Exploring the Influence of the Classroom Environment on Students' Motivation and Self-regulated Learning in Hong Kong

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This study aims at exploring the characteristics of classroom environment in Hong Kong's junior secondary schools, and investigates the influence of classroom environment on students' motivation and use of self-regulated learning strategy. A total of 1,955 Grade 7 to 9 junior secondary students responded to a questionnaire that comprised two sets of instruments, i.e., the Hong Kong Classroom Environment Scale and the Chinese version of Motivated Strategy for Learning Questionnaire. The findings of this study suggest that high teacher support and involvement is a salient feature of classroom environment in Hong Kong. However, in contrast to results of Western research, this study found that it was teachers rather than students who were more influential on students' self-regulated learning in Hong Kong, which might reflect some culture-specific features of teacher-centred classroom environment in Hong Kong. The implications of these findings for understanding Hong Kong classroom environment and students' self-regulated learning are discussed. Finally, suggestions for future research are put forward.

Keywords: classroom environment; self-regulated learning; motivation; Hong Kong

Student motivation, suggested by researchers as one of the most powerful determinants of students' success and failure in school (Hidi & Harackiewicz, 2000; Pintrich, 2003), is a central issue in studies in learning and teaching contexts, and the self-regulation theory is one of the most established conceptual frameworks on motivation research (Pintrich, 1999, 2004). By self-regulation, student learning is defined as an active, constructive process where learners set goals for their learning and then try to regulate and control their cognition, motivation and behavior. At the same time, this process is guided or constrained by students' goals and the contextual characteristics in the environment (Pintrich, 2000; Schunk, 2005).

The Motivated Strategies for Learning Questionnaire (MSLQ) developed by Pintrich and his colleagues is a broadly-used instrument for assessing students' motivational beliefs and self-regulated learning strategies (Duncan & McKeachie, 2005; Pintrich & De Groot, 1990; Pintrich, Smith, Garcia, & McKeachie, 1993). Based on the MSLQ for junior secondary school students suggested by Pintrich and De Groot (1990), Rao and Sachs (1999) adapted a Chinese version of MSLQ (MSLQ-CV) to measure junior secondary students' motivation and self-regulated

learning in Hong Kong. Compared with the original instrument, the MSLQ-CV maintained the three factors of motivational beliefs, i.e., self-efficacy, intrinsic value and test anxiety, but combined the two factors of self-regulated learning strategies, namely, strategy use and self-regulation, into one common factor of strategy use. The results of confirmatory factor analysis showed that the 44-item, 4-factor MSLQ-CV had good psychometric properties (Rao & Sachs, 1999).

As Pintrich, Marx, and Boyle (1993) pointed out, student motivation is more situation or context specific rather than a stable personality trait, and research conducted by Pintrich and his colleagues provided empirical evidence that classroom differences in productive work, teacher effectiveness and cooperative work are significantly related to various aspects of student motivation and self-regulated learning (Pintrich, Roeser, & De Groot, 1994). In S. Paris and A. Paris' review (2001), research on self-regulated learning in the past decades has progressively emphasized cognitive strategies, motivation and social support in the classroom. With the classroom becoming a focus of motivation research, researchers begin to advocate integrating the classroom context into motivation theory, and the focus of research questions has also been expanded from individual differences to interaction between student motivation and the classroom context which includes the social elements such as teachers and peers, cultural elements such as norms and expectations, and material elements such as subject area, curricula and tasks (Turner, 2001; Turner & Meyer, 1999).

