Inclusive Instruction and the Understanding of Disability among University Faculty Members in Taiwan

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Abstract

Taiwan is in the nascent stage of supporting postsecondary students with disabilities in terms of their educational rights and opportunities. The primary purpose of the present study was to examine Taiwanese university faculty members' perceptions toward and their inclusive instruction actions. The second objective of the study was to examine their understanding regarding disability, specifically in terms of four issues: legal knowledge, accommodations policy, disability etiquette, and disability characteristics. One hundred and fourteen (114) university faculty members from a public teaching university in central Taiwan participated in the study. Results of chi-square analyses indicated that participants had positive attitudes toward inclusive instruction. This finding, however, did not equate with inclusive classroom instruction. Also, legal knowledge and disability characteristics were two primary aspects of disability understanding that participants were not familiar with or that they perceived were not addressed properly in their faculty training. A thorough discussion and future research suggestions were provided in order to delineate a better understanding of the impact of faculty member attitudes and inclusive instruction actions on Taiwanese college students with disabilities in postsecondary education settings.

Keywords: disability, postsecondary education, inclusive instruction, Taiwan

In the United States, the number of students with disabilities enrolled in postsecondary education has been increasing gradually (Lombardi et al., 2015; Zhang et al., 2010), and this is also the case in Taiwan. Taiwan had a population of approximately 23.5 million people as of 2016, and 1.1 million were postsecondary students (R.O.C., Taiwan Yearbook, 2016; Taiwan Ministry of Education, 2017). According to the Taiwan Ministry of Education (2017), there were 1.18% postsecondary students with disabilities in 2017 compared to 0.75% in 2007. Realizing the importance of inclusive education for students with different learning needs, the Taiwanese government has revised several pieces of legislation to support postsecondary students with disabilities, such as the amendment to the Special Education Act of 2014 and the amendment to the Regulation for Recruitment and Counseling Service for Postsecondary Students with Disabilities in 2016 (Taiwan Ministry of Education, 2018).

To meet the needs of students with various characteristics, Universal Design (UD) for assessments, instructions, and different learning styles has been widely studied (Cook, Rumrill, & Tankersley, 2009; Lombardi et al., 2015; Thompson et al., 2002). While inclusive instruction has been incorporated into postsecondary education, university faculty members may endorse positive attitudes toward inclusive instruction but may not implement inclusive practices due to specific factors (Lombardi et al., 2011; Lombardi et al., 2015). For example, Zhang and colleagues (2010) mentioned that their American college faculty participants from a southern state may have felt hesitant to provide reasonable accommodations if they did not receive support, services, and appropriate training from their institutions.

While Taiwan has strived to support postsecond-

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ary students with disabilities through the passage of related laws and regulations, limited studies have been conducted to examine attitudes toward and actions associated with inclusive instruction among university faculty members there. Also, perceptions of students with disabilities held by Taiwanese university faculty members remain largely unknown. Since university faculty members function as the primary mechanism in the provision of inclusive instruction, the results of the present study would provide information to enhance our understanding of the strengths and weaknesses related to inclusive instruction, disability services, and disability awareness in Taiwan postsecondary education.

Inclusive Instruction and Disability

The concept of Universal Design (UD) was introduced by Ron Mace from the United States for the purpose of developing products and building environments for people regardless of their diverse characteristics, such as age and ability (The Center for Universal Design, 2018). Later, the concept of Universal Design was incorporated into higher education with the main objective of including and supporting students with various characteristics, such as race and disability (Burgstahler, 2013; Scott et al., 2003). For instance, some researchers examined the components of physical activity for the purpose of developing effective programs for students with intellectual disabilities in the context of inclusive postsecondary education (Roberts et al., 2018) while other researchers studied accommodation seeking strategies (scripting disclosure of a disability and negotiating accommodations with faculty) of college students with disabilities (Barnard-Bark et al., 2010).

Scott et al. (2003) outlined nine principles of Universal Design for Instruction and provided some strategies that can be implemented in postsecondary education including: (a) equitable use (accessibility of online notes and assistive technologies needed to study notes), (b) flexibility in use (providing different instructional methods such as visual outline, group activities, or web board based discussions), (c) simple and intuitive (providing clear and accurate information in terms of exam performance and grading for assignments), (d) perceptible information (providing accessible learning materials through traditional copy and in digital format with proper technological supports such as screen reader and text enlarger), (e) tolerance for error (option of turning in project components separately for constructive feedback and providing online practice exercises), (f) low physical effort (allowing students to use a word processor for writing and editing papers or essay exams), (g) size and space for approach and use (using circular seating arrangements in a small class to facilitate interactions and discussions), (h) a community of learners (fostering communication among students in and out of class by structuring study groups and/or email lists), and finally (i) instructional climate (providing a statement in the class syllabus in terms of respecting diversity and disability supports).

Lombardi and Murray (2011) also introduced an instrument, the Expanding Cultural Awareness of Exceptional Learners (ExCEL), to examine and compare attitudes toward inclusive instruction held by university faculty members. The ExCEL survey was modified and renamed the Inclusive Teaching Strategies Inventory (ITSI) to examine attitudes toward and actions associated with inclusive instruction based on UD principles in terms of six constructs that include (a) multiple means of presentation (providing small group work, peer-assisted learning, and hand-on activities), (b) inclusive lecture strategies (repeating student questions to the class before answering and periodically summarizing key points throughout the lecture), (c) accommodations (providing specific accommodations to support students' needs), (d) campus resources (improving disability awareness and use of the disability services office personnel through website and e-newsletters), (e) inclusive assessment (flexible response options on exams and flexible assignment deadlines), and finally (f) accessible course materials (use of a course website and submission of course assignments through online formats) (Lombardi et al., 2011). The studies mentioned above are examples illustrating the strategies of inclusive instruction based on the concept of universal design developed by educators and other professionals.

