Chinese attitudes toward inclusive education: Perspectives of Hong Kong and Macau secondary school teachers, students and parents

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Abstract
This research investigated the attitudes of Chinese students toward inclusive education, by dividing the research into two studies with different subgroups included. Study 1 invited 340 secondary students and 129 secondary teachers from 9 mainstream secondary schools in Hong Kong to participate. The Chinese version of the 16-item Attitudes toward Inclusive Education Scale originally developed by Wilczenski69 was applied. The results were analyzed at item and variable levels. Hong Kong students had significantly more positive attitudes toward inclusive education than their teachers. However, both groups did not show positive attitudes towards inclusive education.

Based on the results of study 1, study 2 tried to cross validate these findings by inviting 135 teachers and 260 students in Macau to participate. As well, study 2 extended the horizon of comparison by inviting 260 parents to participate. They were either the mothers or fathers of the 260 students who participated in study 2. The same scale was applied in study 2 and the results showed that neither the Macau students nor the teachers were particularly positive toward inclusive education. The Macau parents had the more positive attitudes toward inclusive education than the Macau students and teachers. The results from the two studies in Hong Kong and Macau were compared and discussed.

Keywords: Attitudes toward inclusive education scale, Hong Kong, Macau, Teachers, Students, Parents.

Introduction
The principle of inclusive education was introduced to the world in 1994 at the World Conference on “Special Needs Education: Access and Quality” held in Salamanca, Spain66. This issue was emphasized again in the 2000 World Education Forum in Dakar, Senegal. Later on, inclusive education has been “supported by the UN Standard Rules on the Equalization of Opportunities for Persons with Disabilities proclaiming participation and equality for all”68. Based on the Salamanca Statement, inclusive education indicates that “Schools should accommodate all children regardless of their physical, intellectual, emotional, social, linguistic, or other conditions. They should include disabled and gifted children, street and working children, children from remote and nomadic populations, children from linguistic, ethnic or cultural minorities and children from other disadvantaged or marginalized areas or groups”62.

According to Sharma, Loreman and Forlin52, inclusive education has been a worldwide trend. Developed countries such as the USA, UK, Canada and Australia, already have well-established policies to ensure that special needs students are included in mainstream education. Many developing countries have also been trying to establish policies and enact legislation for inclusive education. The rationale for this is that, overall, inclusive education is a strategy for dealing with exclusion and marginalization7.

Benefits for positive attitudes toward inclusion: There have been numerous studies examining the perspectives or attitudes of teachers towards inclusive education over the past two decades (for example, Mdikana, Ntshangase and Mayekiso66 cited literature spanning the past two decades that has supported the concept). There has been evidence to suggest that teachers’ positive views about this practice are pivotal to its effective and successful implementation in the regular classroom37. Bender, Vail and Scott2 showed that teachers who had a less positive view of inclusion tended to use less effective instructional strategies when teaching in mainstream classrooms into which special needs students had been integrated. When effective teaching strategies were applied in mainstream classrooms that benefitted both ordinary and special needs students, the students were able to learn better as a whole and the difference between the two groups was narrowed. They suggested that effective teaching strategies constitute one of the many components that make inclusion successful.

It is also very important for students to have positive perspectives on inclusive education. When mainstream students have positive views, they are more willing to be friends with special needs students and many benefits will follow. Wiener68 found that when regular students had good peer relationships with special needs students, the behavior of the latter improved. Fisher, Pumpian and Sax6 found that the negative views of high school students had a negative influence on the participation, interactions and
acceptance of students with special needs.

Conversely, other studies have shown that teachers’ and students’ positive perspectives of the integration of special needs students into mainstream classrooms is essential for the successful implementation of inclusive education\textsuperscript{1,8}. It is important for different education stakeholders to be positive about inclusive education. However, for different reasons, teachers, students and parents may have concerns about including students with special needs in the general classroom and this can affect their attitudes toward inclusive education.

**Concerns about students with academic, social, behavioral and physical difficulties:** There are different reasons for students to have poor academic performances. For example, those who suffer from learning disabilities have obvious academic deficits when compared to other children in the same age groups; these deficits could be in areas such as reading, mathematics and written language. Besides learning disabilities, being from socially disadvantaged backgrounds can also lead students to have problems academically\textsuperscript{20}. Students’ family social status and schoolmates’ family social status have also been found to have significant impacts on academic achievement\textsuperscript{11}. Teachers, students and parents may be concerned about having students with academic difficulties in the general educational settings. In fact, many studies have indicated that Chinese people are academic-achievement oriented\textsuperscript{19,60} and that education in the Chinese society usually adapts the pyramid system in which only the top students can get to the narrow top of the educational pyramid.

Teachers, students and parents may be worried about whether students’ with academic problems will affect teaching and learning in the classroom and as a result, overall students’ academic achievement will be hindered. In fact, there are other negative outcomes arising from students’ low achievement. Those with low academic achievement will have a higher chance of school dropout and their parents can have lower efficacy\textsuperscript{11}. Moreover, poor academic performance is associated with delinquent behaviors\textsuperscript{9}, cognitive deficits and attention problems and antisocial behaviors\textsuperscript{45}. Thus, students with low academic achievement can be cause for concern to teachers, students and parents when they are placed in the general classroom.