Recently, researchers in different countries have increasingly focused their studies on the impact of classroom environment on students' motivation. For example, in a qualitative study, Hanrahan (1998) found that even though students in an Australian secondary school viewed the classroom environment positively, both intrinsic and extrinsic motivation were constrained by the preponderance of teacher-centred methods of instruction. In Israel, Eshel and Kohavi (2003) analysed the relationships between students' perceptions of classroom control styles, their motivation and self-regulated learning. They found that students' adoption of self-regulated learning strategies was linked to the net effect of student control: it was highest when student control is high and teacher control is low, and was lowest when teacher control is high and student control is low. Alfassi's (2004) experimental study found that a learner-centred environment could yield significantly higher achievement scores and a higher internal motivational orientation. In Malaysia, researchers found that student-teacher interactions, including the three dimensions of student-centred learning, teacher feedback and strategy instruction, could significantly predict the self-regulated learning of students of higher ability (Yen, Bakar, Roslan, Luan, & Rahman, 2005). A study on high school students' motivation in Taiwan found that students' classroom environmental perceptions, including teacher support, peer support and teacher interpersonal style, were strong predictors for students' motivation, and that these environmental factors explained 46% of variance in students' motivation (Hardré, Chen, Huang, Chiang, Jen, & Warden, 2006). In the United States, Young (2005) found that the three dimensions of classroom environment, i.e., instructor climate, learning climate and performance climate, had significant influences on the cognitive, motivational and behavioural components of students' self-regulated learning. Ryan and Patrick (2001) found that classroom social environment had significant effects on changes in middle school students' motivational beliefs and engagement. Specifically, students' perceptions of teacher support and the teacher as promoting mutual respect were significantly related to positive changes in students' efficacy and self-regulated learning, and students' perceptions of the teacher as promoting performance goals were related to the negative changes in their social efficacy with the teacher. Students' perceptions of the teacher as promoting peer interactions, however, were shown to have no significant relations to academic efficacy and self-regulated learning. In Pintrich et al.'s (1994)

study, it was also found that students' individual perception of cooperative work had no significant impacts on their motivation and self-regulated learning strategies. In summary, although these studies suggested that students' motivation and self-regulated learning could be facilitated in a more student-centred classroom environment with high student autonomy and teacher support, in terms of the function of student collaboration on self-regulated learning, there is still no consensus.

In Hong Kong, the past two decades have seen several studies investigating the relationship between classroom environment and various aspects of student learning. Cheng (1994) found that students' perceptions of some classroom environmental factors, e.g., perceived quality of physical environment and class master's expert power and coercive power, were the strongest predictors of their affective performance, including self-concept, attitude towards peers, school and teachers. Chan and Watkins' (1994) study found that Hong Kong secondary students tended to prefer a friendlier atmosphere where students and teachers collaborated to provide a greater variety of interesting and challenging activities, and that such a learning environment would tend to promote students' deep learning approach. Contrary to Western research findings, Wong and Watkins (1998) found that a deep learning approach could lead to students' perception of a less enjoyable classroom environment, which could be explained by the notion that in Chinese culture, academic success is often attributed to effort and hard work. In Thomas and Au's (2005) study, they found that after a 2-month intervention to alter the classroom environment, student interviews and classroom observations showed there were some positive changes in primary students' metacognitive knowledge of thinking and learning strategies, though no statistical difference was found between the pre- and post-intervention. Lau and Lee's (2008) investigation suggested that students' perception of classroom environment had significant impacts on their achievement goals and use of

learning strategy. However, in this study, the three factors of classroom environment, i.e., mastery task, autonomy support and mastery evaluation, were combined to a common composite score because of the extremely high correlations among them (.84-.99), so we still know little about the details of the associations between classroom environment and student motivation, or specifically, achievement goals.

The relationships between the contextual variables of Hong Kong schools and students' motivation and self-regulated learning have also been examined. Salili and Lai (2003) found that students in CMI (Chinese as the medium of instruction) schools made more use of learning strategies than students in EMI (English as the medium of instruction) schools, and that students in low-ability schools used fewer self-regulated strategies in learning than their counterparts in high-ability ones. This is contradictory to Rao, Moely, and Sachs' (2000) findings that high- and low- achievers did not differ in their use of self-regulated strategies. In Mok, Fan, and Pang's (2007) study, they found that Hong Kong students' competencies of using self-regulated strategies decreased with age with a sharp decline noticeable at the primary/secondary school transition. As to the contextual variables of classroom, there is still a dearth of studies exploring the role of classroom environment in self-regulated learning in Hong Kong.

