what kinds of challenges people with intellectual disabilities may encounter in their daily life settings and workplaces.

#### **An Overview of Intellectual Disabilities**

Naming and defining are important methods to establish meanings and values of a specific subject or a condition. In the disability area, naming and defining a particular or related health condition is the primary method that not only allows health professionals and service providers to obtain information associated with their clients' physical and mental conditions conveniently, but also assists them to identify and locate service resources for their consumers more promptly (Lin, 2003). For example,

McCormick and Loeb (2003) mentioned that American students with disabilities must meet the eligibility criteria of specific disability categories in order to receive appropriate public education and associated services to meet their needs. This is a basic requirement under the Individuals with Disabilities Education Act (IDEA). Therefore, students with disabilities must be identified and classified into one of the following disability categories: visual impairment, hearing impairment, orthopedic impairment, other health impairment, mental retardation, specific learning disabilities, emotional disturbance, speech or language impairment, traumatic brain injury, autism, deafness, deaf-blindness, multiple disabilities, and developmental delay.

Among these disability categories, intellectual disability is considered a synonymic term of mental retardation (AAIDD, 2010a). Some researchers have mentioned that using intellectual disability to describe mental retardation or associated conditions was regarded as a professional and political shift (Carlson, 2010; Harris, 2006). For instance, Lin (2003) noted that the term “intellectual disabilities” had been currently adopted to replace other names that were previously used to describe people with mental retardation including mental deficiency, mental handicap, mental subnormal, exceptional children, amentias, learning disabilities, learning difficulties, and even feeble-minded.

In fact, the American Association of Mental Retardation (AAMR), the oldest and the largest organization in supporting persons with mental retardation and developmental disabilities since 1876, also changed its name to the American Association on Intellectual and Developmental Disabilities (AAIDD) in 2007 in order to reflect this trend. While utilizing intellectual disability to describe mental retardation and relevant health statuses

is currently preferred, the term mental retardation is still used in public law in order to determine the eligibility for related services and programs that were established or supported by the state and federal governments (AAIDD, 2010a).

Since intellectual disability and mental retardation are considered two different terms that are used to describe the same or similar health conditions (AAIDD, 2010a), it was necessary to first examine the development of the definition of mental retardation. Basically, there are many definitions of mental retardation that have been given by several national, international, and related health organizations. A universal definition of mental retardation is not presently available. However, the most widely adopted definitions of mental retardation have been provided by three major organizations: World Health Organization (WHO), the American Association on Intellectual and Developmental Disabilities (AAIDD), and the American Psychiatric Association (APA) (McDermott, Durkin, Schupf, & Stein, 2007). The definitions of mental retardation provided by the AAIDD were most commonly accepted by related professionals around the world, including Taiwan (Lin, 1998).

Historically, persons with mental retardation used to be described as individuals who were “feeble-minded” or “idiotic” in the early 19th century. For instance, the American Association on Mental Deficiency, currently known as AAIDD, classified mental retardation into three categories in 1934: idiot, imbecile, and moron (Nehring, 2005). The AAIDD replaced those words by adopting the term “mental retardation” in 1961 which was accepted internationally. In addition, the AAIDD classified mental retardation into five levels based on Intelligence Quotient (IQ) which were borderline, mild, moderate, severe, and profound (Harris, 2006). Most significantly, mental



retardation was not only diagnosed based on intellectual functioning alone, but also measured by social and practical skills, which have become known as adaptive behaviors. Nonetheless, definitions of mental retardation have been revised several times by the AAIDD even entering into the 21st century.

According to the AAIDD's 2002 manual of *Mental Retardation: Definition, Classification, and Systems of Supports*, mental retardation was defined as "a disability characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills. This disability originates before age 18" (AAMR, 2002, p. 8). From the above description, it was not difficult to understand that persons who were identified with mental retardation had limitations in intellectual, conceptual, social, and practical abilities that would influence their daily activities.

Later, AAIDD replaced the term of "mental retardation" by adopting "intellectual disability" in its latest 2010 manual. The definition of intellectual disability in this manual was described as "[a disability that is] characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills. This disability originates before the age of 18" (AAIDD, 2010b, p. 5). From this latest definition, it was clear that the definitions of mental retardation and intellectual disability were almost identical. According to the AAIDD (2010b), it was better to use intellectual disability instead of mental retardation because it:

- (a) reflects the changed construct of disability, (b) aligns better with current professional practices that focus on functional behaviors and contextual factors, (c) provides a logical basis for understanding individualized supports due to its

basis in a social-ecological framework, (d) is less offensive to persons with disabilities, and (e) is more consistent with international terminology. (p. 3)

While many rehabilitation researchers and related professionals may have changed their terminology of mental retardation to intellectual disability, it was also important to recognize that the boundaries between intellectual disabilities and some developmental disabilities always overlapped (AAIDD, 2010b). For instance, individuals who were identified with severe developmental disabilities may or may not have had co-occurring levels of intellectual disabilities. These include Autism, cerebral palsy, epilepsy, Down Syndrome, etc. (Fraser, Glazer, & Simcoe, 2002; Lovering & Percy, 2007; Winter, 2007). However, health experts admitted that persons with these development disabilities may have had normal or even above normal levels of intelligence. The best example was Asperger Syndrome. A person who was identified with Asperger Syndrome may be measured with superior IQ levels, known as high-functioning autism, but he/she may be unable to behave or function appropriately in his/her daily activities (Gillberg, 2007). This was the main reason that the AAIDD had indicated that both intellectual functioning and adaptive behaviors must be taken into consideration when health professionals evaluate whether one has an intellectual disability.

From the above information, it was apparent that the term intellectual disability was not merely adopted to represent persons with mental retardation, but also could be implemented to designate others who were identified with different developmental disabilities as long as their cognitive functioning and adaptive skills were influenced by having varied disabilities, such as Autism, cerebral palsy, epilepsy, and Down Syndrome.

## **Employment Options for Individuals With Intellectual Disabilities**

Employment is an important part of people's lives; regardless if they have or do not have a disability. For persons with disabilities, employment allows them to become financially independent, foster self-esteem, establish social interaction skills and opportunities, and be a contributing member of society (Dunn, Wewiorski, & Rogers, 2008; Freedman & Fesko, 1996; Wehman, Brooke, et al., 2007). To obtain a better understanding of employment choices for individuals with intellectual disabilities, several employment options must be discussed. These included sheltered workshop, supported employment, and competitive employment (Hawkins, 2004; Mank, 2007; Shafer, 1989). Each of these employment options has been designed with specific functions and particular ways to provide job and/or vocational training opportunities to maximize employability for people with varied levels of intellectual disability.

The primary employment option for persons with intellectual disabilities is sheltered workshops. This is a segregated work setting that is specifically designed for persons with severe developmental disabilities including mental retardation, psychiatric, and multiple disabilities (Murphy & Rogan, 1995). According to the National Association of Sheltered Workshops and Homebound programs, a sheltered workshop was defined as "a nonprofit rehabilitation facility utilizing individual goals, wages, supportive service, and a controlled work environment to help vocationally handicapped persons achieve or maintain their maximum potential as workers" (Nelson, 1971, p. 127). The above definition indicates that a sheltered workshop is a segregated employment setting that allows persons with disabilities to obtain vocational trainings and/or related job experiences.

However, sheltered workshops can also be classified into three categories to meet the unique needs of clients, depending on their level of intellectual functioning and adaptive behaviors. They are regular program workshops, work activities centers, and adult programs (Reynolds & Fletcher-Janzen, 2002). The functions of these three types of sheltered workshops are summarized as follows (Reynolds & Fletcher-Janzen, 2002):

1. Regular program workshops were known as transitional sheltered workshops. They were designed to provide job-related services and training for PWDs who may have been capable of or had potential to work in competitive (ordinary) employment settings.
2. Work activity centers were established for providing job training and extended employment to individuals with severe disabilities.
3. Adult day programs were generally managed by state developmental disability agencies in order to provide non-vocational services including basic living skills, communication, and socialization trainings. The major goal of adult day programs was to assist individuals with severe disabilities to move toward vocational oriented programs.

While the sheltered workshop is considered a means through which PWDs can obtain vocational and/or basic independent living skills, the value of sheltered workshops has been constantly questioned. The most controversial issue was whether a segregated environment could provide meaningful employment outcomes for PWDs (Murphy & Rogan, 1995). Could the sheltered workshop provide PWDs real opportunities for the development of job skills and exploration of future employment (Ainsworth & Baker, 2004)? These criticisms have led professionals to question whether there should be an

alternative work choice for PWDs. As a result, supported employment was developed as a preferred employment option for PWDs in the 1980s (Shafer, 1989).

Unlike sheltered workshops that provide PWDs with employment trainings and opportunities in a segregated environment, supported employment is another career choice that provides similar opportunities, but in an inclusive work setting. In other words, supported employment provides PWDs with job opportunities and/or vocational training in a non-sheltered and/or non-segregated environment. There were many definitions of supported employment that could be found in varied references. For example, according to Reinke-Scorzelli and Scorzelli, (2004), “Supported employment is identified with persons who have severe disabilities and involves competitive work in an integrated work setting with provision of ongoing support services” (p. 126). In addition, supported employment was defined in the Developmental Disabilities Act of 1984.

According to Rusch and Hughes (1990), supported employment was:

(i) for persons with developmental disabilities for whom competitive employment at or above the minimum wage is unlikely and who, because of their disabilities, need ongoing support to perform in a work setting; (ii) conducted in a variety of settings, particular work sites in which persons without disabilities are employed; and (iii) supported by any activity needed to sustain paid work by persons with disabilities, including supervision, training, and transportation. (p. 9)

The above definitions of supported employment consisted of several important concepts that could not be found in sheltered employment. First, supported employment provided ongoing assistance to ensure that PWDs could acquire appropriate job skills through the supports from specialists and/or non-specialists including job coaches, placement specialists, employment coordinators, supervisors, and employees without disabilities (Arnold, 1992). Second, supported employment provided real work settings that allowed PWDs to not only earn wages, but also have chances to participate in

meaningful vocational activities (Shafer, 1989). Most significantly, supported employment emphasized the importance of inclusion and integration. It allowed PWDs to have interaction opportunities with their co-workers and supervisors without disabilities (Wehman, 1981).

Shafer (1989) also mentioned that there were several models of supported employment including supported competitive employment, supported jobs, enclave, mobile work crew, and entrepreneurial models. Each of the supported employment models has been designed for particular functions in assisting PWDs to meet their vocational needs. First, supported competitive employment provided real work opportunities for PWDs in ordinary employment settings so that they could have greater chances to integrate and interact with their non-disabled workers while receiving job training from employment specialists who would gradually reduce their supports. Second, supported jobs offered similar work opportunities as supported competitive employment did. However, PWDs in supported jobs paid less than the requirements of federal minimum wages due to their low productivity. On the contrary, the enclave model and mobile work crew were designed to provide work opportunities for PWDs in a group style. The enclave model placed a group of clients in general workplaces such as assembly plants or other industrial settings. Meanwhile, the mobile work crew model transported their clients to different work settings under the supervision of their employment specialists. Their jobs may include grounds or building maintenance. Finally, the entrepreneurial model placed a small group of persons with severe or profound intellectual disabilities in businesses to perform limited tasks with supervision

from employment specialists. However, the interaction opportunities with non-disabled workers were limited.

There were different types of supported employment; however, the descriptions above have indicated that supported employment had several benefits for PWDs compared to sheltered employment. To summarize, supported employment was an important career option that could be used to assist PWDs earning wages, establishing social networks, and acquiring real job skills in an inclusive employment setting. However, while many researchers have agreed that supported employment should be an alternative occupational choice for individuals with significant intellectual disabilities, it did not mean that there were not criticisms regarding this employment option as well. For example, the question remained whether PWDs could constantly receive necessary ongoing support from employment specialists, supervisors, and their co-workers without disabilities as expected (Wehman, Inge, Revell, & Brooke, 2007). Whether workers with disabilities were socially included in their supported employment settings had been a controversial issue as well (Vander Hart, 2000).

Although sheltered workshops and supported employment are considered two major career options for persons with intellectual disabilities, competitive employment is another choice that should not be neglected. However, not every person with an intellectual disability is qualified or suitable for competitive employment. According to Ainsworth and Baker (2004), competitive employment “[requires workers with disabilities] to have skills equivalent to those of workers without disabilities, [which is] a necessary attribute to be successful in today’s workplace” (p. 111). As a result, individuals with intellectual disabilities must possess basic or appropriate job skills

and/or knowledge for competitive jobs so they could earn typical wages and receive associated benefits (Hanley-Maxwell, Owens-Johnson, & Fabian, 2003).

According to Wehman et al. (2005), competitive employment consisted of several important concepts including earning incomes, working in a typical or integrated setting, and receiving individualized supports. While the notion of competitive employment meant to discontinue the support for PWDs, researchers have argued that every worker with or without a disability should receive some type of employment and personal support at work (Wehman et al., 2005). In addition, other researchers have noted that persons who were identified with intellectual disabilities, such as Asperger Syndrome, may possess unique skills that allowed them to work for competitive jobs as long as they received proper training and/or assistance (Hawkins, 2004). Therefore, competitive employment should be considered an employment option for individuals with intellectual disabilities as long as they possess proper skills and knowledge that allow them to be qualified for that position.

### **Employment Legislation and Barriers for Taiwanese With Disabilities**

Because the Taiwanese government has realized the importance of employment for PWDs, they have passed significant employment-related legislation to ensure that the population of individuals with disabilities could receive appropriate services and/or vocational training, which would better equip them when they had opportunities to enter into the job market. The major functions of these regulations were to ensure that Taiwanese with disabilities could be free from job-related discrimination while having equal opportunities to obtain employment information. The most influential legislation included The Regulations of Establishment of Shelter Factories and Reward for the



Disabled, The Employment Services Act, and The Protection Act for the Handicapped and Disabled of 1997.

First, The Regulations of Establishment of Shelter Factories and Reward for the Disabled promulgated in 2002 was considered the first regulation that clearly outlined the functions of sheltered employment for Taiwanese with disabilities (Bureau of Employment and Vocational Training, Republic of China, Taiwan, 2010). The 3rd Article under this law defined sheltered workshops as places: “for those handicapped who are fifteen years of age, willing and capable to work, who can improve their working skills in different places, including factories, shops, farms, working stations (rooms), etc.” (Bureau of Employment and Vocational Training, Republic of China, Taiwan, 2010, p. 1).

This law clearly indicates that the major objectives of establishing sheltered workshops are to provide work opportunities and trainings for Taiwanese with disabilities so they can obtain hands-on work experiences. It is expected that sheltered employment will allow PWDs to learn proper job skills in controlled work environments before they are able to work in more inclusive settings. This legislation requires competent authorities to provide financial incentives and support to encourage public and/or private organizations to establish shelter-related facilities in order to assist PWDs in acquiring work experiences as well as job training opportunities.

In addition to establishing sheltered employment for PWDs, the amendment of The Employment Services Act in 2003 emphasizes the importance of equal opportunity of employment for the population of individuals with disabilities. The major goal of this legislation is to regulate that employers cannot discriminate against job applicants or

current employees with disabilities (Laws and Regulations Database of the Republic of China, 2010a). In addition, the 24th Article under this legislation requires government agencies to provide financial assistance and to develop a career plan for PWDs who are willing to receive job training and seek future employment opportunities. Furthermore, the 25th Article demands public employment service agencies offer information on employment opportunities that are available to PWDs and the aging population on a regular basis. Finally, the 28th Article asks that related public employment service agencies conduct follow-up visits to provide PWDs with necessary assistance to adapt to their new jobs.

However, the most comprehensive legislation for supporting Taiwanese with disabilities in terms of their employment is considered Physically and Mentally Disabled Citizens Protection Act, which was reauthorized and renamed The People with Disabilities Rights Protection Act in 2007. This legislation regulates many important issues in supporting Taiwanese with disabilities specifically in the areas of their employment rights and opportunities, individualized care, and accessibility to public areas. First of all, the 30th Article of this legislation differentiates sheltered employment and supported employment as well as the qualifications of the programs' potential clients (Ministry of the Interior, Republic of China, Taiwan, 2008). According to the 30th Article:

The competent authorities in charge of labor shall provide supportive and individualized employment services [for PWDs] who have capability to work but are still not able to enter the competitive employment market, and [should] provide sheltering employment services for [PWDs] who are willing to work but have no sufficient capability to do their jobs. (Ministry of the Interior, Republic of China, Taiwan, 2008, p. 11)

Another prominent feature of this legislation is that it requires larger public agencies and private business organizations to hire specific numbers of workers with disabilities. For example, according to the 38th Article, all government-related institutions or agencies must hire at least 3% of PWDs if they have 34 or more employees. In addition, any private organizations must employ at least 1% of workers with a disability if they have over 67 employees (The Government Information Office, Republic of China, Taiwan, 2009). A monthly fine that equals the minimum wage of hiring an individual without a disability will be applied to any organizations that do not meet this requirement. The total amount of the monthly fines depends on how many employees with disabilities are supposed to be employed. These fines will be collected for supporting Taiwanese with disabilities in relation to their vocational rehabilitation services and related programs.

By implementing these employment-related laws mentioned above, the Taiwanese government hopes that PWDs will not only be able to access career services and training programs more easily, but also would like to ensure that their employment rights and opportunities will be well protected and improved. However, while the Taiwanese government has strived for the improvement of employment participation among PWDs, a low employment rate is still a prevailing trend (Shieh & Huang, 2008; Yiu, 2004). Similarly, according to a study conducted by the Taiwanese government (Council of Labor Affairs, Republic of China, Taiwan, 2009), the employment rate among Taiwanese with disabilities who reached the age of 15 and had the ability to work was only about 23% in 2007.

The above study conducted by the Taiwanese government also provided reasons that could be used to explain why Taiwanese with disabilities had limited employment opportunities or chose to leave their jobs. These explanations were based on the perspectives of the surveyed population of individuals with disabilities. They included lower physical abilities to perform job requirements, limited work competence, economic recession, being laid off, lower educational achievements, poor interpersonal relationships with co-workers without disabilities, negative attitudes toward the population with disabilities held by the general public, etc. These factors could best be used to explain why Taiwanese with disabilities had a low employment rate although related employment legislation had been passed for supporting this population (Council of Labor Affairs, Republic of China, Taiwan, 2009).