Inclusive Postsecondary Education in Taiwan

The first postsecondary admission measure in Taiwan was the Examination-free Admission System to Colleges for Blind and Deaf Students, which was established in 1963 and was revised two times in 1968 and 1984 (Ho, 2004). An all-inclusive special admission measure for postsecondary students with disabilities, the Further Education Guidance Measures for Students with Physical and Mental Disabilities after Compulsory Education, was eventually passed in 2002. While educational opportunities and rights for Taiwanese postsecondary students with disabilities have been enacted and protected through legislation, a limited number of studies were conducted to examine how postsecondary faculty members perceive inclusive instruction. The primary related studies were conducted to describe inclusive instruction system, national legislation, and relevant policy

in Taiwan K-12 and higher education (Ho, 2004; Lin, 2015; Wu, 2007), to examine perceptions that college students with disabilities have toward the quality of assistive technology services they received (Ko, 2015), and to describe the transitional challenges from college to workplace transition faced by students with disabilities (Wang & Hua, 2015). While the results of those studies provide valuable information in relation to inclusive education in Taiwan, there is limited information in terms of inclusive instruction based on the perspectives of postsecondary faculty members, who are considered to be the primary means of making inclusive instruction achievable in postsecondary settings.

Perceptions toward Disability Issues

Possessing the proper knowledge of disability and related issues would be helpful for university faculty members in order for them to build a more inclusive learning environment. To meet the objectives of the present study, four disability knowledge and related perceptions held by Taiwanese university faculty members were examined including: disability legal knowledge, accommodation policy, disability etiquette, and characteristics of students who have disabilities.

Legal Knowledge. The Examination-free Admission System to Colleges for Blind and Deaf Students established in 1963 is considered to be the first admission measure for postsecondary Taiwanese students with disabilities (Ho, 2004). Public education for all Taiwanese students with disabilities was not available until the passage of the Special Education Act of 1984. The Regulation for Recruitment and Counseling Service for Postsecondary Students with Disabilities was passed in 2000 and was revised in 2016, and it is considered to be one of the most influential regulations for supporting postsecondary students with disabilities in Taiwan (Taiwan Ministry of Education, 2018). A comprehensive system for serving and supporting postsecondary students with disabilities is outlined, including: defining the objectives of recruiting students with disabilities and providing funding and counseling services. It also requires school faculty members who are responsible for supporting students with disabilities to attend disability training sponsored by governmental agencies.

Accommodation Policy. Availability of reasonable accommodations (e.g., modifications or adjustments of courses materials) is considered to be one of the most important elements for students with disabilities to be integrated into and to succeed in higher education (Kim & Lee, 2016). For example, some researchers have indicated that a lack of adaptive aids and limited accessibility to buildings and grounds were regarded as major barriers for college students with disabilities (West et al., 1993). The traditional modes of instruction and testing (e.g., lecture, and multiple choice exams) may not be appropriate when measuring learning outcomes and academic performance of non-traditional students as well (Cook et al., 2009). College faculty members may have concerns that providing reasonable accommodations for students with disabilities is regarded as changing course contents, lowering academic standards, or causing feelings of unfairness from students without disabilities (Houck et al., 1992; Satcher, 1992). Thus, being familiar with the issue of reasonable accommodation and knowing where to acquire proper supports from the institution would be helpful in solving concerns held by faculty members.

Disability Etiquette. Cook and colleagues (2009) mentioned that college students with disabilities should have equal opportunities acquiring their education in an environment of respect (e.g., faculty members use person first language and maintain the confidentially of their students with disabilities). However, negative attitudes and stereotypes toward college students with disabilities held by peers and faculty members have been considered to be major barriers that prevent full integration in higher education (Abu-Hamour, 2013; May & Stone, 2010). Such attitudes and stereotypes of college faculty would have direct influence on the performance of students with disabilities (Houck et al., 1992). Faculty members may help students reduce their anxiety by acknowledging strengths and areas of need, including a disability statement in syllabi, and inviting students to discuss their needs in person (Connor, 2012; Izzo & Murray, 2003).

Disability Characteristics. Researchers found that college faculty members might have hierarchal attitudes toward students with certain disabilities such as mental health disabilities and learning disabilities (Sniatecki et al., 2015) or psychiatric disabilities (Brockelman et al., 2006) especially if they have limited experiences in interacting with students who have these particular disabilities. Other researchers found that college faculty members may have limited knowledge regarding the characteristics and learning needs of students with disabilities, such as learning disabilities, ADHD, psychiatric disabilities, and chronic illness (Cook et al., 2009). Therefore, possessing a limited amount of knowledge about characteristics and needs of students with certain disabilities would be considered a barrier for both faculty members and students with disabilities.

Overall, researchers from the United States, Canada, and Spain have examined and compared attitudes toward and actions associated with inclusive instruction among faculty members in postsecondary education (Lombardi et al., 2011; Lombardi et al., 2013; Lombardi et al., 2015). However, a limited number of studies have been conducted to examine similar issues in Taiwan. Therefore, the purpose of this study was to examine whether inclusive instruction principles are being established based on the inclusive attitudes and actions of Taiwanese university faculty members who have an essential role in ensuring inclusive postsecondary education for students with disabilities. Two research questions guided this study: (a) what are the differences between attitudes toward and actions associated with inclusive instruction among Taiwanese University faculty members, and (b) what are the perceptions and understandings of Taiwanese university faculty members toward the issues of disability legal knowledge, accommodations policy, disability etiquette, and disability characteristics?

Methods

Participants

A public university in central Taiwan was selected to recruit research participants to represent Taiwanese perspectives of university faculty members. The total enrollment of this teaching-oriented university was approximately 16,200 students who sought associate bachelor, bachelor's, and master's degrees in Fall 2017. There were 143 students identified with a primary disability when the study was conducted (about 0.9% of the student population). The majority of students with disabilities were identified as having hearing impairments (n = 36), followed by physical disabilities (n = 28), learning disabilities (n = 21), emotional disabilities (n = 12), intellectual disabilities (n = 12), and Autism (n = 11).