It has long been argued by researchers that there are remarkable differences between the classroom environment in the East Asian societies, such as Hong Kong, Taiwan, Mainland China, Japan and that in the Western countries. Some researchers commented that in places under the influence of Confucian-heritage traditions like Hong Kong, the classroom environment is characterised by large class size (usually more than 40 students), low teacher-student ratio, high competitiveness, harsh classroom climate, and an emphasis on low-level learning outcomes and good performance in in-school and public examinations (Biggs, 1996), all of which were contradictory to Western research on the features

of a "good" classroom environment, such as small classes, warm classroom climate, student-centredness, and a nonthreatening assessment atmosphere (Biggs, 1996; Watkins & Biggs, 2001). Hence, there are some common Western stereotypes that Asian classrooms are usually teacher-centred with passive students (Mok, Chik, Ko, Kwan, Lo, Marton, Ng, Pang, Runesson, & Szeto, 2001), and that the teacher is an authoritarian purveyor of information rather than a facilitator of students' learning and knowledge construction (Stigler & Stevenson, 1991).

In short, although the impact of classroom environment on Hong Kong students' affective performance (Cheng, 1994), learning approaches (Wong & Watkins, 1998), metacognition (Thomas & Au, 2005) and achievement goals (Lau & Lee, 2008) have been discussed, little is known about the influence of classroom environment on students' motivation and self-regulated learning strategies. Therefore, the present study aims at addressing this gap by exploring the following questions:

1. What are the characteristics of psychosocial classroom environment in Hong Kong with respect to collaborativeness among students, order and student involvement, teacher involvement and support?
2. What are the effects of the classroom environment on students' motivation and use of self-regulated learning strategies?

METHOD

Participants

A total of 1,955 Hong Kong junior secondary students (Grade 7 to 9) participated voluntarily in this study. Of the sample, 45.3% were female (n=885) and 54.7% were male (n=1,070); 29.6% were from Grade 7 (n=578), 36.5% were from Grade 8 (n=714) and 33.9% were from Grade 9 (n=663). They were between the ages of 10 and 18 (M=13.94, SD=1.20).

Instruments

The Chinese version of the Motivated Strategy for Learning Questionnaire (MSLQ-CV)

The MLSQ-CV developed by Rao and Sachs (1999) was given to the participants. The 44-item instrument contains four factors namely: self-efficacy, intrinsic value, test anxiety, and strategy use. There are nine items in the factor of self-efficacy like "I am certain that I can understand the ideas taught in my classes" and "I expect to do very well in school." For intrinsic value, there are nine items including statements such as "I prefer class work that is challenging so I can learn new things" and "I like what I am learning in school." In the factor of test anxiety, the four items comprise statements like "I am so nervous during a test that I can not remember facts that I have learned" and "I worry a great deal about tests and exams." For strategy use, there are a total of 22 items including statements such as "When I study I put important ideas into my own words" and "I ask myself questions to make sure I know the material I have been studying."

Research using the MSLQ-CV in Hong Kong has repeatedly shown students having difficulties in answering the reverse-coded items. Rao and her colleagues (Rao & Sachs, 1999; Rao et al., 2000) suggested that the four reverse-coded items (items 26, 27, 37 and 38) can be clustered to form a separate "methods" scale, which made researchers discard the four items in some recent studies (Sachs, Law, Chan, & Rao, 2001; Mok et al., 2007). However, in order to ensure the completeness of the original conceptual framework, the reverse-scored items were modified to be positively expressed without changing the meaning of the statements in the present research. For example, "It is hard for me to decide what the main ideas are when I study" (item 26) was changed to "It is easy for me to decide what the main ideas are when I study."

Hong Kong Classroom Environment Scale

Considering the problem of cultural relevance, Wong and Wakins (1998) suggested that researchers use an appropriate instrument to collect information about students' perceptions of classroom environment. Therefore, the Hong Kong Classroom Environment Scale (HKCES) developed by Lee, Lee, and Wong (2003) was adopted to measure students' perception on classroom environment in the present study. The 28-item instrument comprises four factors, i.e., collaborativeness among students, order and student involvement, teacher involvement, and teacher support. For collaborativeness among students, the four items comprise statements such as "Classmates help each other in learning" and "After class, classmates can find others to discuss homework." There are eight items in the factor of order and student involvement like "In class, students can usually keep quiet" and "In class, students are working very hard to study." In the factor of teacher involvement, there are nine items such as "If a student requests, the teacher will explain and answer patiently" and "The teacher explains textbook contents in detail." For teacher support, the seven items comprise the statements like "The teacher often rewards students for progress in academic achievements" and "The teacher gives advices on students learning progress."