When examining these factors that prevented Taiwanese with disabilities from obtaining or maintaining their jobs, it was understandable that providing proper vocational training services and job modification assistance should be considered as crucial methods to assist PWDs in accommodating their jobs after placement. It was also necessary to change negative attitudes toward PWDs held by the general public, co-workers without disabilities, as well as employers. This may have ensured that workplaces could be more accessible to and friendly for PWDs. However, changing negative attitudes toward PWDs held by the general public and non-disabled co-workers were not easy tasks, which may have required collaboration from employment specialists, employers, and employees without disabilities. Therefore, the above information has demonstrated that finding a job and maintaining employment could still be challenging

for Taiwanese with disabilities. In other words, there were still many obstacles that PWDs may encounter in their jobs or when they were seeking employment.

### **Attitudes Toward Individuals With Intellectual Disabilities**

Attitude is a very complex concept that has been studied for a long period of time. Researchers have defined it differently. For example, Eagly and Chaiken (1993) explained that attitude in psychology was defined as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (p. 1). Other researchers described that attitudes “are reinforced by beliefs (the cognitive component) and often attract strong feelings (the emotional component) which may lead to particular behavioural intents (the action tendency component)” (Oppenheim, 1992, p. 175).

While there are various definitions of attitude, many researchers have agreed that there is a significant relationship between attitude and behavior. For instance, Allport (2008) stated that “an attitude characteristically provokes behavior that is acquisitive or avertive, favorable or unfavorable, affirmative or negative toward the object or class of objects with which it is related” (p. 21). That is to say, attitudes may guide or determine people’s judgments or opinions, or may directly influence human behavior in some circumstances (Antonak & Livneh, 1988; Krosnick & Petty, 1995; Upmeyer & Six, 1989).

Since attitudes may have been established or reinforced based on beliefs, it was not difficult to realize that the general public may have had negative attitudes toward human disability. For instance, the attitudes or beliefs toward PWDs could be examined through language usage. Some researchers believed that many linguistic terms were used

to convey or to represent one's beliefs, preferences, and attitudes (Hippel, Sekaquaptewa, & Vargas, 2009). In the human disability domain, several terms have been commonly utilized to describe the population of individuals with disabilities including crippled and handicapped. However, there were more terms that have been used to describe individuals with intellectual disabilities, such as idiot, feeble-minded, imbecile, moron, and mental deficient (Nehring, 2005).

While the above terms may have individual meanings, they can have similar purposes when they are utilized to represent implicit or explicit attitudes toward persons with intellectual disabilities. Simply speaking, these words are used to illustrate that people with intellectual disabilities are usually regarded as persons who are unproductive, unstable, and/or incapable of working or living independently. Therefore, it is easy to imagine how individuals with intellectual disabilities were viewed and treated in the past. Although intellectual disability is considered as a formal terminology that has been adopted recently to replace the above phrasings to describe people who are mentally challenged, attitudes toward human disability may not be easily improved simply due to a change of terminology.

Negative attitudes toward persons with intellectual disabilities are a common phenomenon (Bowman, 1987; Corrigan et al., 2000). However, stereotypes toward persons with specific disabilities can be a significant factor that not only influences employment opportunities and outcomes, but also has tremendous impacts on the development of social networks. Studies have been conducted to examine people's attitudes toward individuals with physical disability (Furnham & Thompson, 1994) or to compare people's attitudes toward persons with varied disabilities such as physical,

intellectual, and developmental disabilities (Bowman, 1987; Gordon, Minnes, & Holden, 1990). The primary objectives of these studies were to obtain a better understanding of the general public's attitudes toward people with particular disabilities (Bowman, 1987), to realize what kinds of methods that could be implemented to change negative stereotypes toward human disability (Brostrand, 2006), and to provide valuable information for health professionals and related practitioners for the improvement of service delivery in the future (Lin, Lee, Yen, & Wu, 2003).

The outcomes of these relevant studies indicated that individuals with intellectual disabilities were viewed with less favor when compared to others identified with physical or developmental disabilities. For example, Corrigan et al. (2000) conducted a study to examine stereotypes held by college students toward persons with mental illness including depression, psychosis, substance abuse disorders, and mental retardation. Their findings revealed that people with mental retardation were rated the lowest in terms of their stability. Similarly, the results of another study also demonstrated that college students viewed individuals with mental illness and mental retardation as the least accepted population that they would prefer to establish friendships with when compared to others with physical or chronic disabilities (Gordon et al., 2004).

Furthermore, students from a rehabilitation counseling program had positive attitudes toward people with physical disabilities rather than persons with mental retardation or psychiatric disabilities (Wong, Chan, Cardoso, Lam, & Miller, 2004). Finally, a cross-cultural study that examined the preferences of disability types held by American and Taiwanese college students was conducted by researchers from both countries (Wang et al., 2003). The outcomes of their research clearly showed that both

American and Taiwanese college students ranked mental disabilities as the least favorable disability type compared to physical and developmental disabilities. The conclusions of these relevant studies demonstrated that persons with mental disabilities were commonly viewed in a negative way among students. Unfortunately, this bias may be an indicator of their future attitudes and behaviors toward the population of individuals with mental disabilities.

Similar research has been conducted examining the general public's attitudes regarding social distance and work competence of persons with varied disabilities including alcoholism, blindness, paralysis, epilepsy, disfigurement, deafness, Cerebral Palsy, and mental retardation (Bowman, 1987). Again, the results of this study indicated that individuals with mental retardation were considered as the least favorable population to build friendships with and were also perceived as the least productive group among the population of individuals with disabilities in terms of their job performance.

The purposes of the above studies similarly focused on examining whether people have different attitudes toward individuals with particular disabilities. However, the consequences of the above research indicated that many people, students and the general public, possessed adverse stereotypes toward persons with intellectual disabilities compared to individuals with physical or other developmental disabilities. The preference of interacting with individuals with physical disabilities rather than those with intellectual disabilities was a consistent finding in studies. Unfortunately, this potential prejudice may become a significant barrier that could influence opportunities for people with intellectual disabilities to obtain employment and establish social networks. This



may ultimately prohibit people with intellectual disabilities from living and working in an inclusive environment.

### **Employees' Attitudes Toward Their Co-workers With Intellectual Disabilities**

Researchers have indicated that employers' negative attitudes toward PWDs were the main factors that could influence job opportunities and work performance (Lengnick-Hall & Gaunt, 2007; Peck & Kirkbride, 2001). However, others have found that the negative attitudes of supervisors and/or employees toward their co-workers with disabilities might also function as an influential element that could lead PWDs to have difficulties in maintaining their jobs or seeking promotions (Freedman & Fesko, 1996; Reitman, Drabman, Speaks, Burkley, & Rhode, 1999).

Studies have been conducted in order to obtain a better understanding of the influence of non-disabled employees' attitudes toward their co-workers with disabilities in relation to their job performance and the development of social networks (Chadsey-Rusch et al., 1989; Shafer et al., 1989). The results of related studies have indicated that the negative attitudes of non-disabled workers' could influence their co-workers with disabilities in many aspects. For example, Colella (2001) mentioned that the reactions of non-disabled employees toward the issue of fairness could affect the decisions of employers in providing work accommodations and related support for workers with disabilities. This was because employees without disabilities might view work accommodations, such as changing work schedules and modifying jobs for their co-workers with disabilities, as unreasonable and unfair. Consequently, this might imply that employees with disabilities may not be truly integrated into their workplaces due to

the negative reactions among employees without disabilities; resulting in adverse job performance.

Other research indicated that non-disabled employees could be regarded as valuable resources for supporting their co-workers with disabilities in acquiring job skills more effectively as long as they receive appropriate trainings (Storey & Garff, 1999). The training may include: (a) teaching non-disabled employees to use instructional tactics, such as “Tell-Show-Watch-Coach,” to assist their co-workers with disabilities in learning new skills and (b) training non-disabled workers to provide positive feedback and/or praise to encourage their co-workers with disabilities. From the above two studies, it is clear that employees without disabilities can have significant impacts on their co-workers with disabilities in terms of their work accommodations and job productivity, both in positive and negative directions.

Examining the attitudes of non-disabled employees toward their supported co-workers with intellectual disabilities is also regarded as an important issue in the area of rehabilitation. Based on the concept of supported employment, workplace inclusion and social integration are considered the two primary advantages for persons with intellectual disabilities working in an inclusive setting (Powell et al., 1991; Rusch, Wilson, Hughes, & Heal, 1995). Supported employment should provide PWDs opportunities in acquiring appropriate job skills while also allowed them to establish friendships through the natural interaction with and assistance from their non-disabled co-workers.

Related studies have been conducted to investigate the perspectives of non-disabled employees toward their co-workers with intellectual disabilities (Chadsey-Rusch et al., 1989; Ferguson et al., 1993). The major objectives of these studies were to

examine whether PWDs could benefit from working within the non-segregated work environments as expected. However, the outcomes of this type research have indicated that workers with intellectual disabilities were only physically included rather than socially accepted in their workplaces. For example, Shafer et al. (1989) conducted a study to examine non-disabled employees' attitudes toward their co-workers with mental retardation in supported settings. The findings illustrated that the interactions between workers with and without mental retardation mainly focused on task-related activities rather than social activities during breaks and after work hours. In addition, the attitudes of employees toward their co-workers with mental retardation in terms of their social and vocational competence did not change either positively or negatively due to their contact at work.

Correspondingly, Chadsey-Rusch et al. (1989) discovered that non-disabled employees had more interaction with their co-workers without mental retardation rather than with their supported co-workers with mental retardation during breaks. They also found that employees with mental retardation were less involved in non-work related activities with their co-workers without disabilities.

Ferguson and his colleagues (1993) also uncovered similar results in their investigation. First, non-disabled employees initiated interactions, such as teasing and joking among themselves, more frequently than with their co-workers with mental retardation. Second, non-disabled employees asked more work-related questions or directions in comparison to their counterparts with disabilities. Most significantly, employees with mental retardation had more interactions with their job coaches rather

than with their non-disabled co-workers. These findings illustrated that employees with mental retardation had limited opportunities in receiving natural support from their non-disabled co-workers as anticipated. The researchers further concluded that these interaction patterns might also imply that employees without disabilities had different attitudes toward their co-workers with mental retardation. In other words, workers with mental retardation might be perceived differently and unequally by their non-disabled co-workers.

The conclusions of the above studies have illustrated that workers with intellectual disabilities were physically integrated, but less socially included in their workplaces. However, this phenomenon was not unusual and was also recognized by Taiwanese employment specialists. For instance, Hsu and his colleagues (2009) found that Taiwanese transition specialists perceived several major challenges that could cause young adults with mild to moderate mental retardation to fail or withdraw from their jobs. These challenges included the lack of friendships, negative interaction experiences with co-workers without disabilities, low physical ability to do the labor intensive jobs, parental concerns in relation to safety issues, and community reactions regarding the stability of workers with mental retardation. Among these reasons, the Taiwanese transition specialists believed that the lack of interpersonal relationships and negative attitudes held by non-disabled co-workers were considered the most influential factors that led young adults with intellectual disabilities to feel social rejection and, thus, leave their jobs and return back to sheltered employment.

In contrast to the results of the above studies which have demonstrated that workers with intellectual disabilities are not socially included, other researchers

discovered that inclusive work environments at least provide some interaction opportunities between workers with and without intellectual disabilities (Riches & Green, 2003). In addition, the integrated workplaces could be regarded as a means to improve non-disabled workers' attitudes toward their co-workers with disabilities due to their contact at work. Belcher and Smith (1994) demonstrated that non-disabled employees' attitudes toward their co-workers with autism could change due to the amount of contact at work. They further explained that, although non-disabled workers had fewer interactions with co-workers with autism outside of work, their outlook toward PWDs in terms of their vocational competence greatly improved with direct work experience with them.

Riches and Green (2003) also indicated that direct work contact experience could enhance the attitudes of non-disabled supervisors and employees toward their supported co-workers with disabilities in a positive direction. In addition, they discovered that integrated workplaces provided at least some opportunities for supported employees with disabilities to interact with their non-disabled co-workers during special events in workplaces including birthday parties. However, they admitted that, in contrast to their non-disabled employees, supervisors may have stronger positive attitudes toward their supported co-workers with disabilities. In addition, non-disabled employees might still view their supported co-workers with disabilities differently in relation to their work productivity and competence.

The primary objectives of integrating workers with intellectual disabilities into ordinary workplaces are to assist them in acquiring job skills while allowing them to

establish social networks through the natural support of their non-disabled co-workers. However, it is very difficult to achieve these goals without receiving assistance from co-workers without disabilities. The results of the above studies in relation to non-disabled employees' attitudes toward their supported co-workers with disabilities have indicated that workers with intellectual disabilities may still be viewed differently. While some research has demonstrated that attitudes toward PWDs held by non-disabled employees may change due to the direct work contact experience (Belcher & Smith, 1994; Riches & Green, 2003), other studies indicated that workers with intellectual disabilities may be physically integrated rather than socially integrated in their workplace (Chadsey-Rusch et al., 1989; Shafer et al., 1989). However, if the feeling of social rejection has been constantly experienced by workers with intellectual disabilities, their work days in the integrated environment will be limited and numbered.

### **Impacts of Demographic Variables on Attitudes Toward PWDs**

The relationship between various demographic factors and people's attitudes toward PWDs is an important issue that has been studied by researchers for decades (Geskie & Salasek, 1988; Popovich et al., 2003). Based on the Multidimensional Opinion About Mental Illness Scales (OMI) developed by Cohen and Struening in the 1960s, several factors were considered to affect individuals' attitudes toward people with disabilities including age, gender, education, general knowledge regarding PWDs, and years of experience working with PWDs (Geskie & Salasek, 1988). In fact, recent studies in relation to people's attitudes toward PWDs have also examined the impacts of these or associated factors (Ten Klooster, Dannenberg, Taal, Burger, & Rasker, 2009; Yazbeck, McVilly, & Parmenter, 2004). Other researchers have focused their efforts in

examining influences of other demographic variables on attitudes toward PWDs such as culture and race (Gill & Cross, 2010). The above information indicates that the subject of impact of different demographic variables on attitudes toward PWDs have attracted the attention of researchers who have interest in studying related issues.

While the influences of these demographic variables on individuals' attitudes toward PWDs have been examined, findings have yielded different answers in relation to which demographic factors can influence people's attitudes toward PWDs. First of all, educational attainment was considered to have influence on one's attitudes toward PWDs (Fichten, 1988). In fact, the results of studies have indicated that people with higher educational attainment tend to have more positive attitudes toward PWDs (Lau & Cheung, 1999; Scior, Kan, McLoughlin, & Sheridan, 2010; Yazbeck et al., 2004). Researchers have explained that people with higher education may be more liberal, open, and knowledgeable about PWDs and related issues that led them to have more favorable attitudes toward PWDs than others with limited educational attainment (Lau & Cheung, 1999).

However, researchers were unable to infer the influence of other demographic variables on people's attitudes toward PWDs. The outcomes of associated studies indicated that gender either can or cannot influence people's attitudes toward PWDs. To be more specific, some studies showed that female college students (Popovich et al., 2003), female medical students (Tervo, Azuma, Palmer, & Redinius, 2002), and female high school students (Krajewski & Flaherty, 2000) tended to have more positive and favorable attitudes toward PWDs. On the contrary, the findings of other research showed

that gender had no significant effects on attitudes toward PWDs among undergraduate nursing students (Chenoweth, Pryor, Jeon, & Hall-Pullin, 2004) and Korean and Korean-American students (Choi & Lam, 2001).

These inconsistent results in relation to the impacts of other demographic factors, such as age, can also be found. For example, some researchers found that younger people (Bakheit & Shanmugalingam, 1997; Yazbeck et al., 2004) have more positive perceptions toward PWDs. However, other studies indicated that age was not a determining variable that influenced attitudes toward PWDs among college students (Perry, Ivy, Conner, Shelar, 2008) or health care professionals (Al-Abdulwahab & Al-Gain, 2003). The contradictory findings could also be discovered in related studies in which the impacts of contact experiences on people's attitudes toward PWDs were examined (Horner-Johnson et al., 2002; Shafer et al., 1989). As a result, the uncertainty of whether and which demographic factors influence people's attitudes toward PWDs are clear. In other words, it is difficult or even impossible to make a strong conclusion of which demographic variables can or cannot influence individuals' perceptions or attitudes toward PWDs.

Researchers have provided different but possible explanations to clarify why people's attitudes toward PWDs go in various directions although they might have similar backgrounds. These explanations include: (a) differences of individual characteristics and personalities (Horner-Johnson et al., 2002), (b) diversity of field studies (Hunt & Hunt, 2000), (c) influences of socio-cultural factors (Huang et al., 2009; Livneh & Cook, 2005), (d) types of different contact experiences with PWDs (Krahe & Altwasser, 2006), and (e) the change of attitudes toward PWDs due to the possibility of the improvement of social and human systems and related services (Huang et al., 2011).



These factors are considered as significant variables that may impact people's attitudes toward PWDs. In addition, other researchers mentioned that the differences of sampling methods and survey instruments adopted by researchers could also be regarded as factors leading to significant dissimilarity of the impacts of these demographic variables on attitudes toward PWDs (Stachura & Garven, 2003).

Because of the reasons previously stated, some researchers have tried to control for the backgrounds of their research participants, such as their field of study, in order to find out whether other demographic variables have influence on attitudes toward PWDs. Studying nursing students' attitudes toward PWDs was one example (Ten Klooster et al., 2009). However, the findings of related studies have indicated that the impacts of demographic variables on nursing students' attitudes toward PWDs were still different even though they have similar educational backgrounds. For instance, the results of a study indicated that contact experiences with PWDs rather than gender could influence nursing students' attitudes toward PWDs in both positive and negative directions (Johnston & Dixon, 2006). On the contrary, the outcomes of a similar study demonstrated that attitudes of nursing students toward PWDs were not affected by their age, gender, and caregiving experiences (Chenoweth et al., 2004).

Other researchers have compared students with different academic backgrounds in order to find out whether educational training programs could influence their attitudes toward PWDs (Stachura & Garven, 2003). Hunt and Hunt (2000) found that undergraduates in a rehabilitation program had a positive outlook toward PWDs compared to others who were in the business program. In addition, they discovered that

females and students who had more contact experience with PWDs tended to have a more positive attitude toward PWDs.

A comparable study was conducted by researchers to examine attitudes toward PWDs held by Hong Kong college students from rehabilitation and business programs (Chan, Lee, Yuen, & Chan, 2002). Their findings were consistent with the previous study that indicated rehabilitation students had higher positive perceptions toward PWDs than business students. Surprisingly, the researchers also discovered that business students with prior contact experience with PWDs had more positive attitudes toward this population than rehabilitation students who had similar experiences. From the above description, it was clear that these two studies have demonstrated that educational programs may influence people's attitudes toward PWDs in a particular direction.