The university employed 405 full-time and 632 part-time or seasonal faculty members at the time the study was conducted. From this population, the researchers received responses from 23.2% of the full-time teaching faculty members (n = 94) and 3.2% from the part-time teaching faculty members (n = 20). A total of 45 (40%) were males and 69 (60%) were females. The participants included 15 (13.2%) professors, 58 (50.9%) associate professors, 31 (27.2%) assistant professors, and 10 (8.8%) lecturers. They represented different academic disciplines: 35 (30.7%) from the college of business; 35 (30.7%) from the college of information and distribution science; 20 (17.5%) from the college of health; 13 (11.4%) from general education and athletics; 7 (6.1%) from the college of languages; and 4 (3.5%) from the college of design.

Measures

Inclusive Teaching Strategies Inventory (ITSI). The ITSI was developed by Lombardi and revised several times (Lombardi, 2010; Lombardi et al., 2015; Lombardi & Murray, 2011). The ITSI contains 33 items that measure six constructs in relation to attitudes toward and actions associated with inclusive instruction by university faculty members (see Appendix A). These six constructs are: (a) Accommodations (ACC), (b) Accessible Course Materials (ACM), (c) Course Modifications (CMS), (d) Inclusive Lecture Strategies (ILS), (e) Inclusive Classroom (ICM), (f), and Inclusive Assessment (IAT). There are two response types for all items. The attitude response, ranges from 1 (*strongly disagree*), 2 (*disagree*), 3 (*somewhat disagree*), 4 (*somewhat agree*), 5 (*agree*), to 6 (*strongly agree*), and is used to measure self-reported attitudes/beliefs toward inclusive instruction. As for the action response, it ranges from 1 (*never*), 2 (*sometimes*), 3 (*usually*), to 4 (*always*) to measure actions/behaviors toward inclusive instruction.

The Accommodations construct contains eight items to examine how college faculty members perceive and respond to accommodation requests from students with disabilities. The Accessible Course Materials construct contains four items related to utilization of flexible and diverse methods to assist students accessing course materials and submitting assignments. The third construct, Course Modifications, contains four items that can be used to examine whether faculty members are willing to change course assignments and/or requirements to meet the needs of students with and without disabilities. The Inclusive Lecture Strategies construct contains four items that are used to examine utilization of different inclusive teaching strategies such as repeating and summarizing key questions or points. The Inclusive Classroom construct has nine items related to flexibility of utilization of technology and various instructional formats. Finally, the Inclusive Assessment construct has four items that examine flexibility of adoption of non-traditional examinations and flexible assignment deadlines.

The ITSI has been employed in several studies and it is considered a reliable instrument. For example, Lombardi and colleagues (2011) used the ITSI in a study with university faculty members and yielded acceptable Cronbach's alpha values of .70 to .89 on six constructs for the attitude subscale and .72 to .85 for the action subscale. Gawronski and colleagues

(2016) reported that their study produced appropriate overall Cronbach alpha reliability values of .88 on the attitude subscale and .90 on the action subscale. Content, convergent, and discriminant validity of ITSI were confirmed (Lombardi & Murray, 2011). In the present study, an internal consistency reliability analysis of the six constructs of the attitude subscale ranged from .70 to .82 and on the action subscale it ranged from .70 to .86. The overall Cronbach's alpha values for the entire attitude subscale were .92, and .91 for the entire action subscale.

Since the ITSI was not implemented in any Asian contexts before, a confirmatory factor analysis (CFA), including convergent and discriminant validities, was conducted to examine the consistency of the instrument. Both validities mentioned above were examined through comparison of factor loadings, composite reliability (CR), and average variance extracted (AVE). While several references provide different criteria for measuring CFA, the researchers set the criteria of convergent validity to at least .50 for factor loadings, .70 for CR, and .50 for AVE on constructs (Fornell & Larcker, 1981; Hair et al., 2009). Results indicated only four items in the attitude subscale and another 4 items in the action subscale did not meet minimum criteria of factor loadings (see Appendix A).

Faculty Priorities and Understanding Regarding College Students with Disabilities Scale (FPUSD). The FPUSD was developed by Cook and colleagues in order to obtain a better understanding of how college faculty members perceive their students with disabilities (Cook et al., 2009). The FPUSD contains 37 items that are resided within six constructs. These six constructs are: (a) legal knowledge, (b) accommodations policy, (c) accommodations willingness, (d) disability etiquette, (e) disability characteristics, and (f) universal design for instruction. Each item has two rating scales: importance (idea or behavior) and agreement (general climate or practices). The importance response ranges from 1 (*very unimportant*), 2 (*unimportant*), 3 (*important*) to 4 (*very important*) that represents an idea or behavior that participants feel on the importance subscale. As for the agreement response, it ranges from 1 (*strongly disagree*), 2 (*disagree*), 3 (*agree*) to 4 (*strongly agree*) for the purpose of reflecting general climate and practice regarding disability related issues on campus.

To avoid repetitive questions from the ITSI (accommodation willingness and universal design for instruction), four constructs with 26 items were preserved from the original FPUSD including: (a) Legal Knowledge, (b) Accommodations Policy, (c) Disability Etiquette, and (d) Disability Characteristics (see Appendix B). The Legal Knowledge construct contains four items to examine knowledge of the legal rights of students with disabilities. The Accommodations Policy construct contains ten items to examine knowledge about accommodations. The Disability Etiquette construct contains five items to examine knowledge of people first language and stereotypes toward students with disabilities. The Disability Characteristics construct contains seven items to examine knowledge regarding students with specific disabilities.

Cook et al. (2009) used the FPUSD in a study and produced acceptable Cronbach's alpha values from .76 to .97 for importance ratings on six constructs with an overall value of .95 for the entire importance subscale. Results for agreement ratings on six constructs also yielded adequate Cronbach's alpha values that ranged from .72 to .94 with an overall value of .96 on the agreement subscale. Content validity was confirmed by professionals who are knowledgeable and have experiences with the education of college students with disabilities. In the present study, Cronbach's alpha values ranged from .87 to .93 for importance ratings on four constructs with a .96 for the entire importance scale. Agreement ratings on four constructs also yielded Cronbach's alpha values of .76 to .88 with an overall value of .93. Since FPUSD was not used in any Asian countries as well, a CFA was conducted based on the criteria mentioned above in the ITSI. The results indicated only one item from the agreement subscale did not meet the minimum criteria of factor loadings (see Appendix B).

