The Perceived School Climate in Invitational Schools in Hong Kong: Using the Chinese Version of the Inviting School Survey-Revised (ISS-R)

Citation

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Abstract

This article describes the use of the Chinese translation of the revised Inviting School Survey (ISS-R; Smith, 2005; Smith & Bernard, 2004) to measure the invitational climate of seven invitational secondary schools in Hong Kong. The five subscales of Chinese version of ISS-R were found to be valid and reliable in a sample of 706 Grade 11 students. Students' perceptions of the invitational climate in the key areas of people, places, processes, policies, and programs (5P's) were analyzed. It is suggested that indications of invitational climate in the 5P's could facilitate teachers' and administrators' consideration in improving invitational practices to cater for the needs of different groups of students.

Hong Kong, like many other parts of the world, has experienced waves of education reform over the past thirty years (Cheng, 2003). Most recently, the Education Bureau in Hong Kong has implemented significant curriculum reforms requiring a paradigm shift in teaching and learning approaches. The aim is to enhance students' ability to adapt to a fast changing knowledge-based society and to meet the challenges of globalization and information technology in the future (CDC, 2001). Despite criticisms of increased workload for teachers and a lack of adequate professional support for such change, much progress has been made over the past decade. An example of the effort made by the Education Bureau is the introduction of the concept of Invitational Education (IE) to schools in 2002. Invitational Education has been identified internationally as an effective school development framework (Purkey & Novak, 1988). There is much support now for the notion of creating an inviting school environment and developing students' self-concept and positive perceptions of school as important foundations for quality education. It is suggested that much untapped potential of students could be more effectively developed if a school adopts the IE approach.

At present, over 100 schools in Hong Kong have adopted Invitational Education as a conceptual framework, and principals and teachers in these schools have reported improvement in their students' performance. Students have been provided opportunities to realize their potential, and as a result they have more confidence in learning and have become more active learners.

Key Features of Invitational

Invitational Education (Purkey, 1978) requires a particular set of beliefs that practitioners must accept regarding self and others. These beliefs are based on four elements – respect, trust, optimism and intentionality. In this context, "intentionality" refers to the deliberate intention of staff in schools to create policies, programs, practices and environments that are welcoming to all students. These four elements in Invitational Education interact and are interdependent within the educative process. Practitioners who accept these beliefs have a greater chance of creating an inviting school (Purkey & Novak, 1988).

Invitational Education provides a general framework for thinking about and acting on what is believed to be worthwhile in schools. Purkey (1996) considers that Invitational Education is still evolving, but already points in a hopeful direction by offering a systematic approach to the educative process, encouraging school improvement, and providing ways to make schools much more inviting places as perceived by students.

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Invitational education can be thought of as a perceptually anchored and self-concept-focused approach to the educative process that centers on the principle that human potential can best be realized by places, policies, programs and processes that are specifically designed to invite personal development, and by people who are intentionally inviting of others. The principle illustrates how Invitational Education works. In practice, Invitational Education focuses on the people, places, processes, policies and programs that transmit overt and covert "messages" promoting and influencing human relationships and fostering individual potential. These "messages" are the basic units of Invitational Education, and educators need to have a systematic way of looking at them. Where necessary, messages may need to be modified in order to become more positive and encouraging, both in their tone and their intention.

Ideally, people, places, processes, policies and programs in schools should be so intrinsically inviting as to create a school climate in which each individual is encouraged and inspired to develop to his or her highest level intellectually, socially, physically, psychologically and morally (Purkey & Schmidt, 1990). In Hong Kong, this principle offers a sound framework for implementing the sixth important aim in the Curriculum Development Council Report Learning to Learn: Life-long Learning and Whole-person Development (CDC: 2001). The aim is that schools should be given the space, professional autonomy and flexibility to develop their own school-based curricula to improve students' learning capabilities in ways best suited to their needs, abilities and aspirations.

The 5P's of the Invitational Model

As described by Smith (2005), the Invitational Model embodies contributions and influences from five domains—people, places, processes, policies and programs. These domains are summarized briefly below.