Researchers have also examined ethnicity and its influence on people's attitudes toward PWDs (Hampton & Xiao, 2007). A cross-cultural study was conducted to examine American, Taiwanese, and Singaporean college students' general attitudes toward PWDs (Chen, Brodwin, Cardoso, & Chan, 2002). They found that American students had the highest positive attitudes toward PWDs compared to Taiwanese and Singaporean students. In addition, female American students had more positive attitudes than male students. However, no gender effect was found among Asian students. Moreover, the findings indicated that contact experiences had improved American and Taiwanese students' attitudes toward PWDs while it had no significant effect on Singaporeans. The above description of this study had again demonstrated that there were many complicated factors that could influence individuals' attitudes toward disability.

The impacts of several major demographic factors on people's attitudes toward PWDs have been frequently studied including age, gender, education, contact experience, culture, and race (Gill & Cross, 2010; Hannah, 1988; Lau & Cheung, 1999; Ten Klooster et al., 2009). To obtain a better understanding of the influences of these demographic variables on attitudes toward PWDs, some researchers have tried to control for varied backgrounds of their research participants (Chenoweth et al., 2004; Johnston & Dixon, 2006). However, as described above, the inconsistent findings of related studies have indicated that these demographic variables either can or cannot influence individuals' attitudes toward PWDs.

It is also possible that research participants may provide false information when completing the surveys because "not only do people want to maintain favorable images of themselves in the eyes of others, but they also want to have such images in their own eyes as well" (Krosnick, Judd, & Wittenbrink, 2005, p. 51). This is referred to as the tendency of social desirability. Nevertheless, the research designs created by researchers have provided important orientation and footprints for researchers who would like to conduct similar studies in the future. Most significantly, the explanations of possible influence on people's attitudes toward PWDs mentioned in the previous studies are also valuable for the development of the prospect research path.

### **Measuring Attitudes Toward Individuals With Intellectual Disabilities**

Attitudes may guide and influence one's judgments or behaviors toward specific subjects in some situations (Antonak & Livneh, 1988; Krosnick & Petty, 1995; Upmeyer & Six, 1989). Therefore, understanding one's attitude toward a particular subject may be a method to predict his/her later behavior towards that issue (Ajzen & Fishbein, 1980).

Based on this belief, many attitude measurement instruments were developed for the objective of examining attitudes toward PWDs held by employers (Schmelkin & Berkell, 1989), non-disabled employees (Shafer et al., 1989), and the general public (Yuker, Block, & Campbell, 1960). Others were developed for the goals of studying attitudes toward people with particular disabilities, such as mental retardation and developmental disabilities (Antonak & Livneh, 1988).

Since the major objectives of this study were to examine general attitudes toward individuals with intellectual disabilities and affective reactions of non-disabled employees toward their co-workers with intellectual disabilities, several attitude measurement instruments that were developed for this orientation was emphasized in this section. These instruments included Attitude toward Disabled Persons Scale (ATDP), Scale of Attitudes Toward Mental Retardation and Eugenics (AMRE), the Mental Retardation Attitude Inventory (MRAI), Attitudes Toward Supported Employees with Mental Retardation, Contact with Disabled Persons Scale (CDP), and the Affective Reactions Subscale of the Disability Questionnaire (QD).

The original version of the Attitude Toward Disabled Persons Scale (ATDP-O) was developed for the goal of studying people's general attitudes toward individuals with disabilities (Yuker et al., 1960). Two additional versions, the ATDP-A and the ATDP-B, were developed by Dr. Yuker and his colleagues for the similar purpose in which more items were added and the scoring methods were also changed (Yuker, Block, & Young, 1966). These three versions of the ATDP have been commonly used by researchers to examine attitudes toward PWDs held by people with different backgrounds. For example, ATDP-O was administered to measure attitudes toward PWDs by the general

public (Eichinger, Rizzo, & Sirotnik, 1992). In addition, ATDP-A was used to examine attitudes toward PWDs held by college students (Chan et al., 2002) and employers (Levy, Jessop, Rimmerman, Francis, & Levy, 1993). Some researchers even modified the ATDP-B to study employers' attitudes toward their workers with mental retardation (Marcouiller, Smith, & Bordieri, 1987). Thus, the ATDP is the most widely used instrument for studying general attitudes toward PWDs (Antonak & Livneh, 1988).

Unlike the ATDP that was developed for examining general attitudes toward PWDs, others were created for studying attitudes toward persons with particular disabilities, such as mental retardation. For instance, the Scale of Attitudes Toward Mental Retardation and Eugenics (AMRE), developed by Antonak, Fielder, and Mulick (1993), was designed to explore people's attitudes toward individuals with intellectual disabilities and how this population should be treated. This instrument was used by the original authors in their own study (Antonak et al., 1993). Moreover, it was utilized by researchers to examine attitudes toward people with intellectual disabilities held by Australian students, disability service professionals, and the general public (Yazbeck et al., 2004).

The Mental Retardation Attitude Inventory (MRAI) is another significant instrument that was developed by Antonak and Harth (1994) to examine people's attitudes toward persons with mental retardation in four aspects (integration-segregation, private rights, social distance, and subtle derogatory beliefs). MRAI was implemented by researchers to examine attitudes of high school students toward individuals with mental retardation (Krajewski & Flaherty, 2000). Yazbeck et al. (2004) also administered this

measurement tool to study attitudes toward people with intellectual disabilities held by Australians.

In addition to these instruments that were developed for studying attitudes toward persons with intellectual disabilities, several attitude measurement tools were created particularly for exploring attitudes toward workers with mental retardation held by their non-disabled co-workers. A 33-item questionnaire on attitudes toward supported employees with mental retardation developed by Shafer and his colleagues (1989) was created for the purposes of examining viewpoints of non-disabled employees toward their co-workers with intellectual disabilities in three areas: social skill competence, vocational competence, and willingness to work with individuals with mental retardation. This instrument was not only administered by Shafer and his colleagues (1989) in their own study, but was also utilized by other researchers who examined attitudes of non-disabled employees toward their co-workers with Autism (Belcher & Smith, 1994).

The Contact with Disabled Persons Scale (CDP), a 20-item questionnaire developed by Yuker and Hurley (1987) is also considered a proper instrument for studying attitudes toward people with disabilities. The original goal of this instrument was to measure the amount of contact between people with and without disabilities. Yuker and Hurley (1987) explained that it was necessary to understand prior contact experience between people with and without disabilities because it could be regarded an important variable to influence one's attitudes toward PWDs. Yuker and Hurley (1987) used it along with the ATDP-A, ATDP-B, and ATDP-O to explore whether prior contact would influence people's attitudes toward PWDs. Later, Elmaleh (2000) utilized the

CDP and the ATDP-O to study the attitudes of non-disabled employees toward their co-workers with disabilities in competitive employment settings.

Finally, the Affective Reactions Subscale of the Disability Questionnaire may be regarded as an appropriate instrument to investigate attitudes toward working with persons with disabilities (Popovich et al., 2003). The Disability Questionnaire consists of three subscales; beliefs about disabilities, affective reactions, and the issue of reasonable accommodations (Popovich et al., 2003). Originally, the developers used it to measure attitudes toward PWDs held by undergraduate students who enrolled in an introductory psychology course (Popovich et al., 2003). Some researchers have utilized the Affective Reactions Subscale, which contains 21 items, to study attitudes of employers and related managerial professionals toward working with persons with disabilities (Copeland et al., 2009). This subscale may also be applicable to examine attitudes of people toward working with their co-workers with disabilities as long as it is accompanied with proper modification of terminology.

### **Supply-Side and Demand-Side Job Development Approaches for PWDs**

As previously mentioned, a number of factors can lead the population of individuals with disabilities to have high unemployment rates. These include negative attitudes toward PWDs held by employers, supervisors, and co-workers (Council of Labor Affairs, Republic of China, Taiwan, 2009; Freedman & Fesko, 1996; Lengnick-Hall & Gaunt, 2007), lower job competence (Fabian et al., 1994), the concerns of the cost of accommodation and health insurance held by employers (Hill et al., 2003; Peck & Kirkbride, 2001), poor interpersonal relationships (Hsu et al., 2009), and the lack of transportation and educational achievement (Cook, 2006; Council of Labor Affairs,

Republic of China, Taiwan, 2009). When examining these factors that can prevent PWDs from acquiring or maintaining their jobs, it is understandable that there is no single solution that can be implemented to assist PWDs in dealing with all of these barriers that they may encounter in the workplace or when they search for employment opportunities.

Since there were several factors that could limit employment opportunities of PWDs, many researchers have studied different approaches that could assist them in securing employment or maintaining their employment (Gilbride & Stensrud, 1999; Ryan, 2004; Storey & Garff, 1999). Strategies for supporting PWDs in acquiring job opportunities or dealing with difficulties in their workplaces could be classified into two methods: supply-side and demand-side job development approaches (Gilbride & Stensrud, 1992). Each of these two job development approaches has been designed with specific functions that could be utilized for supporting PWDs to meet their unique vocational needs.

Supply-side job development approaches could be considered traditional methods of assisting PWDs to obtain employment opportunities (Gilbride & Stensrud, 1992). Supply-side approaches require employment specialists to assist PWDs in seeking and applying for jobs by improving their work competence and job seeking skills which may pay no attention to the needs of employers and the variables of work environments (Chan, Strauser, Gervey, et al., 2010). Researchers who emphasized the importance of supply-side approaches have focused their efforts on serving PWDs to develop their work competence and job-seeking skills such as writing an appropriate resume and preparing for a job interview (Ryan, 2004).



Under the notion of supply-side approaches, employment specialists need to assist PWDs in becoming employed, to provide services primarily to the clients with disabilities, to refer clients with disabilities to potential employers, and to offer limited services after placement (Gilbride & Stensrud, 1992). From the above description, it is apparent that the supply-side approaches may have had some drawbacks that could reduce employment opportunities of PWDs. The major disadvantage is that PWDs may not be able to maintain their jobs if they are unable to receive time-sensitive support from employment specialists especially after placement. In return, employers may also lack motivation for hiring future job seekers with disabilities if they have had negative experience of working with employees with disabilities.

Unlike supply-side job development approaches, demand-side approaches emphasize that the employment services should be available to both clients with disabilities and potential employers in a long-term manner (Gilbride & Stensrud, 1992). According to Gilbride and Stensrud (1999), there were several major differences between supply-side and demand-side approaches. First, demand-side employment specialists would provide services and related support for both clients with disabilities and employers in a long-term fashion even after placement. In addition, demand-side specialists would look for qualified PWDs to meet the needs of employers from any resources rather than their own caseloads.

Demand-side approaches also have quite a few features which are different from supply-side approaches. Gilbride and Stensrud (1999) further explained that demand-side job specialists should provide services that include “developing consulting relationships with employers, providing consulting services to employers, providing

labor-market consulting services to rehabilitation counselors and agencies, and using Internet technology to enhance employment solution” (p. 332). By implementing these strategies, it is anticipated that problems faced by both clients with disabilities and potential employers can be solved in a timely manner. This will not only enhance hiring practices of employers of PWDs, but also assist clients with disabilities to deal with difficulties expediently in time, resulting higher job retention rates.

Many rehabilitation researchers have supported the implementation of demand-side approaches to assist both PWDs and employers to meet their needs (Chan, Strauser, Maher, et al., 2010). Demand-side approaches allow employment specialists to assist employers solving their particular concerns in relation to hiring PWDs including early employment services, long-term assistance, labor market consulting services, job modification and related accommodation consultation, disability awareness training, and problem resolution services (Chan, Strauser, Maher, et al., 2010; Gilbride & Stensrud, 1992; Smith & Alston, 2010). This will not only help employers relieve their worries of recruiting PWDs, but also assist their clients in adjusting their jobs in an effective manner.

Based on the concept of demand-side approaches, employment specialists should provide trainings in relation to the issues of work accommodation and disability awareness to employers, managerial professionals and non-disabled workers (Chan, Strauser, Maher, et al., 2010; Gilbride & Stensrud, 1999). This is regarded as the most effective strategy to make work environments more accessible and friendly for PWDs. As a result, assisting employers to help their non-disabled employees develop disability awareness should be a focus under the demand-side approaches. In fact, this idea has

been supported by others who have recognized the importance of assisting non-disabled employees and students establish proper skills and attitudes toward working or interacting with the population of individuals with disabilities (Hunt & Hunt, 2004; Storey & Garff, 1999).

Wehman (2003) further provided several important strategies that could be implemented by employment specialists to provide more interaction opportunities between workers with and without disabilities. These strategies included: (a) making job site modifications to provide interaction opportunities between workers with and without disabilities, (b) providing social skills instructions to PWDs such as asking a question or knowing when to greet by observing non-disabled employees' behavior, (c) teaching non-disabled employees to interact with their co-workers with disabilities through the observation of interaction between employment specialists and workers with disabilities, and (d) teaching and encouraging employees with disabilities to participate in special events or social activities with their non-disabled co-workers. By implementing these work inclusion strategies, it would help to assist employees without disabilities to obtain a greater understanding of how to interact with their co-workers with disabilities, but also can be a means to change negative attitudes toward PWDs held by non-disabled employees. At the same time, it may also allow employees with disabilities to develop proper social skills as well. As a result, it is expected that the major goal of the workplace inclusion for PWDs can be truly achieved.

Before providing interaction opportunities to promote disability awareness among workers with and without disabilities, it is necessary to examine attitudes of non-disabled employees toward their co-workers with disabilities in order to find out whether the

conflicts between workers with and without disabilities exist. By examining attitudes toward employees with disabilities held by their non-disabled co-workers, demand-side employment professionals will be able to obtain a better understanding of the work relationship between employees with and without disabilities in order to provide needed and appropriate services.

### **Summary**

Employment is an important part of people's lives regardless if they have a disability or not. For people with disabilities, employment allows them to earn wages and establish social networks (Dunn et al., 2008; Wehman, Brooke, et al., 2007). While supported employment provides job opportunities for individuals with intellectual disabilities to work in ordinary workplaces, it does not ensure that PWDs will receive related support as expected. Western studies have indicated workers with intellectual disabilities do not receive natural support from their non-disabled co-workers without disabilities as anticipated (Chadsey-Rusch et al., 1989; Ferguson et al., 1993; Riches & Green 2003). However, the feelings of social rejection could lead workers with intellectual disabilities to withdraw from their jobs (Hsu et al., 2009).

To examine whether negative attitudes toward employees with disabilities held by their non-disabled co-workers was a common phenomenon in different cultural context, this study examined the attitudes of non-disabled Taiwanese employees toward their supported co-workers with intellectual disabilities which was similar to the previous studies done in Western societies. Related issues associated with this current research were discussed in this chapter. This would allow readers to obtain clear background information in relation to this study.

## CHAPTER III

### METHODOLOGY

#### **Introduction**

The concept of supported employment is to assist people with disabilities (PWDs) to work in integrated settings (Reinke-Scorzelli & Scorzelli, 2004). Researchers have found that attitudes of non-disabled employees toward their supported co-workers with disabilities could influence job performance and job retention rates among PWDs (Colella, 2001; Freedman & Fesko, 1996). Therefore, the main objective of this study was to examine the attitudes of non-disabled Taiwanese employees toward their co-workers with intellectual disabilities. This chapter gives an overview of the methodology utilized in the present study including a description of research participants, procedures, survey instruments, and data analysis techniques.

#### **Participants and Criteria**

This study examined the attitudes of non-disabled Taiwanese employees toward their supported co-workers with intellectual disabilities. The researcher contacted organizations that provide supported employment services for PWDs. These included public health service agencies and private rehabilitation organizations. The purpose of the study was explained to the directors of these contacted organizations through e-mails and/or in-person visits.

Upon agreement, employment specialists who serve clients with intellectual disabilities in supported employment workplaces acted as a bridge between the researcher

and employers. Willing employment specialists referred the researcher to employers who agreed to have their employees who did not have disabilities participate in the study. The employers included line managers, department heads, supervisors, human resources managers, personnel directors, and public relation personnel (Millington, Miller, Asner-Self, & Linkowski, 2003). The researcher then provided information related to this study to employers and personnel directors mentioned above who were able to make the final decision on whether their non-disabled employees could participate in the present research.

The recruited volunteer participants were provided with related documents such as a letter of the study's purpose, a consent form, and two survey instruments and their instructions. Finally, the researcher utilized the G\*Power software to estimate a sample size of 92 research participants for the medium effect appropriate for this study (Erdfelder, Faul, & Buchner, 1996).

Two criteria for research participants were established for this study to ensure that participants were highly qualified and could provide useful information. First, the research participants were required to be native Taiwanese without a disability. This ensured that their opinions toward their supported co-workers with intellectual disabilities were truly based on non-disabled Taiwanese people's perspectives. Second, the recruited participants must have worked with their co-workers with intellectual disabilities for at least three months. Employees with intellectual disabilities who worked in supported settings consecutively for 3 to 6 months were considered to be successfully employed (Lin, 2007; Wehman, Inge, et al., 2007). Therefore, the research participants who had

worked with their supported workers for that period of time were considered to be qualified participants who had sufficient experience in working with PWDs.

In addition to these two criteria, research participants were asked to provide their opinions only toward their supported co-workers who were identified with intellectual disabilities. Participants were not required to provide their attitudes toward their co-workers with other disabilities rather than intellectual disabilities. To ensure the objective of this study could be reached, intellectual disability was based on the AAIDD 2010 definition and was provided in the beginning of survey sheets:

[An intellectual disability is a disability that is] characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills. [It means that people with intellectual disabilities have limitations in their mental capability that can affect their daily lives]. This disability originates before the age of 18. (AAIDD, 2010b, p. 5)

To make sure that research participants understood the definition of intellectual disability in a detailed manner, the examples of intellectual disabilities were also provided in their surveys including autism, cerebral palsy, Down syndrome, and mental retardation. Finally, the meanings of conceptual, social, and practical skills were also provided in the beginning of survey sheets based on AAMR 2002 manual as the following: (a) conceptual skills mean community self-sufficiency ability; (b) social skills represents the ability of personal-social responsibility, and finally, (c) practical skills refer to personal self-sufficiency skills such as daily living skills.

### **Survey Instruments**

In order to meet the objectives of the present study, two survey instruments that were developed to measure people's attitudes toward PWDs were selected and administered. They were the Mental Retardation Attitude Inventory-Revised (Antonak &

Harth, 1994) and the Affective Reactions Subscale of the Disability Questionnaire (Popovich et al., Polinko, 2003). A demographic information sheet was developed by the researcher to collect the respondents' background information. This information allowed the researcher to examine whether gender, age, educational levels, duration of work contact, and types of contact influenced attitudes of the research participants toward their co-workers with intellectual disabilities.