Procedures

Both surveys were translated from English to Mandarin prior to data collection through the double translation technique (Brislin et al., 1973; Chen et al., 2002). This translation technique requires professionals with proper backgrounds to examine and translate surveys in order to assure that translations are accurate and appropriate. All items related to disability laws and regulations were changed based on Taiwan's legal responsibilities regarding students with disabilities. A recruitment email containing a description of the study with an informed consent statement was sent out to all teaching faculty members. Participants were unable to access surveys if they did not consent. Hardcopies of surveys and relevant documents were also available to faculty members upon requests.

Data Analysis

To answer question one, the item mean and standard deviation of two subscales (attitude and action) of the ITSI were computed. Cronbach's alpha values

of the six constructs of the two subscales of the ITSI were calculated as well. The ITSI does not provide a neutral midpoint in order to push participants to pick either agree or disagree for all items under the attitude subscale. Since utilizing or not utilizing midpoints are both acceptable (Tsang, 2012), the researchers set a midpoint at 3.5 to differentiate negative and positive attitudes/beliefs toward inclusive instruction. The midpoint was set at 2.5 for all items under the action subscale to identify if participants endorse inclusive instruction. The higher mean scores of each item residing in the attitude (falling near [4] somewhat agree) and the action subscale (falling near [3] usually) means more positive attitudes toward and actions associated with inclusive instruction.

Later, responses of attitude and action subscales were re-categorized in order to conduct equal comparisons. A series of chi-square analyses regarding the proportion of responses made by participants was conducted. This allowed for an examination of the discrepancies between attitudes toward and actions associated with inclusive instruction. Furthermore, extending the work of Lombardi et al. (2011), "the two extremes on the attitude response scale (i.e., yes/no) to the proportion of responses by action for each subscale" (p. 256) were calculated to confirm whether participants who endorsed inclusive instruction also implement it.

For question two, the item mean and standard deviation of each item resided in two subscales (importance and agreement) of the FPUSD was calculated. The researchers followed the work of Cook et al. (2009) to classify each items into three categories based on rating results: high-importance and high-agreement (*high/high*), high-importance and low-agreement (*high/low*), and low-importance and low-agreement (*low/low*). The cutoff points was set at 75% of the proportion for participants who rated 3 (important/agree) and 4 (very important/strongly agree) for high importance and high agreement. The *high/high* items represent that our participants feel those issues are important and addressed properly. The *high/low* items represent that the participants feel those issues are important but are not addressed properly. The *low/low* items mean that participants do not feel those issues are important and addressed properly.

Results

Attitudes and Actions Regarding Inclusive Instruction

The results from the ITSI (see Appendix A) show that the mean scores of the attitude subscale across six constructs ranged from 4.65 (Course Modifications) to 5.13 (Inclusive Assessment). This finding revealed that the participants hold positive attitudes toward inclusive instruction in general, ranging from *somewhat agree to agree*. However, the mean scores of the action subscale across six constructs ranged from 2.45 (Inclusive Assessment) to 2.83 (Accessible Course materials). This showed that participants did not implement inclusive instruction techniques on a regular basis, ranging from *sometimes to usually*.

The attitude and action responses were later re-categorized to conduct equal comparisons. For the attitude subscale responses, (1) *strongly disagree* and (2) *disagree* were recorded as a *no* response. Responses of (3) *somewhat disagree* and (4) *somewhat agree* (4) were recorded as *maybe*. Responses of (5) *agree* and (6) *strongly agree* were recorded as *yes*. For the action subscale, response of (1) *never* was recorded as *no*. Response of (2) *sometimes* was recorded as *maybe* and the responses of (3) *most of the time* and (4) *always* were recorded as *yes*. The results of a series of chi-square equal comparisons (see Table 1) showed that participants had positive attitudes toward inclusive instruction as indicated by a high proportion of responses under the "yes" column that ranged from 60% (Course Modifications) to 80% (Inclusive Assessment). Participants also endorsed their actions regarding inclusive instruction as indicated by the high proportion of responses under the "yes" column that ranged from 47% (Inclusive Assessment) to 64% (Accessible Course Materials).

Results of chi-square analyses also indicated statistical significance for participants having more positive attitudes toward inclusive instruction across ACC ($X2(2, N=90) = 83.60$, $p < .05$), ACM ($X2(2, N=87) = 67.53$, $p < .05$), CMS ($X2(2, N=68) = 96.77$, $p < .05$), ILS ($X2(2, N=80) = 81.15$, $p < .05$), ICM ($X2(2, N=87) = 77.39$, $p < .05$), and IAT ($X2(2, N=91) = 72.97$, $p < .05$) in the attitude subscale compared with all six constructs in the action subscale. The effect sizes for chi-square analyses showed that they exceeded Cohen's (1988) conventional criteria ($d = .80$) for a large effect (see Table 1).

Furthermore, the researchers followed the work of Lombardi et al. (2011) to compare the two extremes on the attitude response scale (i.e., *yes/no*) to the proportion of action responses for each individual subscale (see Table 2). Responses in the action subscale were also categorized as *yes* (positive), *maybe* (neutral) and *no* (resistant). Results indicated that the majority of participants who endorsed positive attitudes toward inclusive instruction also implemented it. However, discrepancies were greater in Accommodations (ACC) and Inclusive Assessment (IAT).

For example, about 58 (64%) of 90 participants who had positive attitudes toward ACC endorsed their actions in ACC. In addition, only 53 (58%) of 91 participants who had positive attitudes toward IAT endorsed their actions in terms of IAT.

Perceptions toward Disability Issues

The results indicated that participants perceived all of these four disability related issues of legal knowledge, accommodations policy, disability etiquette, and disability characteristics as being important. However, they tended to agree that the learning needs of students with certain disabilities might not be addressed enough (see Appendix B).