There were four reverse-coded items (items 9, 19, 25 and 26) in the original HKCES. In the present study, they were changed to positive statements in order to avoid potential difficulties for participants caused by negative wording. For example, "Students are often disturbed by other classmates in class" (item 19) was changed to "Students are not disturbed by other classmates in class." Moreover, although the HKCES was designed to assess both the perceptions of actual and expected classroom environment of upper primary and junior secondary school students, only students' perception of actual classroom environment was considered in this study as its primary aim was to investigate the impact of actual classroom environment on students' self-regulated learning.

All items in the two instruments were scored on a 5-point Likert scale from 1 (not at all true of me) to 5 (very true of me).

RESULTS

Descriptive statistics and analysis for reliability and construct validity

The descriptive statistics for the subscales of MSLQ-CV are shown in Table 1. Among the four subscales, intrinsic value was scored the most positively by students ($M = 3.32$), and test anxiety

Table 1

Correlations, descriptive statistics and reliability analysis of MSLQ-CV

	Self-efficacy	Intrinsic value	Test anxiety	Strategy use
Self-efficacy	—			
Intrinsic value	.80	—		
Test anxiety	.14	.23	—	
Strategy use	.77	.79	.26	—
M	3.14	3.32	3.09	3.21
SD	.63	.64	.80	.60
Cronbach's α	.85	.85	.71	.93

Note: $\chi^2 = 6853.30, p = 0.00$, NFI=.97, NNFI=.97, CFI=.97, IFI=.97, RFI=.96, RMSEA=.060

obtained the lowest score ($M = 3.09$). From the internal consistency estimates of reliability shown in Table 1, all four Cronbach's alpha coefficients were higher than .85 with the exception of the factor test anxiety (.71). This indicates that all subscales in the MSLQ-CV had high internal consistency. Furthermore, confirmatory factor analysis (CFA) using LISREL8.53 was used to examine the construct validity of the MSLQ-CV. Results showed that all items had moderate to high factor loading values (.51-.75) to the corresponding factors. Some indices were employed to assess the general model fitness, such as NNFI, CFI, IFI, RMSEA (Joreskog & Sorbom, 1998). The goodness-fit-indices indicated a good fit to the data and supported the proposed factor structure suggested by Rao and Sachs (1999).

However, CFA results of the HKCES found the factor of teacher involvement to have extremely high correlation with the factor of teacher support ($r = .93$, $p<.01$). Further analysis of the items' content of the two factors indicated that the meaning of the two factors are quite similar and that both reflect the guidance and supportive role that teachers play in students' learning, for example, "The teacher is always willing to answer students' questions" in teacher involvement and "The teacher often helps students to set learning targets" in teacher support, and "The teacher arrange adequate time for teaching every lesson" in teacher

involvement and "The teacher often designs some class assignments so as to allow students to apply knowledge in daily lives" in teacher support. This close resemblance in meaning may have affected students' ability in differentiating among the items. Therefore, the two factors were combined into one factor of teacher involvement and support. After this combination, all the goodness-of-fit indices were acceptable except that the value of RSMEA was slightly higher than .08. Table 2 shows the descriptive statistics and reliability analysis of the revised HKCES. Among the three subscales, the combined factor of teacher involvement and support was assessed the most positively by students ($M = 3.41$), and the factor of order and student involvement was scored the lowest ($M = 2.90$). The results of reliability analysis presented in Table 2 show that all three subscales had acceptable internal consistency and all values of Cronbach's α were higher than .80.

Comparison of grade and gender differences

Table 3 shows the analysis of the grade and gender differences on the factors of the MSLQ-CV and the HKCES. The results of two-way ANOVA indicated that there was no significant interaction effect. Although the girls' self-efficacy was significantly lower than that of the boys, their perception of collaborativeness was significantly higher. As to the grade differences, of all seven

Table 2

Correlations, descriptive statistics and reliability analysis of HKCES

	CO	OI	TI&S
CO	—		
OI	.79	—	
TI&S	.72	.55	—
M	3.17	2.90	3.41
SD	.84	.83	.77
Cronbach's α	.82	.89	.95

Note: a. $\alpha^2 = 5104.78$, $p = 0.00$, NFI=.97, NNFI=.97, CFI=.97, IFI=.97, RFI=.96, RMSEA=.089;

b. CO = Collaborativeness among students, OI = Order and student involvement, TI&S = Teacher involvement and support.