### **The Mental Retardation Attitude Inventory-Revised (MRAI-R)**

The MRAI-R was derived from the Mental Retardation Attitude Inventory (MRAI) that was developed by Harth in 1974 (Hampton & Xiao, 2008). The original version of the MRAI was a 50-item survey instrument with five subscales that measured people's attitudes toward persons with mental retardation from different perspectives including integration-segregation, overfavorableness, social distance, private rights, and subtle derogatory belief (Antonak & Harth, 1994).

According to Antonak and Harth (1994), the definitions of each subscale were described in the following:

Integration-Segregation [refers] to the respondent's view of the integration of children with mental retardation in regular classes; Overfavorableness [means] characteristics that make individuals with mental retardation superior to other individuals; Social Distance [expresses] a willingness to recognize, live near, or be associated with children with mental retardation; Private Rights [state] the view that school personnel, landlords, and others have a private right to exclude individuals with mental retardation from schools, communities, and the workplace; and Subtle Derogatory Belief [means the] degrading view of the moral character and social behavior of individuals with mental retardation. (p. 273).

However, due to the passage of U.S. Federal legislation that required the integration of children with disabilities in public education, Antonak and Harth revised the original MRAI in order to reflect the changes of the legislation and to omit any



invalid and dated items (Antonak & Harth, 1994; Hampton & Xiao, 2008). After the authors conducted a factor analysis of responses with 230 American adults, they deleted 21 items from the original MRAI and the 29 remaining items were loaded on four subscales. The MRAI-R currently contains 29 items to measure people's attitudes toward individuals with mental retardation in the four aspects mentioned above, with the exception of overfavorableness (Antonak & Harth, 1994). Among these 29 items, 7 items were loaded on the subscale of Integration-Segregation (INSE) including questions 1, 2, 7, 13, 17, 23, and 29; 8 items made up the Social Distance subscale (SDIS) containing questions 3, 5, 11, 15, 18, 19, 24, and 27; 7 items were differentiated in the subscale of Private Rights (PRRT) consisting of questions 6, 8, 12, 14, 20, 22, and 28; and finally 7 items designed the subscale of Subtle Derogatory Belief (SUDB) comprising questions 4, 9, 10, 16, 21, 25, and 26.

Sample items of each subscale are: "We should integrate people who are mentally retarded and who are not mentally retarded into the same neighborhoods" (INSE); "I have no objection to attending movies or a play in the company of people who are mentally retarded" (SDIS); "Real estate agents should be required to show homes to families with children who are mentally retarded regardless of the desires of the homeowners" (PRRT); and "Even though children with mental retardation are in public school, it is doubtful whether they will gain much from it" (SUDB) (Antonak & Harth, 1994).

All of these 29 items are rated by the respondents on a 4-point scale from (1) *strongly disagree*, (2) *disagree*, (3) *agree*, to (4) *strongly agree*. According to Antonak and Harth (1994), items are worded in a positive direction with an agree response

representing a favorable attitude toward people with mental retardation. However, some items worded in a negative direction with a disagree response also symbolize a favorable attitude toward the same population. The reversed items will be transformed for scoring. Finally, a total score of the MRAI-R is the sum of the responses that the participants give for all of the 29 items. The higher score means a more favorable attitude toward people with mental retardation (Krajewski & Flaherty, 2000).

The MRAI-R was utilized by the researchers in related studies. Results indicated that the scale is reliable. For example, the original developers reported a Cronbach's alpha value for the full scale of .91 and reported inter-item reliabilities of .81, .82, .76, and .80 for subscale scores INSE, SDIS, PRRT, and SUDB, respectively (Antonak & Harth, 1994). Krajewski and Flaherty (2000) also utilized the MRAI-R to examine 144 Nevada High School students' attitudes toward people with mental retardation. The results of their study produced reliability values of .71, .84, .59, and .60, respectively, for INSE, SDIS, PRRT, and SUDB.

In addition, the MRAI-R was used by Hampton and Xiao (2007) in a cross-culture study to examine attitudes toward people with developmental disabilities held by Chinese and American college students. The results produced .82 reliability of the MRAI-R (Chinese version) in their pilot study and .78 in the formal study of 242 Chinese college students. The same instrument was used to measure the attitudes of 174 American college students resulting in a reliability of .90.

To ensure the MRAI-R was a reliable measuring tool to study Chinese people's attitudes toward PWDs, Hampton and Xiao (2008) further utilized the Chinese version scale to measure 534 Chinese college students' attitudes toward PWDs. The outcomes of

their study indicated that the reliability coefficient of the full scale MRAI-R was .80. However, the reliability values were .50, .78, .21, and .50 for INSE, SDIS, PRRT, and SUDB, respectively. This indicated that only the Social Distance subscale (SDIS) of the MRAI-R appeared to be reliable to measure Chinese people's attitudes toward PWDs. The researchers (Hampton & Xiao, 2008) mentioned that it was necessary to conduct more research in order to discover whether the MRAI-R was an appropriate instrument to examine attitudes toward PWDs held by Chinese people.

The results of the above study conducted by Hampton and Xiao (2008) indicated that MRAI-R may not be an appropriate survey instrument to examine attitudes of Chinese people toward persons with intellectual disabilities. However, it does not mean that this instrument could not be implemented to study attitudes toward those with intellectual disabilities held by people from other societies that were based on general Chinese culture such as Taiwan, Singapore, and Hong Kong. Although Taiwanese society is regarded as a Chinese dominant society (Cooper, 1996), its social and human service systems are different from China, which may lead Taiwanese people to have different attitudes toward persons with intellectual disabilities (Huang et al., 2011; The Government Information Office, Republic of China, Taiwan, 2007). Therefore, the MRAI-R still could be utilized to examine attitudes of Taiwanese people toward individuals with intellectual disabilities.

Finally, factor analysis was conducted by the original developers of the MRAI-R and they demonstrated that there were four factors underlying the instrument (Antonak & Harth, 1994). They include the Integration-Segregation subscale (INSE), the Social Distance subscale (SDIS), the subscale of Private Rights (PRRT), and the subscale of

Subtle Derogatory Belief (SUDB). The convergent validity of the MRAI-R was undertaken through correlation with the Community Living Attitudes Scale-Mental Retardation Form (CLAS-MR) (.72) and the Scale of Attitudes Towards Mental Retardation & Eugenics-Revised (AMR&E-R) (.77). As a result, the MRAI-R is considered a valid instrument to measure people's attitudes toward others with intellectual disabilities.

### **The Affective Reactions Subscale of the Disability Questionnaire**

The Disability Questionnaire was developed by Popovich and her colleagues in 2003 with the goal of measuring attitudes toward PWDs (Popovich et al., 2003). The Disability Questionnaire consists of three subscales. Among these three subscales, 42 statements were created to examine people's "beliefs about what constitutes a disability, [21 items were developed to study respondents'] feelings toward working with individuals with disabilities, [and finally another 25 statements were established to study individuals'] beliefs about the reasonableness of workplace accommodation" (Popovich et al., 2003, p. 163).

According to the original scale developers (Popovich et al., 2003), the Disability Questionnaire was created based on literature reviews in relation to the issues of ADA and attitudes toward PWDs, and then was finalized through several pilot studies. To meet the objective of the research, the Affective Reactions Subscale of the Disability Questionnaire was the second scale administered in the study.

As previously mentioned, the Affective Reactions Subscale consists of 21 items that were created to measure people's reactions toward working with individuals with disabilities. The respondents rate these 21 items on a 7-point Likert-type scale which

ranges from *completely agree* (1) to *completely disagree* (7). Sample statements are “I am uncomfortable with the idea of sharing my work space with a person with a disability” and “Working with an individual with a disability would increase my workload” (Copeland et al., 2009). Some items were reverse coded for scoring. The scores for the Affective Reactions Subscale were computed by finding the sum of these 21 items in the scale.

The original developers used the Affective Reactions Subscale in their initial two studies with undergraduate participants who enrolled in an introductory psychology course (Popovich et al., 2003). The results of their studies yielded acceptable Cronbach’s alpha values of .69 and .74, respectively. This scale was also implemented by Copeland (2007) to assess employers’ attitudes toward people with disabilities and produced a reliability of .816, which was higher than the original studies using the same instrument. According to Copeland (2007), internal consistency was higher than the original studies, which may be due to the fact that their research participants had real experiences in dealing with disability related issues in the workplace.

Copeland and her colleagues (2009) further conducted exploratory factor analysis to assess the construct validity of the Affective Reactions Subscale of the Disability Questionnaire. Seventeen items remained and were loaded onto three dimensions described as (a) negative cognitive and affective reactions, (b) positive attitudes toward accommodations, and (c) positive attitudes toward equal treatment of PWDs in the workplace. The coefficient values were .83, .63, and .61 in order for each dimension. Copeland and her colleagues (2009) concluded that the Affective Reactions Subscale of the Disability Questionnaire was a valid instrument that could be used to measure

people's attitudes toward PWDs in the workplace due to the identification of the three underlying attitudinal constructs.

As mentioned in the above description, the Affective Reactions Subscale of the Disability Questionnaire is regarded as an appropriate survey instrument that can be utilized to measure people's attitudes toward their co-workers with disabilities in the workplace. Most importantly, the exploratory factor analysis conducted by Copeland and her colleagues (2009) to evaluate the construct validity of the Affective Reactions Subscale demonstrated this survey is a valid tool to measure people's attitudes toward their co-workers with disabilities, specifically in terms of their reactions toward working with others with disabilities, their work accommodations, and their equal treatment of their co-workers with disabilities.

### **Demographic Information Sheet**

One research question in the study was to examine whether gender, age, educational attainment, duration of work contact, and types of contact were related to affective reactions of Taiwanese employees toward their supported co-workers with intellectual disabilities. Therefore, a demographic information sheet was created to collect related background information of the research participants that primarily contained the participants' gender, age, educational attainment, duration of work contact, and types of contact with their co-workers with intellectual disabilities.

On the demographic information sheet, participants were first asked to provide their gender, age, and duration of work contact experiences with their co-workers with intellectual disabilities. Second, since the Taiwanese government requires its citizens to receive 9 years of compulsory education (The Government Information Office, Republic

of China, Taiwan, 2010), the educational section was divided into five types: (a) junior high school, (b) senior high school or equivalent, (c) junior or technical college, (d) undergraduate degrees, and (e) graduate degrees. Finally, the types of contact experiences that the research participants had with their co-workers with intellectual disabilities were categorized into two types: (a) only on the job and (b) on the job and after work. All demographic information about the research participants was presented through descriptive statistics and various tables.

By constructing the demographic information sheet and collecting related data, the researcher was able to examine whether these five demographic factors influenced attitudes of participants toward working with their co-workers with intellectual disabilities. In addition, this allowed the researcher to discover whether lengths of work contact experiences and types of contact affected Taiwanese employees' attitudes toward their co-workers with intellectual disabilities.

### **Data Collection and Procedures**

Since the researcher needed to recruit human participants in this study, it was necessary to obtain approval from the University of Northern Colorado Institutional Review Board (IRB) before conducting the study and collecting data. Due to the residential district of the researcher, the researcher contacted directors of both public and private nonprofit rehabilitation agencies in the city of Taipei and nearby areas that provide supported employment services for Taiwanese people with intellectual disabilities for assistance after the IRB granted permission.

Upon agreement, employment specialists who were willing to support this study served as liaisons between the researcher and employers in order to recruit qualified

research participants. An informational letter detailing the study objectives (Appendix A) was distributed to employers and related personnel directors via e-mails or during in-person discussions with those willing to have their non-disabled employees participate in this study. Furthermore, research participants were contacted by employers and related personnel directors who were capable of making final decisions regarding on-site research conducted at their facilities.

A package including all research documents was distributed to each of the participants through the assistance of related personnel directors mentioned above and/or employment specialists in the presence of the researcher during their lunch breaks. This packet contained four documents: a voluntary consent form of research participation (Appendix B), a demographic information sheet (Appendix C), and the survey instruments including MRAI-R (Appendix D) and the Affective Reactions Subscale of the Disability Questionnaire (Appendix E). Research participants could complete these materials at their most convenient times and locations, including at home after work.

All related documents were translated into Chinese. The two survey instruments with instructions were also translated into Chinese and proofread by professors who are proficient in both English and Chinese through the “committee approach” technique. This method referred “to the type of translation effort in which two [or] three people translate from the original to target language and then compare results” (Brislin, Lonner, & Thorndike, 1973, p. 46). This ensured that the meaning of the survey instruments was presented without losing original meanings.

Finally, although these two instruments were fully adopted and implemented in this study, the slight modifications of language usage in these two instruments were made



to ensure that they met the objectives of the study and contained people-first language in Chinese. For example, the term “people who are mentally retarded” was replaced by “people with intellectual disabilities” in the MRAI-R Chinese version. In addition, the term “disabled people” was changed to “people with intellectual disabilities” in the Affective Reactions Subscale of the Disability Questionnaire in Chinese version as well.

The researcher retrieved these documents in person (Appendices C, D, and E) during the participants’ lunch breaks 1 day after distribution or waited for the notice of completion from employers, personnel directors, and employment specialists. Research participants were provided with a sealable envelope in which they could put these two surveys once they completed them. This ensured that their opinions toward their co-workers with intellectual disabilities were not revealed or accessible to others besides the researcher. In addition, since the research participants were not required to write their names on the survey sheets, their identities were kept confidential. In the same way, opinions held by the research participants toward their co-workers with intellectual disabilities were not to be identified and associated with them. All research participants were notified of their right to withdraw from participation in the study for any reason in their voluntary consent form. Finally, as compensation for participants’ time and effort, a NT \$100 (equal to 4 U.S. dollars) gift card for a convenience store was included in the survey package.

### **Data Analysis Methods**

To obtain a better understanding of Taiwanese employees’ attitudes toward their supported co-workers with intellectual disabilities, two research questions were developed to guide the purpose of this study.

Q1 What is the relationship between general attitudes of Taiwanese employees without disabilities toward individuals with intellectual disabilities and their affective reactions toward their co-workers with intellectual disabilities?

H1 There is a negative relationship between Taiwanese employees' general attitudes toward individuals with intellectual disabilities and their affective reactions toward their co-workers with intellectual disabilities. Taiwanese employees have positive attitudes toward individuals with intellectual disabilities in general but have negative attitudes toward their co-workers with intellectual disabilities.

Data analysis procedures for the first research question included several steps.

First, composite scores for the MRAI-R and the Affective Reactions Subscale were computed by adding all items on each scale, respectively. The mean, median, and standard deviation for composite scores of each scale were also determined. The researcher used Pearson correlation coefficient to examine the relationship between general attitudes toward individuals with intellectual disabilities and affective reactions toward workers with intellectual disabilities held by research participants. Additionally, a Paired Sample *t*-test was calculated to compare the difference between these two attitudes. Finally, the reliability values of both attitudinal scales were calculated and reported.

Q2 How do gender, age, educational attainment, duration of work contact, and types of contact influence the affective reactions of Taiwanese employees toward their supported co-workers with intellectual disabilities?

Criteria variable: The scores of the Affective Reactions Subscale

Predictor variables: Gender, age, educational attainment, duration of work contact, and types of contact.

Data analysis for the second research question also included several procedures.

The composite score for the Affective Reactions Subscale was calculated by summing up

all items in the scale. Subsequently, the mean, median, and standard deviation for composite scores of the Affective Reactions Subscale were calculated. Since the feature of each factor's variable was different, One-way ANOVA, Independent Sample *t*-test, and Pearson correlation coefficient were utilized to separately inspect whether each of these demographic factors had an influence on the participants' affective reactions toward their co-workers with disabilities. Lastly, multiple regression was implemented to examine whether gender, age, educational attainment, duration of work contact, and types of contact influenced respondents' attitudes toward working with their co-workers with intellectual disabilities in combination.

Multiple regression was chosen as the data analysis method for the second research question because it could be utilized to examine relationships between one dependent variable and two or more independent variables (Kerlinger & Pedhazur, 1973). According to Tabachnick and Fidell (2007), the basic assumptions of multiple regression were that (a) the scores of Affective Reactions Subscale were independent and normally distributed at all points along the regression line; (b) there was a linear relationship between independent variables (IVs) and dependent variable (DV), and (c) the scores of Affective Reactions Subscale had equal variances at each value of the independent variables (gender, age, educational attainment, duration of work contact, and types of contact).

### **Summary**

This chapter included a sequential description of the methodology for the present study. Criteria for research participants and data collection procedures were also described. Two survey instruments, the MRAI-R and the Affective Reactions Subscale

of the Disability Questionnaire, which were implemented in the study, were also discussed in detailed. Finally, data analysis methods for the two research questions established for the study were outlined and explained to ensure that the goals of the study were reached.

## CHAPTER IV

### RESULTS

#### **Introduction**

The main goal of supported employment is to assist people with disabilities (PWDs) to work in integrated settings in order to help them earn wages and participate in meaningful vocational activities (Shafer, 1989). However, researchers have stated that negative attitudes of non-disabled employees toward their supported co-workers with intellectual disabilities could influence job retention rates of PWDs (Freedman & Fesko, 1996) and exclude them from establishing formal and informal work relationships (Lengnick-Hall & Gaunt, 2007). Therefore, it was necessary to examine the attitudes of non-disabled employees toward their co-workers with intellectual disabilities in order to determine whether it was necessary to promote disability awareness in workplaces where PWDs were employed.

The main objective of this study was to examine attitudes of non-disabled Taiwanese employees toward their supported co-workers with intellectual disabilities. Additionally, the researcher examined whether various demographic backgrounds influenced attitudes held by the Taiwanese population toward workers with intellectual disabilities. The results of this study are presented in several sections, including the description of sample characteristics, the reliability of instruments, results of Research Question 1, results of three parts of Research Question 2, and the summary.

### Sample Characteristics

Through the assistance of employment specialists from related vocational rehabilitation agencies, 140 voluntary non-disabled Taiwanese employees who worked with individuals with intellectual disabilities were identified to participate in this study. After collection, the researcher organized the data through Microsoft Excel 2010 and exported it to Statistical Package for the Social Science (SPSS) 18.0 for Windows. The detailed information of research participants is displayed in Table 1. Five persons (4%) were removed from the study due to three or more incomplete responses in their demographic information sheet and surveys. This produced a successful completion rate of 96% and met the required sample size established by G\* Power, which required at least 92 participants. Among these 135 participants, 44 (33%) were male and 91 (67%) were female. The ages of the participants ranged from 20 to 59 years with a mean age of 34.67 years.

