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SECONDARY SCHOOL STUDENTS' PERCEPTIONS OF CLASSROOM ENVIRONMENT IN MALAYSIA AND CHINA

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DISSERTATION SUBMITTED IN FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF EDUCATIONAL MANAGEMENT (MASTER BY COURSEWORK AND MIXED MODE)

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ABSTRAK

Kajian ini bertujuan membandingkan persepsi pelajar sekolah menengah tentang persekitaran bilik darjah di Malaysia dan China. Penyelidikan kuantitatif ini menggunakan instrumen *Student Perceptions of Classroom Quality (SPOCQ)* untuk mengumpul data. Sejumlah 260 orang pelajar dari tiga buah sekolah menengah di Tanjung Malim, Malaysia dan 351 orang pelajar dari empat buah sekolah menengah di Wilayah Feng, China telah dipilih secara rawak sebagai responden kajian ini. Analisis deskriptif dan analisis inferensi digunakan untuk menganalisis data yang dikumpul. Analisis deskriptif menggambarkan tahap persepsi pelajar sekolah menengah di Malaysia dan China terhadap persekitaran bilik darjah dalam lima faktor iaitu daya tarikan, cabaran, pilihan, pengertian dan efikasi kendiri akademik. Statistik inferensi menggunakan ujian-t untuk menunjukkan perbezaan persepsi di antara pelajar sekolah menengah Malaysia dan China terhadap persekitaran bilik darjah berdasarkan jantina dan juga secara keseluruhan. Dapatan kajian menunjukkan tidak terdapat perbezaan yang signifikan dalam persepsi pelajar sekolah menengah Malaysia dan China terhadap persekitaran bilik darjah berdasarkan jantina dengan nilai (t=-0.849, p=0.544) untuk pelajar Malaysia dan (t=0.676, p=0.325) untuk pelajar China. Dapatan kajian juga menunjukkan terdapat perbezaan yang signifikan dalam persepsi pelajar sekolah menengah Malaysia dan China terhadap persekitaran bilik darjah secara keseluruhannya (p=0.004). Dapatan kajian ini adalah penting untuk pendidik dan pentadbir sekolah untuk memahami secara mendalam tentang keperluan pelajar dalam pembelajaran dan meningkatkan tahap pencapaian akademik sekolah. Implikasi kajian ini menunjukkan bahawa guru hendaklah meningkatkan kemahiran pengurusan bilik darjah dan kemahiran pedagogi serta mengoptimumkan persekitaran bilik darjah berdasarkan persepsi pelajar terhadap persekitaran bilik darjah.

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SECONDARY SCHOOL STUDENTS' PERCEPTIONS OF CLASSROOM ENVIRONMENT IN MALAYSIA AND CHINA

ABSTRACT

This study was aimed to compare secondary school students' perceptions of classroom environment in Malaysia and China. This quantitative research used the Student Perceptions of Classroom Quality (SPOCQ) survey instrument to collect the data. A total of 260 respondents from three secondary schools in Tanjong Malim, Malaysia and 351 respondents from four secondary schools in Feng County, China were randomly selected for this study. Data was analyzed using descriptive and inferential analyses. Descriptive analysis described the level of Malaysia and China secondary school students' perceptions of their classroom environment on five factors which were appeal, challenge, choice, meaningfulness and academic self-efficacy, while inferential statistics which involved the independent-sample t-test analysis was used to address the differences between Malaysia and China secondary school students' perceptions of their classroom environment based on gender as well as the overall secondary school students' perceptions of their classroom environment in Malaysia and China. The results showed that there were no significant differences in Malaysian and Chinese secondary students' perceptions of classroom environment based on gender with the values (t=-0.849, p=0.544) for Malaysian students and (t=0.676, p=0.325) for Chinese students. The findings also indicated that there was a significant difference in overall secondary school students' perceptions of their classroom environment in Malaysia and China (p=0.004). The findings of the study are crucial for educators and school administrators to get a better understanding of students' needs in learning and improve the academic standards of the school. The study implicates that teachers may improve their classroom management and pedagogical skills, and optimize classroom environment based upon students' perceptions of classroom environment.

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LIST OF ABBREVIATIONS

CES	*Classroom Environment Scale*
CPI	*Classroom Participation Inventory*
ISSC	Integrated Secondary School Curriculum
ITBM	Malaysian Institute of Translation and Books
LEI	*Learning Environment Inventory*
MEB	Malaysia Education Blueprint
MOEC	Ministry of Education of People's Republic of China
MOEM	Malaysian Ministry of Education
MSECEI	*Middle School English Classroom Environment Inventory*
NCR	New Curriculum Reform
NPSC	New Primary School Curriculum
OECD	Organization for Economic Co-operation and Development
PISA	Programme for International Student Assessment
SBA	School-Based Assessment
SPOCQ	*Students' Perceptions of Classroom Environment*
SPSS	*Statistical Package Social Science*
WIHIC	*What Is Happening In this Classroom*

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CHAPTER 1

INTRODUCTION

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1.1 Introduction

In *Twenty Thousand Hours*, Fraser (2001) pointed out that students spend up to 20,000 hours from entering primary school to graduating from university in the classroom. Classroom is the main place of school teaching, and it has great effects on students' growth. Since the 1980s, the western scholars have explored the impact of the classroom on students through the classroom environment (Liu, 2012).

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Classroom teaching is one of the ways for teachers to impart knowledge, cultivate students' abilities and improve students' overall quality. Classroom environment has often been closely connected with students' learning. Si (2013) stated that classroom environment has increasingly attracted attention from domestic and foreign researchers since 1930s. In the twenty-first century, one of the remarkable characteristics of education is lifelong learning, and this has become the main form of education. Nevertheless, classroom is still considered as one of the places for students' learning. Students spend a great deal of their time learning in classroom. The classroom environment is also the central section of school education, and it is the main form of implementing curriculum plan.

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Ramli, Masri, Zafrullah, Taib, and Hamid (2012) stated that school students in Malaysia spend most of time in classroom environment and they spend about 5 to 10 hours each day in school environment. With the further popularization of quality education, the classroom environment improvement has become a new trend of the future, therefore, an increasing number of educators and policy makers in education pay close attention to improve classroom environment.

Under the background of implementing quality education in China, classroom teaching is the main position for students to study scientific and cultural knowledge during school as well as the main channel of ideological and moral education for

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students (Shi, 2014). What is more, Zhai, Guo and Jiao (2009) stated that classroom teaching is the direct form of education in school education, it is also the core and important component of the teaching quality monitoring system. Apart from that, classroom learning is the way for students to acquire knowledge and skills. Therefore, the quality of teaching depends mainly on the quality of classroom environment.

Classroom environment has been a popular topic in educational field. There are a lot of research on how students perceived their classroom environment. For example, Hu (2015) conducted a survey on senior high school students' perceptions of English classroom environment. Rahmi and Diem (2014) investigated junior high school students' perceptions of classroom environment and their academic achievement. Murugan (2013) conducted a research to examine the level of mathematics classroom environments and performance in Sabah, Malaysia based on students' perceptions. Another research examined the relationship of middle school students' perceptions of the classroom environment with their motivation and achievement (Gilbert et al., 2014). There is a research conducted by Yang (2013) to investigate on senior secondary school students' perceptions of mathematics classroom learning environments in China and its relationship with their attitudes. On the other hand, the study carried out by Lau (2011) to examine the relationship between Malaysian students' perceptions of classroom environment and their motivation in learning English language. Thus, it is clear that classroom environment is a popular research due to its impact on students' learning.

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1.2 Background of the Study

Comparing to the abundant research in foreign countries, the research on classroom environment can still be placed at the beginning stage in China. In recent years, some China scholars have started to attach great importance to the classroom environment research since 1990s. Classroom teaching is a bilateral activity between teachers and students. What is more, classroom environment is a major determinant of students' cognitive and affective outcomes. According to Hu (2015), classroom environment is one of the significant factors affecting students' achievement and classroom performance. Classroom teaching is the main position of teaching and learning in secondary schools in China. In recent years, it has attracted more attention from the field of educational theory and practice.

In Malaysia and China educational atmosphere, learning is typically exam-oriented and students are regularly spoon-fed by the teachers (Du,2012; Yuan, 2016; Rahman et al., 2012). Zabidi and Rahman (2012) claimed that Malaysia's education has been focusing on exam-oriented system since independence in 1957. In China, the teachers only consider the students as the receivers not the masters of their knowledge, thus the students are always in a passive state and lack the initiative towards learning. In the whole teaching process, students' independent thinking, critical thinking and their development of personality are denied. This is quite similar to Malaysia's context.

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Peen and Arshad (2014) argued that students listen to their teachers passively and depend on teachers to give them all the information, explanation, and instructions in Malaysian secondary school classroom. According to the Ministry of Education of the People's Republic of China (MOEC) (2010), education should always be student-oriented, with teachers playing a leading role in order to mobilize the initiatives of the students; and implementing quality-oriented education. Moreover, the concept of student-oriented quality education has become a guiding principle of education policies both in China and Malaysia until now. For instance, in an effort to move away from an exam-oriented learning environment, the Ministry of Education (MOEM) in Malaysia has introduced School-Based Assessment (SBA). SBA was implemented in accordance with the Standards-Based Primary School Curriculum in stages starting in 2011 as part of Malaysia educational reform (Mansor, Leng, Rasul, Raof, and Yusoff, 2013). Furthermore, according to Talib et al. (2014), School-Based Assessment attempts to reduce exam-oriented learning and evaluate students' academic progress. This shows that the two countries are trying to move away from a heavily examination focused education to a quality education.

It is a fact that Chinese teachers tend to depend on conventional teaching patterns, highly focus on school examinations, therefore the success of the reform, to a certain extent, relies on how to change the function of teacher's teaching. Du (2012) stated that teachers should change the old conceptions and traditional teaching method

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"injection" or "Cramming education" (in Chinese "Man Tang Guan '满堂灌' "), and construct the teaching mode of students as the main body and the teacher as the main leader to stimulate students' subject consciousness. In doing so, students can get more opportunity and choice to show the teacher what they have learned in the class, increase students' motivation to participate actively in the class as well. Similarly, Tan and Arshad (2011) stated that traditional teacher-centered approaches are still used in Malaysian secondary schools. During the process of students' learning, they are always in a passive state waiting for teachers to provide them with information and examination tips. Consequently, students lack of higher-order thinking and are not looking for long-term knowledge or skills gain, but rote memorizing to pass examinations in such context (Dwee & Anthony, 2017). Besides that, Lin (2012) suggested that the ideology of teaching, teaching process, teaching methods and teaching effectiveness must be gradually transformed from examination-oriented education to quality-oriented education.

With the development and improvement of the society, the traditional teaching mode has become more and more difficult to keep up with in the era development. In the traditional concept of education, the teacher is the leader in education and responsible for arranging the teaching tasks, where students are passive receivers. Consequently, most students are not able to enjoy the learning process and they regard learning as a kind of burden (Zhong, 2016).

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The New Curriculum Reform (NCR) has been in place for over six decades in China. China's basic education curriculum has experienced several waves of changes since the establishment of the People's Republic of China in 1949; there have been seven major waves in previous years, and the eighth wave of New Curriculum Reform in China starts from 1999 to present (Cui & Zhu, 2014). NCR is a strategic measure that the educational authorities for the present education form, and it is an innovation of the traditional education (Zhong, 2016). The advancement of the new curriculum reform plays an important role in the field of education. For junior middle school mathematics classroom, the teaching mode has been changed dramatically on the basis of the traditional concept of education, which greatly improves the students' interest in learning (Zhong, 2016). Further, in the face of increasingly rigid traditional education, the new curriculum reform has undoubtedly brought new highlight, it can help students cultivate interest in learning, develop the spirit of independent study and exploration, and promote students' all-round development (Yuan, 2016).

Similarly, new curriculum reform also has been carried out in Malaysia and it has experienced several waves as well. New curriculum aims to reduce the focus on exam-oriented in the schools and encourage students to think, to know, to understand what they have learned in the classroom as well as can apply the knowledge learned in their life (Rahman et al., 2012). The significant development of the New Primary School Curriculum (NPSC) and the Integrated Secondary School Curriculum (ISSC)

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were introduced by MOE of Malaysia in 1983 and in 1989 respectively. According to Ahmad (1998), the NPSC aimed at decreasing the previous heavily content-oriented curriculum to focusing on the three Rs (reading, writing, and arithmetic). The ISSC, on the other hand, emphasized on "life skills" as part of the core, continued to provide general education until the 11th year of schooling, and allowed students to make choices to choose elective subjects of their interest. In the light of the above, it is apparent that curriculum reform and development in education is a constantly changing process which is affected by current trends and issues happening locally and globally for the two countries.

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It is worth mentioning that according to the Organization for Economic Co-operation and Development (OECD) (2014), the Programme for International Student Assessment (PISA) 2012 results show that Shanghai in China ranked first in mathematics performance. Students in Shanghai performed so well in mathematics that the OECD report compares their scoring to the equivalent of nearly three years of schooling above most OECD countries. Chinese students in Shanghai are not only placed first in mathematics but also including reading and science (OECD, 2010). PISA exam items frequently demand the application of concepts to challenging, real life situations (Chen, 2014). Malaysia has also participated in PISA 2009 and PISA 2012. However, PISA 2012 results show that Malaysia's ranking is below OECD's average in mathematics, reading, and science (OECD, 2014). According to the Malaysia

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Education Blueprint (MEB 2013-2025), Malaysia aims to be the top third rankings for international assessments in PISA within 15 years.

In this study, it is important to point that although PISA results cannot identify the causality of the relationship between policies and students' achievement, it is useful to guide governments to measure students' knowledge and skills in comparison with those in other countries, and thus construct policy targets against measurable goals achieved by other education systems (Gurria, 2016). This shows that the PISA results between China and Malaysia are useful in helping policy makers and educators to better think how education systems are similar and different and what that means for students.

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Besides that, there is an English proverb saying "Give a man a fish and you have fed him for today; teach a man to fish and you have fed him for a lifetime". This indicates that effective learning is not imitated simply and memorized mechanically, but rather involves hands-on and independent exploration, cooperation and exchange. That is, teachers should stimulate students to pursue the interests in the method of solving problem as well as provide students more chances to think independently in the classroom. In this study, the researcher attempts to compare secondary school students' perceptions of classroom environment between Malaysia and China, is there any difference between the two countries and explores what is the level of secondary school students' perceptions of classroom environment in Malaysia and China.

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1.3 Statement of the Problem

Nowadays, classroom environment has been receiving more and more attention and many studies on classroom environment show that students' achievement is closely related to the classroom environment.

Although with the deepening of quality education reform in China, the level of teaching has been significantly improved, there are still many deficiencies in terms of classroom environment. For example, "excessive assignments tactics" (in Chinese "Ti Hai Zhan Shu '题海战术' ") is a common problem in high school education in China. It refers to consuming plenty of time, conducting a great deal of practice in an aimed, planned and reflective way before the important examinations, which is to consolidate the knowledge points and improve students' speed of doing exercises. According to Yang (2012), in order to pass the senior high school entrance examination, a quarter of the time is occupied by the majority of the schools organizing students to carry out the "excessive assignments tactics", which greatly reduces students' enthusiasm and interest in learning.