High-important and high-agreement items. Results indicated that all 26 items (100%) across four constructs in the importance subscale of the FPUSD were rated as "high-importance" items. This indicated that participants perceived all of the issues examined regarding students with disabilities were important. Of those 26 items, 18 items (69%) were rated as both high-importance and high-agreement items. Among these 18 items, two items were under Legal Knowledge (50%), nine were under Accommodations Policy (90%), four were under Disability Etiquette (80%), and three were under Disability Characteristics (43%). The results showed that participants believed that the majority of issues were important and addressed properly especially in terms of issues of Accommodations Policy and Disability Etiquette (See Appendix B).

High-important and low-agreement items. Among 26 items, eight items (31%) were rated as high-importance and low agreement items. Two items resided in Legal Knowledge (50%), one resided in Accommodations Policy (10%), another one resided in Disability Etiquette (20%), and four resided in Disability Characteristics (57%). The results indicated that while participants perceived Legal Knowledge and Disability Characteristics important, related issues might not be addressed properly (See Appendix B). Most significantly, the majority of participants reported that they did not perceive that characteristics and learning needs of students with particular disabilities were addressed appropriately (Disability Characteristics).

Discussion

Attitudes and Actions Regarding Inclusive Instruction

Results of the present study indicated that the majority of participants supported inclusive instruction across all six constructs of the ITSI attitude subscale. However, for participants who supported inclusive instruction attitudinally, they did not endorse all of the inclusive instructional techniques. For example, while Inclusive Assessment (80%) and Accommodations (79%) were rated as the top two constructs in the attitude subscale, they were ranked (47%) and (51%), respectively, as the bottom two constructs under the action subscale (see Table 1). The results are consistent with prior research that used the ITSI, which indicated that there were discrepancies between attitudes toward and actions associated with inclusive instruction due to the possibility of disability-related experiences and prior disability training (Lombardi et al., 2011; Lombardi et al., 2015).

Reasons for these discrepancies between attitude and action in the present study could also be explainable by examining the results of some items residing in different constructs. Regarding Accommodations under the action subscale, participants rated low on the issues of allowing technology usage on tests (item 1), providing hard copies of lecture notes or outlines (item 2), and allowing digitally recorded class sessions (item 5). A few potential reasons can be used to explain these phenomena when inspecting highly ranked items of one, two, and three that resided in Accessible Course Materials construct under action subscale. For example, the applications of digitalization of course materials and utilization of online teaching techniques could be possible reasons to explain why participants did not prefer to provide hard copies of their course materials or to have their courses recorded digitally. Also, a possible reason of lower rankings on technology usage on tests (item 1) may simply reflect that there may be limited needs for technology usage when students take tests.

Regarding Inclusive Assessment under the action subscale, participants did not endorse strongly allowing students to demonstrate their knowledge and skills in ways other than traditional tests (item 1), being flexible with assignments deadlines (item 3), and permitting flexible response options on exams (item 4). Several possible reasons may explain these issues as well. Since those items emphasize the usage of flexible inclusive assessment strategies for "any" students, participants might simply reflect that they have different assessment methods for students with and without disabilities. In fact, this is not uncommon to find that instructors may have different strategies to accommodate needs of students with and without disabilities (Lovett, 2010; Orr & Hammig, 2009). Secondly, requirements and standards for different academic disciplines may also be associated with decisions of utilization of inclusive assessments (Dallas et al., 2014). All of these factors may have influence

on the practices of assessment strategies; thus, preventing full implementation of inclusive instruction.

Additionally, two items related to campus accessibility (item 5) and disability support (items 6) that resided in the Inclusive Classroom construct under ITSI action subscale were ranked low. However, it might not mean that participants were not aware of those issues. An amendment to the People with Disabilities Rights Protection Act of 2007 and an amendment to the Building Code and Regulations of 2009 clearly require that public buildings and gathering places and school facilities be accessible to people with and without disabilities (Laws and Regulations Database of the R. O. C., Taiwan, 2018). Therefore, it is possible that participants might simply expect that their classrooms should be free from any physical barriers.

Finally, while the majority of participants did not include a disability statement in their syllabi (item 6 of Inclusive Classroom), they endorsed making a verbal statement in class regarding disability related support issues (item 7). Unlike schools from the United States that strongly recommend including a disability statement in all syllabi (Habanek, 2005; Passman & Green, 2009), the majority of universities in Taiwan do not have this mechanism to remind students about availability of disability services provided by the institution and the instructor. Therefore, this is an area that should be improved upon in order to remind students with disabilities about the availability of supports in a more convenient way.

In conclusion, the results from the ITSI attitude and action subscales clearly indicated that there were discrepancies between attitudes toward and actions associated with inclusive instruction, especially in terms of Inclusive Assessment and Accommodations constructs. Participants were also unfamiliar with some issues, such as surveying physical barriers and including a disability statement in the syllabus that resided in Inclusive Classroom construct. Therefore, the Office of Disability Services (ODS) and related service providers should function as an agency to create cross-campus collaborations between the Office of Academic Affair and the Office of Student Affair so that questions and concerns from faculty members in terms of reasonable accommodations, academic standards, and legal issues can be solved effectively and efficiently (Harbour, 2009). Most importantly, ODS should create partnerships across university divisions, which would be beneficial to both faculty members and students in relation to informing all stakeholder of inclusive instruction practices and fostering disability policy for success in a more clearer and effective manner (Scott et al., 2016).

Perceptions of Disability Issues

The results of the second research question were encouraging because participants showed positive reactions toward all of the four issues under the importance subscale (Appendix B). However, results also indicated that participants tended to agree that Legal Knowledge and Disability Characteristics were two primary issues that might not be addressed enough in their institution. These findings are consistent with the previous study conducted by the FPUSD developers (Cook et al., 2009). For example, the results of their study indicated that while their American participants believed Legal Knowledge and Disability Characteristics were important, these two issues were not addressed thoroughly due to a lack of disability-specific information available to faculty.

Since the results of the present study showed that only eight items were rated as high-importance and low agreement (*high/low*), the following discussions emphasizes the results of these items under the FPUSD scale. Regarding Legal Knowledge under the agreement subscale, two items (item 1 and item 3) were rated as low agreement statements ($\leq$75%). This indicated that participants were not familiar with issues of educational access provisions of the Special Education Act and the processes that students undergo to document their disabilities (see Appendix B). While the results showed potential improvement areas, it is understandable that not all faculty members can be familiar with disability legal processes such as intake procedures, eligibility of disability services, and disability documentation especially if they did not receive proper trainings and were not responsible for supporting students with disabilities directly (Murray et al., 2009; Thompson et al., 1997).