People: From the standpoint of the Invitational Model, people are the most important component (Purkey & Novak, 1996). People establish and maintain the "invitational climate" in a school through their actions, attitudes, words and relationships. It is fundamental to the invitational model that all individuals should demonstrate respect for one another. In school, this respect is evident in the caring, supportive and encouraging behaviors that teachers, other adults and students display toward others (Smith, 2007). Teachers and peers are the two main types of people in a school which have great influence on the invitational climate. Studies have demonstrated the importance of the teacher-student relationship in contributing to students' overall perception of school climate. Ryan and Patrick (2001) have shown that student perception of teacher warmth and support can accurately predict student engagement. In addition, students who have positive relationships and interactions with teachers tend to have above average achievement (Osterman, 2000). Zins, Weissberg, Wang, and Walberg (2004) have pointed out that "caring" classroom environments increase student engagement by providing the opportunity for supportive relationships, participation in school life, and pursuit of academic goals.

Peer relationships are also influential. The relationships that exist between children and their peers play a significant role in their sense of belonging at school (French & Conrad, 2001; Zins et al., 2004). The particular significance of these peer relationships is heightened during adolescence and impacts on many aspects of the adolescent's life. Peer relationships, and the social networks that children develop seem to affect adolescent engagement in school (Mullis, Rathge & Mullis, 2003). Those students who are more engaged in school, and have a network of friends who are also engaged, tend to have more positive educational experiences (Rice, 1999). This relationship is very evident during the middle school years. At that stage of schooling it has been found that children who have previously been low achievers tend to increase motivation and academic performance once they are included in a peer group of high achievers (Ryan, 2000, 2001).

Places: Places or environments are also key components in the Invitational Education model. A pleasant physical environment is crucial for helping students feel valued and comfortable. Unfortunately, classrooms and school workshops, particularly at secondary school level, are often "uninviting" because they are crowded, untidy, bleak and impersonal. Changing the physical environment is often a relevant starting point for making a school more inviting, accepting and motivating for students.

Processes: Within the IE model, processes involve not only dealing with subject matter, method or style of delivery, and interactions among students but also the social, emotional and communicative context in which this occurs. Student learning and development are unlikely to be optimized, for example, when classroom processes are executed by teachers who convey a lack of concern for students' feelings or who resort to harsh criticism, rudeness, impatience or ridicule. Under the operating principles of the Invitational Model teachers must always find time to be caring, encouraging, civil, and warm in their teaching and their interactions with students.

Policies: In the context of schools, "policy" refers mainly to guidelines, procedures and directives that regulate such functions as teaching, assessment, extra-curricular activities

and behavior management. Under the Invitational Model, all policies are seen to convey an overt or covert message to students and to teachers. That message may reflect trust or distrust, respect or disrespect, encouragement or constraint. Policies in school reveal much about the policy-makers and their degree of trust and respect for their students as people.

Programs: The fifth P, programs, represents an area that can be either inviting or off-putting (de-motivating) for students. Some programs are not intrinsically interesting to students, and are therefore not perceived as "inviting." Often programs focus too much on examination grades, teaching to the syllabus, conformity rather than creativity, and give scant attention to students' wider interests and needs. Some programs, by their titles or stated aims tend to label individuals as "different" (e.g. "remedial", "gifted") and can have negative effects on students' self-esteem, motivation and confidence.

In summary, Invitational Education is an integrative approach, and the five Ps should be viewed as a whole rather than the sum of parts. People, places, processes, policies, and programs in schools interact and are instrumental in inviting students to feel positive about school and about themselves, and to realize their full potential. Educators who are aware of, and respect, the five basic assumptions of Invitational Education and the five Ps are better able to create a school climate that is inviting and supporting the best from their students.

