

Comparison of High School Learning Environment between China and the UK

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Abstract: The study of learning environments in China and the United Kingdom is a significant thesis in the field of study, and there have been numerous studies, but there have not been many comparisons of the two countries' learning environments. This paper compares the physical, academic, and cultural environments in public high schools in China and the United Kingdom, using comparative data analysis of government official guidelines, information published by both countries' Departments of Education, and a documentary that compares pedagogical practices and student behaviour. After evaluation, there are similarities in the arrangement of campus infrastructure, one final assessment in the national curriculum, and the teacher evaluation process. The differences were concluded with differences in population, government policies, and peer pressure between students and teachers.

Keywords: international education, comparative education, learning environment, China, UK

1. Introduction

Two of the most powerful nations in the world, the UK and China, have very different histories, societies, and political systems, which have created quite different educational environments. Some Chinese students get the stereotype of being good at math, obedient in learning, and having strict self-discipline. It is important to compare how the education environment composes: the distribution of resources and protocols in building structures, the education system and curriculum, and how government benefits could influence students' motivation and teachers' teaching attitudes. Both countries aim for students' academic success and high school aims to prepare students to go to further education or preparation for adulthood. Less comparative papers have been introduced, but there are TV series that look into the chemistry between the learning environment between the two countries. Researchers looked at the comparison of attitudes and motivation, but less looked at the physical campus structure and research environment. The setting of secondary schools is crucial to character development since it is where the students enter adulthood and universities that connect them to the outside world. This paper aims to suggest a framework that can situate the discussion of the difference in high school learning environments between the UK and China. Since there lack of current discussion on the topic, this paper proposes three factors, the physical environment, the academic environment and the cultural environment to compare and contrast. This paper will use documents published by the UK Department for Education, the Ministry of Housing and Urban-Rural Development of the People's Republic of China, and a documentary made by the BBC channel as

evidence. Due to the distinctive education system of private and public high schools in both countries, this paper only focuses on public high schools in the UK and China.

2. The Physical Environment

2.1. Campus Infrastructure

The Physical Environment is a crucial factor to evaluate the different focuses between school culture and characteristics. In comparing the different school's infrastructure and technical facilities, this paper could also see into the curriculum and diversity of the classes. In 2014, the UK Department of Education created an Area of Guidelines for Mainstream Schools to advise and assist architects, sponsors, and head teachers on the ideal amount of space for teaching and learning activities [1]. The guideline outlines suggested building areas and categories for outdoor spaces, including suggested site acreage for various outdoor space categories. The guideline divides the gross area into a net area and a non-net area. Protocols for basic dining, staff, teaching and storage rooms are included in the net area. Restrooms, circulation, and plants are examples of non-net areas. The recommendation for maximum and minimum areas when planning a school is illustrated by a detailed analysis of space consumption and several standard deviation graphs. The maximum and minimum area rules allow flexibility for the arrangement of spaces according to different schools' needs and specific requirements.

On the other hand, the Ministry of Housing and Urban-Rural Development of the People's Republic of China also published a *Code for Design of schools* in 2010 [2]. In the Chinese specification, there is also a similar section of the area used for auxiliary rooms, however, there appear to be specific measurements of the desks, blackboards and hallways. For example, the specification includes the specific ideal area measurement of lab equipment, medicine room, lab preparation room, specimen showroom, computer room, and instrument room. It is visible that the administrators and architects also paid attention to organising a diverse learning environment for their students. Apart from the specific area requirement, there is also another category of emergency, which indicates when there is a fire, earthquake, or other emergencies, the fire door, or there should be spaces for emergency exits. Chinese schools value safety inside and outside of school, which is why there is another category of the requirement of the school's location. In the code, the distance between the outer boundary of the window in the school's main teaching buildings and the railway track shall not be less than 300m, and the effective distance of the underground metro and rail traffic sound line sections shall not be less than 80m. Which is a strict protocol protecting the students' safety when they get to school. There also should be a shelter for disaster in schools, usually underground in case of any emergency or weather.