Secondly, the rating results of Disability Characteristics under the agreement subscale clearly indicated that participants were not familiar with characteristics and learning needs of students with ADHD (item 3), psychiatric disabilities (item 4), visual impairments or who are blind (item 6), and with chronic illness (item 7). These findings paralleled the results from Cook and colleagues (2009) that a minority of university faculty members understood the learning needs and characteristics of students with particular disabilities. Therefore, it is understandable that participants may not be knowledgeable about students with various disabilities especially when they have limited opportunities in interacting with students with such disabilities.

Finally, the rating results of item 8 of Accommodations Policy under the agreement subscale indicated that participants may have difficulties in supporting students who are not satisfied with accom-

modations provided to them. In addition, the results of item 5 of Disability Etiquette under the agreement subscale paralleled outcomes found on items 6 in Inclusive Classroom under the ITSI action subscale, which illustrated that participants did not include a disability statement in their syllabi. While including a disability statement in syllabi can be implemented easily, solving concerns of students with disabilities in terms of inadequate accommodations may require professional support from the institution (Zhang et al., 2010). Without professional interventions, difficulties encountered by students with disabilities may not be solved in a timely manner, which may cause further challenges, such as withdrawing from school (Anastopoulos & King, 2015; Cai & Richdale, 2016).

In summary, the above information indicated that the school should put emphasis on advertising and advocating disability laws and relevant services to support its faculty members through disability trainings and/or to provide relevant information on the main websites of the school and Office of Disability Services (ODS). This would be helpful for both faculty members and students with disabilities in obtaining necessary information and support, such as disability legal requirements, reasonable accommodations, and appropriate resources to assist students with particular disabilities in a timely manner when they have a need.

Implications for Practice

The results of the study provide suggestions to improve inclusive instruction techniques and disability knowledge among Taiwanese university faculty members. The results illustrated that the majority of participants did not endorse all of the inclusive instructional techniques and were not familiar with characteristics of students with certain disabilities. Some researchers have mentioned that whether faculty members are willing to provide reasonable accommodations is largely dependent on supports from their institutions (Zhang et al., 2010). Therefore, the Office of Disability Services (ODS) should have a significant role in supporting faculty members by providing inclusive instruction workshops based on UDI principles, disability trainings, and posting updated disability information on its website regularly to remind faculty members and students about accommodations and the availability of disability resources (Meeks & Jain, n.d.; Murray et al., 2011; Sniatecki et al., 2015; Vita, 2001).

The findings from both surveys clearly indicated that the majority of participants did not include a disability statement in their syllabi. Providing it in syllabi would remind students about the willingness of providing reasonable accommodations from their teachers, which would also be considered motivational by students with disabilities because of a high level of support from their lecturers (Izzo & Murray, 2003). Since the majority of Taiwan universities do not have this mechanism to support students with disabilities, the Office of Disability Services (ODS) should suggest that the board of trustees and/or administration to implement this policy campus wide. This may also be considered a reminder to both faculty members and students regarding disability services and resources.

Limitations and Future Research

The results of this study must be regarded in light of several limitations, which could also provide a few suggestions for future research. First, participants were from one university with a low response rate hindering generalizability. However, researchers from the United States who conducted similar studies also obtained low response rates and from one institution (Lombardi & Murray., 2011; Sniatecki et al., 2015). While the primary reasons for choosing not to participate in the study was unclear, it may be appropriate to conduct workshops or to deliver information in relation to inclusive instruction and disability awareness (such as print resources, online e-newsletters, and websites resources) prior to administering surveys (Lombardi et al., 2013) in order to increase the participation rate.

Socially desirable responses are always considered a limitation when collecting and analyzing self-report attitudinal data (Krosnick et al., 2005; Lombardi et al., 2013). Future researchers could conduct similar studies by adopting a small-scale face-to-face interview for the purpose of obtaining detailed information. This could be conducted by the Office of Disability Services (ODS) during faculty disability trainings and workshops in order to understand what challenges prevent them from implementing inclusive instruction or what kinds of support they need from ODS (Lombardi et al., 2015).

The results of the study may have been different if researchers would conduct similar research to examine perspectives of students with disabilities (Lyman et al., 2016; Timmerman & Mulvihill, 2015). It is highly possible that students who are living with disabilities may perceive services and accommodations provided by their schools differently. How students with disabilities perceive their teachers and counterparts without disabilities would influence their integration into higher education settings. Therefore,

exploring perspectives of inclusive instruction and disability awareness climates on campuses from the perspectives of students with disabilities is important as well (Gawronski et al., 2016).

Finally, the two instruments used in the present study were developed by researchers from the United States. It is important to note that the educational systems, disability services, and cultural differences may limit utilization of some items of these two measures in different cultural contexts. For example, there were few items that did not meet minimum criteria of factor loadings on from both instruments (see Appendix A & B). Therefore, it is recommended that future researchers from different countries who are interested in studying similar issues examine, incorporate, or modify items from these two instruments to meet local educational standards. The results of relevant studies would be helpful to examine if an international scale can be developed to support research of inclusive instruction in different cultural contexts.

Conclusion

This study examined attitudes toward and actions associated with inclusive instruction as well as disability awareness among Taiwan university faculty members. The findings from this study identify several improvable areas in terms of inclusive instruction practices and disability awareness that should be addressed through collaborations across school divisions. The findings also help school administrators and policymakers to realize the importance of evaluating whether hard-negotiable academic standards, testing methods, and teaching strategies should be more flexible. Finally, while different countries have their own educational cultures and systems, strategies of inclusive instruction mentioned in the ITSI instrument provide a great resource for university faculty members to reference and incorporate their teaching methods based on the concept of universal design. This would ultimately improve their disability knowledge and services to support their students with disabilities and to build a respective learning environment for all stakeholders.