According to Liu (2016), the existing problems in senior high school English classroom environment are as follows: 1) the main body of the classroom is teacher, and cramming teaching method is a common phenomenon in the classroom; 2) students'

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participation is low and classroom interaction is difficult to carry out. As a result, students accept the knowledge that teachers impart to them passively; meanwhile the effect of knowledge absorption is poor, which affect students' learning interests and attitudes towards English learning. Similarly, Anthony (2017) also stated that the passive attitude and lack of interests in learning English among Malaysian students.

Besides that, Yuan (2016) claimed that due to the impact of conventional exam-oriented teaching ideas, many teachers in senior high school still adopt the teacher-centered teaching mode, which leads to fixed and rigid classroom teaching mode. As a result, the efficiency and quality of whole classroom teaching is greatly reduced.

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At present, the main problem of classroom teaching in China is that too much emphasis is placed on knowledge transmission and less on the function of knowledge education. According to Bu (2016), the teachers only pay attention to whether the student's answer is correct or not, and they do not notice or cannot effectively guide the students self-learning and group learning. Under such circumstances, therefore, it cannot enhance students' learning ability and interests in learning as well as cultivate the goals of students' good emotion, attitude and values.

In practice, we found that many teachers hardly change the traditional classroom teaching of "knowledge-orientation" teaching philosophy, they still emphasize "knowledge-orientation" and ignore the overall concern for the development of human

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life (Pei, 2012). For example, Hao (2017) stated that this traditional teaching philosophy ignored the interaction between teachers and students as learning community in the classroom teaching activities, and it regards students as a container to be filled with knowledge, which disconnected knowledge and life. Students' real experiences are neglected in the process of traditional teaching and learning, which makes classroom teaching like a program of the factory assembly line, the whole classroom environment full of tediousness and lack of vitality and curiosity.

As mentioned earlier, according to Tan and Arshad (2014), in traditional Malaysian classrooms, students listen to their teachers' explanations and instructions passively and engage in rote learning, hence there are low participation rates among students in the whole process of classroom teaching and learning, and lack of logical thinking and higher-order thinking skills.

Lau (2011) also claimed that students have low participation rates in the classroom. In his study, he found that the majority of students in Malaysia have problems when they are learning English language in the classroom such as they have low level of intrinsic motivation and seldom pay attention or take part in their classroom activities. He also stated that students need interesting and meaningful classroom environment when learning English language.

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According to Ahmad, Shaharim and Abdullah (2017), many Malaysian students had low interest in science and pointed that the learning environment could be one of possible factors impact this issue. They also argued that the teacher provided less chances for students to become responsible for their learning in the classroom from the perceptions of students.

Based on what has been discussed above, it is clear that the main issue revolves around that teachers' limited ability to connect classroom materials and activities to students' daily living. Moreover, there are less appropriate challenging tasks for students in the class, and the whole classroom environment atmosphere lacks vigor and vitality, which decreased students' interests in learning. Additionally, teachers always regard the students as a passive object to shape, and students have limited chances to provide their own opinions or standpoints. Further, teachers' inappropriate teaching methods result in students lack of confidence severely for their study. Therefore, students learning passion, interest and motivation will be decreased dramatically.

Classroom research has become one of the hottest research areas in western field. In recent years, some researchers in the educational field pay attention to the classroom environment in Malaysia and China. Based on the previous research, there are many researchers who discussed the classroom environment in China and in Malaysia. However, to my knowledge, there are very limited comparative studies of

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the classroom environment in Malaysia and China. Nonetheless, Malaysia and China have some similarities, for example, the two countries have experienced new curriculum reform and are trying to move away from examination-oriented education to student-oriented education.

Besides that, it is the fact that no studies in Malaysia have been done using Students' Perceptions of Classroom Quality (SPOCQ) instrument. Hence there is a gap, and this research is valuable in determining the usefulness of the instrument in Malaysia. Therefore, this study intends to compare students' perceptions of their classroom environment in Malaysia and China in order to provide useful advice to help secondary school educators and teachers improve classroom environment for the two countries.

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1.4 Objectives of the Study

In general, the main objective of the study is to compare secondary school students' perceptions of classroom environment in Malaysia and China. The specific objectives of the study are as follows:

a. To identify the level of secondary school students' perceptions of classroom environment with regard to appeal, choice, challenge, meaningfulness, and academic

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self-efficacy in Malaysia and China.

b. To compare secondary school students' perceptions of their classroom environment between male and female students in Malaysia and China.

c. To compare the overall secondary school students' perceptions of classroom environment in Malaysia and China.

1.5 Research Questions

a. What is the level of secondary school students' perceptions of classroom environment with regard to appeal, choice, challenge, meaningfulness, and academic self-efficacy in Malaysia and China?

b. Is there any difference in secondary school students' perceptions of their classroom environment based on gender in Malaysia and China?

c. Is there any difference in overall secondary school students' perceptions of classroom environment in Malaysia and China?

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1.6 Hypotheses of the Study

The Null Hypotheses are as follows:

Ho 1: There is no significant difference in secondary school students' perceptions of their classroom environment based on gender in China.

Ho 2: There is no significant difference in secondary school students' perceptions of their classroom environment based on gender in Malaysia.

Ho 3: There is no significant difference in overall secondary school students' perceptions of classroom environment in Malaysia and China.

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1.7 Conceptual Framework

The present study has adopted the Chinese version of Students' Perceptions of Classroom Quality instrument. For this study, the framework consists of two main parts: 1) respondents' demographics, 2) students' perceptions of classroom environment, which include appeal, challenge, choice, meaningfulness, and academic self-efficacy, as illustrated in figure 1.

The original Students' Perceptions of Classroom Quality (SPOCQ) instrument was developed by Gentry and Owen (2004), which was used to measure secondary

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students' various perceptions about classroom activities. The instrument focused on five constructs of appeal, challenge, choice, meaningfulness, and academic self-efficacy to examine difference between gifted and general students' perceptions of their classroom environment.

Based on Gentry and Owen's (2004) instrument, Yang (2012) has translated the Chinese version of Students' Perceptions of Classroom Quality (SPOCQ-C) instrument. This instrument also focused on five motivational factors, which are appeal, challenge, choice, meaningfulness, and academic self-efficacy. For the Malaysia study, back-to-back translation of the Gentry and Owen (2004) instrument was used.

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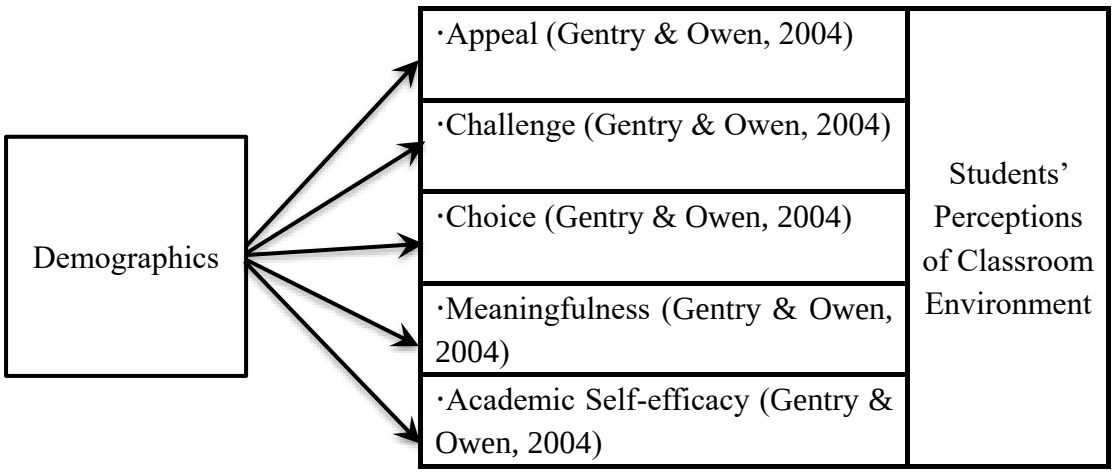


Figure 1.1 Conceptual Framework

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1.8 Significance of the Study

The findings of this study will be beneficial to the educational policy makers and other stakeholders for policy development and strategies for improving the quality of classroom teaching and act as a guide for teacher educators in training teachers. Houstan and Fraser (2008) stated, "Students' perceptions of classroom environment can provide useful criteria for evaluating educational alternatives." Furthermore, it is of great significance to evaluate classroom quality and promote the improvement of teachers' teaching level, and to ensure the realization of the goal of quality education and personnel training.

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The purpose of this study is to compare students' perceptions of the classroom environment with regard to appeal, choice, challenge, meaningfulness and academic self-efficacy between China and Malaysia. The study helps teachers identify their important factors that contribute to students' learning by assessing students' perceptions of classroom environment, and also can help teachers to improve their teaching methods, classroom management and enhance their professionalization.

Finally, this study provides the information about what factors will be helpful to students' learning base on students' perceptions by comparing students' perceptions of classroom environment between Malaysia and China. Besides that, the results found

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in this study can assist teachers and researchers get a more scientific evaluation about students' perceptions of classroom environment in secondary school. Several teaching implications are also provided for teachers to make proper adjustments of their teaching methods, with the purpose of improving the standard of teaching and students' learning.

1.9 Limitations of the Study

There are still a number of limitations in this study. Firstly, about the location the researcher only chooses Feng County, Baoji city, Shaanxi Province (a northwestern province of China) and Tanjong Malim, Perak, Malaysia to explore secondary school students' perceptions of classroom environment.

Secondly, the other limitation is that this study only focuses on how students perceive their classroom environment through five motivational constructs of appeal, choice, challenge, meaningfulness and academic self-efficacy.

Last but not the least, all of the participants in this study come from Feng County and Tanjong Malim secondary schools. They may not represent the general perceptions of secondary school students in Malaysia and China.

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1.10 Operational Definition

1.10.1 Classroom Environment

The classroom environment is defined as in terms of the students' and teachers' shared perceptions in that environment (Fraser & Pickett, 2010). In this study, the classroom environment is students' perceptions on their classroom and their feeling about the classroom teaching and learning based on five factors: appeal, choice, challenge, meaningfulness, and academic self-efficacy.

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1.10.2 Appeal

Appeal combines interest and enjoyment. And it indicates a pleasant, safe, and satisfying learning environment that encourages smiles, positively engages students, and reflects their preferences for topics and activities (Gentry and Owen, 2004). In this study, appeal refers to interest. It indicates that the classroom environment is harmonious, pleasant and interesting, as well as the teaching content is interesting, which can motivate the desire of students' learning.

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1.10.3 Challenge

Conceptually, challenge inspires learners to actively engage in learning with positive affective perception and extra effort (Chae and Gentry, 2007). In this study, the meaning of challenge is similar to Gentry and Owen's (2004) definition: challenge involves rigor, depth, and complexity and is at the intersection of content, process, product, and audience. Optimal challenge is based on individuals, engaging them in effective learning.

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1.10.4 Choice

Choice involves empowering students to direct and make important decisions about their learning (Gentry and Owen, 2004). Similarly, choice, in this study, also refers to give students more choices for their learning and allow them to make choices in the class.

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1.10.5 Meaningfulness

Meaningfulness involves when content and methods have relevance to students' lives and are significant, important, connected, and worth caring about, then meaningfulness has been achieved (Gentry and Owen, 2004). In this study, meaningfulness means that the contents and teaching methods are connected with students' daily life, science and technology and students can integrate theory with practice, apply the lessons they have learned to practical experiences.

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1.10.6 Academic Self-Efficacy

Self-efficacy is defined as, one's judgment about the capabilities to organize and execute the course of performance to achieve desired goals (Bandura, 1997). Academic self-efficacy reflects students' perceived confidence in performing important classroom learning behaviors (Gentry and Owen, 2004). Academic self-efficacy, in this study, means that students' capability and self-confidence to make judgment of their own learning behaviors.

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1.10.7 Secondary School of Malaysia

Secondary school of Malaysia indicates that lower secondary school (Form 1 to 3) and upper secondary school (Form 4 to 5), and the secondary school students at the age of 13 to 17 years old.

1.10.8 Secondary School of China

Secondary school of China lasts 6 years, it refers to junior middle school (3 years) and senior high school (3 years), and the secondary school students' age is from 13 to 18 years old.

1.11 Summary

This chapter discusses the overview of the classroom environment. The researcher began by giving a brief introduction which explain the secondary school classroom environment in Malaysia and China. It is followed by an account of elaboration on the classroom teaching and its problems that are discussed in the statement of the problem section. The objectives, research questions and hypotheses of the study are also stated

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in this chapter. In addition, the significance of this study is that it may be helpful for school administrators or stakeholders to make relevant policy and measures to improve the classroom environment quality from students' perceptions. Moreover, it will enable teachers to improve the effective teaching and learning as well as satisfy students' learning needs by considering students' perceptions of classroom environment. It is hope that this study will contribute knowledge in the research field.

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CHAPTER 2

LITERATURE REVIEW

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2.1 Introduction

This chapter focuses on the relevant literature in the study of classroom environment. It describes and discusses the concept of the classroom environment and the theories of classroom environment. The literature reviews on students' perceptions of classroom environment as well as related studies on the five factors of Students' Perceptions of Classroom Quality (SPOCQ). Then, this is followed by a section on previous studies regarding the classroom environment in Malaysia and in China.

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2.2 The Concept of Classroom Environment

Defining the concept of classroom environment is complex. There is no fixed, specific definition of the concept which can be observed from a variety of available definitions. Fraser (1986) defines the classroom environment as the classroom life situation composed of classroom space, teacher-student interpersonal relationship in the classroom, the quality of classroom life and classroom atmosphere and so on, it refers to the students and sometimes the teachers' common perceptions of the environment, including physical environment and social humanity environment, which not only affects the development of students, but also affects the teaching quality.

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Zuo (2015) insists that the classroom environment can be broadly divided into three types: the constructive classroom environment, traditional classroom environment, and the intermediate one in between. He also stated that students' ability to accept knowledge in the class depends on classroom environment, and the constructive classroom environment is conductive to effective teaching and learning, it can promote students to study better and make students achieve better achievement in the classroom as well.

In addition, the classroom environment generally refers to a variety of factors that affect the teaching and learning activities development, the quality and the effect.

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These factors may come from various aspects such as teacher's teaching psychology and student's learning psychology. It might be the objective factor such as external environment (Hu, 2015).

Fan (2005) conducted a more systematic review of the classroom environment research in China and abroad, and stated that from the content construct, in a broad sense, classroom environment includes three categories: the physical environment, the social environment and the psychological environment. The physical environment is the material basis of the teaching activities are carried out in an orderly manner, including the school environment and teaching facilities and equipment. The social environment mainly refers to the synthesis of various basic elements such as the interaction between teachers and students and the interaction between students and students in class, which generally includes teacher-student interaction and classmate relations, the class rules and orders and so on. The psychological environment is the classroom participants' personality, psychological characteristics and classroom atmosphere.