Table 3

Grade and gender differences on the factors of the MSLQ-CV and the HKCES

| Variable	Group		n	M	SD	F
Self-efficacy	Grade	G7	571	3.22	0.65	6.64**
		G8	710	3.11	0.62	
		G9	653	3.10	0.60	
	Gender	F	878	3.08	0.55	-4.10**
		M	1056	3.19	0.68	
	Grade × Gender					1.68
Intrinsic value	Grade	G7	567	3.48	0.67	24.67**
		G8	705	3.27	0.63	
		G9	643	3.24	0.60	
	Gender	F	873	3.32	0.58	-.13
		M	1042	3.33	0.69	
	Grade × Gender					1.63
Test anxiety	Grade	G7	568	3.06	0.86	.70
		G8	707	3.10	0.78	
		G9	654	3.11	0.76	
	Gender	F	876	3.12	0.74	1.77
		M	1053	3.06	0.84	
	Grade × Gender				.	2.51
Strategy use	Grade	G7	549	3.28	0.64	6.647**
		G8	692	3.18	0.60	
		G9	639	3.17	0.55	
	Gender	F	865	3.22	0.523	.81
		M	1015	3.20	0.65	
	Grade × Gender					.087
Collaborativeness among students	Grade	G7	555	3.21	0.85	6.44**
		G8	696	3.23	0.80	
		G9	651	3.08	0.88	
	Gender	F	862	3.24	0.79	3.03**
		M	1040	3.12	0.88	
	Grade × Gender					.084
Order and student involvement	Grade	G7	554	2.93	0.86	6.42**
		G8	691	2.97	0.78	
		G9	651	2.81	0.84	
	Gender	F	865	2.87	0.77	-1.64
		M	1031	2.93	0.87	
	Grade × Gender					2.26
Teacher involvement and support	Grade	G7	552	3.67	0.78	53.32**
		G8	684	3.39	0.71	
		G9	649	3.22	0.75	
	Gender	F	858	3.41	0.70	.012
		M	1027	3.41	0.82	
	Grade × Gender					.17

Note: ** $p<.01$; G7 = Grade 7 students, G8 = Grade 8 students, G9 = Grade 9 students, F = female, M = male.

factors examined, only test anxiety, a factor in the motivation section of the MSLQ-CV, was found to have no significant grade difference. Specifically, Grade 7 students' self-efficacy, intrinsic value and strategy use were significantly higher than those of Grade 8 and Grade 9 students. There was no significant difference between Grade 8 students and Grade 9 students. For students' perception of classroom environment, Grade 9 students scored significantly lower than their counterparts in Grade 7 and 8 on the subscales of collaborativeness and order and student involvement, and students' perception of teacher involvement and support was found to be highest at Grade 7, declining significantly at Grade 8 and Grade 9.

Relationships between students' motivation, learning strategy use and the classroom environment