2.2. Advanced Research and Teaching Facilities

Advanced research and teaching facilities were also included in the UK guideline. Research facilities and activities such as an ICT room, 3D printing room, music room, and multiple science studios are all recommended [1]. This shows the school's input in the student's academic life and extra-curriculum activities, the detailed descriptions of the facilities and room settings all contribute to a student's learning environment. Apart from academic achievements, extra-curriculum has also become a standard to assess a student's ability of learning, therefore, other subjects such as Music, Computer, and Art occupy their own space on campus. More facilities such as the Library, Gym, and Cafeteria are also advanced facilities that are all connected to a learning environment of a high school. All rooms for research teaching facilities were assigned a recommended area in proportion to the number of students. Additional offices for the campus crew such as the facilities manager and technicians, and a conference meeting room next to the campus crew should also be included. The

location of a staff social area is also suggested to be “centrally located”, along with another area such as a sick bay should be located next to the main office or a washing facility. The location of facilities and the structure were also suggested as an example of convenience.

However, compared to UK schools, Chinese schools' advanced facility arrangements were more complex and detailed but less varied. There is a set area for the tables used in experiment studios, and there is a set category of reading every public secondary school should include in its library. In the code [2], it is specified that except for rooms with musical instruments, every classroom should include a window for ventilation and light. The code took into consideration the storage of the musical instruments, as there could be potential damage to the instruments under long hours of direct sunlight. Although there are detailed arrangements of the tables and corridors, the Chinese code for advanced facilities seems to have a smaller diversity of extracurricular activities room, and less attention to staff offices. There are dance studios included in the code, but there does not have food studio, drama studio, or hair studio like UK high schools.

2.3. Comparison of Physical Environment

There are a few variances between the official protocols for building infrastructure and advanced lab facilities that were issued by both nations. The Chinese version has stronger attention to detail, including accurate measurements of desks and corridors. Due to the increased risk of earthquakes on China's southwestern side, there is a strong focus on safety. According to Schiaenza [3], China made significant changes to its building rules in the aftermath of the disastrous 2008 Sichuan earthquake, and a greater proportion of Chinese now live in earthquake-resistant structures. There are maximum and minimum area suggestions based on the percentage of students in the UK guideline, as well as particular requirements such as space for wheelchairs and larger student bathrooms. The differences in the physical environment's protocols demonstrate the school's many adaptations to student life, which gives the students access to a more varied learning environment.

3. The Academic Environment

3.1. Curriculum and Assessment

While the physical environment provides diversity in student life, the academic environment of the curriculum, assessment, and teacher resources provide insight into a school's expectations for its students. The UK Department for Education published *The National Curriculum in the UK* in 2014 [4], which includes the school curriculum, inclusive education curriculum, and literacy targets. More specifically, in *The National Curriculum in the UK* [4], there is a specific attainment target for English, Mathematics, Science, Art, and a few more subjects. For assessments, the A-level examination is one official examination in the UK. Out of more than 80 courses, most colleges require secondary school students to achieve three or more subjects, and some universities or majors might require specific subjects [5]. The AQA A-level website states that UK students in grades 16 through 18 could register for the exams and qualifications in January and could retake the modules each year. These findings must be used by students when submitting their university applications.

Similar to secondary students in the UK, Chinese students also spent most of their time in secondary school preparing for an examination, the Chinese College Entrance Examination. Following the 9-year compulsory school and three-year secondary school, all public high school students are required to take the College Entrance Examination to qualify for universities in China. According to the Ministry of Education of the People's Republic of China [6], the subjects students need to take are the 3+1+2 program, 3 meaning Chinese literature, Mathematics, and one foreign language, 1 could be Physics or History, and 2 could be any two from Ideology and Politics, Geography, Chemistry and Biology. The examination takes place once every year, usually in June or

July, and students need to restudy their Year 12 to take the examination again. Statistics by the Ministry of Education of the People's Republic of China show that there are more than 11,390,000 participants in 2022, which is more than 15 times the A-level examination taken [6].