School Climate

A positive school climate is characterized by trust, effective communication, cooperation, and warmth and commitment shown by school staff towards students, leading to a sense of membership in the school community (DeLuca & Rosebaum, 2000). It has been suggested that the perceived quality of school climate is directly linked to students' academic performance (Haynes, Emmons, & Ben-Avie, 1997; Purkey & Smith, 1983). Schools that emphasize and develop a supportive learning environment, where learning can occur within a caring, safe atmosphere with high expectations and many opportunities for reinforcement have shown the greatest improvement in academic achievement (Zins et al., 2004). Students in these schools are more engaged in learning, feel more attachment to the school and staff, and exert greater effort. The orderly environment provides structure for student learning and the attachment promotes better communication among all members of the school community. Longitudinal studies have also suggested that school climate can impact upon student achievement (Esposito, 1999; Ross & Lowther, 2003). Most importantly, in a study carried out by Brookover, Schweitzer, Schneider, Beady, Flood and Wisenbaker (1978), school climate was found to be a more significant factor in predicting student achievement than the variables of race and socioeconomic status.

School climate can be conceptualized at two levels. First, at school level (i.e., as an integral property of a school that teachers and administrators intentionally set out to establish through policies, practices and programs). School-level aspects of climate are perhaps experienced and perceived with the same intensity by all students. Second, school climate is further interpreted at the level of an individual student (i.e., how a particular student actually experiences and perceives school climate day by day). This latter view holds that climate is a psychological property of the individual, influenced strongly by such personal factors such as prior experience, attitude toward authority, degree of success and recognition in academic and social domains, and happiness within the school situation. Under this assumption, climate will be perceived differently by each student based on his or her personal characteristics, experiences and perceptions.

Purpose of the Study

The purpose of this study was to examine students' perceptions of school climate in secondary schools in Hong Kong where principles and practices of Invitational Education have been implemented. The instrument used was a translated version of the revised Inviting School Survey (ISS-R) (Smith, 2005; Smith & Bernard, 2004), as described below. The following specific research questions were formulated for the study. 1) Are there differences in the perceptions of school climate in the five domains of people, places, processes, policies, and programs among boys and girls? 2) Are there differences in the perceptions of school climate in the five domains of people, people, places, processes, policies, and programs among students of low average and high achievement levels? 3) Are there differences in the perceptions of school climate in the five domains of people, people, places, processes, policies, and programs among students from different schools?

Method

School Selection

Since 2004, outstanding Invitation Education schools in Hong Kong have been receiving an Inviting School Award from the International Alliance for Invitational Education (IAIE). Schools that have shown even more IE achievement, as assessed by the IAIE, would further receive the Inviting School Fidelity Award. All of the seven secondary schools receiving the Inviting School Fidelity Award, and all of the three secondary schools receiving the Inviting School Award in 2008 were selected for this questionnaire survey. Eventually, seven of the ten schools agreed to participate.

Participants

The students selected to take part were all Grade 11 students attending the IE schools. These students were selected because, after five years, they were assumed to have a very good working knowledge of all facets of the school environment. At Grade 11 level they would also have little difficulty in understanding and responding thoughtfully to the questionnaire items. As the questionnaire survey was carried out with all Grade 11 students of all schools, the sample size of 706 was adequate for statistical analyses.

Instrument

Based on the revised Inviting School Survey (ISS-R) (Smith, 2005), a Chinese version of ISS-R (translated by Clio Chan, present chairperson of the IAIE in Hong Kong) was used for the study. The survey items were designed to reveal students' perceptions of invitational climate of their own schools in the five areas of people, places, processes, policies, and programs.

The original Inviting School Survey (ISS) was designed to assess invitational school climate (Purkey 1984; Purkey & Schmidt, 1987). The basic belief behind the instrument is that "everything counts" in a student's education, from the physical environment in which they spend their days to the way each individual student is treated in the classroom (Smith, 2005). The original 100-item instrument was revised in 1990 to include the five areas as outlined in Invitational Education theory (Purkey, 1984; 1990; Purkey & Fuller, 1995). This checklist was designed to be used with Grade 4 students and above. As a result of further research and feedback from users, the 100-item version was revised and reduced later to 50 items (the ISS-R) in order to facilitate its use in schools (Smith, 2005; Smith & Bernard, 2004).