Due to the strength of analysing the complex relations among multiple latent variables simultaneously, structural equation modeling (SEM) using the LISREL 8.53 program was used to examine the impacts of classroom environment on students' motivation and self-regulated learning. In the model, the three factors of classroom environment in Hong Kong were used as the independent variables to directly predict students' motivational beliefs and use of learning strategy. The SEM results showed this model was good to fit the data in general (see Figure 1). Specifically, the results indicated that: (1) collaborativeness among students had no significant impact on students' motivational beliefs and strategy use; (2) order and student involvement had positive and significant but weak impact on students' self-efficacy, test anxiety and strategy use, and no significant impact on students' intrinsic value of learning; (3) teacher involvement and support had positive, significant and moderate impact on students' efficacy, intrinsic value and use of learning strategy,
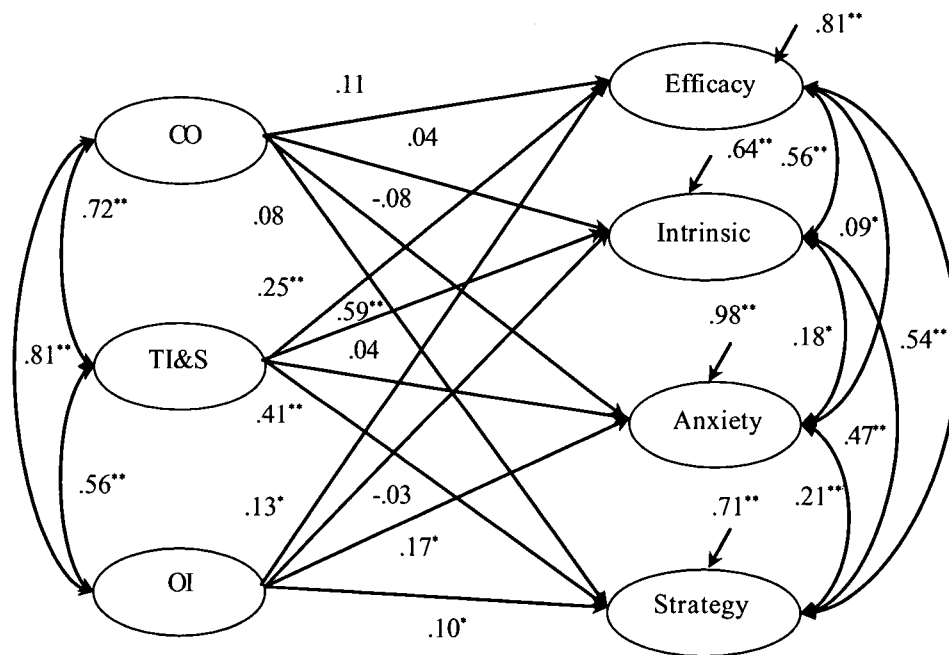
Note: a. χ^2=14647.44, p=0.00, df=2393, NFI=.97, NNFI=.98, CFI=.98, IFI=.98, RFI=.97, RMSEA=.053;
        b. * $p<.05$, ** $p<.01$;
        c. CO = Collaborativeness among students, OI = Order and student involvement,
        TI&S = Teacher involvement and support, Efficacy = Self-efficacy, Intrinsic = Intrinsic value,
        Anxiety = Test anxiety, Strategy = Strategy use.

Figure 1. *Findings of SEM model between HKCES and MSLQ-CV*

among which the relations between teacher involvement and support and students' intrinsic value was the strongest one ($B = .59$, $p<.01$), but there was no significant relations between teacher involvement and support and students' test anxiety; (4) the correlations among the independent variables and among the residuals of dependent variables were all acceptable. Compared with other factors in the classroom environment, teacher involvement and support was the most powerful predictor of students' motivation and self-regulated learning.

DISCUSSION

This study aimed to explore the characteristics of classroom environment in Hong Kong's junior secondary schools, and investigated the influence of classroom environment on students' motivation and use of self-regulated learning strategy. As for students' perceptions of classroom environment, the results of this study suggest the following: First, the junior secondary students (Grade 7 to 9) may have difficulties differentiating conceptually the two factors reflecting teachers' active role in leading and supporting students' classroom learning, i.e., teacher involvement and teacher support. So, the two factors can be combined to generate a new common factor of teacher involvement and support. After the combination, students scored much higher on this new subscale (M=3.41) than the other two subscales in HKCES (M=3.17 for collaborativeness and M=2.90 for order and student involvement), which echoes Wong's (1996) findings that the teacher is the most crucial factor in Hong Kong's classroom environment. Kember (1997) classified two broad orientations of teaching conceptions which refers to the overall view that teachers have of the process of teaching, i.e., teacher-centred orientation which is characterised as imparting information and transmitting structured knowledge, and student-centred orientation which is labeled as facilitating students' understanding and intellectual development. Broadly speaking, teacher–

centredness focuses on teachers' role of transmitting knowledge, with knowledge passing from the expert teacher to the novice learner, and the development of the instruction and control of the learning process that is retained by the teacher. In contrast, student–centredness stresses what students do to achieve their own learning goals in the classroom, and provides opportunities for students to draw on their own experiences and interpretations of the learning process (Schuh, 2004; Kember, 1997). The result of this study shows that teacher-centredness, rather than student-centredness, can be seen as a salient feature of classroom environment in Hong Kong.