Besides that, Li (2015) discussed the construction of classroom environment based on the perspective of three-dimensional target of the new curriculum reform which refers to the three target dimensions that should be achieved in the process of education and teaching. It is the core of educational reform, which are 1) knowledge

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and skills, 2) process and steps, 3) emotional attitude and values. He believed that the classroom environment is closely related to the realization of three-dimensional target and put forward the harmonious and healthy classroom environment. Therefore, Li explored the classroom environment in four aspects: 1) the multi-functional of education goal, 2) the specialization of teachers' quality, 3) the people-oriented of teaching design, and 4) the creation of problem situation. The results concluded that classroom environment should be started from people-oriented (student-oriented), should satisfy students' learning needs, arouse students' potential and creativity, and realize the meaningful learning so as to promote students' knowledge and skills, process and steps, emotional attitude and values.

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From the literature reviewed, it is obvious that classroom environment can be defined and viewed from various perspectives. However, in this study, the classroom environment is students' perceptions on their classroom and their feeling about the classroom teaching and learning based on five motivational factors of appeal, choice, challenge, meaningfulness and academic self-efficacy to measure classroom environment.

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2.3 Theories of the Study

2.3.1 Bandura's Self-Efficacy Theory

Self-efficacy theory is one of Bandura's social cognitive theories. Bandura (1997) believes that human behavior is not only affected by behavior results, but also by the expectation of self-behavior and behavior results by the cognition of the human being. In other words, self-efficacy can affect students' learning behavior, while learning behavior also can influence their learning ability. Therefore, students' learning self-efficacy affects their academic performance and learning motivation at the same time. Students with high self-efficacy have a strong self-monitoring ability for their learning; and high self-efficacy has a positive impact on students' goal orientation and academic achievement.

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According to Bandura (1997), there are three main functions of self-efficacy which include, 1) influence on students' choice of behavior and behavior persistence, specifically, they tend to choose tasks that are challenging and suitable for their abilities; 2) influence on students' level of effort and attitude towards facing difficulties, that is, students with high self-efficacy are more confident, and brave enough to face difficulties and challenges. They believe that they can overcome difficulties through hard work as well. Hence, they will strive to pursue and achieve their goals; 3) influence on students' way of thinking and the efficiency of behavior.

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Based on the above, it is safe to say that self-efficacy is a person's preview evaluation about his or her ability in completing a task. In other words, self-efficacy evaluates whether he or she can complete the task well. In this study, the researcher tries to compare how students perceive their classroom environment in Malaysia and China through five motivational factors with regards to appeal, challenge, choice, meaningfulness and academic self-efficacy. And they are closely related to students' learning. Only if the classroom is more interesting and meaningful, then the students are more willing to learn and will enjoy their leaning. And when students get high achievement, they will be more confident and have high academic self-efficacy at the same time. Students with high self-efficacy will have strong self-confidence in their learning. This contributes to stimulate and maintain the spirit of challenging difficulties, the endurance of pursuing the motivation of achievement and persisting in achieving goals (Li, 2004). Obviously, these five factors affect each other.

2.3.2 Lewin's Field Theory

One of the theories that has underpinned studies of classroom environment is Lewin's Field Theory. Lewin (1936) insists that people is a "Field", where the psychological activities of people occur in a psychological field or living space. Life space (or Lsp) includes the individual and psychological environment. A person's behavior (B)

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depends on the interaction between the person (P) and the environment (E), that is, behavior depends on the individual's life space (or Lsp). His formula is presented as B=f (P,E), in which B, f ,P, and E stands for Behavior, function, Person, and Environment respectively.

Lewin (1936) claims that "all scientific psychology must discuss the whole situation, namely the state of the person and the environment". He believes that the human's behavior is made up of the interaction between the person and the environment, the environment in here refers to the individual's "psychological environment", which includes all the factors that affect the individual's behavior. On the basis of this theory, therefore, all the elements of classroom environment such as interesting contents, teacher's support, and the participation of students will affect students and have different influences on their learning behavior.

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2.3.3 Murray's Personality Theory

Murray's Personality Theory is also known as Need-Press Theory. Murray's (1938) emphasis on personality is determined by both the internal and external factors. He deems that a person's behavior depends on the individual's need to combine with the press. Need is a tendentious factor, Press is a contributing factor. Murray's Need-Press

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Theory also emphasized the individual's behavior is the interaction between the person and the environment, but it is different from Lewin' theory, Murray considered the individual element as Need and the environmental element as Press. In the Murray's Need-Press Theory, Need indicates that an organizational tendency to provide direction and motivation for the individual's behavior, Press refers to the external environment that supports the individual expression or prevents the individual from satisfying the needs (Liu and Yang, 2008).

Hence, it is clear that Lewin's Field Theory and Murray's Personality Theory are crucial theories of classroom environment and also closely related to students' learning. For Chinese and Malaysian school students, learning activities mostly take place in the classroom and their learning behaviors are greatly affected by the interaction between students themselves and the classroom environment they are in. During the journey of study, students have needs to acquire knowledge, get thinking and learning skills, and improve their academic performance in the classroom environment, at the same time they also can feel the learning press. In order to improve students' learning and development, school administrators and teachers may balance between students' learning need and press.

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2.4 Students' Perceptions of Classroom Environment

Classroom environment is a complex system and many researchers have studied the classroom environment from various elements, physical classroom environments such as arrangement of desks, classroom space, equipment, and lighting and so forth (Kekare, 2015; Suleman, 2014; Hannah, 2013), the emotional classroom environment (Hannah, 2013), the classroom climate (Christopher, 2017). Besides that, there are a lot of instruments for assessing classroom environment have been developed. For example, the Classroom Environment Scale (CES) (Moos and Trickett, 1974), the What Is Happening In this Classroom (WIHIC) (Chionh & Fraser, 1998), the Learning Environment Inventory (LEI) (Fraser, Anderson & Walberg, 1982), and the Students' Perceptions of Classroom Quality (SPOCQ) developed by Gentry and Owen (2004).

Chae (2009) has conducted a study on classroom environment using Students' Perceptions of Classroom Quality (SPOCQ) instrument to compare high school students' perceptions of classroom quality in Korea and the United States based on five motivational factors of appeal, challenge, choice, meaningfulness, and academic self-efficacy.

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Students' perceptions of classroom environment means that students' reaction to the teachers' performance in the classroom and the feeling about the specific subject's class which from their personal understanding, especially students' psychological reactions to the classroom environment (Li, 2013).

The classroom environment is closely related to the students' learning and learning behavior, and the classroom environment has a great influence on students' learning outcomes (Zuo, 2015). Li (2015) suggested that classroom environment affects the students' cognition and emotion, learning motivation and learning behavior as well as learning results and efficiency. Hu (2015) conducted a study to examine 266 Senior Two students' perceptions of English classroom environment, and the relationship between classroom environment and their learning. The study used two instruments, Middle School English Classroom Environment Inventory (MSECEI) to investigate the English classroom environment in senior high school and Classroom Participation Inventory (CPI) to test students' classroom participation. The findings revealed that senior high school students' perceptions of their English classroom environment are significantly related with their classroom participation, and there is a positive and significant correlation between students' perceived classroom environment and their learning.

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Another study was carried out by Yang (2012) to determine the relationship between gifted and general secondary students perception of their classroom quality and mathematics achievement in China. Participants included 1066 students composing 486 gifted students and 580 general students from two secondary schools (Kaixin Middle School, Zhoukou city in mid China and Huanle High School, Nanchang city in south China). The findings of the study reported that challenge and academic self-efficacy predicted students' mathematics achievement, and choice, meaningfulness, and academic self-efficacy predicted gifted students' mathematics achievement. Besides that, gifted students perceived higher levels of self-efficacy and challenge than general students in mathematics class, gifted students have higher achievement in mathematics when they feel meaningful in class as well.

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Furthermore, Simmons (2014) examined 13-15 years old students' perceptions of motivation related to their learning achievement and effort in the Ocean Beach School District, southwest Washington. One of the major findings in this study was that students' interest in learning is closely connected to both their effort and learning achievement, and students' choice in the classroom is directly relevant to interest.

Besides that, there is another research that Yang (2013) conducted on 994 Grade 10, 966 Grade 11, and 657 Grade 12 senior secondary school students investigating their perceptions of mathematics classroom learning environments in China and its

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relationship with their attitudes. The researcher employed "What Is Happening In this Classroom" (WIHIC) instrument which consists of six scales: student cohesiveness, teacher support, involvement, investigation, task orientation, and cooperation. In the study, the researcher used t-test, two-way MANOVA and Scheffe's post hoc tests to analyze gender and grade differences in perceptions of mathematics classroom environment. The finding of the study is that the interaction between gender and grade is not significant. But the grade differences for WIHIC scales found that there is a statistically significant difference. On the other hand, the result showed that there was a positive correlation between classroom learning environment and students' attitudes towards mathematics.

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The studies discussed in this section show that students perceived classroom environment as an important factor for teaching and learning in the classroom，and as one of the major participants in classroom activities, students have the most direct and real perceptions of what is happening in the classroom.

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2.5 Related Studies on Five Factors of SPOCQ

Many researchers in the west, China and Malaysia believe that appeal, challenge, choice, meaningfulness, and academic self-efficacy are significant factors in influencing students' learning behavior and learning motivation (Gentry and Springer, 2002;Yang, 2013; Ibrahim, 2015; Muhamad, 2006).

Liu (2012) stated that, 1) interest can motivate the desire of students' learning; 2) interest can stimulate students' to participate in the classroom activities positively; 3) interest can keep student' learning motivation. Besides, Hao (2011) believed that interest is the original driving force of children's creativity and intellectual curiosity; as long as students are interested in something, they will devote themselves to pursue, practise, and develop new things. Interest is the necessary prerequisite of students' learning. As stated by Gentry and Springer (2002), interest is an essential factor in increasing students' learning effect and motivation in the classroom and when students have high interest in learning, they are willing to be engaged and enjoyable with their study.

Knowing the student's sense of enjoyment when they are learning is important to the promotion of the teaching process, and students' enjoyment makes them more motivated to learn. Frenzel, Goetz, Luatke, Pekrum, and Sutton (2009) stated that

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enjoyment in learning is one of the crucial factors that improve students' learning in the educational context. The study on 'Learning and Teaching Between Enjoyment and Boredom as Realized by the Students: A Survey from the Educational Field' was conducted by Ibrahim (2015). In this study, the purpose was to investigate the factors that affect students' enjoyment in learning and teaching as recognized by themselves. The researcher developed the instrument and distributed it to 656 upper elementary grades students from three private schools and five public schools, and one of the important results of the study revealed that implementing learning resources in teaching and encouraging students who have low achievement levels in the activities are the important factors that increase students' enjoyment in leaning. Additionally, the researcher also found that students' academic achievement increases their enjoyable level while utilizing learning resources.

To investigate whether there are differences between grade-level and genders in terms of students' perceptions of classroom activities, a study was carried out by Gentry, Gable, and Rizza (2002). The researchers chose Grade 3-8 from 24 schools to form their 3744 samples and used My Class Activities instrument which consists of 31 items in four dimensions (enjoyment, interest, choice and challenge). Descriptive statistics, alpha reliability indices and two-way multivariate analyses of variance were used in this study to analyze the data. One of the findings revealed that middle school students found their classroom activities were minimally interesting and enjoyable, with few

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opportunities for choice. Another result of this study showed that female's class activities were more interesting and enjoyable than did males, which contributed to the significant gender differences.

Many research were conducted to explore the role of choice in motivation and other factors. DeLauder's (2012) study investigated the effects of choice on student motivation, interest, and participation in language arts. The aim of the study was to determine whether providing more chances to choice in the class whether this would have more positive or negative effects on how students perceived and engaged in students' writing and reading. The participants in this study were 19 first grade students in the same classroom from an elementary school. Some findings of this study are as follows: 1) Implementing choice caused a significant decrease in negative student behavior. 2) The choices offered during the intervention did not cause a significant decrease in the amount of influence that extrinsic motivators had on student desires to write. 3) Regularly providing students with various options to choose from during the intervention did not cause an overall increase in their interest towards language arts. From the results of this study, it is clear that the choice does not always have a positive effect on students' learning.

Chan (2001) completed a study to explore talented students' favorite learning methods. This study included 398 secondary school students in Hong Kong. The

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findings of the study revealed that gifted students and ordinary students pointed out some shared preferred methods. However, ordinary students did not like challenging activities that may cause them to fail whereas gifted students preferred independent and challenging activities. Students need high but appropriate levels of challenge. But when students are given challenging tasks, teachers need to pay attention to students' individual differences according to their individual interests and strengths in the classroom. Only when teachers offer appropriate assignments and challenges to students in the class they can lead them to become autonomous in their learning. Nevertheless, teachers may balance between challenging activities and students' learning. Similarly, Gentry et al. (2002) claim that students can become more responsible for their learning and will be involved in self-regulated learning when teachers give students interesting and appropriate projects and encourage students critical thinking skills in the class.

Jiao (2016) argued that improving the classroom environment is very important for quality teaching and students' learning, especially the meaningful classroom environment. He proposed suggestions in the following four aspects, 1) to establish equal, democratic, harmonious and pleasant relationship between teachers and students so that students can enjoy themselves and they are willing to invest more energy and time in their learning; 2) to design meaningful teaching situation and stimulate students' learning interest; 3) to make efforts to create an independent classroom atmosphere.

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That is to say, allowing each student to share his or her opinion freely, and keep different views of each student as long as the conclusion is correct; 4) to design the colorful classroom atmosphere for teaching activities. Only then will teacher arouse students' enthusiasm, interest and participation. Students will like to go to class and apply the lessons they've learned to practical experiences.

In Malaysia, Muhamad et al. (2006) examined the relationship between students' self-efficacy and their English language achievement, and the study indicated that self-efficacy had a positive correlation with academic achievement in English language. Also, from the conclusion, students' learning motivation will be strong when students have high self-efficacy in English language in the study.

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Additionally, in a study of 424 middle school students, Bai (2016) explored the relationship between academic self-efficacy and students' academic achievement and found that the total score of self-efficacy has a significant positive correlation with the academic achievement of Chinese, mathematic and English.

All in all, each of the five factors (appeal, challenge, choice, meaningfulness, and academic self-efficacy) is different, but related construct that is important to students' learning and motivation at Malaysia and China secondary schools.

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2.6 Previous Studies

The original version of SPOCQ instrument was developed by Gentry and Owen (2004), which to assess secondary school students' classroom perceptions. The sample included 7,411 students in grades 7 to 12 from 26 schools in 7 states (Connecticut, Florida, Michigan, Minnesota, New York, Texas, and Wisconsin) and one foreign country. And the schools were located in rural, urban, and suburban middle schools (n = 12) and high schools (n = 14) from across the United States. The instrument consists of five factors with 34 items, namely, appeal (7 items), challenge (7 items), choice (7 items), meaningfulness (5 items), and academic self-efficacy (8 items). The questionnaire is designed in the form of 5-point Likert scale from 5 (strongly agree) to 1 (strongly disagree) for each item. The researchers performed confirmatory factor analysis (CFA) to examine overall model fit in the sample and Internal consistency reliability estimates using SPSS Version 12.0 to generate Alpha reliability coefficients are as follows: appeal (0.85), challenge (0.81), choice (0.81), meaningfulness (0.81), and academic self-efficacy (0.82). The instrument has been shown to be valid and reliable.