The ISS-R consists of five subscales representing the degree to which schools are felt by their students to be "welcoming" in the five areas: People (e.g. Teachers work to encourage students' self-confidence), Places (e.g. Classrooms offer a variety of furniture arrangements), Processes (e.g. People often feel welcome when they enter the school), Policies (e.g. School policy permits and encourages freedom of expression by everyone), and Programs (e.g. The school sponsors extracurricular activities apart from sports). The items were integrated with a Likert-type scale with response options ranging from "Strongly Agree" (5) to "Agree" (4) "Undecided" (3) "Disagree" (2) "Strongly Disagree" (1). The ISS-R provides five sub-scores for the five areas, and one composite total score from all the items combined. The responses to the whole scale are intended to represent a picture of life in school as perceived by respondents (e.g. Administrators, Teachers, Students, and Parents. In addition to helping assess the invitational climate of schools, the ISS-R can also assist school personnel in identifying weaknesses in the system that could be corrected (Smith, 2007).

The reliability (internal consistency) of the ISS-R was reported to be acceptable for instruments of this type (Smith, 2005). The Cronbach's Coefficient Alphasfor the five subscales of People, Places, Policies, Processes, Programs, and Total were .77, .66, .52, 49, .48, and .88 respectively. The Guttman' Split-Half Reliability Alphas for the five subscales and Total were .75, .65, .57, .54, 46, and .86 respectively (Smith, 2005). In the present Chinese sample, the internal reliability (α) of the subscales of the Chinese translation of ISS-R (which had not been reported previously) was found to range from .77 to .89; and for the total scale, the Cronbach's Coefficient Alpha was .96 (see Table 2).

In addition to the ISS-R, data collected from the survey questionnaire also included students' self-reported academic achievement level and gender. Students were asked on the questionnaire to report whether they were usually in the top 25%, the middle 50%, or the bottom 25% in class examinations and assessments.

The Chinese version of ISSR has been examined with Cronbach's Coefficient alpha and confirmatory factor analysis. After confirming the factorial validity of the ISSR, the differences of the subscales of ISSR between gender, achievement and schools sampled were investigated with three ANOVAs.

Results

Participants in the survey comprised 369 (52.3%) male students and 333 (47.2%) female students; from seven schools (4 students did not report their gender). In terms of achievement, as self-reported by students, 165 students were within the top 25%, 313 students in the middle 50%, and 129 in the bottom 25% (99 did not report their achievement level). In the Chinese translation of ISS-R, the item means of overall results ranged from 2.86 to 3.71, on a 5-point scale (Table 1).

Table 1. Item means, standard deviations, and item-total correlations for the Chinese ISS-R

People (n = 629, missing value = 40)				
3. The principal involves everyone in the decision-making process.	3.08	0.90	0.53	0.46
6. Teachers in this school show respect for students.	3.62	0.84	0.56	0.57
9. Teachers are easy to talk with.	3.53	0.86	0.55	0.58
12. Teachers take time to talk with students about students' out-of-class activities.	3.70	0.85	0.55	0.55
15. Teachers are generally prepared for class.	3.71	0.81	0.49	0.48
18. Teachers exhibit a sense of humor.	3.55	0.94	0.54	0.51
21. People in this school are polite to one another	3.36	0.86	0.61	0.58
24. Teachers work to encourage students' self-confidence.	3.38	0.88	0.66	0.63
27. The principal treats people as though they are responsible.	3.49	0.82	0.60	0.57
30. Students work cooperatively with each other.	3.52	0.84	0.51	0.50
33. People in this school want to be here.	3.24	0.89	0.63	0.60
36. People in this school try to stop vandalism when they see it happening.	3.39	0.86	0.53	0.53
39. Teachers appear to enjoy life.	3.33	0.87	0.52	0.49
42. School pride is evident among students.	3.14	0.91	0.65	0.60
45. Teachers share out-of-class experiences with students.	3.64	0.89	0.59	0.59
48. Teachers spend time after school with those who need extra help.	3.54	0.81	0.59	0.56
Places (n = 633, missing value = 36)				
4. Furniture is pleasant and comfortable.	3.38	0.90	0.55	0.56
8. The air smells fresh in this school.	3.33	0.95	0.45	0.47
13. The school grounds are clean and well-maintained.	3.35	0.92	0.62	0.62
16. The restrooms in this school are clean and properly maintained.	2.86	1.09	0.58	0.57
20. The principal's office is attractive.	3.02	0.90	0.55	0.47
25. Bulletin boards are attractive and up-to-date.	3.24	0.94	0.57	0.52
28. Space is available for student independent study.	3.66	0.93	0.53	0.49
32. Fire alarm instructions are well posted and seem reasonable.	3.29	0.94	0.49	0.47
37. Classrooms offer a variety of furniture arrangements.	3.17	0.91	0.63	0.60
40. Clocks and water fountains are in good repair.	3.03	1.04	0.50	0.49
44. There are comfortable chairs for visitors.	3.37	0.88	0.60	0.54
49. The lighting in this school is more than adequate.	3.69	0.87	0.54	0.47