Of these participants, 6 (4%) individuals possessed junior high school diplomas, 40 (30%) had senior high school or equivalent diplomas, 38 (28%) had junior or technical college degrees, 44 (33%) held undergraduate degrees, and 6 (4%) earned graduate degrees. The length of work contact experience with co-workers with intellectual disabilities of research participants was varied: 39 (29%) had less than a half year of work contact experience with their co-workers with intellectual disabilities, 17 (13%) indicated that they had about seven months to one year, 30 (22%) said they had 1 to 2 years' work contact, and 49 (36%) participants reported that they had had more than 2 years' experience. The mean work contact experience of all research participants was 2.06 years. Detailed information of sample characteristics was summarized in Table 1.

Table 1

*Characteristics of Research Participants*

Variable	<i>N</i>	Percent (%)	Mean	<i>SD</i>
Gender				
Male	44	33		
Female	91	67		
Age			34.67	9.59
20-29	56	41		
30-39	41	30		
40-49	25	19		
50 and Above	13	10		
Education				
Junior High School	6	4		
Senior High School or Equivalent	40	30		
Junior or Technical College	38	28		
Undergraduate Degrees	44	33		
Graduate Degrees	6	4		
Unanswered	1	0		
Length of Contact With Co-workers With ID			2.06	1.86
3-6 months	39	29		
7-12 months	17	13		
13-24 months	30	22		
Above 24 months	49	36		

*N* = 135

While the data were obtained from 135 individuals who worked with co-workers with intellectual disabilities, the job duties of their co-workers with disabilities were varied (cleaning and replenishing commodities in convenience stores, washing and cleaning cars at gas stations or related maintenance facilities, cleaning offices, cleaning hospitals, washing and folding clothes in laundries, cleaning fast-food restaurants, cleaning and/or dishwashing in Asian-style restaurants, cleaning facilities or serving

clients in bakeries, cleaning parks, and delivering interoffice mail). A majority of participants' co-workers with intellectual disabilities were employed to perform cleaning jobs in convenience stores and offices or doing car washing. The work duties of participants' co-workers with intellectual disabilities are outlined in Table 2.

Table 2

*Job Duties of Participants' Co-workers With Intellectual Disabilities*

Work Setting	<i>N</i>	Percent (%)
Cleaning and replenishing commodities (convenience stores)	49	36
Washing cars	26	19
Cleaning offices	21	16
Cleaning hospitals	10	7
Laundry men/women	8	6
Cleaning fast-food restaurants	8	6
Cleaning and/or dishwashing in Asian-style restaurants	5	4
Cleaning and/or serving clients in bakeries	3	2
Cleaning parks	3	2
Delivering interoffice mail	2	1

*N* = 135

In addition to exploring job duties of participants' co-workers with intellectual disabilities, types of contact between them were also examined. In this study, all research participants had work contact experiences with their co-workers with intellectual disabilities. However, only 65 out of 135 participants mentioned that they had contact experience with their co-workers with intellectual disabilities after work. Nevertheless, integrating workers with intellectual disabilities in inclusive workplaces seemed to provide them with both work and after work interaction opportunities with their co-workers without disabilities. The contact patterns between participants and their co-workers with disabilities are listed in Table 3.



Table 3

*Contact Patterns Between Participants and Their Co-workers With Intellectual**Disabilities*

Types of Contact	<i>N</i>	Percent (%)
Contact during work	135	100
Contact during break and/or lunch time	107	79
Contact after work	65	48

*N* = 135

### Reliability of Instruments

As mentioned in Chapter II, many attitude measurement instruments have been developed in order to examine people's perceptions toward PWDs and related issues (Antonak & Livneh, 1988). To meet objectives of this study, the researcher chose two instruments to examine non-disabled Taiwanese employees' attitudes toward people with intellectual disabilities in general and their affective reactions toward their co-workers with intellectual disabilities. They were the Mental Retardation Attitude Inventory-Revised (MRAI-R) (Antonak & Harth, 1994) and the Affective Reactions Subscale of the Disability Questionnaire (Popovich et al., 2003). Since all research participants were non-English speakers, these two instruments were translated into Chinese through the "committee approach" technique (Brislin et al., 1973) before they were distributed to the participants.

The first instrument, the MRAI-R, has 29 items that were developed to examine people's general attitudes toward others with intellectual disabilities. These 29 items were rated on a 4-point scale from (1) *strongly disagree* to (4) *strongly agree*. The possible score of the scale ranged from 29 to 116 points. The higher score indicated a more positive attitude toward people with intellectual disabilities. The original

developers reported a Cronbach's alpha value of the full scale of .91 (Antonak & Harth, 1994). In the present study, the researcher examined Cronbach's Alpha value of the Chinese MRAI-R during data analysis that produced an internal consistent reliability value of .83. This reliability value was almost parallel with another study which implemented the same instrument in a Chinese population and yielded a reliability value of .82 (Hampton & Xiao, 2007).

The second instrument, the Affective Reactions Subscale of the Disability Questionnaire, has 21 items that were created to study people's reactions toward working with others with disabilities. Respondents rated these 21 items on a 7-point Likert-type scale which ranged from (1) *completely agree* to (7) *completely disagree*. Similar to the MRAI-R, some items in the Affective Reactions Subscale were reverse coded for scoring. The higher score meant a more positive attitude toward co-workers with intellectual disabilities held by the respondents. The possible score of the scale ranged from 21 to 147 points.

The original developers reported acceptable Cronbach's alpha values of .69 and .74 during developmental stages (Popovich et al., 2003). However, Copeland (2007) reported a higher reliability value of this subscale at .816 and mentioned that having a real experience dealing with disability and related issues of research participants in her study might have been the explanation. In the present study, the internal consistency reliability on this instrument was high ( $\alpha = .85$ ). This might also have been due to having real work experience with employees with intellectual disabilities of research participants in this study.

As supported by Gall, Gall, and Borg (2007), the instruments that produced “a reliability of .80 or higher are sufficiently reliable for most research purposes” (p. 200). Therefore, the Cronbach’s Alpha values of these two instruments produced in this study had again demonstrated that both surveys were reliable. It also indicated that these two surveys could be considered as appropriate tools that could be used to study general attitudes held by Taiwanese people toward individuals with intellectual disabilities and their affective reactions toward working with a similar population.

### **Results of Research Questions**

#### **Research Question 1**

The main objectives of the first research question were to explore the general attitudes and affective reactions of Taiwanese non-disabled employees to individuals and their co-workers with intellectual disabilities. The results of the first inquiry are examined below.

- Q1     What is the relationship between the general attitudes of Taiwanese employees without disabilities toward individuals with intellectual disabilities and their affective reactions toward their co-workers with intellectual disabilities?
  
- H1     There is a negative relationship between Taiwanese employees’ general attitudes toward individuals with intellectual disabilities and their affective reactions toward their co-workers with intellectual disabilities. Taiwanese employees have positive attitudes toward individuals with intellectual disabilities in general, but have negative attitudes toward their co-workers with intellectual disabilities.

In order to find the results of this research question, the researcher calculated composite scores for the MRAI-R and the Affective Reactions Subscale of the Disability Questionnaire by adding all items of both scales, respectively. Negative statements in these two scales were reverse coded for scoring. In both scales, the higher score

indicated a more positive attitude. The results of these two surveys are summarized in Appendices F and G.

For the MRAI-R (see Appendix F), the highest score recorded was 106 points, while the lowest score was 62 points, with a mean score of 80.63 and a standard deviation of 7.95. The overall score indicated that the general attitude toward people with intellectual disabilities held by the respondents was positive. Among these 29 items, number 3 was rated the highest with  $M = 3.30$  while statement 25 was rated the lowest with  $M = 1.93$ . Finally, the mean score among all 29 items was 2.78 with a standard deviation of .27 (see Table 4).

Table 4

*Summary of the Results of the MRAI-R and the Affective Reactions Subscale (Composite and Item Mean Scores)*

Content	MRAI-R			Affective Reaction			<i>r</i>
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	
Composite Mean	135	80.63	7.95	135	99.47	17.56	.57*
Item Mean	135	2.78	0.27	135	4.74	0.83	.57*

\*  $p < .05$

For the Affective Reactions Subscale of the Disability Questionnaire (see Appendix G), the highest score recorded was 147 points, while the lowest score was 42 points, with a mean score of 99.47 and a standard deviation of 17.56. This indicated that the affective reactions toward working with employees with intellectual disabilities held by the respondents were positive as well. Among these 21 items, number 11 was rated the highest with  $M = 6.01$  while item 18 was rated the lowest with  $M = 2.90$ . Finally, the mean score of these 21 items was 4.74 with a standard deviation of .83 (see Table 4).

After comparing the results of the MRAI-R and the Affective Reactions Subscale (see Table 4), it was clear that research participants had positive attitudes toward people with intellectual disabilities in general and also had positive reactions toward working with their co-workers with intellectual disabilities. The item means of the MRAI-R ( $M = 2.78$ ,  $SD = 0.27$ ) and the Affective Reactions Subscale of the Disability Questionnaire ( $M = 4.74$ ,  $SD = 0.83$ ) were both positive. When using Pearson's correlation coefficient to examine the relationship between general attitude and affective work reactions, there was also a significant relationship ( $r = .57$ ,  $p < .001$ ) between the two attitude scales. Therefore, the hypothesis in Research Question 1 was not significant in the predicted direction. This was because two types of attitudes toward people with intellectual disabilities in general and affective reactions toward co-workers with intellectual disabilities held by the participants were both positive.

Since there was a significant relationship between the scores on the two scales, a Paired Sample  $t$ -test was calculated to compare the difference between general attitude and affective work reactions toward individuals with intellectual disabilities held by participants. However, these two instruments have a different number of statements and scoring methods. As a result, the researcher changed the 4-point scale of the MRAI-R from (1, 2, 3, and 4) to (1, 3, 5, and 7) in order to equal the scoring method of the Affective Reactions Subscale. Therefore, an equal comparison of these two scales was performed.

The results (see Table 5) indicated that the item means of the MRAI-R ( $M = 4.56$ ,  $SD = 0.55$ ) and the Affective Reactions Subscale of the Disability Questionnaire ( $M = 4.74$ ,  $SD = 0.83$ ) were both positive. Again, the general attitude and affective reactions

toward working with others with intellectual disabilities held by the participants were both positive. However, a significant difference between the two attitude scales was found ( $t = 2.96, p = .004$ ). The results indicated that the participants' affective reactions toward their co-workers with intellectual disabilities were slightly higher than their general attitudes toward other individuals with intellectual disabilities.

Table 5

*Equal Comparison Between the MRAI-R and the Affective Reactions Subscale*

Content	MRAI-R			Affective Reaction			<i>r</i>
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	
Composite Mean	135	132.00	15.90	135	99.47	17.56	.57*
Item Mean	135	4.56	0.55	135	4.74	0.83	.57*

\*  $p < .05$

**Research Question 2**

The second research question addressed in the study was whether different demographic backgrounds of the participants influenced their affective reactions toward their co-workers with intellectual disabilities. The results of the second inquiry are examined below.

- Q2 How do gender, age, educational attainment, duration of work contact, and types of contact influence the affective reactions of Taiwanese employees toward their supported co-workers with intellectual disabilities?

To answer the second question, several data analyses were applied to examine the relationships between these five demographic factors (gender, age, educational attainment, duration of work contact, and types of contact) and the attitudes toward co-workers with intellectual disabilities held by the participants, separately and then in combination. For example, by using One-way ANOVA's and Independent Sample *t*-tests, the researcher

was able to examine whether each of these five demographic factors separately influenced affective reactions toward co-workers with disabilities. Additionally, the researcher, by implementing multiple regression, explored how these five factors interacted with each other on the participants' affective reactions toward their co-workers with disabilities.

Before data analysis, the researcher divided age into four categories (20-29 years old, 30-39, 40-49, and over 50 years of age). In addition, the educational levels were categorized into four types: junior and senior high school and equivalent, junior and technical college, undergraduate degrees, and graduate degrees. Furthermore, length of work contact was sorted into four levels: 3 to 6 months, 7 to 12 months, 13 to 24 months, and over 25 months.

The results of the second research question were presented in three separate sections due to the utilization of different data analysis methods. The detailed information of the results of the second question is presented in the following paragraphs from Section One to Section Three.

**Section One.** Since the feature of each factor's variable was different, the researcher used the Independent Sample *t*-test to separately study the impacts of gender and types of contact on the participants' affective reactions toward working with their co-workers with intellectual disabilities. A One-way ANOVA was also applied to respectively examine the influences of age, educational attainment, and length of work contact on participants' affective reactions toward working with their co-workers with intellectual disabilities. This helped the researcher explore whether each of these five

demographic factors had an impact on the affective reactions toward working with people with intellectual disabilities held by the participants.

At the beginning, the researcher used the Independent Sample *t*-test to examine whether participants' affective reactions toward their co-workers with intellectual disabilities would be dissimilar due to their gender and different types of contact. The Independent Sample *t*-test was chosen because each of these two factors had only two categories. The results indicated that gender did not influence participants' affective reactions toward working with their co-workers with intellectual disabilities ( $t = -1.11, p = .270$ ). Similarly, there was no attitude difference between participants who only had contact with their co-workers with disabilities on the job and those who had both contact on the job and after work ( $t = -.38, p = .705$ ) (see Table 6).

Table 6

*Impacts of Gender and Types of Contact on Affective Reactions*

Variables	Categories	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Gender	(1) Male	44	97.07	19.21	-1.11	.270
	(2) Female	91	100.64	16.69		
Types of Contact	(1) At and after work	65	98.88	6.50	-0.38	.705
	(2) Only at work	70	100.03	18.59		

$N = 135, p < .05$

A One-way ANOVA was applied to respectively determine whether age, educational levels, and length of work contact influenced participants' affective reactions toward their co-workers with intellectual disabilities. The One-way ANOVA was chosen because each of these three factors had more than two categories. The results also indicated that age ( $F = 2.42, p = .069$ ), education ( $F = 1.43, p = .238$ ), and length of



work contact ( $F = 1.56, p = .203$ ) did not influence participants' affective reactions toward their co-workers with intellectual disabilities (see Table 7).

Table 7

*Impacts of Age, Educational Attainment, and Length of Work Contact on Affective*

*Reactions*

Variables	Categories	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
Age	(1) 20-29	56	95.20	18.32	2.42	.069
	(2) 30-39	41	100.29	13.53		
	(3) 40-49	25	104.64	20.29		
	(4) Over 50	13	105.38	17.03		
Education	(1) Junior/Senior High	46	101.85	17.91	1.43	.238
	(2) Junior/Technical College	38	98.26	17.81		
	(3) University	44	96.41	17.07		
	(4) Graduate	6	109.33	15.02		
Length of contact	(1) 3-6 months	39	94.97	17.25	1.56	.203
	(2) 7-12 months	17	102.35	18.78		
	(3) 13-24 months	30	98.63	18.30		
	(4) Over 25 months	49	102.57	16.60		

$N = 135, p < .05$

In summary, when treating these five demographic factors as categorical variables and utilizing Independent Sample *t*-test or ANOVA to respectively examine the impact of each factor on participants' affective reactions toward their co-workers with intellectual disabilities, no demographic variables studied separately was found to be significant. To re-verify the outcomes, the researcher further utilized different data analysis methods to study this research question, which were described in Section two and Section Three.

**Section Two.** The results of Section One indicated that the five demographic factors did not influence participants' affective reactions toward working with their co-

workers with intellectual disabilities. To re-examine the accuracy of the outcomes, age and length of work contact were treated as continuous variables rather than categorical variables. A Pearson correlation coefficient was calculated to separately inspect whether each of these two factors was related to participants' affective reactions toward working with their co-workers with intellectual disabilities.

Contrary to the results found in Section One, the outcomes in this section showed that both age and length of work contact were associated with participants' affective reactions toward their co-workers with intellectual disabilities (age,  $p = .013$ ,  $r = .21$ ; length of work contact,  $p = .025$ ,  $r = .19$ ) (see Table 8). To be more specific, participants who were older or who had a longer length of work contact with their co-workers with intellectual disabilities tended to have more positive affective reactions toward this population. The results were different from those mentioned in Section One when using different data analysis methods.

Table 8

*Impacts of Age and Length of Work Contact on Affective Reactions (Continuous Variables)*

Variables	Affective Reaction	
	$r$	$p$
Age	.21*	.013
Length of work contact	.19*	.025

$N = 135$ , \* $p < .05$

**Section Three.** As stated in Section One, Independent Sample  $t$ -tests and One-way ANOVAs were applied to respectively study the relationships between each of these five demographic factors (gender, age, educational attainment, duration of work contact,

and types of contact) and the participants' affective reactions toward their co-workers with intellectual disabilities. Additionally, the Pearson's correlation coefficient was utilized separately in Section Two to inspect the relationship of age and length of work contact with the participants' affective reactions toward their co-workers with intellectual disabilities.

In this section, multiple regression was chosen to examine how these five demographic factors (gender, age, educational achievement, duration of work contact, and types of contact) explained affective reactions toward co-workers with intellectual disabilities held by the participants. According to Glass and Hopkins (1996), multiple regression is the most common data analysis technique that can be "employed for predicting [a dependent variable] from two or more independent variables" (p. 170). As a result, by applying multiple regression, the researcher explored the relationships between these five demographic factors and affective reactions of participants at the same time.

At the beginning, gender, educational levels, and types of contact were converted from categorical variables to dummy variables, which would be considered as continuous variables. For example, gender was assigned as 1 to *males* and 0 to *females* (Kerlinger & Pedhazur, 1973). These changes allowed the researcher to apply multiple regression when the independent variables are categorical.

Finally, stepwise forward regression was applied during the data analysis process. When applying stepwise forward regression first, types of contact was removed, followed in order by gender, education, and duration of work contact. The results of applying stepwise regression indicated that age ( $t = .21, p = .017$ ) was the only significant variable that was first entered and stayed in the model when p-value was set at .05 (see Table 9)

indicating that the participants who were older had more positive affective reactions toward working with their co-workers with intellectual disabilities, Affective Reaction =  $86.205 + .382(\text{age})$ . Therefore, the conclusion of this regression model implied that age was only one among these five demographic factors that influenced affective reactions toward co-workers with intellectual disabilities held by the participants. In addition, the results ( $R^2 = .042$ ) demonstrated that there was a little more than 4% variability of a dependent variable (affective reactions) that could be explained by an independent variable (age). This showed that there was a statistical meaning between an independent variable (age) and the overall affective reactions held by the participants toward working with others with intellectual disabilities.