Second, in general, Grade 9 students scored lower on HKCES than their counterparts in Grade 7 and 8. Particularly, when students moved into higher grades in junior secondary school, their perception of teacher involvement and support significantly decreased, which might suggest that with the development of students' ability, students had more and more control of the classroom climate and structure.

Third, although some studies found that girls view their classroom environment more favourably than do the boys (Goh & Fraser, 1998; Huang, 2003), the present study found that there were no significant gender differences except that girls scored higher than boys on collaborativeness, which indicate that girls are more willing to cooperate with their classmates in learning activities.

As for students' motivation and use of self-regulation learning strategy, this study found that students generally scored high on the four subscales of MSLQ-CV, with test anxiety being scored the lowest (M=3.09) and intrinsic value the highest (M=3.32). Although Grade 7 students scored higher than students in Grade 8 and Grade 9 on subscales of self-efficacy, intrinsic value and strategy use, there was no significant grade difference on test anxiety. This indicates that test anxiety is a stable and prevalent phenomenon among junior secondary students in Hong Kong. Moreover, though gender was not a significant predictor of intrinsic value, test anxiety and strategy use, girls did have a lower perception of self-

efficacy than boys, indicating that boys were more confident about their ability to study well in classrooms, which is consistent with the findings of Mok et al.'s (2007) study on Hong Kong students' motivational competencies.

Examining contextual conditions in classroom provides an insight into the factors that support or impede the development of self-regulated learning in classrooms. First, the results of structural equation modeling for the relationships between classroom environment and students' self-regulated learning found that collaborativeness among students had no significant effects on their motivational beliefs and use of self-regulated strategy (see Figure 1), which echoes the findings of some Western researchers, e.g., Pintrich et al. (1994) and Ryan and Patrick (2001). On one hand, this can probably be explained by the fact that students are at similar developmental levels and possess similar learning experiences, especially the limited metacognitive knowledge of monitoring their learning method and process which is important for the development of self-regulation. On the other hand, as Biggs and Watkins (1996) pointed out, peer interaction sometimes becomes more social and recreational rather than task- or learning-related, which could confine the function of student collaboration on the development of self-regulated learning.

Second, compared with student collaboration, order and student involvement was a more significant predictor of self-regulated learning. To be specific, order and student involvement had positive impacts on self-efficacy and strategy use, though it had no significant impact on their intrinsic value. However, it was notable that order and student involvement can also increase their test anxiety, which implies that overly stressing order and obedience in the classroom places too much pressure on students, and may not help enhance their intrinsic interest in learning.

Third, interestingly, this study found that it is teacher involvement and support rather than students' cooperation or involvement in classroom that is the strongest predictor of Hong Kong students' self-regulated learning. It had significant and relatively high positive influences on students' self-efficacy, intrinsic value and strategy use, though there was no significant relation found between teacher involvement and support and students' test anxiety.

Powerful learning environment facilitates students' self-regulated learning. Western research has repeatedly shown that student-centred orientation is associated with higher students' intrinsic motivation and better classroom climate (Alfassi, 2004; Eshel & Kohavi, 2003; Hanrahan, 1998; Ho, 2001; Yen et al., 2005). Pintrich (2004) commented that compared with the traditional classroom in which teachers control most of the aspects of context, student-centred classrooms offer much more autonomy and responsibilities of learning to students, and hence students are more likely to develop the beliefs, attitudes and strategies of self-regulated learning. However, in contrast to Western research findings, the present study found that teacher-centredness tended to play a dominant role in Hong Kong's classroom environment and it was the teachers rather than the students who were more influential on students' self-regulated learning in Hong Kong. So, why does the teacher-centred psychosocial classroom environment in Hong Kong not impair but improve students' self-regulated learning?