Studies have also shown that students with low academic achievement can encounter more social difficulties\textsuperscript{44}. For example, Chen, Chang and He\textsuperscript{18} found that Chinese adolescents’ social adjustment was poorer when they had lower academic achievement. In fact, students with social difficulties in the general classroom may also be a concern for teachers, students and parents. A study by Webster-Stratton and Reid\textsuperscript{46} described the problems that students with social difficulties can bring to the classroom. Students with social difficulties are frequently rejected by their peers and they are found to be engaged in more off task behaviors and to receive less instruction time, therefore, also receiving less positive feedback from their teachers. Moreover, Rubin, Hymel and Mills\textsuperscript{53} showed that socially withdrawn students were more likely to develop other internalizing difficulties later such as lower self-worth, loneliness, depression and anxious behaviors. Generally speaking, when students have difficulties in getting along with others and controlling their emotions, teachers must invest more time and effort in dealing with their social and emotional problems. Teachers have to receive more training and gain more knowledge to be able to handle these students.

Moreover, behavioral problems are more likely to occur when students have social difficulties. Dodge et al\textsuperscript{23} found that students who have high peer rejection demonstrated higher aggression and antisocial behaviors. Merrett et al\textsuperscript{17} defined students’ misbehaviors in the classroom as those that annoy, upset or distress teachers. These behaviors can also disrupt good classroom order and cause trouble, thus they must be addressed continuously by teachers. Students’ misbehavior in the classroom can cause a lot of negative outcomes. The student misbehavior ‘discourts students’ right to learn; it disrupts teachers’ right to teach; it wastes time; it weakens students’ motivation and energy; it produces a climate of fearfulness and stress for students and teachers and it dissolves trust and lessens cooperative relationships between teachers and students.

Moreover, the study also mentioned that half of the teaching time can be lost due to handling students’ behavioral problems. The topic of students’ behavioral problems in the classroom has been studied widely, even in Chinese society. For example, Chan’s study\textsuperscript{13} indicated that teachers in Hong Kong found that students’ behavioral problem was one of their major stressors. Overall, with the negative outcomes that misbehavior brings, teachers, students and parents may be concerned about having students with behavioral problems in the classroom.

Based on the above studies, difficulties in any one of the academic, social or behavioral aspects can lead students to have problems in the other two areas as well. In fact, besides students with academic, social and behavioral problems, this also includes those with special needs, for example physical impairments. Students with physical, visual or hearing impairments are categorized under the physical and sensory impairments group in Hong Kong, indicating that there are number of special needs students suffering from this impairment\textsuperscript{66}. A study by Cambra and Silverstre\textsuperscript{10} reported that students with physical and different sensory impairments had significantly lower self-concepts than their regular peers in the general classroom. They may encounter more academic and social difficulties than their peers and it is suggested that teachers must help facilitate social integration and provide academic support for these students. Inclusive education for students with impairments means that the school must promote a holistic development and
provide equality of access to opportunities for those students. This could be a big challenge for teachers especially when their knowledge and training in these areas are limited.

In order to include students with special needs, such as those described above, successfully into the general classroom, teachers, students and parents should have positive attitudes toward them. To understand individuals’ attitudes toward including students with academic, social, behavioral and physical difficulties in the general classroom, Wilczenski’s 16-item Attitudes Toward Inclusive Education Scale was considered to be suitable for this study. This scale can be seen as four dimensions, namely social, academic, behavioral and physical. By applying principal component analysis, Wilczenski found that the 16 items could be extracted into four dimensions.

**Inclusive education in the Chinese societies – Hong Kong and Macau:** When compared to western countries, the implementation of inclusive education in China seems to be lagging behind. Even in the cities of Hong Kong and Macau, which were under the British and Portuguese governments before 1997 and 1999 respectively, the implementation of inclusion was still underdeveloped when compared to other Western countries.

For example in Hong Kong, instead of full inclusion, a whole-school approach to integrated education has been adopted. Forlin argued that moving from a whole-school approach to inclusion was not an easy reform to implement. “Integration or inclusion is an easy thing to talk about, but it is demanding to implement as it challenges traditional attitudes, beliefs and understandings”. For inclusion to be implemented successfully in Hong Kong, substantive changes must be made not only in the education field, but within the whole society. For inclusion to be adopted fully in Hong Kong, sufficient time must be allowed to make changes in different systems or levels within the society.

In terms of Macau, Forlin described that the Macau Government developed a policy in 2001 that “gave a clearer definition regarding the process for the inclusion of children with SEN in mainstream schools”. Under this policy, all schools must provide an environment that allows students with and without special needs to study together. In addition, schools must “adapt their curricula and pedagogy to meet the individual needs of students by considering teaching materials, homework, teaching approaches and strategies, supplementary teaching, curriculum adjustments and evaluations”. However, based on the information given by the Education and Youth Affairs Bureau, inclusion in Macau does not necessarily mean placing students with special needs in the same classes as regular students, but to have them study in regular schools with other students. Thus, inclusive schools in Macau can be seen as schools that include students with special needs. Inclusive schools in Macau can choose from three options – (1) students with special needs being fully included in the regular classrooms, (2) students with special needs being educated in separate special classrooms and (3) students with special needs being educated in special education classes that focus on basic subjects, self-reliance and communication skills instead of teaching regular curricula.

**Aims and framework of the study:** The underdevelopment of inclusive education in the Chinese societies could be due to Chinese people’s lack of positive attitudes toward inclusive education. Thus, this study aimed at finding out Chinese people’s attitudes toward inclusive education by conducting two studies. Study 1 investigated teachers’ and students’ positive attitudes toward inclusive education in Hong Kong. Then, to cross validate the results found in study 1 and to expand the horizon of comparison, study 2 investigated the same issue from the perspectives of teachers, students and parents in Macau.