Policies (n = 627, missing value = 42)				
5. Teachers are willing to help students who have special problems.	3.68	0.84	0.58	0.49
11. Students have the opportunity to talk to one another during class activities.	3.57	0.85	0.57	0.49
19. School policy permits and encourages freedom of expression by everyone.	3.30	0.92	0.66	0.55
26. The messages and notes sent home are positive.	3.66	0.74	0.64	0.51
34. A high percentage of students pass in this school.	3.07	0.96	0.58	0.50
41. School buses rarely leave without waiting for students.	3.14	0.77	0.46	0.40
47. The grading practices in this school are fair.	3.32	0.91	0.62	0.51
Processes (n = 642, missing value = 27)				
1. Students work cooperatively with one another.	3.45	0.81	0.55	0.46
7. Grades are assigned by means of fair and comprehensive assessment of work and effort.	3.43	0.86	0.53	0.47
14. All telephone calls to this school are answered promptly and politely.	3.27	0.91	0.56	0.47
22. Everyone arrives on time for school.	3.40	0.86	0.55	0.53
29. People often feel welcome when they enter the school.	3.24	0.94	0.64	0.60
35. Many people in this school are involved in making decisions.	3.16	0.92	0.61	0.53
43. Daily attendance by students and staff is high.	3.52	0.84	0.57	0.53
50. Classes get started quickly.	3.38	0.90	0.53	0.52
Programs (n = 657, missing value = 12)				
2. Everyone is encouraged to participate in athletic (sports) programs.	3.50	0.85	0.48	0.52
10. There is a wellness (health) program in this school.	3.42	0.85	0.62	0.53
17. School programs involve out of school experience.	3.53	0.92	0.59	0.57
23. Good health practices are encouraged in this school.	3.35	0.85	0.65	0.58
31. Interruptions to classroom academic activities are kept to a minimum.	3.35	0.86	0.53	0.49
38. The school sponsors extracurricular activities apart from sports.	3.48	0.91	0.64	0.61
46. Mini courses are available to students.	3.59	0.86	0.54	0.52

Note. ***** ITR = Item Total Correlation; items are from the Manual of ISS-R (Smith, 2007.p.9); with permission from Professor K. H. Smith.

Only one item scored below 3.0: "The restrooms in this school are clean and properly maintained." The item with highest score was: "Teachers are generally prepared for class." As shown in Table 2, the item means of the sub-scales of the Chinese translation ranged from 3.27 to 3.50, on a 5-point scale. The reliability of the Chinese translation of ISS-R was investigated. Cronbach's Coefficient Alphas for the five subscales of People, Place, Process, Policy and Program and for Total score were calculated The Cronbach's alphas of all sub-scales in the Chinese version of ISS-R were found to range from .77 to .89, as indicated in Table 2 .In the confirmatory factor analysis, a five factor model provided slightly better fit (CFI = .818, SRMR = .047, RMSEA = .057, 90% CI = .055-.059).