Table 9

*Impacts of Five Demographic Factors on Affective Reactions (Forward Regression)*

Independent Variables	Beta-Coefficient ( $\beta$ )	Standard error (S.E.)	Standardized Beta-Coefficient ( $\beta$ )	<i>p</i>
Constant	86.205	5.656	--	< .001
Age	0.382	0.158	.21	.017

In order to examine the accuracy of the results found in stepwise forward regression model, backward regression was implemented to study the relationships between these five demographic factors and the affective reactions held by the participants toward co-workers with intellectual disabilities. First, the *p*-value was set at .05 and the results indicated that age still was the only variable that explained the participants' affective reactions toward their co-workers with intellectual disabilities. As a result, the *p*-value was reset at .10 for the purpose of possibly including more variables that could be used to explain the relationships between these five demographic variables

and the participants' affective reactions toward their co-workers with disabilities. The types of contact were first removed from the backward regression model by *SPSS*, and then gender and education were taken out sequentially (see Table 10).

Table 10

Model	Collinearity Statistics
	Tolerance
Type of Contact	.930
Gender	.975
Education	.889

The results of applying backward regression at the .10 level of significance showed that age ( $t = .165, p = .062$ ) and duration of work contact ( $t = .152, p = .086$ ) were the two significant variables remaining in the model (see Table 11). In other words, age and duration of work contact predicated the participants' affective reactions toward their co-workers with disabilities.

Table 11

Independent Variables	Beta-Coefficient ( $\beta$ )	Standard error ( <i>S.E.</i> )	Standardized	
			Beta-Coefficient ( $\beta$ )	<i>p</i>
Constant	85.852	5.618	--	< .001
Age	0.307	0.163	.165	.062
Length of contact	1.425	.825	.152	.086

The results demonstrated that the participants who were older and who had longer work contact with their co-workers with intellectual disabilities had more positive affective reactions, Affective Reaction = 85.852 + .307 (age) + 1.425 (length of work

contact). Therefore, the final results of this backward regression model indicated that age and length of work contact were two demographic factors that influenced affective reactions toward co-workers with intellectual disabilities. Additionally, the results ( $R^2 = .064$ ) indicated that there were more than 6% variability of a dependent variable (affective reactions) that could be explained by two independent variables (age and length of work contact). This showed a statistical meaning between these two independent variables and the overall affective reactions held by the participants toward their co-workers with intellectual disabilities.

### **Summary**

This chapter contained a section of description of sample characteristics and different data analysis methods that were implemented to examine Research Questions 1 and 2. The findings demonstrated that Taiwanese research participants had positive attitudes toward people with intellectual disabilities in general and also held positive affective reactions toward working with their co-workers with intellectual disabilities. Additionally, the results showed that age and length of work contact were two significant factors that influenced participants' affective reactions toward working with others with intellectual disabilities in a positive direction. Most significantly, the outcomes illustrated that supported employment at least provided people with intellectual disabilities opportunities to interact with others without disabilities on the job and after work, which would more or less help them to be integrated in the mainstream society.

## CHAPTER V

### DISCUSSIONS AND RECOMMENDATIONS

Employment options for people with intellectual disabilities vary from segregated settings to integrated workplaces. While the segregated work settings, such as sheltered workshops, have been questioned about whether they can provide real opportunities for people with intellectual disabilities to develop job skills (Ainsworth & Baker, 2004), supported employment was created to provide employment training and real work and social interaction experiences for people with disabilities (PWDs) in inclusive settings (Shafer, 1989).

The primary objective of supported employment is to assist people with intellectual disabilities in acquiring job skills and earning wages in inclusive work environments where they can also learn appropriate social skills through natural interactions with their non-disabled co-workers (Powell et al., 1991; Rusch et al., 1995; Shafer, 1989). In fact, Western research has indicated that non-disabled co-workers had important functions for supporting PWDs in learning job skills (Storey & Garff, 1999).

On the other hand, negative attitudes toward PWDs held by non-disabled co-workers could also affect workers with disabilities in obtaining work accommodations and related supports (Colella, 2001). Additionally, results of several Western studies showed that workers with intellectual disabilities tended to be physically included rather than socially accepted by their co-workers without disabilities (Chadsey-Rusch et al., 1989; Shafer et al., 1989). These negative attitudes might possibly result in failure or

withdrawal for PWDs' upon consideration of employment due to feelings of social rejection (Hsu et al., 2009).

Since non-disabled employees could play an important role in influencing work performance of their co-workers with disabilities, it was necessary to explore their attitudes toward this population in order to find out whether there was a need to promote disability awareness in the workplace. As a result, the primary objectives of this study were to examine the attitudes of Taiwanese employees toward people with intellectual disabilities in general and to explore their affective reactions toward working with this population. While the results of the study were presented in Chapter IV, a deeper discussion of the findings, limitations of the study, and recommendations for future studies are included in this chapter.

### **Discussion of Findings**

Two research questions were addressed in this study. The first research question examined the general attitudes of non-disabled Taiwanese employees toward individuals with intellectual disabilities and their co-workers with intellectual disabilities. This inquiry was answered through utilization of two survey instruments: the Mental Retardation Attitude Inventory-Revised (MRAI-R) and the Affective Reactions Subscale of the Disability Questionnaire. The second research question in the study examined whether gender, age, educational attainment, duration of work contact, and types of contact were related to affective reactions of Taiwanese employees toward their supported co-workers with intellectual disabilities. Discussion of the results of the study will be presented in the following sections.



### Research Question 1

- Q1 What is the relationship between general attitudes of Taiwanese employees without disabilities toward individuals with intellectual disabilities and their affective reactions toward their co-workers with intellectual disabilities?

This question was designed to explore the research participants' general attitudes toward individuals with intellectual disabilities and their affective reactions toward working with this population. After equalizing scoring methods of these two surveys and conducting data analysis, the researcher found that the participants showed positive attitudes toward individuals with intellectual disabilities in general ( $M = 4.56$ ,  $SD = .55$ ) and also had positive affective reactions toward their co-workers with intellectual disabilities ( $M = 4.74$ ,  $SD = .84$ ). A positive correlation ( $r = .57$ ) between two composites of these two surveys was found. Most importantly, the participants' affective reactions toward their co-workers with intellectual disabilities were slightly higher than their general attitudes toward others with intellectual disabilities.

After reviewing the participants' general attitudes toward people with intellectual disabilities (see Appendix F), the researcher found that the outcomes were dissimilar from previous references that mentioned Taiwanese people tend to have societal stigma toward people with disabilities due to the influence of Chinese culture (Chang & McConkey, 2008; Huang et al., 2009). The respondents rated items 3, 5, 11, 2, and 19 of the MRAI-R as the top five highest scores (see Appendix F). This indicated that the participants were willing to have their children interact with other children with intellectual disabilities, had no objection to attending social activities with people with intellectual disabilities, and accepted individuals with intellectual disabilities living in the same neighborhoods. In other words, research participants held positive attitudes toward

people with intellectual disabilities in general, especially in terms of their social integration and community inclusion.

Similar findings were also discovered when exploring the participants' affective reactions toward working with their co-workers with intellectual disabilities (see Appendix G). First of all, the respondents showed very high comfort levels in interacting with their co-workers with intellectual disabilities during breaks (item 11) and demonstrated a willingness to accommodate their work schedules (item 7) as well as workspace (item 14) if their co-workers with disabilities had health issues. Additionally, the participants indicated that they believed having workers with intellectual disabilities could positively contribute to the workplace (item 3) and they also trusted their co-workers with disabilities to have proper job skills in performing the necessary job tasks (item 20). However, the results also indicated the respondents believed that their co-workers with intellectual disabilities should not perform dangerous tasks (item 18) and must be supervised intensively (item 21). While the overall affective reactions toward working with their co-workers with intellectual disabilities were still on a positive track, the findings also showed that the respondents had safety and supervision concerns regarding their co-workers with intellectual disabilities.

The above findings revealed several significant issues. First, different from the previous studies that mentioned Taiwanese people tended to have societal stigma toward people with intellectual disabilities (Chang & McConkey, 2008), the research participants held positive general attitudes toward individuals with intellectual disabilities. In addition, the findings were contrary to the results of another study that indicated Taiwanese employment specialists perceived the negative attitude of non-disabled

employees toward their co-workers with intellectual disabilities was a prevailing phenomenon (Hsu et al., 2009). These discoveries implied that Taiwanese people may have changed their attitudes toward PWDs positively and had positive outlooks toward disability and other relevant issues.

While the results of the study were surprising, the interpretations of these findings could be diverse. First of all, all participants in this study had direct work contact experiences with their co-workers with intellectual disabilities. According to a study conducted by Belcher and Smith (1994), employees' attitudes toward their co-workers with autism in relation to their work competence could be changed due to work contact. Therefore, it was possible that the participants' affective reactions toward working with this population may have been influenced in a positive way due to having real and positive work experiences with them. It was also possible that the participants' affective reactions were slightly higher than their general attitudes toward others with intellectual disabilities. This explanation was supported by Allport's "*contact hypothesis*" which indicated that people could change their prejudiced attitudes toward specific populations by having direct contact experience with them (Allport, 1979; Krahe & Altwasser, 2006). In other words, having regular work contact with co-workers with intellectual disabilities may be a reason to allow the research participants to have natural opportunities to realize work competence and personality of their co-workers with disabilities which can change their negative stereotypes toward them.

Having direct work contact experiences may have been a factor in influencing the participants' affective reactions toward their co-workers with intellectual disabilities. However, it was also a possible cause affecting their general attitudes toward the same

population since they may have learned disability and related information through the interactions with their co-workers with disabilities. For instance, 65 out of 135 participants indicated that they had contact experiences with their co-workers with intellectual disabilities after work.

The non-task-related contact experiences not only provided the participants social interaction opportunities with their co-workers with intellectual disabilities, but also allowed the participants to explore what kinds of challenges their co-workers may encounter in mainstream society and the workplace. These challenges included, but were not limited to the issues of searching for a job (Ainsworth & Baker, 2004), accommodating work duties (Brodwin, Parker, & DeLaGarza, 2003), facing negative attitudes in the workplace (Colella, 2001; Lengnick-Hall & Gaunt, 2007), and adjusting to a new life style and learning to live independently (Fabian & MacDonald-Wilson, 2005; Hsu et al., 2009). These were the best educational opportunities for the participants to acquire disability-related knowledge. Most significantly, having after work non-task-related interactions between the participants and their co-workers with intellectual disabilities may have been an important means through which the development of friendships could be established (Riches & Green, 2003); accordingly, improving their general attitude toward other individuals with intellectual disabilities.

As mentioned in Chapter I, the Taiwanese government has passed several pieces of important employment-related legislation in supporting PWDs in terms of their employment rights (Laws and Regulations Database of the Republic of China, 2010a, 2010b). This ensures that PWDs not only can obtain proper employment opportunities, but may also be included in mainstream society. By providing employment opportunities

for qualified people with intellectual disabilities in a common workplace, people may have chances to learn disability knowledge and relevant issues through the interactions with their counterparts with disabilities. The outcomes of the first research question showed that the participants had positive affective reactions toward their co-workers with intellectual disabilities and had positive general attitudes toward others with intellectual disabilities. Although the participants had slightly better affective reactions toward their co-workers than other people with intellectual disabilities, the results have clearly demonstrated that Taiwanese people may have viewed PWDs differently, but in a positive direction.

### **Research Question 2**

Q2 How do gender, age, educational attainment, duration of work contact, and types of contact influence the affective reactions of Taiwanese employees toward their supported co-workers with intellectual disabilities?

The impacts of various demographic factors on people's attitudes toward PWDs were examined extensively (Gill & Cross, 2010; Ten Klooster et al., 2009). For instance, researchers have mentioned that people with higher educational degrees tend to have more positive attitudes toward PWDs because they may be more knowledgeable and open about disabilities and relevant issues (Lau & Cheung, 1999; Scior et al., 2010). To explore whether different demographic backgrounds also influenced attitudes of Taiwanese people toward their co-workers with intellectual disabilities, the second research question was created.

While the results of the first question already indicated that the participants had positive affective reactions toward their co-workers with intellectual disabilities, examining the impacts of various demographic factors on affective reactions provided an

opportunity to explore which demographic factors mostly lead the participants to view their co-workers with intellectual disabilities in a positive light. Except for the general demographic factors such as gender (Popovich et al., 2003; Tervo et al., 2002), age (Perry et al., 2008; Yazbeck et al., 2004), and educational attainment (Fichten, 1988; Scior et al., 2010) that have been examined intensively in different studies, duration of work contact and types of contact were also under investigation in this study since all of the participants had contact experiences with their co-workers with disabilities. This allowed the researcher to determine whether having longer work contact experiences and having after work contact could positively influence the participants' affective reactions toward their co-workers with intellectual disabilities.

When using the Pearson correlation coefficient, the results indicated that "age" and "length of work contact," respectively, influenced the participants' affective reactions toward their co-workers with intellectual disabilities in a positive way. Identical results were found when implementing multiple regression procedures. All in all, the results firmly indicated that the participants who were older had more positive affective reactions toward working with their co-workers with intellectual disabilities. In addition, having longer lengths of work contact experiences positively influenced the participants' affective reactions toward their co-workers with disabilities. However, the results clearly indicated that gender, educational attainment, and having both work and after work contacts did not influence affective reactions of the participants toward their co-workers with disabilities.

Although findings showed that only two demographic factors influenced affective reactions toward working with co-workers with disabilities, this was not unusual. For

instance, some researchers have discovered that females had more positive attitudes toward PWDs (Krajewski & Flaherty, 2000; Popovich et al., 2003), while other scholars found that gender had no effect on attitudes toward PWDs (Chenoweth et al., 2004; Choi & Lam, 2001). These inconsistent findings have demonstrated that it was impossible to have a general assumption of which demographic factors definitely could influence attitudes toward PWDs.

However, it should be noted that constant collinearity values for excluded variables (gender, education, and types of contact) ranged from .889 to .975 which were almost equal to 1. Researchers have indicated that “if the collinearity between the predictor variables is high, only some of the predictor variables will enter the multiple regression analysis as predictors, even though all of them might predict the criterion variable to some extent” (Gall et al., 2007, p. 358). Thus, this implied that the recruited participants in the present study may have had similar backgrounds or experiences in interacting with their co-workers with disabilities that may have led these three demographic factors mentioned above to have had no impact of the participants’ affective reactions toward their co-workers with intellectual disabilities. That could also have been the main reason that led the results ( $R^2 = .064$ ) to indicate that there was only a slightly over 6% variability of the participants’ affective reactions toward their co-workers with intellectual disabilities explained by two demographic factors: age and length of work contact.

It was evident that when utilizing backward regression with  $p$ -value at .10, the probability of error increased 5% while the percentage of explained variance only increased by slightly more than 2%. However, in order to include more variables that

could be used to examine Research Question 2, it was necessary to sacrifice the accuracy rate. The accuracy rate of explanation was still kept at 90% when utilizing backward regression.

Nevertheless, since the results of Research Question 2 indicated that “age” and “length of work contact” influenced the participants’ affective reactions toward their co-workers with intellectual disabilities, the possible explanations must be explored and discussed. First, different from other research that indicated older people tended to have negative attitudes toward PWDs due to possibly deeper cultural influence (Bakheit & Shanmugalingam, 1997) or lacking of disability knowledge and awareness (Dorji & Solomon, 2009), older participants in this study had more positive affective reactions toward their co-workers with intellectual disabilities. Although the results of similar research mentioned above were not based on the perspectives of workers without disabilities, they provided reasonable explanations of why older people with different backgrounds tend to view PWDs negatively.

Similarly, several other reasons explained why older participants in the study had more positive affective reactions toward their co-workers with intellectual disabilities. One of the major possible reasons of this finding was that older workers may have had longer lengths of work experiences than younger people, thus, leading them to have more opportunities to interact with individuals with disabilities in the workplace. This may positively change their affective reactions toward co-workers with disabilities due to acquiring disability awareness through more opportunities to interact with their counterparts with disabilities. In addition, since older participants had longer lengths of work experiences, they may also been more familiar with employment rights of PWDs



because of having frequent contacts with them or receiving proper disability information. All of these reasons mentioned above may have led older participants to be more knowledgeable and friendly toward their co-workers with disabilities; consequently, they had more favorable affective reactions toward their co-workers with intellectual disabilities.

On the contrary, younger participants may have had limited lengths of work experiences that could have led them to have restrained opportunities or time to be familiar with their co-workers with disabilities or to obtain proper disability knowledge in the workplace. This may have caused younger participants to feel uncomfortable or unfamiliar about how to work and/or interact with their co-workers with disabilities on the job. As a result, this may have led younger participants to have less favorable affective reactions toward their co-workers with disabilities than older participants.

While the above explanations were based on assumptions, the findings of the second question also indicated that the participants who had longer lengths of work contact with co-workers with intellectual disabilities had more positive affective reactions toward them. This discovery may not only support the previous assumptions mentioned above, but it also indicated that including PWDs in the workplace may enhance disability awareness among Taiwanese people. In fact, some researchers have found that non-disabled employees can greatly improve their outlook toward PWDs, especially in terms of their vocational competence, due to having direct work contact with them (Belcher & Smith, 1994).

Actually, having longer direct work contact experiences with PWDs may have also allowed the participants to obtain a better understanding of work competence and the

particular strengths of their co-workers with disabilities. This may have changed the participants' stereotypes toward their co-workers with disabilities. In addition, being more familiar with their co-workers with intellectual disabilities due to having longer work contact experiences may have led the participants to possibly develop friendships with them, thus, leading the participants to be more patient and to have better affective reactions. Therefore, the findings of the second question may have implied that promoting supported employment for individuals with intellectual disabilities may not only provided them with job and social interaction opportunities in an inclusive workplace, but also offered chances for non-disabled employees to acquire proper disability knowledge from their co-workers with intellectual disabilities. This may have been the best method to enhance disability awareness among Taiwanese people.

### **Limitations**

Several limitations of this survey study were identified. First, the majority of the research participants' co-workers with intellectual disabilities were doing labor-intensive jobs rather than performing sophisticated tasks. These labor-intensive jobs were varied: cleaning and replenishing commodities in convenience stores, washing and cleaning cars at gas stations, cleaning offices, cleaning hospitals, and cleaning restaurants. Therefore, it was highly possible that the outcomes of the study would have been different if the researcher recruited the majority of the participants whose co-workers with intellectual disabilities had to perform more difficult tasks in different types of work settings, such as using cash registers in bakeries in order to calculate and record sales transactions. In other words, the participants' affective reactions toward working with people with intellectual disabilities may have been pushed in a different direction if their co-workers

with disabilities were required to carry out a higher level of challenging tasks such as serving clients directly or acting as cashiers.