Socialization was selected to be the framework of this study to investigate the attitudes of students, parents and teachers in two specific locations in China. In the theory of socialization, teachers and parents act as important role models for children and children learn through observation from these significant adults to absorb their social norms. The role models exhibit certain attitudes and behaviors and children will imitate and then adopt as part of their own. For example, Brody and Shaffer suggested that children’s morality was developed from the interactions with an important agent of socialization – the parents. Children and their parents will have similar attitudes and beliefs because of socialization. Moreover, Denham, Bassett and Zinsser indicated the contributions of the socialization of teachers on children’s emotional competence. Based on the theory of socialization, the following research questions were developed:

1. Do Hong Kong students have similar (positive or negative) attitudes toward inclusive education in the academic, social, behavioral and physical domains as their teachers?
2. Do Macau students have similar (positive or negative) attitudes toward inclusive education in the academic, social, behavioral and physical domains as their teachers and parents?
3. Are these differences (or similarities) consistent across Hong Kong and Macau?

Few studies have investigated the inclusive attitudes between these two Chinese cities from the perspectives of important stakeholders in education – teachers, students and parents. Data triangulation was applied this study. According to Guion, Diehl and McDonald, data triangulation involves collecting information from different sources to increase the validity of the study. The sources can be from different stakeholders. In this study the different stakeholders were teachers, students and parents.
with an interest in inclusive education in Hong Kong and Macau.

Methods

Instrument for Study 1 and Study 2: The 16-item Attitudes toward Inclusive Education Scale was used in this study to measure students’ and teachers’ attitudes towards inclusive education in the academic, behavioural, physical and social domains. Originally, the scale was developed to measure in-service teachers’ attitudes toward students with special needs. There were 32 items focusing on the attitudes toward students with academic, behavioral, physical and social challenges with 8 items for each type of students. The above four types of challenges were chosen because “educators’ attitudes toward inclusive education might be expected to vary based on functional issues, that is, the physical, academic, social, or behavioral accommodations that students with disabilities require in order to function in a regular class, regardless of their labeled handicap. It was believed that these students could affect the overall function of the classroom adversely and directly.

According to Wilczenski, integrating students with academic disabilities could be problematic since these students must participate in an academic curriculum in the regular classroom. For behavioral integration to happen, it is necessary to establish appropriate behavioral repertoires. In terms of students with social challenges, all students in the classroom must interact with students with or without disabilities. Finally, integrating students with physical challenges means that they must be placed in regular classes so that they can learn like all other ordinary peers. It is not easy to achieve all of these goals.

Based on the results of factor analysis, 16 items were taken away from the 32 items, leaving 16 items in the scale measuring the participants’ attitudes toward four distinct facets (academic, behavioral, physical and social) of inclusive education. In fact, the results of the factor analysis on the 16 items confirmed that the relevant four items of each dimension were able to load nicely into the appropriate four factors. Each of the dimensions also received satisfactory internal consistency. The Cronbach alphas of the four dimensions ranged from 0.81 to 0.86. The Cronbach alpha for all the 16 items was 0.91. Overall, the items were written to measure whether teachers would have positive or negative attitudes towards students with academic, behavioral, physical or social challenges.

In its original English version, a 6-point Likert scale was applied with anchors: “1 = strongly disagree” to “6 = strongly agree”. In the current study the participants were asked to rate each of the 16 items in the scale on a 4-point Likert scale with anchors: “1 = strongly disagree”, “2 = disagree”, “3 = agree” and “4 = strongly agree”. A reason for shortening the response scale from 6-point to 4-point was that the students participating in this study would be less literate than adults and they could be confused easily by too many response options. There has also been evidence from previous studies suggesting that a 4-point response format may yield more reliable data from empirical studies.

A Chinese version of the scale was generated for this study using the standard forward-backward translation procedure. With the assistance of two independent bilingual lists, proficient in both Chinese and English, the original English scale was translated into Chinese and this Chinese version was translated back into English. The back-translated English scale was compared with the original English scale to ensure that the items would not be altered in the translation process. The Chinese version was checked further to ensure it was suitable to use with both students and teachers and in the context of Hong Kong education system. For the student’s questionnaire, information about each participant’s gender, age and education level was solicited. For the teacher’s questionnaire, information was solicited about the participants’ genders, ages, numbers of years of teaching experience and highest education levels attained. For the questionnaire for the Macau parents, information was collected regarding their genders and ages. The students’ questionnaires could be matched with their parents’ questionnaires since both had the same coding marked on the corner of the questionnaire.

Study 1

Study 1 aimed to examine the attitudes toward inclusive education of teachers and students in Hong Kong and to compare the attitudes of these stakeholders in education.

Hong Kong participants: In Hong Kong, 340 Hong Kong secondary school students (162 boys and 178 girls) participated in the study. Their ages ranged from 13 to 19 years, with a mean of 15.70 years (SD = 1.55). Twenty-two students were in Form 2, 121 from Form 3, 40 from Form 4, 124 from Form 5 and 33 were from Form 6. In the teacher sample, there were 129 in-service secondary school teachers (54 males and 75 females). Their ages ranged from 20 to 60 years, with a mean age of 38.37 years (SD = 9.82). They had teaching experiences ranging from less than one year to 38 years (M=14.31 years, SD = 9.14). One teacher had a teaching certificate as his highest education level, four had university degrees, 88 had master’s degrees and 36 had Ph. Ds.