In fact, this kind of paradoxical phenomenon appeared repeatedly in the comparative studies on student learning between students in Confucian-heritage cultures and their Western counterparts. For example, although Chinese learners, often find themselves in classroom environments that are less favourable compared to the "good" environment cited in Biggs (1996) and Watkins and Biggs (2001), they usually outperform the Western students in international academic assessments. Chinese learners also tend to have a more positive attitude toward subject learning than their Western counterparts (Aldridge & Fraser, 2000; Aldridge, Fraser, & Huang, 1999). The possible reason for this phenomenon is the culture-specific nature of teacher-centred classroom environment in Asian regions including Hong Kong. First, "teacher-centredness" does not necessarily refer to teacher

authority or exclusive control in classroom activities. Although constrained by the highly competitive nature of curriculum and the focus of education on developing students' academic ability, Chinese teachers have to adopt a teacher-centred teaching approach in classroom (Aldridge & Fraser, 2000; Aldridge, Fraser, & Huang, 1999), but Asian teachers, as Stigler and Stevenson (1991) observed, are not as authoritarian and arbitrary as the Western stereotype assumes. On the contrary, they consider their tasks to include: posing provocative questions, allowing reflective time, and varying teaching methods to suit students' individual needs. Therefore, the teacher-centred approach can create a respectful and comfortable working relationship between teachers and students, though it may seem hierarchical in the eyes of Western researchers (Biggs & Watkins, 1996; Ho, 2001).

Second, "teacher-centredness" can also induce active student engagement. Mok et al.'s (2001) study indicated that a high degree of teacher control in Hong Kong classrooms does not necessarily imply passive student learning. If we look at the ways teachers handle the subject content and students' experiences of the classroom activities, there is a large space of learning for students and the teacher could successfully engage the students actively by probing the meaning of the curriculum. In the present study, the moderate to high correlations between teacher involvement and support and students' involvement and collaborativeness implies that there is potentially positive impact between them. In nature, it may be more proper to define Hong Kong teachers' classroom practices as "activating teaching" which ensures that students are actively involved in classroom activities, which is manifested when the teacher is asking questions, paying attention to students' responses, stimulating student interaction and guiding students to work on collaborative tasks (Bolhuis & Voeten, 2001).

Third, related to the second reason, the polarized teacher-centredness versus student-centredness may not be appropriate for understanding the psychosocial classroom environment in Hong Kong. Gao and Watkins' (2001) study on teaching conceptions of Mainland China teachers found that they did not split into the teacher-centred/transmitting knowledge versus student-centred/facilitating understanding division as suggested by Kember (1997). In reality, they considered their role as variously including both, depending on circumstances. The multiple duties of the teacher are manifested in the Confucian proverb that "it takes a teacher to transmit wisdom, impart knowledge and resolve doubts" (On the Teacher, "師者，所以傳道授業解惑也"), in which "transmitting wisdom" requires teachers to serve as a moral example as well as guide students' intellectual development. Moreover, Schuh (2004) found that learner-centred principles can be embedded within teacher-centred practices. As long as teachers' practices are grounded in the learner-centred principles which speak more of acceptance of learners and combining a focus on individual learners with a focus on learning, any variety of instructional strategies can be used to facilitate student learning.

Recognizing the culture-specific nature of teacher-centredness in Hong Kong could be a starting point for the improvement of classroom environment. In order to facilitate students' self-regulated learning, the findings of some recent studies indicated that classroom environment could be improved through renewing the manners of teacher involvement and support as follows (Braine, 2003; Lau & Lee, 2008; Schuh, 2004; Young, 2005): (a) providing students with motivating tasks that involve variety, diversity and meaningful reasons; (b) providing students with activity choice and autonomy support for planning and applying appropriate strategies; (c) giving positive feedback to develop students' competence and task mastery orientation; (d) reinforcing social connections between teachers and students in learning; and (e) focusing on individual needs of students and the attributes of complex classroom environments that are most likely to affect learning.

The present study casts light on the directions for future research on the same topic. To be

specific, there are two directions for future researchers' consideration. One is to investigate in detail the means of teacher involvement and support in Hong Kong classrooms through qualitative research, and to find out the influence of teacher-centredness on students' self-regulated learning, and the other direction is to explore the influences of students' collaboration and student learning community on students' motivation and learning strategies in classrooms.

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