Second, people's attitudes toward PWDs could have been established through cultural beliefs, life experiences, as well as interactions with them (Antonak & Livneh, 1991; Oppenheim, 1992). This meant that attitudes toward PWDs may change back and forth if people have different contact experiences with PWDs at different life stages or in particular circumstances. Thus, the information regarding the participants' general attitudes toward individuals with intellectual disabilities and their affective reactions toward co-workers with similar disabilities collected in this study may simply have expressed what the participants felt at that particular period rather than their lifelong attitudes toward PWDs.

Third, although the results of the study showed that the participants had positive affective reactions toward their co-workers with intellectual disabilities, this information was only based on quantitative data. Similar research conducted by Western scholars utilized both questionnaires and observations as means to examine social and work interaction patterns between workers with and without intellectual disabilities (Chadsey-Rusch et al., 1989; Rusch et al., 1995). Therefore, it was possible that the hidden information regarding affective reactions of the non-disabled participants toward their co-workers with intellectual disabilities may have been found if observation was taken as a research tool in this study.

Fourth, two surveys utilized in the study were distributed through the assistance of personnel directors of the contacted companies and the Taiwanese employment specialists in the presence of the researcher when permission was granted. However, it

was possible that personnel directors and employment specialists who supported this study may have recruited participants with whom they were most familiar. Therefore, it was possible that the participants may have responded to these survey questions incorrectly in order to maintain their positive images in front of employment specialists or employers even though the research was anonymous. This is known as the tendency of social desirability (Krosnick et al., 2005). As a result, the possibility of providing false information to survey questions by the participants should not be neglected.

Finally, as mentioned, the constant collinearity values for excluded variables (gender, education, and types of contact) ranged from .889 to .978 when implementing multiple regression procedures. These values indicated that the research participants in the study may have had similar backgrounds or experiences in interacting with their co-workers with intellectual disabilities; thus, resulting in three demographic factors having no apparent impact on the participants' affective reactions toward their co-workers with intellectual disabilities. Therefore, the outcomes of the second research questions may have been different if the researcher recruited the participants who had diverse experiences in interacting and working with their co-workers with intellectual disabilities.

### **Implications for Practice**

The main goals of supported employment are to provide PWDs with job opportunities in real work settings that not only allow them to earn wages and to participate in meaningful vocational activities (Shafer, 1989), but also provide them with social interaction opportunities with their counterparts without disabilities (Wehman, 1981). In this study, the participants who had a longer contact experience with their co-workers with intellectual disabilities had more positive affective reactions toward them.

In addition, results indicated about half of the participants had non-task-related contacts with their co-workers with intellectual disabilities after work. These findings confirmed that supported employment was one of the best methods to assist people with intellectual disabilities with living independently and establishing their own social networks. Thus, supported employment should also be considered a great way to help non-disabled Taiwanese people to acquire disability knowledge and related information through natural work and social interactions with their co-workers with disabilities. As a result, providing supported employment trainings and opportunities for qualified people with intellectual disabilities should be promoted by the Taiwanese government and related public and private vocational rehabilitation agencies or organizations.

The finding of the study also yielded several important implications for Taiwanese employment specialists. For example, employment specialists should realize the importance of job modifications for their clients with disabilities who work in ordinary settings (Hanley-Maxwell et al., 2003). Since the participants indicated that their co-workers with intellectual disabilities should not perform risky tasks, Taiwanese employment specialists should be aware of the importance of providing ongoing support for any job modification needs for their clients. This would not only ensure that their clients with intellectual disabilities could appropriately perform their job tasks based on their abilities and strengths, but also could assure that the challenges their clients encounter in the workplace could be solved in a timely manner. Providing ongoing services of job modification or intervention would be great methods to solve concerns held by employers. Otherwise, people with intellectual disabilities may experience permanent job loss due to their poor performance or repeated failure to complete job

duties (Hsu et al., 2009) which will also cause employers to lose confidence in hiring PWDs in the future.

While the participants have positive affective reactions toward their co-workers with intellectual disabilities, it was also important to note that the participants who were older tended to have more positive affective reactions toward their co-workers with disabilities. Although many studies indicated that age may (Yazbeck et al., 2004) or may not (Perry et al., 2008) be an influential factor that affects people's attitudes toward PWDs, it was a significant factor that influenced the Taiwanese people's affective reactions toward their co-workers with disabilities in this study. This finding should remind legislators, vocational rehabilitation service providers, and related professionals to brainstorm about how to promote disability awareness among the younger generation of Taiwanese people.

In fact, some researchers have emphasized the importance of providing disability information, such as etiology and myths about intellectual disability, through educational campaigns at school-based settings (Tang, Davis, Wu, & Oliver, 2000). This would be a proper technique to assist younger people with acquiring accurate disability knowledge, thus, enhancing their positive attitudes toward people with intellectual disabilities and learning how to interact with them. Additionally, another method that could be used to enhance disability awareness among younger employees without disabilities would be to assign experienced workers to assist younger employees in working with their counterparts with disabilities. This may help younger employees to obtain a better understanding of strengths and particular abilities of their co-workers with disabilities in

a timely manner, thus, reducing possible conflicts due to misunderstandings between younger employees and their counterparts with disabilities.

Finally, the data collected during the study indicated that the majority of the participants' co-workers with intellectual disabilities were working on labor-intensive tasks. However, results of a study have already indicated that limited job variety was a major reason that led Taiwanese people with intellectual disabilities to withdraw from the ordinary workplace (Hsu et al., 2009). Thus, although employment specialists must set realistic vocational goals for their clients with intellectual disabilities, they should also be aware of clients' strengths that could allow them to perform particular tasks that were not on the job list. Otherwise, limited job variety may be a factor that leads clients with intellectual disabilities to feel unsatisfied or uninterested in their jobs which may result in them withdrawing from their positions (Hsu et al., 2009).

Fortunately, there were several strategies that could be utilized to solve this issue. For instance, one example was that people identified with Asperger Syndrome may possess unique skills or talents that would allow them to work in competitive jobs as long as they receive appropriate training (Hawkins, 2004). Therefore, identifying specific vocational abilities and career interests of clients with intellectual disabilities should be emphasized. Moreover, employment specialists could work with employers to find out what positions were difficult to fill and then to restructure or modify these jobs so that PWDs could perform them (Gilbride & Stensrud, 1992). This is known as demand-side job development approaches. These job search and development approaches mentioned above may help employment specialists to identify different types of jobs suitable for

their clients with intellectual disabilities. As a result, this may help workers with intellectual disabilities to obtain jobs that are not merely limited to janitor duties.

### **Recommendations for Future Research**

The results of this study demonstrated that Taiwanese employees had positive affective reactions toward their co-workers with intellectual disabilities, which was inspiring. However, the findings of a study conducted in Taiwan indicated that there were several major challenges faced by Taiwanese employees with intellectual disabilities in their workplace, including a lack of friendships and having negative interaction experiences with their counterparts without disabilities (Hsu et al., 2009). These negative experiences resulted in workers with intellectual disabilities withdrawing from their jobs. Therefore, further study should explore how Taiwanese workers with intellectual disabilities perceive attitudes of their co-workers without disabilities toward themselves, which will be an opportunity to examine similar issues emphasized in this study from different angles. The results of conducting such research would be an appropriate method to verify the outcomes of this study.

Second, in the present study, general attitudes toward individuals with intellectual disabilities were examined based on the perspectives of the research participants who had experiences interacting with their co-workers with intellectual disabilities rather than the general public, such as consumers who may or may not have contact experiences with PWDs. Therefore, future researchers who are interested in examining the general attitudes of Taiwanese people toward persons with intellectual disabilities should recruit participants with different backgrounds, such as consumers, students, or the general public whose neighbors have intellectual disabilities. These relevant studies would help



future researchers to not only examine whether the general attitudes toward people with intellectual disabilities held by Taiwanese people would be different compared to the results found in this study, but also could be used to confirm whether Taiwanese people may have already changed their attitudes toward people with intellectual disabilities in a positive track.

Third, understanding employees' attitudes toward their co-workers with disabilities has been considered as an important issue in the area of vocational rehabilitation (Powell et al., 1991; Riches & Green, 2003). Conducting relevant studies would allow researchers to obtain necessary information regarding whether work performance of people with disabilities is influenced by their counterparts without disabilities due to negative attitudes (Colella, 2001; Freedman & Fesko, 1996; Reitman et al., 1999). However, future researchers should not neglect the influences of employers and supervisors of PWDs in the workplace (Lengnick-Hall & Gaunt, 2007; Peck & Kirkbride, 2001). Therefore, future comparative studies should examine attitudes of Taiwanese employers and supervisors toward their workers with intellectual disabilities. This would help researchers and service providers to acquire essential information in finding whether it is necessary to promote disability awareness in the workplace and to find the methods that could be used to solve concerns toward workers with intellectual disabilities held by the employers and supervisors.

Finally, the results of different studies have indicated that people with intellectual disabilities were viewed lowest in terms of their stability (Corrigan et al., 2000) or were rated as the least accepted population of individuals with disabilities (Gordon et al., 2004) when compared with others with different types of disabilities. Although the results of

the present research indicated that the participants had positive general and affective reactions toward individuals and their co-workers with intellectual disabilities, future relevant studies should explore and compare whether Taiwanese people also view persons with various disabilities differently in general and in the workplace. This would allow researchers to explore whether it is necessary to promote disability awareness in order to change stereotypes of Taiwanese people's viewpoints toward particular disabilities.

### **Summary**

Supported employment is considered as a preferred career option for individuals with intellectual disabilities because it provides job opportunities in the real workplace that also allow them to establish social networks, thus, leading them to live independently (Shafer, 1989). However, the negative attitudes toward employees with intellectual disabilities held by their counterparts without disabilities have been regarded as a significant barrier that could lead them to fail, withdraw, or resign from their jobs (Hsu et al., 2009). Fortunately, the outcomes of this study showed that the Taiwanese employees had positive general attitudes toward individuals with intellectual disabilities and also had positive affective reactions toward working with them.

Additionally, the impacts of various demographic factors on the participants' affective reactions toward their co-workers with intellectual disabilities were examined in this study. The results demonstrated that age and having longer work contact were two major factors that could positively influence the participants' affective reactions toward their co-workers with disabilities. Finally, the recommendation of promoting supported employment was made in combination of future research directions and suggestions of practices for rehabilitation practitioners and related service providers.

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APPENDIX A  
INFORMATIONAL LETTER OF STUDY

UNIVERSITY of  
NORTHERN COLORADO



Informational Letter of Study

Dear Employers and Personnel Directors

My name is Tsu-Hsuan Hsu, and I am a doctoral student in the Department of Human Rehabilitation at the University of Northern Colorado. I am working on my doctoral dissertation and am conducting research related to attitudes of non-disabled Taiwanese employees toward their co-workers with intellectual disabilities.

According to the People with Disabilities Rights Protection Act of 2007, 3% of all Taiwanese government agencies' workforce must be individuals with disabilities when the agencies have 34 employees or more. These government agencies include public schools. In addition, all private business organizations that have more than 67 employees are required to have at least 1% of their employees be individuals with disabilities.

Your organization has been identified by vocational rehabilitation counseling agencies as having employed people with disabilities, especially individuals with intellectual disabilities. You are to be commended that your organization is willing to provide job opportunities for qualified individuals with intellectual disabilities.

The primary objectives of integrating workers with intellectual disabilities into ordinary workplaces are to assist them in acquiring job skills while allowing them to establish social networks through the support of their non-disabled co-workers. It is difficult to achieve these goals without receiving assistance from co-workers without disabilities.

According to Western research, negative attitudes held by non-disabled employees toward their co-workers with disabilities may ultimately lead their counterparts with disabilities to fail or withdraw from their jobs due to feelings of frustration, failure, social rejection, and unfairness. However, research also indicated that non-disabled employees could be regarded as valuable resources for supporting their co-workers with disabilities in acquiring job skills more effectively as long as they receive appropriate training.

While Western studies have been conducted to examine related issues, little research has been conducted to investigate attitudes of non-disabled Taiwanese employees toward their co-workers with intellectual disabilities. Thus, your non-disabled employees are invited to participate in the study of attitudes of Taiwanese employees toward their co-workers with intellectual disabilities. Participation is voluntary. Participants will be asked to complete two surveys and a demographic sheet. The first survey instrument, the Mental Retardation Attitude Inventory-Revised (MRAI-R), will be implemented to collect information to examine attitudes of your non-disabled employees toward

individuals with intellectual disabilities in general. The Affective Reactions Subscale of the Disability Questionnaire is the second survey that will be administered to study attitudes of your non-disabled employees toward working with their co-workers with intellectual disabilities.

The results of the survey will allow Taiwanese vocational rehabilitation professionals to obtain a better understanding of whether it is necessary to promote disability awareness in the workplace. It will also help the researcher to obtain information regarding whether workers with intellectual disabilities require assistance in improving their employability and social competence. Most importantly, the results of the study can help related professionals learn how to make work environments friendly for both workers with and without intellectual disabilities.

This take-home survey takes less than 20 minutes to complete. No personal or corporate identify information will be collected or identified. The valuable feedbacks from your non-disabled employees regarding this topic will help us to better understand issues of disabilities in the workplace.

If you have any questions regarding this study, I am willing to discuss your concerns in person, via e-mail, or on the phone.

Thank you!

Tsu-Hsuan Hus, Principal Investigator  
Taiwan (02-2219-2257)  
U.S.A (970-397-2817)  
hsu8006@bears.unco.edu  
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APPENDIX B  
CONSENT FORM



CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH  
UNIVERSITY OF NORTHERN COLORADO

Project Title: Attitudes of Taiwanese Employees Toward Their Co-workers with Intellectual Disabilities  
 Researcher: Tsu-Hsuan Hsu, Doctoral Candidate  
 School of Human Sciences, University of Northern Colorado  
 Phone: 970-397-2817  
 E-mail: fenton888@gmail.com hsu8006@bears.unco.edu  
 Research Advisor: Joseph N. Ososkie, Ph.D.  
 School of Human Sciences, University of Northern Colorado  
 970-351-1579  
 joe.ososkie@unco.edu

Purpose and Description:

The purpose of this study is to investigate the attitudes of Taiwanese employees without disabilities toward their co-workers with intellectual disabilities. These opinions offered by Taiwanese employees without disabilities who have experience interacting and working with their co-workers with intellectual disabilities will allow the researcher to obtain a better understanding of how Taiwanese workers view people with intellectual disabilities in general and in their workplace. The results of the study would also allow the researcher to examine the extent to which it is necessary to promote disability awareness among Taiwanese employees without disabilities.

As a voluntary participant, you will be asked to complete two surveys and a demographic sheet. The first survey instrument, the Mental Retardation Attitude Inventory-Revised (MRAI-R), will be implemented to collect information about and examine your general attitudes toward individuals with intellectual disabilities. A sample statement you will rate follows: "I have no objection to attending movies or a play in the company of people with disabilities."

The Affective Reactions Subscale of the Disability Questionnaire is the second survey that will be administered to study your attitudes toward working with your co-workers with intellectual disabilities. A sample statement you will rate follows: "Working with an individual with a disability would increase my workload."

A package including all research documents mentioned above will be distributed to you in the presence of the researcher. This packet contains four documents: a voluntary consent form of research participation, a demographic information sheet, and the survey instruments including MRAI-R and the Affective Reactions Subscale of the Disability Questionnaire. You can complete these materials at your most convenient time and location. You will be provided with a sealable envelope in which you can put these documents once you complete them, except for this consent form which you can keep for your records. The researcher will retrieve these documents in person during your lunch break the day after they are distributed. It is estimated that you will need to spend about 20 minutes to complete these two surveys and the demographic information sheet.

The project data will be collected between June and August of 2011 in Taipei, Taiwan. The researcher will take every precaution in order to protect your confidentiality. You will not be required to write your name on the survey sheets. As a result, your identity will be kept anonymous. In the same way, your opinions toward your co-workers with intellectual disabilities will not be associated with you. Second, all surveys collected by the researcher will be kept secure in a locked cabinet in the researcher's home in Taiwan. The researcher will take surveys back to the United States and will keep them in a safety deposit box at home. Only the researcher will be able to access these surveys. All surveys will be de-identified and will be kept for over three years for further reference.

Potential risks in this project are minimal. Surveys and demographic questions are fairly straightforward. It is unlikely you will have any problems as a result of answering these questions. It is possible that answering these questions may cause you to feel tense. If you feel uncomfortable, you may stop answering the questions at any time. Non-participation or withdrawal from the study will not affect your employment status. As compensation for your time and effort, a NT \$100 (equal to 4 U.S. dollars) gift card for a convenience store is attached.

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask questions, please complete the questionnaire if you would like to participate in this research. By completing the questionnaire, you will give us permission for your participation. You may keep this form for future reference. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Sponsored Programs, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-2161.

APPENDIX C

DEMOGRAPHIC INFORMATION SHEET

## DEMOGRAPHIC INFORMATION SHEET

Directions: Please circle your choice of response to these items. Please do not respond to the questionnaire if you have a disability. Thank you for your cooperation!

1. What is your gender?  
 Male  
 Female
2. What is your age?  
\_\_\_\_\_
3. What is the highest level of education you have completed or are currently pursuing?  
 Junior high school  
 Senior high school or equivalent  
 Junior or technical college  
 Undergraduate degrees  
 Graduate degrees
4. How long have you been working for this company?  
\_\_\_\_\_ years    \_\_\_\_\_ months
5. How long have you been working with your co-workers with intellectual disabilities?  
\_\_\_\_\_ years    \_\_\_\_\_ months
6. What types of contact do you have with your co-workers with intellectual disabilities?  
 Only on the job  
 Contact during break and/or lunch time  
 Both on the job and after work
7. Your experience interacting with people with intellectual disabilities  
 I have a family member with an intellectual disability  
 I have a friend with an intellectual disability  
 I have a classmate /co-workers with an intellectual disability



APPENDIX D

MENTAL RETARDATION ATTITUDE INVENTORY REVISED (MRAI-R)

MENTAL RETARDATION ATTITUDE INVENTORY  
REVISED (MRAI-R)

“[An intellectual disability is a disability that is] characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills. [It means that people with intellectual disabilities have limitations in their mental capability that can affect their daily lives]. This disability originates before the age of 18” (American Association on Intellectual and Developmental Disabilities [AAIDD], 2010b, p. 5).