Procedure in Hong Kong: The data collection process took over three months. First, invitation letters were sent to 12 school principals, explaining the purpose of the study and the data collection procedures. Within two weeks, nine principals of mainstream secondary schools had agreed to participate in the study. Upon confirmation of participation by the school principals, questionnaires for both teachers and students were sent to the schools by hand with the help of a research assistant. Parents’ consent forms were collected before the students participated in the study. The
participants were informed that their participation would be completely voluntary and that the data collected from them would be kept confidential. To collect the teachers’ questionnaires, an opaque and locked collection box was placed in each of their offices so that they could return their filled questionnaires anonymously just by putting them into the box.

For the student’s questionnaire, the school principals were asked to select two or three classes in their schools to participate. The questionnaire was sent to all students in the selected classes. They were informed about the purpose of the study and they had full autonomy to decide whether or not to participate. They also had the right to withdraw from the study at any time while making their responses. No enforcement or pressure was given by the researchers, principals, or teachers. Two weeks after the questionnaires were sent to the schools, a research assistant picked up the completed questionnaires from all participating schools by hand.

Hong Kong results: Table 1 shows the frequencies and percentages of the responses to individual items of the Attitudes Toward Inclusive Education Scale and table 2 shows subscale means and deviation deviations for both the student and teacher samples. For the student sample (Table 1), more than half of the participants disagreed or totally disagreed with the statement on 9 out of the 16 items (Item 1, 5, 6, 7, 9, 10, 11, 12 and 14). Their most unfavorable attitudes were found on Item 7 “Students who do not follow school rules for conduct should be in regular classes” (in the behavioral domain, percentage differences = 53.0%), Item 5 “Students who are physically aggressive toward their peers should be in regular classes” (in behavioral domain, percentage differences = 48.2%), Item 10 “Students who cannot hear conversational speech should be in regular classroom” (in the physical domain, percentage differences = 43.0%) and Item 12 “Students who cannot hear conversational speech should be in regular classes” (in the physical domain, percentage differences = 44.2%) and Item 11 “Students who use sign language or communication boards should be in regular classes” (in the physical domain, percentage differences = 44.2%).

Chi-square tests used to compare the student and teacher samples on individual items showed significant differences on six items (Item 1, 3, 5, 7, 11 and 13). Compared with the student participants, the teacher participants reported more unfavorable attitudes towards inclusive education on five items (Item 1, 3, 5, 7 and 11). For the item “Students who are shy and withdrawn should be in regular classes” (Item 13), the teachers reported very favorable attitudes towards inclusion of this group of students (a total of 72.0% in “totally agree/agree” category) which by far outnumbered the responses to this item by the student participants (31.8%).

Regarding the four domains being investigated in this study (Table 2), both the student and the teacher participants reported the most unfavorable attitudes towards students with special needs in the behavioral domain while the academic domain was the most favorable one. The rank orders of the subscale means (sorted by value of the subscale means in descending order for each of the student and teacher samples) were identical across the two samples. Compared with the student participants, the teachers reported more unfavorable attitudes towards inclusive education in the academic, physical and behavioral domains, with two of these mean differences reaching a conventional level of statistical significance (i.e. p<.05 for the academic and behavioral domains). In contrast, the teacher participants reported more favorable attitudes towards students with special needs in the social domain compared with the student participants. However, this mean difference was not able to reach a conventional level of statistical significance (with p=.055).

Study 2

Macau is a city that is very similar to Hong Kong in terms of the ethnicity of its citizens (the majority of them are Chinese) and its colonial history (Hong Kong was governed by the British before 1997 while Macau was governed by the Portuguese before 1999). As such, by employing the same measure, an investigation into the attitudes of teachers and students toward inclusive education in Macau was considered to be a meaningful task for two reasons. First, it could be regarded as a cross-validating study of study 1. Second, it could be considered as an extension of study 1 by an inclusion of one more stakeholder (i.e. parents, beyond students and teachers).

Macau participants: There were 135 secondary school teachers, 260 typical secondary school students and their parents (n = 260) participating in this study. Among the 135 teachers, there were 52 males and 83 females. The average age for the teachers was 36.58 years (SD = 8.92). One teacher had a high school diploma as his / her highest
education level, 8 had teaching certificates, 91 had university degrees and 35 had masters’ degrees. Of the 260 students, 105 were males and 155 were females. They were studying in Form 2 (n = 32), Form 3 (n = 74), Form 4 (n = 40) and Form 5 (n = 114). Their average age was 15.40 (SD = 1.57). These students were each asked to invite one parent to participate in this study as well. There were 102 fathers and 158 mothers participating and their average age was 41.89 years (SD = 5.43).

Seven Chinese-medium secondary schools were involved in this study. There are different kinds of secondary schools in Macau. For example, there are Portuguese-medium schools, Luso-Chinese schools, Chinese-medium schools, English-Chinese schools and English-medium schools. The English-medium schools and some of the English-Chinese schools only go as far as the secondary 5 level while the other types of schools go to secondary 6. Therefore, some students have to change schools in order to study secondary 6 or to enter pre-university classes.