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Table 1

Frequencies of Attitudes and Actions by Subscale and Results of Chi Square Analyses

Subscale	Attitude			Action			X^2	Cohen's *d*
	No	Maybe	Yes	No	Maybe	Yes		
ACC	0(0%)	24(21%)	90(79%)	18(16%)	38(33%)	58(51%)	83.60**	1.54
ACM	0(0%)	27(24%)	87(76%)	6(5%)	35(31%)	73(64%)	67.53**	1.30
CMS	1(<1%)	45(40%)	68(60%)	20(18%)	32(28%)	62(54%)	96.77**	1.73
ILS	0(0%)	34(30%)	80(70%)	12(11%)	32(28%)	70(61%)	81.15**	1.47
ICM	0(0%)	27(24%)	87(76%)	18(16%)	34(30%)	62(54%)	77.39**	1.46
IAT	0(0%)	23(20%)	91(80%)	15(13%)	46(40%)	53(47%)	72.97**	1.48

Note. ACC: Accommodations; ACM: Accessible course materials; CMS: Course modifications; ILS: Inclusive lecture strategies; ICM: Inclusive classroom; IAT: Inclusive assessment. $df = 2$ for all chi square tests. ** $p < .001$.

Table 2

Positive and Negative Attitude Endorsements by Specified Action

	Attitudes											
	ACC		ACM		CMS		ILS		ICM		IAT	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Actions												
Yes (Positive)	58 (64%)	-	73 (84%)	-	62 (91%)	-	70 (88%)	-	62 (71%)	-	53 (58%)	-
Maybe (Neutral)	32 (36%)	-	14 (16%)	-	6 (9%)	-	10 (12%)	-	25 (29%)	-	38 (42%)	-
No (Resistant)	-	-	-	-	-	1 (100%)	-	-	-	-	-	-

Note. ACC: Accommodations; ACM: Accessible course materials; CMS: Course modifications; ILS: Inclusive lecture strategies; ICM: Inclusive classroom; IAT: Inclusive assessment.

Appendix A

Item Analysis for the Inclusive Teaching Strategies Inventory

	Attitude				Action			
	Mean	SD	Rank	Cronbach's Alpha	Mean	SD	Rank	Cronbach's Alpha
Accommodations	5.11	.79		.76	2.51	.94		.75
1. Allow students with documented disabilities to use technology (e.g., laptop, calculator, spell checker) to complete tests even when such technologies are not permitted for use by students without disabilities	5.14	.70	3		2.10	.70	7	
2. Provide copies of my lecture notes or outlines to students with documented disabilities.	4.76	.87	8		2.08	.88	8	
3. Provide copies of my overhead and/or PowerPoint presentations to students with documented disabilities.	5.41*	.64	2		2.61	.94	3	
4. Allow flexible response options on exams (e.g., change from written to oral) for students with documented disabilities.	4.89	.84	6		2.57	1.03	4	
5. Allow students with documented disabilities to digitally record (audio or visual) class sessions.	4.78	.78	7		2.46	.97	6	
6. Make individual accommodations for students who have disclosed their disability to me.	5.14	.85	4		2.63*	1.01	2	
7. Arrange extended time on exams for students who have documented disabilities.	5.61*	.49	1		3.04*	.81	1	
8. Extend the due dates of assignments to accommodate the needs of students with documented disabilities.	5.11	.69	5		2.55	.71	5	
Accessible course materials	5.07	.82		.70	2.83	.85		.70
1. Use a course website (e.g., eLearning system or moodle)	5.39	.71	1		3.08	.83	1	
2. Put my lectures notes online for ALL students (on eLearning system or moodle).	5.01	.82	3		2.73	.61	3	
3. Post electronic versions of course handouts.	5.13	.75	2		2.84	.92	2	
4. Allow students flexibility in submitting assignments electronically (e.g., mail attachment, digital drop box).	4.75	.87	4		2.66	.93	4	
Course modifications	4.65	.97		.74	2.58	1.00		.86
1. Allow a student with a documented disability to complete extra credit assignments.	4.86	1.02	1		2.55	.97	3	
2. Reduce the overall course reading load for a student with a documented disability even when I would not allow a reduced reading load for another student.	4.68	.96	3		2.51	1.09	4	
3. Reduce the course reading load for ANY student who expresses a need.	4.37	1.08	4		2.61	1.01	2	
4. Allow ANY student to complete extra credit assignments in my course(s).	4.70*	.74	2		2.64	.94	1	

(*Table continues*)

(*Table continued*)

Inclusive lecture strategies	4.94	.90		.70	2.75	.93		.71
1. Repeat the question back to the class before answering when a question is asked during a class session.	5.18	.77	2		3.27	.67	1	
2. Begin each class session with an outline/agenda of the topics that will be covered.	5.68	.50	1		2.98	.89	2	
3. Summarize key points throughout each class session.	4.66	.84	3		1.91	.75	4	
4. Connect key points with larger course objectives during class sessions.	4.23	.74	4		2.82	.81	3	
Inclusive classroom	5.05	.82		.82	2.58	.96		.77
1. Use technology so that my course material can be available in a way of formats (e.g., podcast of lecture available for download, course readings available as mp3 files)	4.96	.79	7		2.07*	.70	7	
2. Use interactive technology to facilitate class communication and participation (e.g., Discussion Board)	4.60	.76	8		2.65	.91	6	
3. Present course information in multiple formats (e.g., lecture, text, graphics, audio, video, hands-on exercises).	5.53*	.58	2		3.01	.82	3	
4. Create multiple opportunities for engagement.	5.20	.68	3		2.82	.70	4	
5. Survey my classroom in advance to anticipate any physical barriers	4.23	.80	9		1.88*	.82	8	
6. Include a statement in my syllabus inviting students with disabilities to discuss their needs with me.	5.13	.80	4		1.65	.84	9	
7. Make a verbal statement in class inviting students with disabilities to discuss their needs with me.	5.07	.74	6		2.72	.86	5	
8. Use a variety of instructional formats in addition to lecture, such as small groups, peer assisted learning, and hands on activities.	5.66	.51	1		3.11	.69	2	
9. Supplement class sessions and reading assignments with visual aids (e.g., photographs, video, diagrams, and interactive simulations).	5.11	.75	5		3.29	.68	1	
Inclusive assessment	5.13	.80		.71	2.45	.85		.72
1. Allow students to demonstrate the knowledge and skills in ways other than traditional tests and exams (e.g., written essays, portfolios, journals).	5.00	.86	3		2.05	.67	4	
2. Allow students to express comprehension in multiple ways.	5.35	.70	1		2.81	.77	1	
3. Be flexible with assignment deadlines in my course(s) for ANY student who expresses a need.	5.25	.79	2		2.47	.86	2	
4. Allow flexible response options on exams (e.g., change from written to oral) for ANY student who expresses a need.	4.91	.78	4		2.46	.91	3	
Overall	5.01	.85		.92	2.60	.94		.91