Table 2. Inter-correlations, reliabilities, and summary statistics for the Chinese ISS-R

	Subscales	1	2	3	4	5	Coefficient Alpha	Item Means Mean (Scale SD)
1	People	-					.89	3.46 (0.54)
2	Programs	0.81	-				.85	3.45 (0.61)
3	Processes	0.84	0.76	-			.77	3.35 (0.58)
4	Policies	0.86	0.78	0.82	-		.80	3.39 (0.57)
5	Places	0.83	0.76	0.81	0.82	-	.81	3.27 (0.58)
6	**Total Scale**	**0.93**	**0.89**	**0.91**	**0.92**	**0.92**	**.96**	**3.39 (0.52)**
	Female sample (n= 281)							
1	People	-					.89	3.50 (0.49)
2	Programs	0.79	-				.86	3.51 (0.57)
3	Processes	0.83	0.75	-			.78	3.39 (0.55)
4	Policies	0.86	0.76	0.83	-		.82	3.41 (0.53)
5	Places	0.82	0.77	0.82	0.84	-	.82	3.29 (0.56)
6	**Total Scale**	**0.92**	**0.88**	**0.91**	**0.92**	**0.92**	**.96**	**3.42 (0.49)**
	Male sample (n= 306)							
1	People	-					.89	3.43 (0.57)
2	Programs	0.82	-				.84	3.40 (0.65)
3	Processes	0.84	0.76	-			.76	3.30 (0.61)
4	Policies	0.86	0.79	0.81	-		.79	3.38 (0.59)
5	Places	0.83	0.76	0.80	0.80	-	.80	3.27 (0.61)
6	**Total Scale**	**0.94**	**0.90**	**0.91**	**0.93**	**0.92**	**.96**	**3.37 (0.55)**

Note. All correlations are significant at the 0.01 level. Subscales of ISS-R use a 5-point scale. Total sample (N= 590)

Table 3. Univariate analysis of variance of ISS-R sub-scale and total scores by gender

	Male (N=290)	Female (N=266)		
ISS-R	**Mean (SD)**	**Mean (SD)**	**F**	**η^2**
People	3.42 (0.57)	3.49 (0.48)	1.833	0.003
Places	3.28 (0.61)	3.29 (0.55)	0.036	0.000
Policies	3.38 (0.60)	3.40 (0.53)	0.163	0.000
Processes	3.32 (0.60)	3.39 (0.54)	2.065	0.004
Programs	3.41 (0.63)	3.51 (0.55)	3.702	0.007
Total	3.36 (0.55)	3.42 (0.49)	1.336	0.002

Note. $*p < .05$, $**p < .01$, $***p < .001$. *F* test was based on *df* = 554.

Table 4. Univariate analysis of variance of ISS-R sub-scale and total scores by students' self-perceived achievement level

	Top 25% (N=132)	Middle 50% (N=258)	Bottom 25% (N=105)		
ISS-R	Mean (SD)	Mean (SD)	Mean (SD)	F	η^2
People	3.54[a] (0.61)	3.45[ab] (0.53)	3.32[b] (0.47)	4.432*	0.018
Places	3.32 (0.66)	3.28 (0.56)	3.23 (0.57)	0.702	0.003
Policies	3.45[a] (0.65)	3.41[ab] (0.57)	3.25[b] (0.48)	3.987*	0.016
Processes	3.38 (0.64)	3.38 (0.57)	3.25 (0.53)	1.981	0.008
Programs	3.49 (0.68)	3.47 (0.59)	3.39 (0.54)	0.931	0.004
Total	3.44 (0.61)	3.40 (0.52)	3.29 (0.46)	2.410	0.010

Note. *p < .05, **p < .01, ***p < .001. F test was based on df = 492. Values with differing superscripts indicate significant within-row mean score differences between groups of students with different self-perceived achievement levels, using Bonferroni comparisons.

Differences in Perceived School Climate between subgroups of gender, achievement and school