Procedure in Macau: The questionnaires were distributed and collected within one month. To collect the teachers’ questionnaires, a collection box was placed in each school so that the teachers could drop in their completed questionnaires without revealing their identities. Then, the school principals selected two to three classes in their schools to participate and the teachers of these classes were asked to distribute questionnaires for their students to complete in class. Two questionnaires (students and parents) were distributed to the students in each class. First of all, the students were asked to complete the 16-item Attitudes Toward Inclusive Education Scale in class and the teachers collected the questionnaires immediately after the students had completed them. The students were informed about the purpose of the study, based on the instructions given on the top of the questionnaires and that their results would only be used in this study. Numbers were assigned on the right hand corner of the students’ questionnaires so that the authors of this study could match the students’ results with their parents’.

For example, when a student’s questionnaire was assigned the number of 01 in the right hand corner of his/her questionnaire, his/her parent’s questionnaire would also have the corresponding 01. The students were asked to take their parents’ questionnaires home and to ask either their fathers or mothers to complete them. Again, instructions were given on the parents’ questionnaires to explain the purpose of the study. The parents were asked to hand in their completed questionnaires within one week after distribution. Consent forms were received from parents before their children participated in this study.

Macau results: The results in table 3 show further analyses of the percentages of agree and disagree for each of the 16 items from the Attitudes toward Inclusive Scale, from the perspectives of the students, parents and teachers. The items were categorized by academic, behavioral, physical and social dimensions. Table 3 shows that the percentage differences of all 16 items were positive for parents, indicating that they had more positive attitudes toward inclusive education at item level when compared to teachers and students in Macau. For example, parents had positive attitudes toward including students with academic achievement one year below the norm in the regular classroom (Item 2). They also had favorable attitudes toward the classroom inclusion of students who are physically aggressive (Item 5).

The results shown in table 3 further suggest that the students and teachers tended not to agree with inclusive education when: (i) “they (the special needs students) were physically aggressive toward their peers (Item 5)”; (ii) “they could not control their behaviour and disrupted activities (Item 7)”; (iii) “they could not read standard print and needed to use Braille (Item 10)”; (iv) “they used sign language or communication boards (Item 11)”; (v) “they could not hear conversational speech (Item 12)”; (vi) their academic achievement was two or more years below the other students in the grade (Item 1)” or (vii) their speech was difficult to understand (Item 14).

The students disagreed that special needs students should be in the regular classroom if: (i) they are verbally aggressive toward their peers (Item 6); (ii) their academic achievement is one year below the academic achievement of the class (Item 2); (iii) they have difficulty expressing their thoughts verbally (Item 15); (iv) they do not follow school rules for conduct (Item 8); or (v) they cannot move without help from others (Item 9). The teachers particularly disagreed that students should be included in the regular classroom if “they need training in self-help skills and activities of daily living” (Item 3).

According to table 4, applying a theoretical midpoint of 2.50, the values of the subscale means suggest that the students, parents and teachers in this sample did not have very favorable attitudes toward inclusive education. A one-way ANOVA indicated significant differences amongst the views of the three groups. In table 4, the scores that were underlined or italicized had no significant difference. The results showed that the students and teachers had more negative attitudes to the academic, behavioral and physical dimensions of the Attitudes toward Inclusive Education Scale than did the parents. For social dimensions, there was no significant difference between the students’ score (M = 2.49 and SD = .52) and the parents’ score (M = 2.57 and SD = .53), as was also the case for the parents’ and teachers’ scores (M = 2.69 and SD = .43).

Comparisons between Hong Kong and Macau teachers and students: To compare the attitudes of teachers and students from Hong Kong and Macau further, a full-factorial two-way MANOVA was conducted with a specification of two main effects (perspective: teachers
versus students; city: Hong Kong versus Macau) and an interaction effect. At multivariate level, the main effect of location (Wilks’ $\lambda = .997$, $F(4, 857) = 0.614$, $p = .652$) and its interaction with perspective were statistically non-significant (Wilks’ $\lambda = .943$, $F(4, 857) = 1.011$, $p = .401$) whereas the main effect of perspective was statistically significant (Wilks’ $\lambda = .932$, $F(4, 857) = 15.667$, $p < .001$, partial $\eta^2 = .068$). A follow-up univariate analysis suggested this multivariate difference could be caused by a consistent pattern of more positive teachers’ attitudes towards inclusive education than students in the social domain ($F(1, 860) = 15.367$, $p < .001$, partial $\eta^2 = .018$) and its reverse in the academic domain ($F(1, 860) = 6.685$, $p = .010$, partial $\eta^2 = .008$).

**Discussion**

Overall, the attitudes toward inclusive education for students and teachers in Hong Kong and Macau were similar because they did not hold positive views about inclusion. The socialization of teachers on the attitudes toward inclusion could be very influential to students because teachers and students could be considered as insiders in the topic of inclusive education because they are directly influenced by it. One of the main reasons for teachers’ negative attitudes may be that they do not have a lot of experience in teaching students with special educational needs in their classes. For the past several years, the Hong Kong and Macau governments have been encouraging primary school teachers to receive training in this area. However, to date it is has not been particularly common for secondary school teachers to participate in this type of training, especially in the case of Macau.

Another area of concern for secondary school teachers in both cities is the lack of support they receive from the principals and fellow teachers in their schools. Some secondary school teachers are worried that once they are assigned special educational needs students in their classes, they will hold sole responsibility for their performances. Therefore, it is important for school managements to allay these worries and build the teachers’ confidence by creating a supportive culture with high collective teacher efficacy. Teachers need to know that when they have difficulties with special educational needs students, they will receive support and help from fellow teachers.