In this study, the researcher will employ the Chinese version of Secondary Student Perceptions of Classroom Quality (SPOCQ-C) instrument and the Malay version of Secondary Student Perceptions of Classroom Quality (SPOCQ-M). The SPOCQ-C instrument was translated by Yang (2012), this instrument measures how

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Chinese students perceive their classroom environment through five motivational constructs of appeal, challenge, choice, meaningfulness, and academic self-efficacy. The participants included 1066 students: 580 general students and 486 gifted students, who are from two secondary schools of two cities in China. The researcher also conducted Internal consistency reliability estimates and confirmatory factor analyses, which showed that the results of SPOCQ-C instrument are the same as its original English version. Additionally, the SPOCQ instrument developed by Gentry and Owen (2004), has also been translated into the Malay language to be used with Malaysian students using back-to-back translation method. A pilot study will be carried out to determine the validity and reliability of the instrument.

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The SPOCQ-C instrument and SPOCQ-M instrument are selected for this study due to various reasons. First of all, students' perceptions of classroom environment will provide important information about improving their learning. What's more, investigating students' perceptions of classroom environment is one of the ways to determine what factors contribute to students' learning and achievement. Furthermore, there are few research that examine Chinese and Malaysian students' perceptions of classroom environment using this instrument. On the other hand, SPOCQ-C instrument has already been tested in China. It has been used to measure students' perceptions in different domains and it is appropriate to use for measuring classroom environment from the perspectives of students. The translated Malay language version will

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determine the suitability of using such instrument in the Malaysia context. Furthermore, it will also allow for a better comparison of secondary school students' perceptions of the classroom environment between the two countries.

A study was done by Barna (2009) to compare students' perceptions (appeal, challenge, choice, meaningfulness, and academic self-efficacy) of teacher quality based on students who were taught by the career switcher teachers and students who were taught by the traditional pathway teachers using the Student Perceptions of Classroom Quality (SPOCQ; Gentry et al., 2004) instrument. One of the main results in the study revealed that students of traditional pathway teachers have higher levels of appeal, challenge, choice, and meaningfulness.

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In Salehi and Kareshki's (2017) research, 310 high school female students from Tabadkan education area were surveyed to investigate the relationship between student perceptions of their class activities and school adjustment employing SPOCQ instrument and the school adjustment scale. The main findings of the research demonstrated that students' perceptions of classroom quality which consists of appeal, challenge, choice, meaningfulness, and academic self-efficacy have a significant correlation with the school adjustment scales of social and academic maladjustment. The researchers also measured the reliability and validity of SPOCQ instrument, the results reported that the overall Cronbach coefficients of five constructs was 0.86 and

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acceptable. The Confirmatory Factors Analysis presented that the five constructs of SPOCQ are valid.

Besides that, another study was conducted by Chae and Gentry (2011), using SPOCQ instrument to compare whether there are differences between gifted and general students' perceptions of their learning in Korea and the United States. 882 grade 10 and grade 11 students were chosen. Specifically, the sample was composed of 220 general high school students and 221gifted high school students (128 foreign language high school students and 93 science academy students) in Korea. In the United States, 220 general students and 221 gifted students participated in the research. The main finding of the study indicated that there were differences between gifted and general students in Korea and the US. They found that Korean students have higher level of appeal than US students, however, the level of challenge, meaningfulness, and choice is lower than US students.

Based on the previous studies, there are some foreign researchers using the SPOCQ instrument to start their research. However, to the researcher's knowledge, there are few comparative studies to compare students' perceptions of classroom environment in Malaysia and China using SPOCQ instrument. Hence, this study will employ the SPOCQ instrument to compare Malaysian and Chinese students how to perceive their classroom environment.

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2.6.1 Previous Studies in China

The research on classroom environment started in the late 1990s in China, the Chinese scholars summarize the research results of foreign classroom environment from different perspectives (Tian, 1995; Qu, 2002; Zhang, 1989; Liu, Ma & Liu, 2009; Sun, 2010; Fan, 2005). Tian (1995) divided the western research on this subject into three stages of the origin, development and rapid development. Qu (2002) reviewed the western research findings in the last 30 years from the theoretical foundations, content structure and evaluation and put forward the future research trend of this topic. Fan (2005) analyzed the concept of classroom environment in detail and the deficiencies of the classroom environment definition in previous studies, and also pointed out the future research direction of classroom environment. Liu et al. (2009) summarized a variety of classroom environment survey scales and application from the aspects of theoretical foundations, contents and inventories and so on, which provide the reference for future research.

Liu Liyan and Liu Yongbing (2010) developed Middle School English Classroom Environment Inventory (MSECEI), which is to investigate Chinese mainland middles school students' perceptions of English classroom environment. It includes 5 dimensions (teacher support, task orientation, student cohesiveness, cooperation, and class order) and 25 items. Liu et al. (2012) used MSECEI developed

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by themselves to investigate the relationship between senior high school students' perceptions of English classroom environment and their learning outcomes. 142 male and 166 female senior high school students were involved in this quantitative research. One of the research results indicated that there is a gender difference in students' perceptions of English classroom environment, that is, female students have more positive perceptions of English classroom environment than male students.

Another study was conducted by Yang (2015) to explore how rural junior secondary school students perceive classroom environment and their attitude and mathematics achievement in west China. The researcher investigated 2455 rural junior secondary students which includes 749 Grade 7, 842 Grade 8 and 864 Grade 9 students in three provinces (Chongqing, Guizhou and Gansu) in China. What Is Happening In this Class (WIHIC) questionnaire was adapted in the study to measure students' perceptions of their classroom environment. A t-test was performed to analyze gender differences. The results showed that male students have more positive attitude and confident in mathematics than female students. However, female students are more clear about the tasks they need to finish than male students and they have more opportunities for cooperation in mathematics class than male students.

Students' Perceptions of Classroom Quality (SPOCQ; Gentry & Owen, 2004) has been validated in different contexts, for example, the United States (Barna, 2008),

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Korea (Chae, 2009), and Iran (Salehi, 2017). The Chinese version of Students' Perceptions of Classroom Quality (SPOCQ-C) instrument was developed by Yang (2012). In this research, the researcher used SPOCQ-C instrument to investigate Chinese gifted and general secondary school students' perceptions of their classroom environment. Besides the main findings are mentioned earlier, the researcher also measured reliability and validity of the SPOCQ-C instrument which consists of five factors using SPSS 19.0 to generate Cronbach's Alpha coefficients and Confirmatory Factor Analyses (CFA). The Cronbach coefficients of five factors are acceptable, in which appeal (0.75), challenge (0.70), choice (0.70), meaningfulness (0.74), and academic self-efficacy (0.79). The results revealed that the Chinese version of SPOCQ instrument is reliable and valid when used with Chinese gifted and general secondary school students.

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2.6.2 Previous Studies in Malaysia

Murugan (2013) carried out a study to examine the relationship between mathematics classroom environments and mathematics achievements based on students' perceptions and compare these two constructs based on genders in Sabah, Malaysia. There were 235 participants selected in this study. The researcher employed and combined two existing instruments: "What Is Happening In this Classroom" (WIHIC) and the

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Constructivist Learning Environment Survey (CLES) to determine students' perceptions of their mathematics classroom environment. It was reported that students had a moderate perceptions of mathematics classroom, while female students were better achievers than males in their mathematics assessment.

A study was conducted to examine the relationship between students' perceptions of classroom environment and their motivation in learning English language through two instruments of Actual Classroom Environment Scale (ACES) and Motivated Strategies for Learning Questionnaire (MSLQ) (Lau, 2011). In this study, participants included 140 secondary school students (Form 4) in Malacca, Malaysia. The results demonstrated that the majority of the students perceived affiliation was the most important dimension of their classroom environment and they have high level of extrinsic motivation whereas lower intrinsic motivation. Another finding revealed that students' perceptions of affiliation and task orientation were significantly associated with their motivation in the classroom.

Additionally, in Ahmad, Shaharim, and Abdullah's (2017) study, the researchers used four instruments which were the Teacher-Student Interaction Inventory (TSI) to determine the teacher-student interaction in the biology classroom, the Classroom Learning Environment Inventory (CLEI) to identify the suitability of learning environment, the Learning Commitment Inventory (LCI) to identify students' leaning

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commitment, and the Learning Comfort Inventory (LCI) to examine biology students' perceptions of classroom learning comfort. The researchers chose 400 form four biology students in Larut Matang and Selama District, Perak, Malaysia participated in the study. The findings of the study presented that students were satisfied with their biology classroom environment and had high level of suitability of learning environment. Except for students' perceptions of freedom construct, they felt teachers gave them less chances to undertake their learning responsibility.

From the previous studies, it is apparent that Malaysian and Chinese researchers used various instruments to investigate students' perceptions of classroom environment. But very few research was carried out using the SPOCQ instrument to examine the classroom environment. Hence, for this study, the researcher employs the Chinese version of Students' Perceptions of Classroom Quality (SPOCQ-C; Yang, 2012) instrument and the Malay version of Students' Perceptions of Classroom Quality (SPOCQ-M) instrument based on the original SPOCQ (Gnetry et al., 2004) instrument to examine secondary school students' perceptions of classroom environment in Malaysia and China.

Interestingly, the Malaysian researcher Murugan and the Chinese researcher Yang used the same instrument "What Is Happening In this Class" (WIHIC) in their study. Yang (2015) used the WIHIC instrument to measure students' perceptions of their

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classroom environment in China. Murugan (2013) employed the WIHIC instrument to determine students' perceptions of their mathematics classroom environment in Malaysia. However, there are no researchers use the SPOCQ instrument to compare students' perceptions of their classroom environment in Malaysia and China.

In conclusion, Chinese and Malaysian scholars and researchers are paying more attention studies to assist their understanding of classroom environment, how students perceive their classroom environments at different levels. To the researcher's knowledge, very few studies to investigate students' perceptions of classroom environment using the SPOCQ instrument have been carried out in China. In addition, the researcher could not find any studies using the SPOCQ instrument in Malaysia. There are limited studies using this instrument to compare the classroom environment between two countries as well. Therefore, this review of literature sets the direction for this study to compare secondary school students' perceptions of classroom environment in Malaysia and China.

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2.7 Summary

This chapter is a presentation of the literature review relating to the concept of classroom environment and students' perceptions of classroom environment. In this review, the researcher traces the evolution and trends of classroom environment in recent years. Although there are various aspects of classroom environment and many ways of examining the classroom environment, for the purpose of this study, the researcher primarily focuses on students' perceptions of classroom environment of five factors, namely appeal, challenge, choice, meaningfulness, academic self-efficacy to measure classroom environment.

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CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

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3.1 Introduction

This chapter presents and discusses the research methods and procedures of data collection and analysis in addressing the research questions identified in chapter one. It basically contains the overview of research design and the research instrument. The following part focuses on the population under investigation, sample size and sampling techniques, data collection methods, research procedures as well as pilot test used to ensure validity and reliability of the instruments.

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The main purpose of this study is to compare secondary school students' perceptions of classroom environment in Malaysia and China. Specifically, this study aims to identify the level of secondary school students' perceptions of their classroom environment with regard to appeal, challenge, choice, meaningfulness and academic self-efficacy in Malaysia and China. The study also aims to compare the difference between Malaysia and China secondary school students' perceptions of their classroom environment based on gender as well as the overall secondary school students' perceptions of their classroom environment in Malaysia and China.

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3.2 Research Design

A research design is the systematic plans and procedures that a researcher developed to study a scientific problem. A research design includes how to collect the data, what instruments will be employed and what analysis will be used to analyze the data collected. In other words, research design is a kind of the framework developed to answer research questions.

Comparative research aims to compare different countries and cultures, which attempts to identify and analyze similarities and differences between social entities (Michael, 2004). In the current study, comparative research methodology was used to

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compare students' perceptions of classroom environment in Malaysia and China.

For this study, the researcher employs the quantitative research method. Quantitative research is a type of educational research in which the researcher decides what to study, asks specific and narrow questions, collects quantifiable data from participants, and analyzes data and so on (Creswell, 2012). According to Suter (2012), quantitative research aims to test hypothesis using numbers and statistical maneuvers. Besides, it usually uses tables or charts to present research findings.

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3.3 Population and Sample

3.3.1 Population

The target population of the study is four secondary school students in Feng County and four secondary school students in Tanjong Malim, Perak, Malaysia. Feng County is located in Baoji city of Shaanxi Province north China and this is one of the nine counties of Baoji city. The researcher chooses Tanjong Malim because it shares similar characteristics with Feng County. These two locations are not urban or rural area. They are sub-urban areas. Besides that, students can provide reliable and important information for the conduct of this study. Hence, the researcher chooses them as the study population.

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3.3.2 Sample Size Selection and Sampling Techniques

For this study, the samples were selected from secondary schools in Tanjong Malim, (Perak, Malaysia) and Feng County (Shaanxi province, China). According to Feng County Education website, in 2009, through an amalgamation process, schools in Feng County were merged to only 19 schools which including 15 primary schools, two junior middle schools, one senior high school, and one vocational school. For the purpose of this study, secondary schools were chosen from both Feng County and Tanjong Malim. They were chosen because the researcher is interested in understanding what kind of factors benefit student's learning in Tanjong Malim and Feng County. On the other hand, secondary school education is an important component of China's basic education and is also the key stage of basic education. Moreover, secondary school is in a crucial connecting stage of learner's school career and it is very important to educate the qualified secondary school students in moral, intellectual, physical and aesthetic with all-round development in China and Malaysia. Apart from that, in China the secondary school students' age is from 13 to 18 years old: junior middle school students (13-15 years old) and senior high school (16-18 years old). In Malaysia, the secondary school students are at the age of 13 to 17 years old.

A random sampling technique was used for this study. In China secondary schools, a total population of 4511 students in Fengzhou Junior Middle School,

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Shuangshipu Junior Middle School, and Feng County Senior High School. From the target population, a sample of 351 respondents was chosen for this study according to Kreijcie and Morgan's (1970) table. 400 students were randomly selected from these three secondary schools in Feng County (100 students from Fengzhou Junior Middle School, 100 students from Shuangshipu Junior Middle School, and 200 students from Feng County Senior High School).

As for Malaysia secondary schools, there are approximately 1300 population of Form 1, Form 2, and Form 4 secondary school students in Tanjong Malim. Based on Kreijcie and Morgan's (1970) table, the sample size is 297. 300 students were randomly selected from three secondary schools in Tanjong Malim. Specifically, 100 students from SMK Bandar Behrang 2020, 100 students from SMK Methodist, and 100 students from SMK Katholik. However, only 260 respondents were able to return their questionnaires. This is an acceptable return rate as it is still above 80% of the total sample selected.

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3.4 Research Instrument

The questionnaire is used to collect the data in the study. A questionnaire is a form used in a survey design that participants in the study complete and return to the researcher. Specifically, the participants choose options for each question and fill out the basic demographic information (Creswell, 2012). According to Abawi (2013), questionnaire is used because it can allow collecting both subjective and objective data in a large sample of the study population in order to obtain results that are statistically significant. Moreover, it also protects the privacy of the participants so can lead to honest, frank and objective feedback.