Due to the fact that school number 7 contained only 37 students, this sample size was deemed insufficient for MANOVA. The following MANOVA — with gender, achievement and school as predictors and the subscales of ISS-R as dependent variables — was therefore conducted without the sample from school number 7. When all three independent variables were analyzed in the same MANOVA, no significant interaction effects were found. ANOVAs were conducted on the Grade 11 students, with gender (valid n =554), achievement (valid n =495) and school (valid n =559,) as separate independent variables in three separate analyses and People, Places, Policies, Processes, and Programs subscales as dependent variables Regarding the People subscale score, the results indicated significant main effects for Achievement Level (F(2, 495) = 4.432, p = .012, Partial Eta Squared =.018) and School (F(5, 559) = 5.175, p < .001, Partial Eta Squared = .045), and non-significant main effects for Gender (F(1, 556) = 1.833, p = .176, Partial Eta Squared = .003). Regarding the Places subscale score, the results indicated significant main effects for School (F(5, 559) = 3.100, p = .009, Partial Eta Squared = .027), while non-significant main effects for Achievement Level (F(2, 495) = 0.702, p = .496, Partial Eta Squared = .003) and Gender (F(1, 556) = 0.036, p = .849, Partial Eta Squared = .000). Regarding the Policies subscale score, the results indicated significant main effects for Achievement Level (F(2, 495) = 3.987, p = .019, Partial Eta Squared =.016) and School (F(5, 559) = 7.240, p < .001, Partial Eta Squared = .061), while non-significant main effects for Gender (F(1, 556) = 0.163, p = .686, Partial Eta Squared = .000). Regarding the Processes subscale score, the results indicated significant main effects for School (F(5, 559) = 6.030, p < .001, Partial Eta Squared = .052), while non-significant main effects for Achievement Level (F(2, 495) = 1.981, p = .139, Partial Eta Squared =.008) and Gender (F(1, 556) = 2.065, p = .151, Partial Eta Squared = .004). Regarding the Programs subscale score, the results indicated significant main effects for School (F(5, 559) = 4.393, p = .001, Partial Eta Squared = .038), while non-significant main effects for Achievement Level (F(2, 495) = 0.931, p = .395, Partial Eta Squared =.004) and Gender (F(1, 556) = 3.702, p = .055, Partial Eta Squared = .007). Regarding the ISSR total score, the results indicated significant main effects for School (F(5, 559) = 5.539, p < .001, Partial Eta Squared = .048), while non-significant main effects for Achievement Level (F(2, 495) = 2.410, p = .091, Partial Eta Squared =.010) and Gender (F(1, 556) = 1.336, p = .248, Partial Eta Squared = .002).

To follow up with the significant main effect of Achievement Level on the two subscales of People and Policy and the significant main effect of School on the five subscales of People, Places, Policies, Processes and Programs, multiple comparison tests were performed under Bonferroni criterion to adjust for multiple tests within different categories of Achievement Level and School. Multiple comparison tests among Achievement Level revealed that students in the top 25% achievement level scored significantly higher than students in the bottom 25% achievement level in terms of People subscale score (mean difference = 0.21, p = .009) and Policies subscale score (mean difference = 0.20, p = .023) (Table 6). From multiple comparison tests among School, for the People subscale score, students in School 4 scored significantly higher than School 1 (mean difference = 0.21, p = .046), School 2 (mean difference = 0.40, p = .001), School 3 (mean difference = 0.30, p = .001), and School 5 (mean difference = 0.31, p = .019) (Table 7). For the Places subscale score, students in School 4 scored significantly higher than School 5 (mean difference = 0.37, p = .006). For the Policies subscale score,

students in School 4 scored significantly higher than School 1 (mean difference = 0.24, p = .026), School 2 (mean difference = 0.48, p < .001), School 3 (mean difference = 0.32, p < .001), School 5 (mean difference = 0.45, p < .001) and School 6 (mean difference = 0.25, p = .012). For the Processes subscale score, students in School 4 scored significantly higher than School 1 (mean difference = 0.26, p = .009), School 2 (mean difference = 0.47, p < .001), and School 5 (mean difference = 0.37, p = .004). Students in School 6 also scored significantly higher than School 2 (mean difference = 0.33, p = .012) in the Processes subscale score. For the Programs subscale score, students in School 4 scored significantly higher than School 2 (mean difference = 0.36, p = .012), School 3 (mean difference = 0.24, p < .048), and School 5 (mean difference = 0.36, p = .011). For the ISSR total score, students in School 4 scored significantly higher than School 1 (mean difference = 0.21, p = .047), School 2 (mean difference = 0.39, p = .001), School 3 (mean difference = 0.26, p = .004), and School 5 (mean difference = 0.37, p = .001).