Moreover, as mentioned above, the academic performance of secondary school students is a great cause of concern for parents, teachers, principals and students themselves. This is because the students’ academic results determine their opportunities to enter university. Thus, having special educational needs students, especially those with behavioral and academic challenges, in their classes, can hinder teachers’ teaching and lower the learning pace and academic performance for the other students. This fear that they could be held accountable for lowered grades could be one of the major reasons why the teachers’ mean score on the academic dimension was significantly lower than that of the students.

On the other hand, more parents strongly agreed/agreed than strongly disagreed/disagreed with including students with special needs in the regular classroom. Similar positive attitudes toward inclusive education were also reported by Tafa and Manolitsis. In this study, the parents of typically developing kindergarten children believed that when their children interacted with students with special needs, they would learn to accept the limitations of those children more, be more aware of their needs, have fewer prejudices against them and would learn to be more supportive and helpful to special needs students. The parents who participated in the study could have realized the benefits of having special needs students in the inclusive setting.

De Boer, Pijl and Minnaert investigated studies that focused on the attitudes of parents of students with and without special needs. They found that the parents of typically developing children had more positive attitudes toward special needs students than the parents of students with disabilities. Again, the parents of typically developing children could see the benefits and opportunities to include special needs children in the inclusive setting. The results of this study were consistent with those of other studies that the parents had positive attitudes toward inclusive education.

Results of this study also showed that Macau parents did not have positive attitudes toward inclusive education as well but their scores on the four domains were higher than students and teachers. Similar to teachers and students, parents are also stakeholders of inclusion. However, when compared to students and teachers, parents are considered as outsiders, since the influences of inclusion are more direct and strong for students and teachers. In other words, parents could perceive inclusion in a more objective way, seeing benefits and opportunities that teachers and students would not be aware of. Thus, the socialization of parents’ attitudes toward inclusion to students may be less influential to students because of their different stand points – insiders and outsiders. Overall, most existing studies focused on the attitudes of inclusive education from one perspective only – the perspective of students, parents or teachers. With this Chinese version scale, the attitudes of Hong Kong students and their teachers of secondary mainstream schools could be measured and investigated. Most studies investigated the attitudes of teachers but not students and their parents together. However, students and parents also play an important role in making inclusion education successful. It is important to understand their attitudes as well.

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### Table 1
Frequencies and percentages of responses to individual items of the Attitudes Toward Inclusive Education Scale (Hong Kong, N = 469)

<table>
<thead>
<tr>
<th>Item</th>
<th>Student Responses (n=340)</th>
<th>Teacher Responses (n=129)</th>
<th>( \chi^2 )</th>
<th>( \phi )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Students whose academic achievement is two or more years below the other students in the grade should be in regular classes.</td>
<td>182 (53.5%) 158 (46.5%)  ((-7.0%))</td>
<td>98 (76%) 31 (24%)  ((-52.0%))</td>
<td>19.57***</td>
<td>-0.204</td>
</tr>
<tr>
<td>2. Students whose academic achievement is one year below the other students in the grade should be in regular classes.</td>
<td>128 (37.6%) 212 (62.4%)  ( (+24.8%))</td>
<td>39 (30.2%) 90 (69.8%)  ( (+39.6%))</td>
<td>2.24</td>
<td>.069</td>
</tr>
<tr>
<td>3. Students who need training in self-help skills and activities of daily living should be in regular classes.</td>
<td>145 (42.6%) 195 (57.4%)  ( (+14.8%))</td>
<td>72 (55.8%) 57 (44.2%)  ( (-11.6%))</td>
<td>6.52**</td>
<td>-.118</td>
</tr>
<tr>
<td>4. Students who need an individualized functional academic program in everyday reading and math skills should be in regular classes.</td>
<td>159 (46.8%) 181 (53.2%)  ( (+6.4%))</td>
<td>66 (51.2%) 63 (48.8%)  ( (-2.4%))</td>
<td>7.25</td>
<td>-.039</td>
</tr>
<tr>
<td><strong>Behavioral</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Students who are physically aggressive toward their peers should be in regular classes.</td>
<td>252 (74.1%) 88 (25.9%)  ( (-48.2%))</td>
<td>118 (91.5%) 11 (8.5%)  ( (-83.0%))</td>
<td>16.92***</td>
<td>-.190</td>
</tr>
<tr>
<td>6. Students who are verbally aggressive toward their peers should be in regular classes.</td>
<td>186 (54.7%) 154 (45.3%)  ( (-9.4%))</td>
<td>70 (54.3%) 59 (45.7%)  ( (-8.6%))</td>
<td>.007</td>
<td>.004</td>
</tr>
<tr>
<td>7 Students who cannot control their behaviour and disrupt activities should be in regular classes.</td>
<td>260 (76.5%) 80 (23.5%)  ( (-53.0%))</td>
<td>116 (89.9%) 13 (10.1%)  ( (-79.8%))</td>
<td>10.65***</td>
<td>-.151</td>
</tr>
<tr>
<td>8 Students who do not follow school rules for conduct should be in regular classes.</td>
<td>168 (49.4%) 172 (50.6%)  ( (+1.2%))</td>
<td>59 (45.7%) 70 (54.3%)  ( (+8.6%))</td>
<td>.506</td>
<td>.033</td>
</tr>
<tr>
<td><strong>Physical</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Students who cannot move without help from others should be in regular classes.</td>
<td>182 (53.5%) 158 (46.5%)  ( (-7.0%))</td>
<td>65 (50.4%) 64 (49.6%)  ( (-0.8%))</td>
<td>.370</td>
<td>.028</td>
</tr>
<tr>
<td>10. Students who cannot read standard print and need to use Braille should be in regular classes.</td>
<td>243 (71.5%) 97 (28.5%)  ( (-43.0%))</td>
<td>93 (72.1%) 36 (27.9%)  ( (-44.2%))</td>
<td>.018</td>
<td>-.006</td>
</tr>
<tr>
<td>11. Students who use sign language or communication boards should be in regular classes.</td>
<td>210 (61.8%) 130 (38.2%)  ( (-23.6%))</td>
<td>93 (72.1%) 36 (27.9%)  ( (-44.2%))</td>
<td>4.36*</td>
<td>-.096</td>
</tr>
<tr>
<td>12. Students who cannot hear conversational speech should be</td>
<td>241 (70.9%) 99 (29.1%)  ( (-41.8%))</td>
<td>97 (75.2%) 32 (24.8%)  ( (-50.4%))</td>
<td>.864</td>
<td>-.043</td>
</tr>
</tbody>
</table>
in regular classes.