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In this study, the questionnaire is mainly divided into two sections. The first section is about respondent's demographic information, which consists of 5 questions including the school name, respondent's gender, age, and grades and parents' highest education of respondents. The second section is the secondary school students' perceptions of classroom quality in five motivational constructs (appeal, challenge, choice, meaningfulness and academic self-efficacy) using 5-point Likert scale type. The Likert scale includes thirty-eight items and the responses are "strongly disagree", "disagree", "undecided", "agree" and "strongly agree" in sequence. It consists of five factors with 34 items: appeal (7 items), challenge (7 items), choice (7 items), meaningfulness (5 items) and academic self-efficacy (8 items) respectively and another

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4 attribution items that do not measure any of the five factors. Table 3.1 below presents the detailed information about the questionnaire.

Table 3.1

Factors and Specific Items of the Questionnaire

Factors	Specific Items
Appeal	1,2,3,4,5,6,7
Challenge	8,9,10,11,12,13,14
Choice	15,16,17,18,19,20,21
Meaningfulness	22,23,24,25,26
Academic self-efficacy	27,28,29,30,31,32,33,34

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3.5 Research Procedure

The researcher requested permission from the selected school administrators in secondary school of Feng County before conducting the survey. The next, the researcher distributed questionnaires to the respondents by random. Specifically, the researcher will use student number (even number) to choose the samples to distribute the questionnaire. In order to make sure all the respondents understand the questions clearly and collect the data smoothly the researcher gives an overall explanation as far as the questionnaire. Then, all the respondents will answer the questionnaire during the time of their self-study class under the supervision of their teachers, the questionnaire

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will be collected immediately after all the respondents complete it.

To conduct research in Malaysian schools, the researcher had to, first obtain permission from the Education Planning and Research Division (EPRD) at the Ministry of Education Malaysia. This was done online through the ERAS 2.0 application at https://eras.moe.gov.my. Once the application was approved the researcher brought the letter of approval to the selected schools to get entry for data collection process.

3.6 Pilot test

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Pilot test is used to avoid mistakes occurred within questionnaire before the actual survey starts. Also, the researcher conducts pilot test in this study is to test the validity and reliability of the questionnaire. The pilot test is conducted in one Junior Middle School in Hu County of Xi'an city (Shaanxi Province, China) with 30 students. In Malaysia, the pilot test is conducted in one secondary school (SMK Slim) in Slim River with 30 students. The researcher selected the respondents by random. After the questionnaires are completed, the researcher will do some discussions with a number of the respondents to verify the clarity and the relevance of the questions asked.

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3.7 Validity and Reliability

Validity is an important concept to consider when preparing or selecting an instrument for use. It means that the content to which an instrument measures what it intends to measure with investigated subjects (Salkind, 2010). According to Gay, Mills, and Airasian (2012), validity refers to the degree to which a test measures what it is supposed to measure and, consequently, permits appropriate interpretation of scores. There are several different kinds of validity, however, for this study the researcher will discuss the main type of validity that is content validity.

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Gay, Mills, and Airasian (2009) defines that content validity is 'the degree to which a test measures an intended content area; it is important because we cannot possibly measure every topic in a content area, and we want to make inferences about testers' performance on the entire content area'. For this study, the researcher found two experts who can speak both Chinese and English, and know about the contents of SPOCQ in Chinese culture. First, the researcher emailed two versions of instruments (Chinese and English version) to an expert who was studying translation theory and practice in Xi'an International Studies University, China. The expert validated the conformity of the test items. After that, in order to ensure the instrument is valid for this research, the researcher found another expert who is a lecturer in Baoji University of Arts and Sciences，China to verify the two versions of the instruments.

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For the Malaysia study, the SPOCQ instrument was translated using back-to-back translation method. The instrument was first translated into the Malay language by a translator from the Malaysian Institute of Translation and Books (ITBM). Then, this was translated back into the English language to ensure the accuracy of the translation process. The instrument was then passed to an academic lecturer who is fluent in both languages for the validation. A pilot study was carried out to determine the validity and reliability of the instrument.

Reliability refers to the consistency of the scores or answers from one administration of an instrument to another, and from one set of items to another (Fraenkel, Wallen, and Hyun, 2012). Cronbach's Alpha is one of common analysis methods to report reliability coefficient. Hence, the researcher employed Cronbach's Alpha to measure the reliability of the questionnaire in this study.

From Table 3.3, for the SPOCQ-C, all the items are more than 0.70. The Cronbach's Alpha value for Appeal and Choice are within 0.70 and 0.80, which means the result is acceptable. While the other three factors consist of Challenge, Meaningfulness and Academic self-efficacy with Cronbach's Alpha value range from 0.80 to 0.90, which means the result is good. Therefore, based on Table 3.2 Cronbach's Alpha and Internal consistency (George and Mallery, 2003; DeVellis, 2012) it can be

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concluded that all the items are reliable and consistent and valid to measure the studied variables. Also, all Cronbach's Alpha value for Malaysia data is above 0.80 except appeal factor, but the Alpha value of appeal is almost close to 0.70. That is to say, these values show that both language versions of SPOCQ instrument are suitable for this study.

Table 3.2

Cronbach's Alpha and Internal Consistency

Cronbach's Alpha	**Internal consistency**
More than 0.90	Excellent
Between 0.80-0.90	Good
Between 0.70-0.80	Acceptable
Between 0.60-0.70	Questionable
Between 0.50-0.60	Poor
Less than 0.50	Unaccepted

Source: George, D., and Mallery, P. (2003).

Table 3.3

Cronbach's Alpha Values

Factor	**No. of Items**	**Cronbach's Alpha**	
		China	**Malaysia**
Appeal	7	0.774	0.682
Challenge	7	0.867	0.835
Choice	7	0.785	0.806
Meaningfulness	5	0.814	0.816
Academic self-efficacy	8	0.891	0.887
Total	34	0.959	0.945

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3.8 Data Collection Method

The researcher distributed all SPOCQ-C questionnaires to the selected participants in Fengzhou and Shuangshipu Junior Middle School, and Fengxian Senior High School, Feng County of China personally. The SPOCQ-M questionnaires were distributed to three secondary schools' participants in Tanjong Malim, Malaysia (SMK Bandar Behrang 2020, SMK Methodist, and SMK Katholik) with the help of the teachers.

The purpose and significance of this study were communicated to all the participants before distributing the questionnaires. Next, all respondents were allowed 15-20 minutes to answer the items in the questionnaire. Then, all the distributed questionnaires would be taken back on that same day after all the respondents complete it in order to make sure the rate of return is acceptable.

3.9 Data Analysis

The data will be analyzed using Statistical Package Social Science (SPSS Version 20.0). Descriptive and inferential statistical measure will be used to analyze the collected data. The descriptive statistics is used to identify the level of secondary school students' perceptions of classroom environment with regard to appeal, choice, challenge,

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meaningfulness, and academic self-efficacy in Malaysia and China. Moreover, the Independent-sample t-test will be used to address the second and third research questions in this study: to compare secondary school students' perceptions of their classroom environment between male and female students in Malaysia and China and the overall secondary school students' perceptions of classroom environment in Malaysia and China. And summary of the data analysis methods by objectives, research questions and hypotheses is shown in the Table 3.4 below.

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Table 3.4

Summary of The Data Analysis Methods by Objectives, Research Questions and Hypotheses

Objectives	Research Questions	Hypotheses	Data Analysis
1. To identify the level of secondary school students' perceptions of classroom environment with regard to appeal, choice, challenge, meaningfulness, and academic self-efficacy in Malaysia and China.	1. What is the level of secondary school students' perceptions of classroom environment with regard to appeal, choice, challenge, meaningfulness, and academic self-efficacy in Malaysia and China?		Frequency Analysis: Percentage Descriptive Analysis: Mean and Standard Deviation
2. To compare secondary school students' perceptions of their classroom environment between male and female students in Malaysia and China.	2. Is there any difference in secondary school students' perceptions of their classroom environment based on gender in Malaysia and China?	Ho1: There is no significant difference in secondary school students' perceptions of their classroom environment based on gender in China. Ho2: There is no significant difference in secondary school students' perceptions of their classroom environment based on gender in Malaysia.	Independent-sample t-test Analysis
3. To compare the overall secondary school students' perceptions of classroom environment in Malaysia and China.	3. Is there any difference in overall secondary school students' perceptions of classroom environment in Malaysia and China?	Ho3: There is no significant difference in overall secondary school students' perceptions of classroom environment in Malaysia and China.	Independent-sample t-test Analysis

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3.9.1 Descriptive Analysis

The purpose of descriptive analysis is to provide better understanding on the results obtained from the study. Frequency analysis is used to analyze the samples for items in section one (respondents' demographic information). Frequency and percentage will produce the results in this section. Nevertheless, Frequency analysis and descriptive analysis, which include percentage, mean and standard deviation will be used to analyze data on the level of secondary school students' perceptions of classroom environment with regard to appeal, choice, challenge, meaningfulness, and academic self-efficacy in Malaysia and China. And the mean score interpretation is shown as in the Table 3.5 below.

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Table 3.5

Mean Score Interpretation

Mean score	Levels
1.00-2.33	Low
2.34-3.67	Moderate
3.68-5.00	High

Source: Landell (1977), and Mohd Najib (1994).

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3.9.2 Inferential Analysis

In this study, the data will be analyzed using the Independent-sample t-test Analysis. The researcher will compare the difference between Malaysia and China secondary school students' perceptions of classroom environment. The Independent-sample t-test Analysis is used to compare the means of two sets of data in order to determine whether the mean difference is statistically significant (Suter, 2012). Specifically, if p-value is less than 0.05, which means that the variance of two groups is not equal. In this case, look at the t-value of the column of "Equal variances not assumed", if p-value<0.05, then reject the null hypothesis. Otherwise, it indicates that the variance of two groups is equal and do not reject the null hypothesis.

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3.10 Summary

The purpose of this chapter is to describe the research design and methodology for this study. This chapter illustrated population and sampling, data collection method and instrument, data collection process and analysis of the data. In this study, questionnaire is used to collect data from the respondents, and the collected data are analyzed in order to obtain the results for comparing secondary school students' perceptions of classroom environment in Malaysia and China as well as comparing the difference between

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Malaysia and China secondary school students' perceptions of their classroom environment based on gender and comparing the overall secondary school students' perceptions of classroom environment in Malaysia and China. Moreover, descriptive and inferential analysis are used by the researcher to make sure that all the hypotheses and the research questions are answered.

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CHAPTER 4

FINDINGS

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4.1 Introduction

This chapter presents the findings regarding secondary school students' perceptions of their classroom environment in Malaysia and China. Frequency analysis, descriptive analysis, and independent sample t-test analysis have been used in this study. Demographic information of the respondents will be illustrated in the following section. Next, the findings of the data analysis will be evaluated and interpreted in this chapter based on research questions and hypotheses.

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4.2 Demographic Information of the Respondents

Frequency analysis was used to analyze respondents' demographics which are respondents' gender, age, and the highest education level of respondents' parents. The demographic information of the Chinese and Malaysian respondents who involved in this study is represented in the Table 4.1, and Table 4.2 below.

Table 4.1

Demographic Information of Respondents

Items	China		Malaysia	
	Frequency (n)	**Percent (%)**	**Frequency (n)**	**Percent (%)**
Gender				
Male	208	59.3	121	46.5
Female	143	40.7	139	53.5
Total	351	100.0	260	100.0
Age				
12 and below	8	2.3	1	0.4
13-15 years old	120	34.2	165	63.5
16-18 years old	206	58.8	94	36.2
19 and above	16	4.6	0	0.0
Total	351	100.0	260	100.0

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Table 4.2

Demographic Information of Respondents' Parents

Items	China	
	Frequency (n)	**Percent (%)**
Highest Education Level		
Degree	64	18.2
SHS Certificate	232	66.1
JMS Certificate	55	15.7
Total	351	100.0
	Malaysia	
	Frequency (n)	**Percent (%)**
Sekolah Rendah	9	3.5
Sekolah Menengah	166	63.8
Diploma	38	14.6
Ijazah Pertama	25	9.6
Ijazah Sarjana	10	3.8
PHD	12	4.6
Total	260	100.0

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4.2.1 Gender

From the results of Table 4.1, it is apparent that the majority of the Chinese respondents were male students, which were 59.3% from total of 351 students, with the other 40.7% consisting of female students.

As for Malaysian respondents' gender results, however, it was found that most respondents were female students (53.5%), 46.5% were male students.

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4.2.2 Age

In term of Chinese respondents' age, the highest number of respondents was 16-18 years old (58.7%). Out of 351 respondents participated, 122 of the students were at the age 13-15 years old which represented 34.8% of the total respondents. This is followed by students at the age of 19 and above (4.6%), while the lowest group is 12 and below with the percentage of 2.0 (Table 4.1).

According to Table 4.1, however, in Malaysia, most respondents' age ranged from 13 to 15 years old (63.5%), followed by students aged between 16 to 18 years old (36.2%) and only one respondent was 12 years old and below (0.4%), and there was no respondent who is 19 and above.

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4.2.3 Highest Level of Education

In terms of the level of education, the results showed that 66.1% of Chinese respondents' parents hold the Senior High School Certificate, while 15.7% of respondents' parents with Junior Middle School Certificate, and only 18.2% respondents' parents were Degree holders (Table 4.2).

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Table 4.2 shows that the majority of Malaysian respondents' parents (63.8%) had Sekolah Menengah (Secondary School Certificate), and 14.6% respondents' parents hold the Diploma, 9.6% respondents' parents were Ijazah Pertama (Degree) holders, while 4.6% respondents' parents had PHD Degree, and 3.8% respondents' parents hold the Master Degree.

4.3 Descriptive Analysis for Research Question One

In order to answer Research Question one, *what is the level of secondary school students' perceptions of classroom environment with regard to appeal, choice, challenge, meaningfulness, and academic self-efficacy in Malaysia and China?* descriptive analysis is used in the study. Table 4.3 below describes the mean and standard deviation of five SPOCQ factors (i.e., appeal, challenge, choice, meaningfulness, and academic self-efficacy) of Malaysia and China.

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Table 4.3

Descriptive Analysis for Five SPOCQ Factors

Factors	Chinese students (n=351)		Malaysian students (n=260)	
	Mean	**Std. Deviation**	**Mean**	**Std. Deviation**
Appeal	3.51	0.50	3.61	0.55
Challenge	3.31	0.49	3.70	0.56
Choice	3.47	0.56	3.69	0.62
Meaningfulness	3.20	0.56	3.74	0.62
Academic self-efficacy	3.00	0.49	3.58	0.59

The study attempts to evaluate the level of secondary school students' perceptions of classroom environment in China and Malaysia. As shown in Table 4.3, Chinese students ranked appeal as the highest motivational factor (Mean=3.51) with respect to the classroom environment. This is followed by choice factor which scored a mean of 3.47. The third factor in determining the level of perceptions of classroom environment is challenge, which returned a mean value of 3.31. The factor that scored the lowest in attributing classroom environment perceptions is academic self-efficacy with a mean of 3.00.

