An Exploration of How the Resourcing of Staff and Book Purchasing Affects the Development of China’s Public School Libraries in Guangzhou

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An Exploration of How the Resourcing of Staff and Book Purchasing Affects the Development of China’s Public School Libraries in Guangzhou

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ABSTRACT
School libraries provide invaluable support to national education systems of China. The current status of school libraries in China is generally far from being able to meet the demands of students and teachers. This study explores the factors that prevent the development of public school libraries in Guangzhou, China. A questionnaire and four sets of interview questions were designed to explore the factors which hinder the development of school libraries in 12 districts of Guangzhou. 132 valid responses were collected from primary and middle schools in Guangzhou. School libraries call for considerable improvements, especially from the views of teachers. This research found that lack of sufficient funds and professional personnel prevents school libraries from providing professional information services.

KEYWORDS
School libraries; school education; school libraries’ funding; school libraries workforce

Introduction
In an international context, school libraries have become an indispensable and well-recognised type of library that provides information services to teachers and students (Yu, 2016). School libraries can play a central role in cultivating reading and local culture (Adkins & Brendler, 2015), although their importance is often underestimated in climates of budgetary constraints (Loh, Ellis, Paculdar, & Wan, 2017). However, several universal issues exist in school libraries. Library funds (LF) represent all funds devoted to the maintenance of school libraries, including sustainable investments in collections, operations, infrastructure and administration. Among library expenses, investments in collections are the most basic expenditures (Qiu, 2013). Funds are required for school libraries to survive, to develop, and to play a proper role in organisations.

School libraries often lack resources, including funds to a verifiable extent, probably indicating that other educators commonly have not given enough attention to, or fully
recognised the importance of, school libraries. Even in the United States, little financial help is given to school libraries. Such budget shortages have already presented many school librarians with challenging situations (Kachel, 2008). Due to limited staffing budgets (Smith, Shea, & Wu, 2014), school librarians frequently find themselves competing with fellow educators for diminishing resources (Adams, 2004). These tough situations not only exist in the USA, but are quite common around the world. Such conditions also exist in China (Zhang, Wang, Ji, & Xu, 2016) although the Chinese government has established requirements for school libraries.

China has been enforcing a nine-year compulsory education system since 1 July 1986 (Zong, 2010). Many cities (especially metropolises) have established nine- or 12-year schools (9S and 12S in short). These nine-year schools include primary and junior middle schools, while 12-year schools include primary, junior middle and senior high schools. Most Chinese schools are public schools, which are supervised and controlled by a department of education at various administrative levels under various government agencies.

Based on the nine-year compulsory educational system, almost all Chinese children and adolescents who are between seven and 16 years old are enrolled in a school. Due to the accessibility of information, school libraries become their first choice for extracurricular readings, followed by public libraries. Furthermore, the diffusion of Inquiry Based Learning (Liu, 2010) in China today encourages the maintenance and development of school libraries. Therefore, having adequately resourced and staffed libraries benefits children and adolescents (Parker, 2000). The Ministry of Education of the People’s Republic of China (PRC) has already promulgated three editions of Primary and Secondary School Library (Room) Regulations since August in 1991. The latest version was published in May, 2018 (The Ministry of Education of the PRC, 2018). The current requirements of the Ministry for school libraries have been embodied in this regulation. The requirements include that primary and secondary school libraries (rooms) should be standardised and modernised, carry out the fundamental task of ‘cultivating morality and people’, and enhance the ability of serving education and teaching (The Ministry of Education of the PRC, 2018). This regulation also stipulates that a school library should be positioned as a document and information centre of a primary and secondary school, an important place for school education, teaching and scientific research, an important carrier of school culture nurturing and curriculum resources development, an important platform for promoting students’ all-round development and teachers’ professional growth, an important embodiment of the modernisation of basic education, and an organic part of the Chinese ‘socialist public cultural service system’ (The Ministry of Education of the PRC, 2018).