Social
13. Students who are shy and withdrawn should be in regular classes.
   Student (n=340) | Teacher (n=129) |
   M (SD) | t-value | p | Cohen’s d
   Social | 2.51 (.50) | 2.60 (.41) | -1.77 | .055 | 0.20
   Academic | 2.50 (.44) | 2.39 (.44) | 2.47 | .015 | 0.25
   Physical | 2.26 (.51) | 2.22 (.50) | 0.92 | .363 | 0.08
   Behavioral | 2.24 (.51) | 2.10 (.52) | 2.71 | .006 | 0.27

Note: Responses were made on a 4-point Likert scale with anchors “1=strongly disagree” to “4=strongly agree”.
Higher mean within a domain was in boldface.

Table 3
Frequencies and percentages of responses to individual items of the Attitudes toward Inclusive Education Scale (Macau, N=655)

Item | N | % | N | % (diff)* | N | % (diff)* | N | % (diff)* | N | % (diff)* | N | % (diff)* | N | % (diff)* | N | % (diff)* | \( \chi^2 \) | \( \phi \)
Academic
1. Students whose academic achievement is two or more years below the other students in the grade should be in regular classes.
   Student Responses (n=260) | 144 | 55.4 | 116 | 44.6 (-10.8%) | 128 | 49.2 | 132 | 50.8 (1.6%) | 97 | 71.9 | 38 | 27.1 (-44.8%) | 18.64*** | .17
2. Students whose academic achievement is one year below the other students in the
   Student Responses (n=260) | 98 | 37.7 | 162 | 62.3 (-24.6%) | 110 | 42.3 | 150 | 57.7 (15.4%) | 40 | 29.6 | 95 | 70.4 (40.8%) | 6.08* | .10
3. Students who need training in self-help skills and activities of daily living should be in regular classes.

<table>
<thead>
<tr>
<th>Grade</th>
<th>108</th>
<th>41.5</th>
<th>152</th>
<th>58.5</th>
<th>115</th>
<th>44.2</th>
<th>145</th>
<th>55.8</th>
<th>70</th>
<th>51.9</th>
<th>65</th>
<th>48.1</th>
<th>3.88</th>
<th>.08</th>
</tr>
</thead>
</table>

4. Students who need an individualized functional academic program in everyday reading and mathematics skills should be in regular classes.

<table>
<thead>
<tr>
<th>Grade</th>
<th>122</th>
<th>46.9</th>
<th>138</th>
<th>53.1</th>
<th>113</th>
<th>43.5</th>
<th>147</th>
<th>56.5</th>
<th>63</th>
<th>46.7</th>
<th>72</th>
<th>53.3</th>
<th>.72</th>
<th>.03</th>
</tr>
</thead>
</table>

**Behavioral**

5. Students who are physically aggressive toward their peers should be in regular classes.

<table>
<thead>
<tr>
<th>Grade</th>
<th>197</th>
<th>75.8</th>
<th>63</th>
<th>24.2</th>
<th>110</th>
<th>42.3</th>
<th>150</th>
<th>57.7</th>
<th>115</th>
<th>85.2</th>
<th>20</th>
<th>14.8</th>
<th>95.48***</th>
<th>.38</th>
</tr>
</thead>
</table>

6. Students who are verbally aggressive toward their peers should be in regular classes.

<table>
<thead>
<tr>
<th>Grade</th>
<th>144</th>
<th>55.4</th>
<th>116</th>
<th>44.6</th>
<th>111</th>
<th>42.7</th>
<th>149</th>
<th>57.3</th>
<th>67</th>
<th>49.6</th>
<th>68</th>
<th>50.4</th>
<th>8.39*</th>
<th>.11</th>
</tr>
</thead>
</table>

7. Students who cannot control their behavior and disrupt activities should be in regular classes.

<table>
<thead>
<tr>
<th>Grade</th>
<th>199</th>
<th>76.5</th>
<th>61</th>
<th>23.5</th>
<th>122</th>
<th>46.9</th>
<th>138</th>
<th>53.1</th>
<th>116</th>
<th>85.9</th>
<th>19</th>
<th>41.1</th>
<th>79.60***</th>
<th>.35</th>
</tr>
</thead>
</table>

8. Students who do not follow school rules for conduct should be in regular classes.

<table>
<thead>
<tr>
<th>Grade</th>
<th>132</th>
<th>50.8</th>
<th>128</th>
<th>49.2</th>
<th>118</th>
<th>45.4</th>
<th>142</th>
<th>54.6</th>
<th>55</th>
<th>40.7</th>
<th>80</th>
<th>59.3</th>
<th>3.83</th>
<th>.08</th>
</tr>
</thead>
</table>