Whereas, the results indicated that Malaysian students perceived their classroom environment on meaningfulness factor was the highest level which scored a mean score of 3.74. The second factor in determining the level of students' perceptions of classroom environment is challenge (Mean=3.70). It is followed by the factor of

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choice (Mean=3.69). Academic self-efficacy factor also scored the lowest level in Malaysia with a mean of 3.58, but its mean value was higher than China's.

4.3.1 Appeal for Students' Perceptions of Their Classroom Environment

There are 7 items that represent appeal in identifying students' perceptions of their classroom environment (Table 4.4). For Chinese students' perceptions, item 5 "I look forward to learning new things in this class" recorded the highest mean of 4.19 (SD=0.93). The next item which scored the second highest was item 4 "The textbook provides examples of how the material relates to society and daily living" which scored a mean of 3.66 with standard deviation of 0.90. The lowest mean (M=2.99, SD=1.13) was recorded for item 7 "I like going to my class each day". As a whole, appeal scored a mean of 3.51 and a standard deviation of 0.50.

As for Malaysian students' perceptions, item 7 "I like going to my class each day" was the highest (M=3.97, SD=0.91). The next item which scored the second highest was also item 4 "The textbook provides examples of how the material relates to society and daily living" which scored mean of 3.94 (SD=0.75). The lowest mean (M=3.26, SD=0.95) which was recorded for item 2 "The assigned reading material for

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my class is interesting". As a whole, appeal scored a mean of 3.61 and a standard deviation of 0.55.

Table 4.4

Descriptive Analysis for the SPOCQ Items——Appeal

Factors	Items	Mean		Std. Deviation	
		C (n=351)	**M (n=260)**	**C (n=351)**	**M (n=260)**
APP	1. I find the contents of my class interesting.	3.65	3.43	0.94	0.91
	2. The assigned reading material for my class is interesting.	3.48	3.26	0.88	0.95
	3. The material covered in my textbook is interesting.	3.46	3.59	0.98	0.94
	4. The textbook provides examples of how the material relates to society and daily living.	3.66	3.84	0.90	0.75
	5. I look forward to learning new things in this class.	4.19	3.70	0.93	1.04
	6. I find the reading material for my class a pleasure to read.	3.15	3.48	1.07	0.99
	7. I like going to my class each day.	2.99	3.97	1.13	0.91
Total		3.51	3.61	0.50	0.55

Notes. APP = Appeal, C = China, M = Malaysia.

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4.3.2 Challenge for Students' Perceptions of Their Classroom Environment

There are 7 items with respect to challenge in order to determine students' perceptions of their classroom environment (Table 4.5). As for Chinese students' perceptions, item 9 "I find my class assignments a good challenge" recorded the highest mean of 3.85 (SD=0.91). The second highest score was item 11 "This class content is an appropriate challenge for me" (M=3.66, SD=0.89). However, the lowest one was item 13 "I like the way my teacher challenges me in this class" (M=2.99, SD=0.84). The overall mean score for challenge as a factor of students' perceptions of their classroom environment was 3.31 with standard deviation of 0.49.

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For Malaysian students' perceptions, item 12 "I like the challenge of the projects in this class" recorded the highest mean was 3.88 (SD=0.95). The next highest score was item 10 "I learn best when I am challenged" (M=3.81, SD=0.84). However, the lowest one was item 8 "I find my class time instruction appropriately challenges my intellectual abilities" (M=3.05, SD=0.78). The overall mean score for challenge as a factor of students' perceptions of their classroom environment was 3.70 with standard deviation of 0.56.

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Table 4.5

Descriptive Analysis for the SPOCQ Items——Challenge

Factors	Items	Mean		Std. Deviation	
		C (n=351)	M (n=260)	C (n=351)	M (n=260)
CHA	8. I find my class time instruction appropriately challenges my intellectual abilities.	3.18	3.55	0.82	0.78
	9. I find my class assignments a good challenge.	3.85	3.77	0.91	0.88
	10. I learn best when I am challenged.	3.02	3.81	0.89	0.84
	11. This class content is an appropriate challenge for me.	3.66	3.56	0.89	0.88
	12. I like the challenge of the projects in this class.	3.46	3.88	1.04	0.95
	13. I like the way my teacher challenges me in this class.	2.99	3.69	0.84	0.84
	14. I use my critical thinking skills in my class.	3.02	3.67	1.08	0.96
Total		3.31	3.70	0.49	0.56

Notes. CHA = Challenge, C = China, M = Malaysia.

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4.3.3 Choice for Students' Perceptions of Their Classroom Environment

There are 7 items of choice that represent students' perceptions of their classroom environment (Table 4.6). As for Chinese students' perceptions, item 15 "I am given choices regarding how to show the teacher what I have learned" recorded the highest mean of 3.95 (SD=1.00). The next item 19 "I feel responsible for my learning because I am allowed to make choices in my class" scored the second highest with mean of 3.83

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and standard deviation of 0.91. However, the lowest score was item 21 “I am encouraged to pursue subjects that interest me in my class” (M=2.89, SD=1.09). The total mean value for choice factor of students’ perceptions of their classroom environment was 3.47 with standard deviation of 0.56.

For Malaysian students’ perceptions, item 17 “When there are different ways to show what I have learned, I can usually pick a good way” recorded the highest mean of 3.88 (SD=0.81). The next item 16 “My teacher lets me choose the resources I use for projects” scored the second highest with mean of 3.79 and standard deviation of 0.92. However, the lowest score was item 18 “I am given lots of choices in my class” (M=3.46, SD=1.00). The total mean score for choice factor of students’ perceptions of their classroom environment was 3.70 with standard deviation of 0.62.

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Table 4.6

Descriptive Analysis for the SPOCQ Items——Choice

Factors	Items	Mean		Std. Deviation	
		C (n=351)	M (n=260)	C (n=351)	M (n=260)
CHO	15. I am given choices regarding how to show the teacher what I have learned.	3.95	3.58	1.00	0.86
	16. My teacher lets me choose the resources I use for projects.	3.81	3.79	0.81	0.92
	17. When there are different ways to show what I have learned, I can usually pick a good way.	3.60	3.88	1.23	0.81
	18. I am given lots of choices in my class.	2.97	3.46	1.08	1.00
	19. I feel responsible for my learning because I am allowed to make choices in my class.	3.83	3.72	0.91	0.87
	20. The teacher uses a variety of instructional techniques that make this class enjoyable.	3.24	3.70	1.54	0.98
	21. I am encouraged to pursue subjects that interest me in my class.	2.89	3.70	1.09	0.91
Total		3.47	3.70	0.56	0.62

Notes. CHO = Choice, C = China, M = Malaysia.

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4.3.4 Meaningfulness for Students' Perceptions of Their Classroom Environment

There are 5 items that represents meaningfulness in identifying students' perceptions of their classroom environment (Table 4.7). As for Chinese students' perceptions, item 22 "The teacher applies the lessons to practical experiences" recorded the highest mean

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of 3.70 (SD=0.93). While, the lowest one was recorded for item 26 “I can relate the material discussed in my class to my daily life” (M=2.88, SD=1.09). The overall mean value for meaningfulness factor of students’ perceptions of their classroom environment was 3.20 with standard deviation of 0.56.

For Malaysian students’ perceptions, item 24 “In my class my teacher relates current issues to the material we are learning” recorded the highest mean of 3.88 (SD=0.90). While, the lowest one was recorded for item 25 “In my class I explore real issues that affect the world around me” (M=3.61, SD=0.87). The overall mean value for meaningfulness factor of students’ perceptions of their classroom environment was 3.74 with standard deviation of 0.62.

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Table 4.7

Descriptive Analysis for the SPOCQ Items——Meaningfulness

Factors	Items	Mean		Std. Deviation	
		C (n=351)	M (n=260)	C (n=351)	M (n=260)
MEA	22. The teacher applies the lessons to practical experiences.	3.70	3.66	0.93	0.90
	23. My teacher makes connections between the course material and society.	3.16	3.82	0.88	0.75
	24. In my class my teacher relates current issues to the material we are learning.	3.08	3.88	1.12	0.90
	25. In my class I explore real issues that affect the world around me.	3.19	3.61	0.77	0.87
	26. I can relate the material discussed in my class to my daily life.	2.88	3.75	1.09	0.85
Total		3.20	3.74	0.56	0.62

Notes. MEA = Meaningfulness, C = China, M = Malaysia.

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4.3.5 Academic Self-efficacy for Students' Perceptions of Their Classroom Environment

There are 8 items with regard to academic self-efficacy in order to determine students' perceptions of their classroom environment from the questionnaire (Table 4.8). For Chinese students' perceptions, item 33 "I can usually discover interesting things to learn about in this class" recorded the highest mean of 3.79 (SD=0.75). The next item that scored the second highest is number 27 "I'm good at helping other kids understand

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concepts" with mean (M=3.51) and standard deviation (SD=0.97). However, the lowest one (M=2.21, SD=1.06) was the item number 31 "I'm good at taking tests in this class". The total mean value for academic self-efficacy as a factor of students' perceptions of their classroom environment was 3.00 with standard deviation of 0.49.

As for Malaysian students' perceptions, item 33 "I can usually discover interesting things to learn about in this class" recorded the highest mean of 3.73 (SD=0.90). The next item that scored the second highest was number 27 "I'm good at helping other kids understand concepts" with mean (M=3.65, SD=0.89). However, the lowest one (M=3.43, SD=0.89) was item number 30 "It is pretty easy for me to earn good grades". The total mean value for academic self-efficacy as a factor of students' perceptions of their classroom environment was 3.58 with standard deviation of 0.59.

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Table 4.8

Descriptive Analysis for the SPOCQ Items——Academic Self-efficacy

Factors	Items	Mean		Std. Deviation	
		C (n=351)	**M (n=260)**	**C (n=351)**	**M (n=260)**
ASE	27. I'm good at helping other kids understand concepts.	3.51	3.65	0.97	0.89
	28. I am good at connecting material from this class with the real world.	3.44	3.55	1.05	0.88
	29. I am good at answering questions in this class.	3.46	3.56	0.96	0.80
	30. It is pretty easy for me to earn good grades.	2.48	3.43	0.92	0.89
	31. I'm good at taking tests in this class.	2.21	3.53	1.06	0.90
	32. I can easily understand assignments for this class.	2.46	3.73	1.14	0.78
	33. I can usually discover interesting things to learn about in this class.	3.79	3.73	0.75	0.90
	34. I can express my opinions clearly in this class.	2.59	3.50	0.89	0.89
Total		3.00	3.58	0.49	0.59

Notes. ASE = Academic Self-efficacy, C = China, M = Malaysia.

4.4 The Independent Sample t-test Analysis

The independent sample t-test analysis is to compare the mean scores of two different groups and to determine whether a significant difference exists in terms of their mean scores. In this study, an independent sample t-test determines if a significant difference in secondary school students' perceptions of classroom environment in Malaysia and

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China. The p-value helps to show whether the hypotheses are rejected or accepted. According to the results of independent sample t-test analysis (Table 4.9), there was a statistically significant difference in secondary school students' perceptions of classroom environment in Malaysia and China. According to Table 4.10, there was no significant difference in secondary school students' perceptions of classroom environment based on gender in China except academic self-efficacy. Table 4.11 shows that there was no significant difference in secondary school students' perceptions of classroom environment based on gender in Malaysia except meaningfulness.

Table 4.9

Independent Sample t-test of Students' Perceptions of Classroom Environment Between Malaysia and China

Factors	Mean		Std. Deviation		t	p
	China	Malaysia	China	Malaysia		
Appeal	3.51	3.61	0.50	0.55	-2.336	.020
Challenge	3.31	3.70	0.49	0.56	-9.158	.000
Choice	3.47	3.69	0.56	0.62	-4.603	.000
Meaningfulness	3.20	3.74	0.56	0.62	-11.313	.000
Academic self-efficacy	3.00	3.58	0.49	0.59	-13.572	.000
Total	3.30	3.66	0.52	0.59	-8.196	.004

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Table 4.10

Independent Sample t-test of the Male and Female Students' Perceptions of Classroom Environment in China

Factors	Male		Female		t	p
	Mean	SD	Mean	SD		
Appeal	3.48	0.53	3.56	0.47	-1.308	.192
Challenge	3.34	0.50	3.27	0.49	1.189	.235
Choice	3.47	0.54	3.48	0.58	-0.172	.863
Meaningfulness	3.22	0.52	3.17	0.61	0.985	.325
Academic self-efficacy	3.04	0.51	2.90	0.46	2.686	.008
Total	3.30	0.52	3.28	0.52	0.676	.325

Table 4.11

Independent Sample t-test of the Male and Female Students' Perceptions of Classroom Environment in Malaysia

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Factors	Male		Female		t	p
	Mean	SD	Mean	SD		
Appeal	3.61	0.54	3.62	0.55	-0.019	.985
Challenge	3.31	0.58	3.72	0.54	-0.636	.525
Choice	3.65	0.65	3.73	0.60	-0.981	.327
Meaningfulness	3.65	0.64	3.82	0.59	-2.269	.024
Academic self-efficacy	3.57	0.62	3.59	0.56	-0.238	.812
Total	3.56	0.61	3.70	0.57	-0.849	.544

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4.5 Hypotheses Test

Ho 1: There is no significant difference in secondary school students' perceptions of their classroom environment based on gender in China.

Table 4.10 indicates that Chinese students' perceptions of classroom environment with regard to appeal (t=-1.308, p=0.192), challenge (t=1.189, p=0.235), choice (t=-0.172, p=0.863), meaningfulness (t=0.985, p=0.325), these four factors' P-value is more than 0.05. Thus they failed to reject this null hypothesis. However, the factor of academic self-efficacy (t=2.686, p=0.008) rejected the null hypothesis ($p<0.05$). Therefore, there was no significant difference in secondary students' perceptions of classroom environment based on gender in China except academic self-efficacy.

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Ho 2: There is no significant difference in secondary school students' perceptions of their classroom environment based on gender in Malaysia.

From the results (Table 4.11), Malaysian students' perceptions of classroom environment with regard to appeal (t=-0.019, p=0.985), challenge (t=-0.636, p=0.525), choice (t=-0.981, p=0.327), academic self-efficacy (t=-0.238, p=0.812), the P-value of these four factors were higher than 0.05, hence this null hypothesis was not rejected. But the significant difference only existed in the factor of meaningfulness (t=-2.269, p=0.024) ($p<0.05$). Therefore, there was no significant difference in secondary school students' perceptions of classroom environment based on gender in Malaysia except meaningfulness.

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Ho 3: There is no significant difference in overall secondary school students' perceptions of their classroom environment in Malaysia and China.

Table 4.9 shows that secondary school students' perceptions of classroom environment with respect to appeal (t=-2.336, p=0.020), challenge (t=-9.158, p=0.000), choice (t=-4.603, p=0.000), meaningfulness (t=-11.313, p=0.000), and academic self-efficacy (t=-13.572, p=0.000) in Malaysia and China, the p-value of all factors was lower than 0.05. Hence, this null hypothesis was rejected. It means that there was a significant difference in overall secondary school students' perceptions of their classroom environment in Malaysia and China. And summary of hypotheses test is shown in Table 4.12.