3.2. Teacher Resources

In addition to the assessment, it is important to take into account the school's teacher resources. According to UCAS's official website, You must have a degree and obtain Qualified Teacher Status (QTS) by completing an Initial Teacher Training(ITT) programme to teach in a public school in England. You must have met the minimal criteria in science, math, and English at the GCSE level. To become a teacher in the UK, applicants must pass a qualification process, ensuring the country's high standards for educators. Teachers determine the selection, development and utilization of curriculum resources, and are the guides for students to use curriculum resources. The ability of teachers to pass the knowledge to their students is crucial in a school's learning environment. Teachers' salaries, according to The UK Department for Education [7], range from about 25,000 to 43,000 pounds a year depending on the location. The teacher-student ratio in public High Schools in the UK is estimated to be 16 students per teacher [8], which surprisingly is a larger number compared to the EU23 average, which is 12.

The teachers in China also need to take a qualification examination which includes a written examination and an interview. Unlike the statistics in the UK, there are fewer candid statistics on teacher salaries in public high schools in China. Teacher salaries are different in every city and province, and there are bonuses for each teacher differently. According to the Ministry of Education of the People's Republic of China [9], the average salary income level could not be lower than or higher than the average salary income level of local city workers. According to Li [10], the teacher-student ratio is 1:13, lower than the ratio in the UK, however, some class sizes could be up to 50 students per class with multiple responsible teachers. It is interesting that, although there are 25 million high school students recorded in 2020, there are still two million high school teachers, which shows China's sufficient teaching resources. This could reflect on people's attitudes toward teaching and the profession of teachers is more needed.

3.3. Comparison of Academic Environment

To apply for higher education, students from both the UK and China must take final college entry exams, which can be seen when comparing the academic environments of the two nations. The similarity could be seen in the teacher qualification examination process. Since students have the option of choosing their courses, they were all given the same opportunities, but some would claim that Chinese students are exposed to a more stressful, competitive, and demanding academic atmosphere. Due to its enormous population, China had 15 times as many students take the college entrance exam as there were A-level exam takers, which covered three grades. Given the situation, China's policy of holding college entrance exams is a very effective approach for institutions to choose the better students and give students from throughout China an equal chance. The teacher resources show more communication and more attention to students in China than in the UK, and show that there is a sufficient teacher resource a country could provide to its students. The differences in the academic environment led to questions in the cultural environment, such as how teachers effectively teach when there is such a disparity in numbers between the UK and China.

4. Cultural Environment

4.1. Students' Learning Motivation

Western countries like the UK and Eastern countries like China have a distinct culture, which is implemented in the school's environment, student motivation, the organisation of classes by teachers, and the student's learning preferences in class. In comparing the teaching method and cultural environment between the UK and China, the BBC channel created a documentary in 2015 about a unique experiment where five Chinese teachers practice their teaching methods in a public high school in Hampshire, a county in southeast England, UK. The contrasts between teaching cultures started to become noticeable when the Chinese teachers were instructing [11]. Teachers discovered that UK students had lower study motivation than Chinese students. "Education is also about the practical business of ensuring that young people receive the preparation they need to secure a good job and a fulfilling career, and have the resilience and moral character to overcome challenges and succeed," the UK Department for Education stated in reference to the study goals of students [12]. In the UK, education serves to provide the foundation for their future professions and prepare them for adulthood.

A Chinese teacher from the documentary held a different view, she mentions that Chinese students know they need to study hard to get their chance at a better life and support their families. With a fair chance of a nationwide examination to get into a university, every student will work hard and aim for their best performance, which could be traced back to years of intensive practice and hard work. Equal opportunity motivates students from poorer educational backgrounds to prove their ability to learn and their ability to do better in the future. The study purpose of students seems different, and it may be traced to the Chinese students' pressure by the significant demographic disparity and the better quality of life of UK students. In response to and with a priority on assisting women and children as well as poverty, the UK government will spend £745 million in 2022–2023 according to Brien and Loft [13]. It is clear why UK students are less motivated to study and work, especially in light of the National Health Service's free health care programme (NHS).