**Physical**

9. Students who cannot move without help from others should be in regular classes.

<table>
<thead>
<tr>
<th>Grade</th>
<th>138</th>
<th>53.1</th>
<th>122</th>
<th>46.9</th>
<th>121</th>
<th>46.5</th>
<th>139</th>
<th>53.5</th>
<th>60</th>
<th>44.4</th>
<th>75</th>
<th>55.6</th>
<th>3.46</th>
<th>.07</th>
</tr>
</thead>
</table>

10. Students who cannot read standard print

<table>
<thead>
<tr>
<th>Grade</th>
<th>188</th>
<th>72.3</th>
<th>72</th>
<th>27.7</th>
<th>113</th>
<th>43.5</th>
<th>147</th>
<th>56.5</th>
<th>92</th>
<th>68.1</th>
<th>43</th>
<th>31.9</th>
<th>49.78***</th>
<th>.28</th>
</tr>
</thead>
</table>
and need to use Braille should be in regular classes.

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<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Students who use sign language or communication boards should be in regular classes.</td>
<td>157</td>
<td>60.4</td>
<td>103</td>
<td>39.6</td>
<td>(-20.8%)</td>
<td>118</td>
<td>45.4</td>
<td>142</td>
</tr>
</tbody>
</table>

12. Students who cannot hear conversational speech should be in regular classes.

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<thead>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Students who cannot hear conversational speech should be in regular classes.</td>
<td>186</td>
<td>71.5</td>
<td>74</td>
<td>28.5</td>
<td>(-43%)</td>
<td>118</td>
<td>45.4</td>
<td>142</td>
</tr>
</tbody>
</table>

**Social**

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Students who are shy and withdrawn should be in regular classes.</td>
<td>91</td>
<td>35</td>
<td>169</td>
<td>65</td>
<td>(30%)</td>
<td>117</td>
<td>45</td>
<td>143</td>
</tr>
</tbody>
</table>

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<table>
<thead>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14. Students whose speech is difficult to understand should be in regular classes.</td>
<td>159</td>
<td>61.2</td>
<td>101</td>
<td>38.8</td>
<td>(-22.4%)</td>
<td>121</td>
<td>46.5</td>
<td>139</td>
</tr>
</tbody>
</table>

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15. Students who have difficulty expressing their thoughts verbally should be in regular classes.</td>
<td>106</td>
<td>40.8</td>
<td>154</td>
<td>59.2</td>
<td>(-18.4%)</td>
<td>115</td>
<td>44.2</td>
<td>145</td>
</tr>
</tbody>
</table>

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Students who are frequently absent from school should be in regular classes.</td>
<td>126</td>
<td>48.5</td>
<td>134</td>
<td>51.5</td>
<td>(3%)</td>
<td>111</td>
<td>42.7</td>
<td>149</td>
</tr>
</tbody>
</table>

Note: (%diff)ª = Percentage of strongly agree/agree – percentage of strongly disagree/disagree

**Table 4**

Subscale means and standard deviations of the Attitudes toward Inclusive Education Scale for students, parents and teachers subsamples (N=655)

<table>
<thead>
<tr>
<th>Domain</th>
<th>Student (n = 260)</th>
<th>Parents (n = 260)</th>
<th>Teachers (n = 135)</th>
<th>F</th>
<th>p Partial η²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Academic</td>
<td>2.50</td>
<td>.46</td>
<td>2.59</td>
<td>.55</td>
<td>2.44</td>
</tr>
<tr>
<td>Behavioral</td>
<td>2.23</td>
<td>.03</td>
<td>2.57</td>
<td>.53</td>
<td>2.22</td>
</tr>
<tr>
<td>Physical</td>
<td>2.27</td>
<td>.52</td>
<td>2.55</td>
<td>.55</td>
<td>2.29</td>
</tr>
<tr>
<td>Social</td>
<td>2.49</td>
<td>.52</td>
<td>2.57</td>
<td>.54</td>
<td>2.69</td>
</tr>
</tbody>
</table>

Note: Responses were made on a 4-point Likert scale with anchors “1=strongly disagree” to “4=strongly agree”; Means of the same dimensions that are underlined had no significant differences; Means of the same dimensions that are italicized had no significant difference. Highest mean within a domain was in boldface.
Table 5
Subscale means and standard deviations of the Attitudes toward Inclusive Education Scale by students and teachers samples between Hong Kong and Macau

<table>
<thead>
<tr>
<th>Domain</th>
<th>Hong Kong</th>
<th>Macau</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Teachers (n=129)</td>
<td>Teachers (n=135)</td>
</tr>
<tr>
<td></td>
<td>Students (n=340)</td>
<td>Students (n=260)</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Social</td>
<td>2.60</td>
<td>0.41</td>
</tr>
<tr>
<td>Academic</td>
<td>2.39</td>
<td>0.44</td>
</tr>
<tr>
<td>Physical</td>
<td>2.22</td>
<td>0.50</td>
</tr>
<tr>
<td>Behavioral</td>
<td>2.10</td>
<td>0.52</td>
</tr>
</tbody>
</table>

Note: Responses were made on a 4-point Likert scale with anchors “1=strongly disagree” to “4=strongly agree”. For each city, higher mean within a domain was in boldface.

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