Table 4.12

Summary of Hypotheses Test

Hypotheses	**Decisions**
Ho 1: There is no significant difference in secondary school students' perceptions of their classroom environment based on gender in China.	Fail to reject
Ho 2: There is no significant difference in secondary school students' perceptions of their classroom environment based on gender in Malaysia.	Fail to reject
Ho 3: There is no significant difference in overall secondary school students' perceptions of their classroom environment in Malaysia and China.	Reject

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4.6 Summary

This chapter has presented the findings of the study and it began with the demographic information of respondents. Then it outlined the procedures for data analyses. Frequency analysis and descriptive analysis were conducted. Independent-sample t-test analysis was carried out to report whether there is any difference between Malaysia and China students' perceptions of the classroom environment afterwards. The following chapter will discuss the findings of the study and compare them with relevant literature in detail based on research questions.

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CHAPTER 5

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

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5.1 Introduction

This chapter discusses the findings from the previous chapter for the present study. The second section presents a discussion and interpretation of the main findings based on the research questions. It is followed by the implications and recommendations of the study as well as a brief summary.

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5.2 Discussion of the Findings

The findings of the present study are discussed under research questions:

5.2.1 What is the level of secondary school students' perceptions of their classroom environment with regards to appeal, challenge, choice, meaningfulness, and academic self-efficacy in Malaysia and China?

From the study's findings, Chinese students' perceptions of classroom environment on five factors, their mean scores from the highest to the lowest in order was appeal (Mean=3.51), choice (Mean=3.47), and challenge (Mean=3.31), meaningfulness (Mean=3.20), and academic self-efficacy (Mean=3.00). About Malaysian students' perceptions of classroom environment, the order of five factors from high to low was meaningfulness (Mean=3.74), challenge (Mean=3.70), choice (Mean=3.69), appeal (Mean=3.61), and academic self-efficacy (Mean=3.58). Therefore, the results illustrated that secondary school students in Malaysia and China are satisfied with their classroom environment based on their perceptions.

In the previous research (Gentry et al., 2011), they found that Korean students had the highest level on challenge factor and the lowest level on choice factor, while the United States gifted students had the highest level on the factor of challenge and the lowest level on appeal factor. However, the United States general students had the high level of meaningfulness factor (Mean=3.55), this finding was similar with Malaysian

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students' result above.

Therefore, from the results discussed above, we can understand some differences and similarities between Malaysian and Chinese students concerning how they perceive the level of five factors of appeal, challenge, choice, meaningfulness, and academic self-efficacy in their classrooms. The results may help educators to consider how to meet students' learning needs and optimize the classroom environment.

1) Students' perceptions on five factors of appeal

Appeal refers to interest and enjoyment. Based on the results of descriptive analysis in previous chapter, it can be reported that Chinese students preferred to have teachers who can provide examples of how the material relates to society and daily living in the class (Item 4, Mean=3.66). It is the same as Malaysian students' perceptions of their classroom environment (Item 4, Mean=3.94). When students perceive their class is more interesting and lively, they feel more satisfied with their classroom environment. This finding supported the results of Ibrahim (2015) who investigated the factors that affect the enjoyment of students' learning and teaching from their viewpoints and reported that "implement the instructional aids" and "asking classroom questions and managing dialogue" are important factors contribute to students' enjoyment in learning. Because the former will attract students' attention to focus on their learning, the latter

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interesting dialogue that includes a sense of humor, and respect for students will also attract students to learn and increase their interests and enjoyment of discussion during the whole learning process. There is another study (Hao, 2011) which suggested that interest is the original driving force of learner's creativity, and intellectual curiosity. Other than that, MeenuDev (2016) who also found that interest was one of crucial factors that relatively influence students' learning and their achievement. Furthermore, the finding of Firmani's (2009) research suggested that there was a significant relationship between interest and students' academic achievement, and students who had high interest to learn or pursue knowledge more than students who had low interest.

According to the findings, Malaysian students perceived their classroom as more appealing than did Chinese students with mean scores between the two countries being 3.61 and 3.51 respectively. Chinese and Malaysian students' perceptions of classroom environment on appeal factor may make progress if their teachers made teaching and learning more appealing to them. The finding was consistent with the results of Gentry and Springer's (2002) research, they stated that interest was an essential factor in increasing students' learning effect and motivation in the classroom and when students had high interest in learning, they were willing to be engaged and enjoyable with their study. Besides that, Goetz, et al. (2009) also stated that enjoyment in learning is one of the crucial factors that improve students' learning and academic achievement in the educational context. Therefore, we can see that the findings

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supported appeal as one of the important factors which could influence students' learning and learning outcomes.

2) Students' perceptions on five factors of challenge

Challenge inspires students to engage in effective learning and extra efforts. From the results, Chinese students were satisfied with the appropriate challenge of the class content (Item 9, Mean=3.85) and class assignment (Item 11, Mean=3.66). Malaysian students like the challenge of the projects in the class (Item 12, Mean=3.88) and they learn best when they are challenged (Mean=3.81). We can see that when teachers provided optimal level of challenge to students, students had great interest to learn. But Chinese students showed the lowest mean score on Item 13 they did not like the way the teachers challenged them in class, which means students may enjoy their learning tasks if teacher provides the appropriate level of challenges. There were other findings which reported that challenge was a significant motivational factor of classroom environment. For example, the findings of Chan's (2001) study revealed that ordinary students did not like challenging learning assignments that may bring them to failure whereas gifted students preferred independent and challenging learning tasks. Positive challenge is an important factor for students leaning in the classroom (Molly, 2015). Therefore, teachers should give students learning tasks that match their capabilities, interest, and talents rather than making students feel threatened or putting students

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under the pressure.

3) Students' perceptions on five factors of choice

Choice indicates that students have more choices and make important decisions for their learning. The findings of this study showed that Malaysian and Chinese students had low mean score on choice factor and they were less satisfied with the less choices are given in the class (Mean=2.97 and Mean=3,46). The findings of the present study did not support the results of previous study (Karen, 2007) which revealed that students seemed to invest more time and energy in their learning in the class when they were given some choice opportunities. Thus, students should be given more chances and make important choices about their learning. According to Yang's (2012) research, the finding of structural equation modeling (SEM) showed that challenge was a predictor of higher mathematics achievement and SEM using the gifted result revealed that choice was predictive of gifted students' mathematics achievement. When students are encouraged to pursue interesting projects and allowed to make choices in the class, they feel responsible for their learning.

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4) Students' perceptions on five factors of meaningfulness

Meaningfulness means that the textbook content and teaching methods have relevance to students' lives and are important, connected and so on. The results presented that Chinese students were not very satisfied with the classroom on meaningfulness factor. Except the first item of the meaningfulness factor, the rest of the items' mean score are below the total mean score. It was mentioned in previous chapter that secondary schools are exam-oriented educational atmosphere in China. The teachers are under the pressure of how to improve the students' exam results and finish the teaching missions, so they rarely emphasized the significance of making connections between lesson content and real life. Compared with China's results, the total mean score of meaningfulness (Mean=3.74) in Malaysia is higher than China's. In general, Tanjong Malim's, Malaysia classroom environment is more meaningful than Feng County, China. There is a study (Gao's, 2014) suggesting that the meaningful method was helpful to stimulate students' interest in learning and form good classroom atmosphere, and the teachers should encourage positively students to explore the real issues that affect daily life around them in the classroom. Therefore, teachers should create more meaningful classroom environment for students and show how to apply the knowledge they have learned in class into the real world. Also, Chinese and Malaysian students should be encouraged to be more engaged in exploring and discovering new things in the daily life by their knowledge.

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5) Students' perceptions on five factors of academic self-efficacy

Academic self-efficacy refers to students' perceived self-confidence and capacity to perform their learning behaviors. Compared with the other four factors, academic self-efficacy is the lowest level in Malaysia (Mean=3.58) and China (Mean=3.00) based on students' perceptions. The results reported that most Malaysian and Chinese students were less confident in their learning. Nevertheless, Malaysian students had higher mean score on academic self-efficacy factor than had Chinese students. The reason perhaps was that Malaysian students perceived their classroom is more appealing and meaningful, has more choices and appropriate level of challenges in class than did China based on the results above, so they have higher academic self-efficacy than Chinese students.

There were many research mentioned academic self-efficacy was one of important factors for students' learning, learning behavior, and academic achievement. For instance, Bai (2016) stated that academic self-efficacy had a direct impact on students' learning attitude and behavior, the degree of effort in the face of learning tasks, the persistence of being in troubles, and the ability of self-learning supervision and management and so forth, which can predict students' learning outcome and learning behavior very well. Besides, Bai (2016) also explored the relationship between academic self-efficacy and students' academic achievement and found that the total

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score of self-efficacy had a significant positive correlation with the academic achievement of Chinese, mathematic and English. What is more, Amit (2016), there is a statistically significant positive correlation between self-efficacy and academic achievement of secondary school students. It was similar with the previous study reported that students' self-efficacy was an important factor that had great influence on their academic achievements (Shan, 2015). Lian's (2014) study demonstrated that high school students' English achievements and specific subject self-efficacy in academic self-efficacy had significant positive correlation ($r=0.413$, $p<0,01$).

Additionally, there was a study conducted by Zarandi et al. (2014) the results of correlation analysis have shown that self-efficacy had a positive and significant correlation with students' academic achievement ($r=0.637$, $p<0.01$). Apart from that, in Malaysia, Muhamad et al. (2006) examined the relationship between students' self-efficacy and their English language achievement, and the study indicated that self-efficacy had a positive correlation with academic achievement in English language. Therefore, we can see that academic self-efficacy is a significant predictor of students learning. Students show more confidence in their learning when they have high academic self-efficacy, and students' learning behavior and academic achievement will be improved.

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5.2.2 Is there any difference in secondary school students' perceptions of their classroom environment based on gender in Malaysia and China?

In chapter four, the results showed that there was no significant difference in secondary students' perceptions of classroom environment based on male and female students in China except academic self-efficacy ($t=2.686$, $p=0.008$) ($p<0.05$). That is to say, for academic self-efficacy, Chinese male students and female students were similar in how they perceived their classroom environment in relation to the five factors. According to the mean score of each factor, Chinese male students and female students had the moderate perceptions of classroom environment. This finding was consistent with Murugan's (2013) research results. However, female students had a little bit less favorable perceptions than male students had in China. On the contrary, Malaysian female students had better perception than did male students according to the results of students' perceptions of their classroom environment on the five factors between male and female.

In Malaysia, there is also no significant difference in secondary school students' perceptions of classroom environment based on gender but except meaningfulness. Among the five factors, the mean scores of Malaysian female students' perceptions on meaningfulness and choice are higher than male students' perceptions, but there was no significant difference about meaningfulness between male and female students according to the p-value ($t=-2.269$, $p=0.024$) ($p<0.05$). The finding of this study was

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consistent with the result of Murugan (2013) who found that there was no significant difference between male and female students' perceptions of their classroom environment. From the total mean score of five factors, female students had better perceptions than male students on their classroom environment. It means that female students were more likely to connect lesson content with the daily life than did male students. Female students felt the classroom activities were more interesting and meaningful than did males. The result in this study was similar with Si (2013) and Liu and Liu (2010) who found that female students perceived their classroom environment more positively than male students.

A comparison of students' perceptions of classroom activities based on gender differences, Gentry and Gable (2002) found that interest and enjoyment variables were significant contributed to the gender differences, and female students perceived their classroom activities were more enjoyable than male students did.

According to the results of current study and previous study, therefore, it was obvious that female students were more satisfied with their classroom environment based on their views. Thus, female students had better perceptions than did male students on their classroom environment. Female students felt their classroom environment quite interesting and meaningful, and they were more likely to take part in various curricular and extra-curricular activities positively. The results are not meant

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for generalization, but educators may consider how to balance the needs of male and female students' learning in class.

5.2.3 Is there any difference in overall secondary school students' perceptions of classroom environment in Malaysia and China?

The results of independent sample t-test of students' perceptions of classroom environment between Malaysia and China presented that there was a significant difference between the two countries' overall secondary school students' perceptions of classroom environment ($P<0.05$). Based on the order of five factors mentioned earlier, it was clear that Malaysian students had better perceptions on the five factors of classroom environment than Chinese students. Malaysian students scored higher in terms of meaningfulness, challenge, and choice than Chinese students. Chinese students reported that their classroom activities with few opportunities for choice and were minimally meaningful, this finding was consistent with the previous study's (Gentry et al., 2002) result.

In general, both Malaysian students and Chinese students feel their classroom environment satisfactory which can be seen from the mean value of each of the five factors. Through comparison, there existed differences between the two countries. Secondary school students in Tanjong Malim, Malaysia liked the challenging learning

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tasks more than did Chinese students in Feng County. Also, Malaysian students had more choices in class than Chinese students. However, another finding reported that Malaysian students and Chinese students had low level of academic self-efficacy compared with the other four factors. Though both countries' students had low level of self-efficacy, its mean values of Malaysian students (Mean=3.58) were higher than Chinese students' perceptions (Mean=3.00). The findings of the present study were supporting the finding of Gentry et al. (2002), which there was a significant effect on the factor of challenge could be explained by group differences, with gifted students scored significantly higher than the other groups at the middle school levels. And another finding was different from the current study that there was no significant difference for the factor of challenge at the elementary school for the three groups of students.

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The finding of the research (Barna, 2009) revealed that there existed statistically significant differences in appeal, challenge, choice, and meaningfulness factors on the basis of the teacher preparation pathway except academic Self-efficacy factor according to students' perceptions (appeal, challenge, choice, meaningfulness, and academic self-efficacy) of teacher quality. Specifically, students who taught by traditional pathway teachers perceived their teachers created more challenging and meaningful classroom environment, and offered more appealing and more choices than the students who taught by the career switcher teachers did.

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A comparative study on classroom environment showed that significant differences existed between Malaysia and China in overall secondary school students' perceptions of classroom environment, but the latter had a more positive and better perceptions than the former. It means that Malaysian students showed satisfaction with their classroom with respect to appeal, challenge, choice, meaningfulness, and academic self-efficacy. And Malaysia classroom was more appealing and meaningful than China classroom. There was a finding of the previous study was different but a bit similar with the current study's result, Chae (2009) revealed that Korean and the U.S. gifted students had better perceptions of their classroom on the five factors of appeal, challenge, choice, meaningfulness, and academic self-efficacy than general students.

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5.3 Implications of the Study

This study compares secondary school students' perceptions of their classroom environment in Malaysia and China, and helps to identify which factors scored highly among students and if students are satisfied with the present classroom environment based on their perspectives. In the present study, the results found that there was significant difference in overall secondary school students' perceptions of their classroom environment in Malaysia and China. It also demonstrated that there was no significant difference in secondary school students' perceptions of classroom

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environment based on gender in Malaysia except meaningfulness and there was no significant difference in secondary students' perceptions of classroom environment based on gender in China except academic self-efficacy Therefore, based on the main findings above, there are three implications of this study can help to improve the quality of classroom environment in Malaysia and China.