Discussion

The findings from this study suggest that respondents appeared to have no difficulty in understanding the Chinese language questionnaire items and applying them to their own school experiences. There are no significant differences in the perceptions of school climate in the five domains of people, places, processes, policies, and programs among boys and girls.

There are significant differences in the perceptions of school climate in the domains of people and policies among students of low average and high achievement levels. There are significant differences in the perceptions of school climate in the five domains of people, people, places, processes, policies, and programs among students from different schools.

Regarding any investigation of school climate, it is important to reiterate that there is some disagreement among researchers as to whether climate is a property of schools or is a reflection of the subjective perception by the participants in that school. Most researchers believe that climate is a property of the school, and teachers and students simply experience that climate in their daily interactions within the school. The opposite view holds that climate is a psychological property of the individual within the school. In this scenario, the perceived climate will be different for each participant based on personal characteristics and experiences. It has been suggested that the extent to which individuals agree on climate factors could be measured and used to construct a tool for assessing school climate. For example, Lindell and Brandt (2000) have suggested that "average climate" within the school is a meaningful phenomenon, and ratings from observers and participants could be combined to form a rough measure of "climate quality." A problem that arises from such a rough estimation of climate quality is that it is difficult then to implement suitable strategies to improve or change school climate because of the diversity of personal perceptions of students.

Some particular features of a school that is viewed positively by some students may not be viewed in the same way by others. Between these two views of school climate is a belief that climate is actually a property of both the school and of individuals. The findings from this study supported this third position and suggest that school climate could be a school property in some areas, but an individually perceived aspect in other areas. The purpose of conducting the ANOVAs of ISS-R subscale scores against participants' self-reported achievement ratings was to identify those among the five Ps through which invitational climate was perceived differently among students of different academic achievement.

The present study revealed that students of different academic achievement had significantly different perceptions of invitational climate in two domains, namely People and Policies (Table 6). Lower ability students felt less positive than higher achievers about the people and policies in their schools, perhaps as a result of less than satisfying encounters with both. On the other hand, those areas through which the invitational climate was perceived as the same among students of different academic achievement (Processes, Programs and Places) suggests that invitational climate perceived by students in these areas was a school-level property that is not influenced by academic ability.

Three main practical implications can be derived from the findings of this study. First, the practice of IE in the areas of "people" and "policies" might be more effective if differentiated for students of different academic levels. Such differentiated IE practice under "people" could be implemented in areas of teacher-student relationships (e.g., establishing a particularly supportive and encouraging relationship between teachers/counselors and lower-ability students; school principals being more approachable to lower-ability students) and in the peer group. In terms of policies, differences in ability might necessitate greater flexibility in assessment practices, assignment policy, streaming or grouping policy, and promotion policy according to students' ability level. In general, it would be desirable to strengthen the messages of trust, respect and optimism to students of lower academic achievement through these two areas. Second, schools could focus more on increasing school-level IE practices in the areas of

Processes, Programs and Places since these seem to impact equally on higher- and lower-ability students. Third, the Chinese version of ISS-R could be used by individual schools for assessing the invitational climate perceived by their students with different characteristics. This may enable identification of those areas of IE practice that need (or need not) be modified to cater for individual differences among students. This information could allow school-level or group-level IE practices to be more adaptable.

The fact that ISS-R was found to be valid and reliable for use in a Chinese context might encourage similar studies to be carried out in primary schools and/or schools in other Chinese communities such as Chinese mainland or Taiwan. To date, the IE research which has been carried out in Hong Kong comprises almost entirely qualitative studies (Chieh, 2004; Hui, 2009; Poon, 2010; Wong, 2007). There is a need now for a large-scale quantitative study, for example, exploring the effects of varying IE practices in controlled and closely monitored ways. Findings from these studies should add much more knowledge to the principles and practices of IE.

Although the Chinese version of ISS-R was used here to investigate the invitational climate of schools already committed to Invitation Education, it could also be used effectively as a measure in non-IE schools. These schools might have adopted similar or additional practices that result in a positive invitational climate; and again investigating what they do can add much knowledge to IE theory and practice.

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