Note. The attitudes response ranges from 1 (strongly disagree) to 6 (strong agree); Actions response ranges from 1 (never) to 4 (always). Factor loadings of less than .5 are indicated by an asterisk (*).

Appendix B

Items Analysis for the Faculty Priorities and Understanding Regarding College Students with Disabilities (FPUSD)

Subscale & Items	Importance				Agreement			
	Mean	SD	Cronbach's Alpha	Index (H/L)	Mean	SD	Cronbach's Alpha	Index (H/L)
Legal Knowledge	3.35	.63	.91		3.08	.78	.81	
1. Faculty members understand the educational access provisions of the Special Education Act.	3.32	.66		89% (H)	2.93	.76		69% (L)
2. Faculty members understand that students with disabilities must have physical access to building on campus.	3.40	.66		90% (H)	3.32	.73		86% (H)
3. Faculty members understand the processes that students undergo to document their disabilities.	3.27	.61		91% (H)	3.00	.78		71% (L)
4. Faculty members understand that students with disabilities are not required to disclosure diagnostic and treatment information to course instructors.	3.40	.59		95% (H)	3.06	.81		82% (H)
Accommodations Policy	3.37	.59	.93		3.22	.66	.88	
1. Faculty members understand that students must self-disclose to Student Disability Services their disabling condition to receive accommodations.	3.40	.60		94% (H)	3.24	.63		91% (H)
2. Faculty members understand that they are required to provide reasonable accommodations for students with documented disabilities.	3.40	.63		92% (H)	3.32	.65		89% (H)
3. Faculty members understand that reasonable accommodations are determined on a case by case basis.	3.38	.57		97% (H)	3.27	.55		95% (H)
4. Faculty members understand that reasonable accommodations do not alter the course content or objectives.	3.29	.62		95% (H)	3.22	.65		89% (H)
5. Faculty members understand that reasonable accommodations do not give students with disabilities an unfair advantage.	3.39	.57		96 (H)	3.20	.68		85 (H)
6. Faculty members understand that reasonable accommodations do not require them to lower their academic standards.	3.34	.67		89 (H)	3.10	.76		77 (H)
7. Faculty members understand that reasonable accommodations enable students with disabilities to have the same opportunities as their non-disabled peers.	3.49	.55		97 (H)	3.41	.57		96 (H)
8. Faculty members know what to do when a student is unhappy with the accommodations provided to him or her.	3.28	.57		96 (H)	2.93	.70		74 (L)

(*Table continues)*

9. Faculty members understand why accommodations for students with disabilities are necessary.	3.33	.56		96 (H)	3.19	.58		91 (H)
10. Faculty members' academic freedom permits them to decide how they will provide accommodations for students with disabilities in their courses.	3.41	.51		99 (H)	3.32	.55		96 (H)
Disability Etiquette	3.39	.66	.79		3.22	.80	.80	
1. Faculty members understand that students with disabilities are individuals just like all other students and do not share common personality traits as a function of disability.	3.41	.51		99 (H)	3.39	.59		96 (H)
2. Faculty members use person first language (e.g., "person with a disability" rather than "disabled person)" when speaking about a person with a disability.	3.45	.58		96 (H)	3.38	.61		95 (H)
3. Faculty members do not hold overgeneralized stereotypes about students with disabilities (e.g., disability is a constantly frustrating tragedy, all students with disabilities are brave and courageous, all students with learning disabilities are lazy).	3.47	.55		97 (H)	3.42	.62		93 (H)
4. Faculty members are careful to protect the confidentiality of students with disabilities.	3.43	.70		88 (H)	3.34	.74		86 (H)
5. Faculty members include a statement about the rights of students with disabilities on all course syllabi.	3.19	.85		86 (H)	2.55	.98		53 (L)
Disability Characteristics	3.38	.61	.93		2.75	.90	.76	
1. Faculty members know the characteristics and learning needs of students with learning disabilities.	3.36	.66		91 (H)	3.17	.83		78 (H)
2. Faculty members know the characteristics and learning needs of students with mobility or orthopedic impairments.	3.45	.55		97 (H)	3.15	.81		75 (H)
3. Faculty members know the characteristics and learning needs of students with Attention Deficit/Hyperactivity Disorder (ADHD).	3.36	.65		90 (H)	2.71	.91		51 (L)
4. Faculty members know the characteristics and learning needs of students with psychiatric disabilities.	3.37	.60		96 (H)	2.30	.77		35 (L)
5. Faculty members know the characteristics and learning needs of students who have hearing impairments or who are deaf.	3.34	.59		96 (H)	3.09	.76		77 (H)

(*Table continues)*

(*Table continued)*

6. Faculty members know the characteristics and learning needs of students who have visual impairments or who are blind.	3.38	.58		96 (H)	2.53	.93		43 (L)
7. Faculty members know the characteristics and learning needs of students with chronic illness.	3.38	.60		94 (H)	2.32*	.76		38 (L)
Overall	3.37	.61	.96		3.07	.80	.93	

Note. H/H: Importance Index ≥ 75%, Agreement Index ≥ 75%; H/L: Importance Index ≥ 75%, Agreement Index < 75%. Factor loadings of less than .5 are indicated by an asterisk (*).