The first is pedagogical implications. It was found that students' perceptions of classroom environment are connected with their learning and teachers' teaching. However, some factors of students' perspectives on their classroom environment failed to meet the students' needs or expectations. Hence, in order to improve teachers' teaching and students' learning in secondary schools, optimizing the present classroom environment is important.

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First and foremost, teachers should encourage students to build confidence for their learning in the class for both countries. According to Bandura's self-efficacy theory, students with high self-efficacy, they have a strong self-monitoring ability for their learning; and high self-efficacy has a positive impact on students' goal orientation and academic achievement (Bandura, 1997). Hence, teachers should try to create more democratic and cooperative class so as to let students express their opinions bravely as well as finish assignment on their own way. By doing so, more students will benefit from the class and they are more likely to involve in class activities and become more

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confident when they are learning. And students will make great progress as a whole.

Moreover, teachers should enhance the students' awareness of critical thinking skills in class． It is of importance to solve learning problems for the students in class. They should offer appropriate level of challenges and give more choices in class based on students' individual differences to challenge students' intellectual abilities and improve autonomous learning abilities. Consequently, more students are likely to be responsible for their learning. It may increase students' learning interest and motivation, and may help to build their high academic self-efficacy.

Apart from that, students desired to relate the material discussed in class to their daily life. Teachers should keep lesson content relevant to their daily life as much as possible and encourage students to explore and discover new tings or issues that are closed to the course materials in real life. They also should show how to apply the lessons to practical experiences to students so that this can motivate students to learn with enjoyment.

The second implication is that school administrators should know about students' current perceptions in time and evaluate the quality of classroom environment based on SPOCQ questionnaire answered. The school administrators should also encourage teachers to update their knowledge, improve classroom management skills

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and their pedagogical skills, to optimize the classroom environment. The schools should make proper and effective measures as well in order to meet students' needs in their learning and encourage students to study hard to improve the academic standard in Malaysia and China.

The third implication is that the ministry of education should do regular surveys to understand the current situation of schools so that make effective measures and improve teaching quality at schools. And they also should encourage school administrators to offer regular professional development chances to teachers such as conference, seminar, or workshop, which improving and enhancing teachers' qualification, knowledge, and pedagogical skills.

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5.4 Recommendations

The following are the recommendations for this study:

Firstly, for the number of respondents is not vey big in the present study, more respondents may be involved in the further research. More respondents participate in the research, more accurate data and findings will be reported, and therefore the SPOCQ instrument should continue to investigate a large respondent of China and

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Malaysia, because it can be easier to generate statistical significance. In addition, the research should not collect data limited only to one location in China and Malaysia and also can be conducted in various areas which cover more schools and locations in both countries. If this is done, the further study will have more persuasive and valued information, and we can get a better understanding of how students perceive their classroom environment and which factors will be scored highly from different districts and different secondary schools between China and Malaysia.

Secondly, the perceptions on classroom environment are not only limited to what have been discussed in the present study. Teachers also play an important role in classroom environment. For this study only investigated classroom environment from students' perceptions. Hence, the teachers' perceptions of classroom environment should be considered in regard with other factors for the future research.

Thirdly, it is suggested that the further research may compare gifted and general secondary school students' perceptions of classroom environment in China and Malaysia, using student perceptions of classroom quality (SPOCQ) instrument. By doing so, more interesting and valuable findings will be discovered.

Last but no least, the SPOCQ instrument can be used for different educational research purpose, including the following aspects:

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To compare students' perceptions of teacher quality based on students who were taught by the career switcher teachers and students who were taught by the traditional pathway teachers (Barna, 2009).

To investigate the relationship between students' perceptions of their class activities and school adjustment employing SPOCQ instrument and the school adjustment scale (Salehi and Kareshki, 2017).

To compare whether there are differences between gifted and general students' perceptions of their learning in Korea and the United States (Chae and Gentry, 2011).

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For the present study, this instrument can be a useful tool for teachers to get a better understanding of students' needs in learning and understand culture similarities and differences between Chinese and Malaysian students perceived on five factors of their classroom environment. And it helped teachers to optimize the classroom environment. It also provided information and included factors may have an impact on student's learning and teacher's teaching on the basis of students' perceptions.

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5.5 Summary

This study aims to identify the level of secondary school students' perceptions of classroom environment of five motivational constructs, which includes appeal, challenge, choice, meaningfulness, and academic self-efficacy and compare the differences and similarities between China and Malaysia secondary school students' perceptions of their classroom environment. From the findings, all the objectives have been achieved. This study is hoped that the Feng County (Shaanxi province, China) and Tanjong Malim (Perak, Malaysia) secondary school institutions may have a clear description on students' perceptions towards their classroom environment. With the solutions proposed, it is also hoped that the institutions may improve the quality of classroom environment.

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Appendix A: Survey Questionnaire

UNIVERSITI PENDIDIKAN SULTAN IDRIS
SULTAN IDRIS EDUCATION UNIVERSITY

Student Survey About Students' Perceptions of the Classroom Environment

Dear students:

I am a Master of Educational Management student currently studying in Sultan Idris Education University, Perak. For my dissertation, I intended to research on secondary school students' perceptions of their classroom environment in China and Malaysia. I would like to know how you feel about your class activities. First and foremost, please finish **section A: Basic Information**. Then, read each statement of **section B** and show how much you agree with it. Please tick (√) for the appropriate choice for each item. There are no right or wrong answers. Your answers will be kept confidential. Remember to mark an answer for each statement. In the example below, the person agreed that the class was enjoyable.

Thank you for your support and cooperation.

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SECTION A: Respondents' Demographic

1. The name of your school _____

2. Your student number _____

3. Your age _____ years old

4. Your gender a) Male（ ） b) Female（ ）

5. Your grade a) 7th grade（ ） b) 8th grade（ ） c) 9th grade（ ）

d) Senior Grade One（ ） e) Senior Grade Two（ ） f) Senior Grade Three（ ）

6. Your parents' highest education level

a) Master ( ) b) Degree ( ) c) Senior High school Certificate ( )

d) Junior Middle School Certificate ( )

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SECTION B：Students' Perceptions of the Classroom Quality (SPOCQ)

1）Appeal

Items	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
Example: My class is enjoyable.				√	
1.I find the contents of my class interesting.					
2.The assigned reading material for my class is interesting.					
3.The material covered in my textbook is interesting.					
4.The textbook provides examples of how the material relates to society and daily living.					
5.I look forward to learning new things in this class.					
6.I find the reading material for my class a pleasure to read.					
7.I like going to my class each day.					

2）Challenge

Items	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
8.I find my class time instruction appropriately challenges my intellectual abilities.					
9.I find my class assignments a good challenge.					
10.I learn best when I am challenged.					
11.This class content is an appropriate challenge for me.					

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12.I like the challenge of the projects in this class.					
13.I use my critical thinking skills in my class.					
14.I like the way my teacher challenges me in this class.					

3）Choice

Items	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
15.I am given choices regarding how to show the teacher what I have learned.					
16.My teacher lets me choose the resources I use for projects.					
17.When there are different ways to show what I have learned, I can usually pick a good way.					
18.I am given lots of choices in my class.					
19.I feel responsible for my learning because I am allowed to make choices in my class.					
20.The teacher uses a variety of instructional techniques that make this class enjoyable.					
21.I am encouraged to pursue subjects that interest me in my class.					

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4）Meaningfulness

Items	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
22.The teacher applies the lessons to practical experiences.					
23.My teacher makes connections between the course material and society.					
24.In my class my teacher relates current issues to the material we are learning.					
25.In my class I explore real issues that affect the world around me.					
26.I can relate the material discussed in my class to my daily life.					

5）Academic Self-Efficacy

Items	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
27. I'm good at helping other kids understand concepts.					
28. I am good at connecting material from this class with the real world.					
29. I am good at answering questions in this class.					
30. It is pretty easy for me to earn good grades.					
31. I'm good at taking tests in this class.					
32.I can easily understand assignments for this class.					
33. I can usually discover interesting things to learn about in this class.					
34. I can express my opinions clearly in this					

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class.					

35.Good grades are mainly the result of my hard work.					
36.Good grades are mainly the result of my ability.					
37.I can improve my intelligence by working hard.					
38.I plan to go to college.					

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Appendix B: Survey Questionnaire Bahasa Malaysia

UNIVERSITI PENDIDIKAN SULTAN IDRIS
SULTAN IDRIS EDUCATION UNIVERSITY

Tinjauan Mengenai Persepsi Pelajar Terhadap Persekitaran Bilik Darjah

Pelajar yang dikasihi:

Saya Heng Jing (No. Pelajar: M20151001104) merupakan pelajar ijazah Sarjana Pendidikan (Pengurusan Pendidikan) di Fakulti Pengurusan dan Ekonomi, Universiti Pendidikan Sultan Idris, Perak. Sebagai sebahagian syarat bergraduat, saya sedang menjalankan penyelidikan untuk mengetahui bagaimana perasaan pelajar sekolah menengah tentang persekitaran dalam bilik darjah mereka. Justeru anda telah dipilih sebagai sampel kajian tersebut. Anda dikehendaki untuk melengkapkan soal-selidik di bawah bagi tujuan penyelidikan ini. Pertama sekali, sila lengkapkan **Bahagian A: Latarbelakang Responden**. Kemudian, baca setiap pernyataan di **Bahagian B** dan nyatakan sejauh mana anda bersetuju dengan pernyataan tersebut. Sila tandakan (√) untuk pilihan yang sesuai bagi setiap item seperti contoh di mukasurat 2. Tidak ada jawapan yang betul atau salah. Sila berikan jawapan anda secara **jujur dan ikhlas**. Identiti dan jawapan anda akan dirahsiakan dan hanya digunakan untuk tujuan kajian ini sahaja. Pastikan anda menandakan jawapan untuk setiap pernyataan. Sekiranya anda mempunyai sebagai pertanyaan, anda boleh menghubungi saya atau penyelia saya melalui email: mohd.asri@fpe.upsi.edu.my

Terima kasih atas sokongan dan kerjasama anda.

BAHAGIAN A: Latarbelakang Responden

1. Nama sekolah anda: _____
2. Umur anda: _____ tahun
3. Jantina: a) Lelaki ( ) b) Perempuan ( )
4. Tingkatan: a) 1 ( ) b) 2 ( ) c) 3 ( )
   d) 4 ( ) e) 5 ( ) f) 6 ( )
5. Kelayakan tertinggi ibu atau bapa:
   a) Sekolah Rendah ( ) b) Sekolah Menengah ( ) c) Diploma ( )
   d) Ijazah Pertama ( ) e) Ijazah Sarjana ( ) f) PhD ( )
   g) Lain-lain (nyatakan): _____
6. Pekerjaan ibu atau bapa: _____

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BAHAGIAN B：Persepsi Pelajar terhadap Persekitaran Bilik Darjah

1）Tarikan

Pernyataan	Sangat Tidak Setuju	Tidak Setuju	Tidak Pasti	Setuju	Sangat Setuju
Contoh: Kelas saya menyeronokkan.				√	
1. Saya dapati kandungan kelas saya menarik.					
2. Bahan bacaan yang diberikan untuk kelas saya adalah menarik.					
3. Bahan yang diliputi dalam buku teks saya adalah menarik.					
4. Buku teks menyediakan contoh bagaimana bahan tersebut berkait dengan masyarakat dan kehidupan harian.					
5. Saya tidak sabar-sabar untuk mempelajari perkara-perkara baru dalam kelas ini.					
6. Saya dapati membaca bahan bacaan untuk kelas saya sesuatu yang menyenangkan.					
7. Saya suka menghadiri kelas saya setiap hari.					

2）Cabaran

Pernyataan	Sangat Tidak Setuju	Tidak Setuju	Tidak Pasti	Setuju	Sangat Setuju
8. Saya dapati instruksi sewaktu kelas saya mencabar kemampuan intelektual saya.					
9. Saya dapati tugasan kelas saya sebagai cabaran yang baik.					
10. Saya belajar yang terbaik apabila saya dicabar.					
11. Kandungan kelas ini merupakan cabaran yang sesuai untuk saya.					
12. Saya suka cabaran projek-					

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projek/aktiviti-aktiviti di kelas ini.					
13. Saya menggunakan kemahiran berfikir secara kritis saya di dalam kelas.					
14. Saya suka cara guru saya mencabar saya dalam kelas ini.					

3）Pilihan

Pernyataan	Sangat Tidak Setuju	Tidak Setuju	Tidak Pasti	Setuju	Sangat Setuju
15. Saya diberi pilihan mengenai cara menunjukkan kepada guru apa yang saya pelajari.					
16. Guru saya membenarkan saya memilih sumber yang saya gunakan untuk projek/aktiviti saya.					
17. Apabila terdapat cara yang berbeza untuk menunjukkan apa yang saya pelajari, saya biasanya boleh memilih cara yang baik.					
18. Saya diberi banyak pilihan dalam kelas saya.					
19. Saya rasa bertanggungjawab terhadap pembelajaran saya kerana saya dibenarkan membuat pilihan dalam kelas saya.					
20. Guru menggunakan pelbagai teknik pengajaran yang menjadikan kelas ini menyeronokkan.					
21. Saya digalakkan untuk mengkaji tajuk yang menarik minat saya dalam kelas.					

4）Pembelajaran yang Bermakna

Pernyataan	Sangat Tidak Setuju	Tidak Setuju	Tidak Pasti	Setuju	Sangat Setuju
22. Guru mengaitkan pembelajaran dengan pengalaman praktikal.					
23. Guru saya menghubungkait bahan pembelajaran dengan masyarakat.					
24. Di kelas saya, guru saya mengaitkan isu-isu semasa dengan					

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bahan yang kami sedang pelajari.					
25. Di dalam kelas, saya meneroka isu-isu sebenar yang memberi kesan kepada dunia di sekeliling saya.					
26. Saya boleh mengaitkan bahan yang dibincangkan dalam kelas saya dengan kehidupan seharian saya.					

5）Efikasi Kendiri Akademik

Pernyataan	Sangat Tidak Setuju	Tidak Setuju	Tidak Pasti	Setuju	Sangat Setuju
27. Saya mahir membantu rakan-rakan lain memahami konsep.					
28. Saya mahir mengaitkan bahan dari kelas ini dengan dunia sebenar.					
29. Saya mahir menjawab soalan-soalan dalam kelas ini.					
30. Agak mudah bagi saya untuk mendapat gred yang baik.					
31. Saya mahir membuat ujian di kelas ini.					
32. Saya mudah memahami tugasan untuk kelas ini.					
33. Saya biasanya dapat menemui perkara-perkara menarik untuk dipelajari di dalam kelas ini.					
34. Saya dapat menyatakan pendapat saya dengan jelas di dalam kelas ini.					
35. Gred yang bagus adalah hasil kerja keras saya.					
36. Gred yang bagus adalah hasil dari keupayaan saya.					
37. Saya dapat meningkatkan kecerdasan dengan bekerja keras.					
38. Saya merancang untuk melanjutkan pengajian tinggi.					

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