4.2. Teaching Culture

UK students from the documentary reflected that they experienced distinct differences in the Chinese teachers' teaching culture. When students refuse to cooperate with teachers in class and concentrate, Chinese teachers, use the criticism and shame method to punish their students. In the documentary, teachers made their students sit in a special seat next to the lecturer's desk. Chinese teachers thought the student would be shamed and criticised that they are less smarter than their peers. UK students found that humorous and became offended by the teachers' words. Chinese teachers concluded that in UK culture, it is normal for students to challenge their authority, and teachers were in the same social position as their students. However, in Chinese culture, talking back to the teachers is a more disrespectful move. In controlling the students, Chinese teachers used morning exercises, hoisting the flag, and singing the national anthem. The UK students were hesitant at first, but are forced to cooperate since this is not a common activity in UK culture. Chinese teachers later explained that the school uniform, flag, and national anthem were for the purpose of establishing unity and collectiveness, which is a traditional Chinese ethos.

The UK students also noticed the Chinese lecturers finished explaining the subject of trigonometry in 15 minutes, while the UK curriculum intended to cover it over the course of a week. Therefore, students are concerned and pressured by the difficulty of the course. Although during the final examination of the test, the Chinese teachers' class received a higher grade than the UK teachers' class, which proves that the Chinese teaching methods work. In the later interview, students described

their student life under Chinese teaching as like a 12-hour marathon, and UK students seem not to be ready for that kind of lifestyle.

4.3. Comparison of Cultural Environment

There seems to be a distinct difference in Chinese students' learning motivation and teaching culture. In public schools in the UK, teachers generally teach at a steady pace and try to relieve students' pressure using a relaxed schedule. Sometimes, high school students in the UK don't aim for further education and they are ready to work with their high school diploma. Teachers possess a mentoring teaching style and welcome questions and challenges from their students. Chinese students work in a more pressured and more intense way to ensure their best performance in the national college entrance examination. Similar to the students, Chinese teachers value efficiency in teaching, which bans students from asking questions, which would influence the tight teaching schedule they have already arranged. The experiment of five Chinese teachers going to a UK public high school to teach proves the intensive curriculum is effective. However, the research is only on the short-term, with no expectations of the long-term effect. The students might develop rebellious psychology and refuse to listen to class or work with the teachers.

5. Conclusion

After assessing the physical, academic, and cultural environments, similarities were identified, such as a shared building structure and technologically advanced amenities, a shared curriculum, and a shared set of teacher and student qualifying exams. The assessment and teaching approaches, however, differ according to the cultural, economic, and social variables. Due to the enormous population and high intensity of competition among Chinese students, Chinese teachers adopted an intensive teaching style. Chinese educators prioritise efficiency, which causes them to teach more quickly and allow their students more time to prepare for the final exam. Students in the UK might not receive such an intense schedule because their final qualification could be retaken and they have flexible chosen subjects to best show their advantages in certain fields. Socially, the government provide sufficient aid to the poorer citizens so they would still be able to sustain their daily life and not be concerned about food or shelter. This paper aims to be beneficial in comparison to the two countries and illustrate the effect social environment would have on education and learning environments. By outlining the differences, the comparison could show China and the UK's separate focuses on the education system. The Chinese learning environment value a strict, precise, and efficient system to provide the best suited to its country's development, and the UK focuses on more individual development and providing the best in its academic, or specific area.

A long-term observation was advised when using Chinese teaching methods on UK pupils since they are in their ideal learning environment with less stress. More comparison of students' learning environment is suggested, to identify and improve the big current education environment.

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