The examples of intellectual disabilities include: autism, cerebral palsy, Down syndrome, and mental retardation. The meanings of conceptual, social, and practical skills are based on AAMR 2002 manual as the following: (a) conceptual skills mean community self-sufficiency ability; (b) social skills represents the ability of personal-social responsibility, and finally, (c) practical skills refer to personal self-sufficiency skills such as daily living skills.

Below is a series of statements about people with mental retardation. Please rate your agreement with each of the following statements. The term “people who are mentally retardation” was replaced by “people with intellectual disabilities” in the MRAI-R Chinese version.

1. School officials should not place children who are mentally retarded and children who are not mentally retarded in the same classes.  
1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
2. We should integrate people who are mentally retarded and who are not mentally retarded into the same neighborhoods.  
1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
3. I would allow my children to accept an invitation to a birthday party given for a child with mental retardation.  
1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
4. People who are mentally retarded are not yet ready to practice the self-control that goes with social equality with people who are not mentally retarded.  
1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
5. I am willing for my child to have children who are mentally retarded as close personal friends.  
1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree

6. If I were a landlord, I would want to pick my tenants even if this meant only renting to people who are not mentally retarded.  
1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
7. It is a good idea to have separate after-school programs for children who are mentally retarded and children who are not mentally retarded.  
1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
8. Regardless of his or her own views, a private nursery school director should be required to admit children with mental retardation.  
1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
9. Even though children with mental retardation are in public school, it is doubtful whether they will gain much from it.  
1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
10. Although social mixing of people who are mentally retarded and not mentally retarded may be right, it is impractical until people with mental retardation learn to accept limits in their relations with the opposite sex.  
1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
11. I have no objection to attending the movies or a play in the company of people who are mentally retarded.  
1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
12. Laws requiring employers not to discriminate against people with mental retardation violate the rights of the individual who does not want to associate with people who are mentally retarded.  
1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
13. Integrating children who are mentally retarded and who are not into the same preschool classes should not be attempted because of the turmoil it would cost.  
1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
14. Real estate agents should be required to show homes to families with children who are mentally retarded regardless of the desires of the homeowners.

- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
15. I would rather not have people with mental retardation as dinner guests with my friends who are not mentally retarded.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
16. Children who are mentally retarded waste time playing in class instead of trying to do better.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
17. Having people who are mentally retarded and not mentally retarded work at the same jobsites will be beneficial to both.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
18. I would rather not have a person who is mentally retarded swim in the same pool that I swim in.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
19. I would be willing to introduce a person with mental retardation to friends and neighbors in my home town.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
20. Campground and amusement park owners have the right to refuse to serve anyone they please, even if it means refusing people with mental retardation.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
21. The problem of prejudice toward people with mental retardation has been exaggerated.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
22. If I were a barber or beauty shop owner I would not resent it if I were told that I had to serve people with mental retardation.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
23. Assigning high school students who are mentally retarded and who are not mentally retarded to the same classes is more trouble than it is worth.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree

24. I would be willing to go to a competent barber or hairdresser who is mentally retarded.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
25. Even with equality of social opportunity, people who are mentally retarded could not show themselves equal in social situations to people who are not mentally retarded.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
26. Even though people with mental retardation have some cause for complaint, they would get what they want if they were more patient.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
27. I would rather not have people who are mentally retarded live in the same apartment building I live in.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
28. A person should not be permitted to run a day care center if he or she will not serve children who are mentally retarded.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree
29. The child who is mentally retarded should be integrated into regular classes in school.
- 1) Strongly Disagree    2) Disagree    3) Agree    4) Strongly Agree

APPENDIX E

AFFECTIVE REACTIONS SUBSCALE OF THE DISABILITY QUESTIONNAIRE

AFFECTIVE REACTIONS SUBSCALE OF THE  
DISABILITY QUESTIONNAIRE

“[An intellectual disability is a disability that is] characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills. [It means that people with intellectual disabilities have limitations in their mental capability that can affect their daily lives]. This disability originates before the age of 18” (American Association on Intellectual and Developmental Disabilities [AAIDD], 2010b, p. 5).

The examples of intellectual disabilities include: autism, cerebral palsy, Down syndrome, and mental retardation. The meanings of conceptual, social, and practical skills are based on AAMR 2002 manual as the following: (a) conceptual skills mean community self-sufficiency ability; (b) social skills represents the ability of personal-social responsibility, and finally, (c) practical skills refer to personal self-sufficiency skills such as daily living skills.

Below is a series of statements about people with mental retardation. Please rate your agreement with each of the following statements. The terms “disabled person/individual/people/co-worker” were replaced by “people with intellectual disabilities” in the Affective Reactions Subscale of the Disability Questionnaire Chinese version.

1. Working with a disabled individual would increase my workload.

1	2	3	4	5	6	7
Completely Agree			Neutral			Completely Disagree

2. I am comfortable with the idea of working with a disabled person.

1	2	3	4	5	6	7
Completely Agree			Neutral			Completely Disagree

3. Disabled people can positively contribute the workplace.

1	2	3	4	5	6	7
Completely Agree			Neutral			Completely Disagree

4. I am uncomfortable with the idea of sharing my workspace with a disabled person.
- |                  |   |   |         |   |   |                     |
|------------------|---|---|---------|---|---|---------------------|
| 1                | 2 | 3 | 4       | 5 | 6 | 7                   |
| Completely Agree |   |   | Neutral |   |   | Completely Disagree |
5. Working with a disabled person will slow down the rate at which I complete work.
- |                  |   |   |         |   |   |                     |
|------------------|---|---|---------|---|---|---------------------|
| 1                | 2 | 3 | 4       | 5 | 6 | 7                   |
| Completely Agree |   |   | Neutral |   |   | Completely Disagree |
6. Disabled people can handle the stresses of daily work life.
- |                  |   |   |         |   |   |                     |
|------------------|---|---|---------|---|---|---------------------|
| 1                | 2 | 3 | 4       | 5 | 6 | 7                   |
| Completely Agree |   |   | Neutral |   |   | Completely Disagree |
7. I would be willing to cover work for a disabled co-worker who had to miss work because of their disability.
- |                  |   |   |         |   |   |                     |
|------------------|---|---|---------|---|---|---------------------|
| 1                | 2 | 3 | 4       | 5 | 6 | 7                   |
| Completely Agree |   |   | Neutral |   |   | Completely Disagree |
8. Disabled workers should remain behind the scenes and not deal with customers directly.
- |                  |   |   |         |   |   |                     |
|------------------|---|---|---------|---|---|---------------------|
| 1                | 2 | 3 | 4       | 5 | 6 | 7                   |
| Completely Agree |   |   | Neutral |   |   | Completely Disagree |
9. I would find it difficult to supervise a disabled person.
- |                  |   |   |         |   |   |                     |
|------------------|---|---|---------|---|---|---------------------|
| 1                | 2 | 3 | 4       | 5 | 6 | 7                   |
| Completely Agree |   |   | Neutral |   |   | Completely Disagree |
10. It would be difficult to be supervised by a disabled person.
- |                  |   |   |         |   |   |                     |
|------------------|---|---|---------|---|---|---------------------|
| 1                | 2 | 3 | 4       | 5 | 6 | 7                   |
| Completely Agree |   |   | Neutral |   |   | Completely Disagree |



11. I would socialize with a disabled co-worker during by work breaks.
- |                     |   |   |         |   |   |                        |
|---------------------|---|---|---------|---|---|------------------------|
| 1                   | 2 | 3 | 4       | 5 | 6 | 7                      |
| Completely<br>Agree |   |   | Neutral |   |   | Completely<br>Disagree |
12. I wouldn't mind having my job redesigned to accommodate a disabled co-worker.
- |                     |   |   |         |   |   |                        |
|---------------------|---|---|---------|---|---|------------------------|
| 1                   | 2 | 3 | 4       | 5 | 6 | 7                      |
| Completely<br>Agree |   |   | Neutral |   |   | Completely<br>Disagree |
13. If I was on a work team with a disabled co-worker, I would not want my performance rewards to depend on the performance of the disabled worker.
- |                     |   |   |         |   |   |                        |
|---------------------|---|---|---------|---|---|------------------------|
| 1                   | 2 | 3 | 4       | 5 | 6 | 7                      |
| Completely<br>Agree |   |   | Neutral |   |   | Completely<br>Disagree |
14. I would not mind taking the time to set up a disabled worker's workspace to make it easy for them to use.
- |                     |   |   |         |   |   |                        |
|---------------------|---|---|---------|---|---|------------------------|
| 1                   | 2 | 3 | 4       | 5 | 6 | 7                      |
| Completely<br>Agree |   |   | Neutral |   |   | Completely<br>Disagree |
15. It would not be difficult to take directions from a disabled worker.
- |                     |   |   |         |   |   |                        |
|---------------------|---|---|---------|---|---|------------------------|
| 1                   | 2 | 3 | 4       | 5 | 6 | 7                      |
| Completely<br>Agree |   |   | Neutral |   |   | Completely<br>Disagree |
16. All workers, including disabled workers, should be evaluated on the same performance standards.
- |                     |   |   |         |   |   |                        |
|---------------------|---|---|---------|---|---|------------------------|
| 1                   | 2 | 3 | 4       | 5 | 6 | 7                      |
| Completely<br>Agree |   |   | Neutral |   |   | Completely<br>Disagree |
17. It is important to have disabled workers in the workforce.
- |                     |   |   |         |   |   |                        |
|---------------------|---|---|---------|---|---|------------------------|
| 1                   | 2 | 3 | 4       | 5 | 6 | 7                      |
| Completely<br>Agree |   |   | Neutral |   |   | Completely<br>Disagree |

18. I would not want to work with a disabled worker on a job that could be dangerous.

1	2	3	4	5	6	7
Completely Agree			Neutral			Completely Disagree

19. I would not want to work on a work site where disabled workers were operating machinery.

1	2	3	4	5	6	7
Completely Agree			Neutral			Completely Disagree

20. I trust that disabled workers who are hired would be able to perform the necessary tasks of the job.

1	2	3	4	5	6	7
Completely Agree			Neutral			Completely Disagree

21. Disabled workers would require high levels of supervision.

1	2	3	4	5	6	7
Completely Agree			Neutral			Completely Disagree

APPENDIX F  
RESULTS OF MENTAL RETARDATION ATTITUDE INVENTORY  
REVISED (MRAI-R)

RESULTS OF MENTAL RETARDATION ATTITUDE INVENTORY  
REVISED (MRAI-R)

Items	Statements	Min	Max	Mean	SD	Median	Rank
<b>Integration-Segregation</b>		13	28	19.79	2.85	20	
1	School officials should not place children who are mentally retardation and children who are not mentally retardation in the same classes.	1	4	2.48	0.78	2	24
2	We should integrate people who are mentally retarded and who are not mentally retarded into the same neighborhoods.	1	4	3.16	0.60	3	4
7	It is a good idea to have separate after-school programs for children who are mentally retarded and children who are not mentally retarded.	1	4	2.95	0.79	3	13
13	Integrating children who are mentally retarded and who are not into the same preschool classes should not be attempted because of the turmoil it would cost.	1	4	2.95	0.65	3	13
17	Having people who are mentally retarded and not mentally retarded work at the same jobsites will be beneficial to both.	1	4	2.96	0.60	3	11
23	Assigning high school students who are mentally retarded and who are not mentally retarded to the same classes is more trouble than it is worth.	1	4	2.61	0.67	3	20
29	The child who is mentally retarded should be integrated into regular classes in school.	1	4	2.69	0.78	3	18
<b>Social Distance</b>		16	32	25.18	2.91	24	
3	I would allow my children to accept an invitation to a birthday party given for a child with mental retardation.	1	4	3.30	0.59	3	1
5	I am willing for my child to have children who are mentally retarded as close personal friends.	2	4	3.24	0.48	3	2
11	I have no objection to attending the movies or a play in the company of people who are mentally retarded.	1	4	3.24	0.55	3	2
15	I would rather not have people with mental retardation as dinner guests with my friends who are not mentally retarded.	1	4	3.12	0.62	3	7
18	I would rather not have a person who is mentally retarded swim in the same pool that I swim in.	1	4	3.04	0.71	3	10

Items	Statements	Min	Max	Mean	SD	Median	Rank
19	I would be willing to introduce a person with mental retardation to friends and neighbors in my home town.	1	4	3.14	0.51	3	5
24	I would be willing to go to a competent barber or hairdresser who is mentally retarded.	1	4	2.95	0.52	3	13
27	I would rather not have people who are mentally retarded live in the same apartment building I live in.	1	4	3.14	0.61	3	5
<b>Private Rights</b>		15	28	19.54	2.43	19	
6	If I were a landlord, I would want to pick my tenants even if this meant only renting to people who are not mentally retarded.	1	4	2.70	0.72	3	17
8	Regardless of his or her own views, a private nursery school director should be required to admit children with mental retardation.	1	4	2.96	0.63	3	11
12	Laws requiring employers not to discriminate against people with mental retardation violate the rights of the individual who does not want to associate with people who are mentally retarded.	1	4	2.56	0.77	2	22
14	Real estate agents should be required to show homes to families with children who are mentally retarded regardless of the desires of the homeowners.	1	4	2.52	0.77	2	23
20	Campground and amusement park owners have the right to refuse to serve anyone they please, even if it means refusing people with mental retardation.	1	4	3.05	0.72	3	9
22	If I were a barber or beauty shop owner I would not resent it if I were told that I had to serve people with mental retardation.	1	4	3.11	0.61	3	8
28	A person should not be permitted to run a day care center if he or she will not serve children who are mentally retarded.	1	4	2.64	0.78	3	19
<b>Subtle Derogatory Belief</b>		8	21	16.12	2.14	16	
4	People who are mentally retarded are not yet ready to practice the self-control that goes with social equality with people who are not mentally retarded.	1	4	2.35	0.61	2	26

Items	Statements	Min	Max	Mean	SD	Median	Rank
9	Even though children with mental retardation are in public school, it is doubtful whether they will gain much from it.	1	4	2.44	0.68	2	25
10	Although social mixing of people who are mentally retarded and not mentally retarded may be right, it is impractical until people with mental retardation learn to accept limits in their relations with the opposite sex.	1	4	2.59	0.66	3	21
16	Children who are mentally retarded waste time playing in class instead of trying to do better.	1	4	2.86	0.74	3	16
21	The problem of prejudice toward people with mental retardation has been exaggerated.	1	4	1.96	0.66	2	28
25	Even with equality of social opportunity, people who are mentally retarded could not show themselves equal in social situations to people who are not mentally retarded.	1	4	1.93	0.58	2	29
26	Even though people with mental retardation have some cause for complaint, they would get what they want if they were more patient.	1	4	1.99	0.60	2	27
<b>Overall</b>		62	106	80.63	7.95	79	

APPENDIX G  
RESULTS OF AFFECTIVE REACTIONS SUBSCALE OF THE  
DISABILITY QUESTIONNAIRE

RESULTS OF AFFECTIVE REACTIONS SUBSCALE OF THE  
DISABILITY QUESTIONNAIRE

Items	Statements	Min	Max	Mean	SD	Median	Rank
1	Working with a disabled individual would increase my workload.	1	7	4.50	1.54	4	14
2	I am comfortable with the idea of working with a disabled person.	1	7	5.24	1.55	5	7
3	Disabled people can positively contribute the workplace.	1	7	5.33	1.41	5	6
4	I am uncomfortable with the idea of sharing my workspace with a disabled person.	1	7	5.45	1.54	6	4
5	Working with a disabled person will slow down the rate at which I complete work.	1	7	4.96	1.76	5	10
6	Disabled people can handle the stresses of daily work life.	1	7	4.13	1.52	4	17
7	I would be willing to cover work for a disabled co-worker who had to miss work because of their disability.	1	7	5.89	1.35	6	2
8	Disabled workers should remain behind the scenes and not deal with customers directly.	1	7	4.81	1.77	5	11
9	I would find it difficult to supervise a disabled person.	1	7	4.74	1.84	5	12
10	It would be difficult to be supervised by a disabled person.	1	7	4.49	1.63	4	15
11	I would socialize with a disabled co-worker during by work breaks.	1	7	6.01	1.29	7	1
12	I wouldn't mind having my job redesigned to accommodate a disabled co-worker.	1	7	4.68	2.06	5	13
13	If I was on a work team with a disabled co-worker, I would not want my performance rewards to depend on the performance of the disabled worker.	1	7	4.20	1.82	4	16
14	I would not mind taking the time to set up a disabled worker's workspace to make it easy for them to use.	1	7	5.74	1.35	6	3
15	It would not be difficult to take directions from a disabled worker.	1	7	5.09	1.53	5	8
16	All workers, including disabled workers, should be evaluated on the same performance standards.	1	7	3.70	1.93	4	18



Items	Statements	Min	Max	Mean	<i>SD</i>	Median	Rank
17	It is important to have disabled workers in the workforce.	1	7	5.03	1.41	5	9
18	I would not want to work with a disabled worker on a job that could be dangerous.	1	7	2.90	1.94	2	21
19	I would not want to work on a work site where disabled workers were operating machinery.	1	7	3.67	1.99	4	19
20	I trust that disabled workers who are hired would be able to perform the necessary tasks of the job.	1	7	5.45	1.35	5	5
21	Disabled workers would require high levels of supervision.	1	7	3.47	1.78	3	20
<b>Overall</b>		42	147	99.47	17.56	101	

APPENDIX H  
IRB APPROVAL

UNIVERSITY of  
**NORTHERN COLORADO**  
Institutional Review Board (IRB)



April 29, 2011

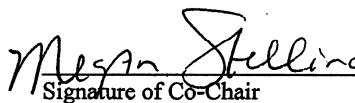
TO: Megan Babkes Stellino  
School of Sport and Exercise Science

FROM: The Office of Sponsored Programs

RE: Exempt Review of *Attitudes of Nondisabled Taiwanese Employees toward Their Co-Workers with Intellectual Disabilities*, submitted by Tsu-Hsuan Hsu (Research Advisor: Joe Ososkie)

The above proposal is being submitted to you for exemption review. When approved, return the proposal to Sherry May in the Office of Sponsored Programs.

I recommend approval.

 \_\_\_\_\_ 5/17/11  
Signature of Co-Chair Date

The above referenced prospectus has been reviewed for compliance with HHS guidelines for ethical principles in human subjects research. The decision of the Institutional Review Board is that the project is exempt from further review.

IT IS THE ADVISOR'S RESPONSIBILITY TO NOTIFY THE STUDENT OF THIS STATUS.

Comments:

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Greeley, Colorado 80639  
Ph: 970.351.1907 ~ Fax: 970.351.1934