The present research focuses on the status of school libraries in Guangzhou, the capital of Guangdong Province. Guangzhou is a historically commercial and cultural city and has always been at the forefront of the reform and opening up of the PRC since 1978. It had a population of 14.04 million at the end of 2016 (Guangzhou Municipal Bureau of Statistics, 2017), and its 2016 gross national product (GDP) was approximately US $21,868 per capita (Guangzhou Bureau of Education, 2012; The Industry Research Institute, 2017). Guangzhou is considered a first-tier city in the PRC. Furthermore, it is one of the leaders in overall education and cultural development in China. Regarding
primary and secondary education in Guangzhou, there were more than 1,400 schools in all 12 districts of Guangzhou in the middle of 2016 (Liu & Zhang, 2016).

There are still obvious and complex problems in school libraries in China based on previous research. The purposes of the present study are to identify the constraining factors in school libraries’ development in a developed region in China (taking Guangzhou as an example) and to generate corresponding recommendations for practice with the goals of inspiring and enlightening education administrators, educators and scholars in relevant fields. Our main research question is: How does the resourcing of staff and book purchasing affect the development of China’s public school libraries in Guangzhou?

**Literature Review**

Previous research indicates a need for well-resourced and staffed school libraries, with purposeful investments in school libraries that benefit teachers and students and thereby improves their service quality and promotes social development (Loh, 2016; Smith et al., 2014; Zhang et al., 2016). In the past 30 years, the development of school libraries and related research has improved internationally (Zhang & Rong, 2015; Zhang & Wang, 2014). In this section, we will review Chinese domestic and foreign studies respectively, and compare them at the end of this section.

**International Studies**

As school libraries develop in response to technological progress and changes in educational requirements, more research on the effectiveness and efficiency of school libraries is being conducted internationally. Many studies have found that students who needed the most support usually had school libraries with fewer or worse resources (i.e. lacking specialised staff and added literature resources) (Eyre, 2000; Loh, 2016; Mojapelo, 2016; Pribesh, Gavigan, & Dickinson, 2011). One study focused on the concentrations of students living in poverty as a classification criterion to investigate the differences in school library characteristics (i.e. staffing, book-purchasing and activity plans) using an online questionnaire for public school librarians in two states in the USA (Pribesh et al., 2011). The research results indicated that those attending schools with the highest concentrations of students living in poverty had the fewest school libraries to draw on, and the schools with high percentages of students living in poverty were also likely to have access to fewer school library resources; thus, there were considerable access gaps among schools (Pribesh et al., 2011). The OECD (2010) report on the PISA 2009 results suggests that the provision of educational opportunities and books can make up for a child’s socioeconomic background. In this case, the provision of better resources in the form of better-funded and staffed school libraries can do much to help disadvantaged students cultivate the reading competencies and habits necessary for academic success and future development (Loh, 2016).

Research has related the presence and adequacy of school libraries to a reduction in social problems, thus adding to the theoretical basis for the sustainable development of school libraries (Okig, 2004; Pribesh et al., 2011; School Library Journal, 2014). Concerning the equality of funding for school libraries, several studies have indicated that when children living in poverty are compared with children from more affluent families, the children living in poverty are more likely to have low academic achievement, to have health,
behavioural, and emotional problems and are more likely to drop out of school (Moore, Redd, Burkhauser, Mbwana, & Collins, 2009). Attention and research focusing on the differences of school libraries with various attributes, e.g. length of schooling, grade level, location, etc., has remarkably increased. The American Association of School Librarians (AASL) investigated teaching quality, enrolment, location, economic conditions and ownership of schools in the USA and found that library resources and services differed significantly (American Association of School Librarians, 2007).

**Chinese Studies**

Generally, there has been very limited empirical research on the development of Chinese school libraries. Furthermore, little attention has been paid politically or academically to the theoretical background or development of school libraries to provide suggestions for meeting the goals of Chinese quality-oriented education and library practices (Quan, 2013; Yu, 2013). This situation may still remain because domestic Chinese education scholars tend to ignore the importance of school libraries and even the importance of adolescents’ independent reading capabilities (Ministry of Education of the PRC, 2010; Quan, 2013; Yu, 2012, 2013). Moreover, studying various types of schools is difficult, especially when the aim is to evaluate school libraries. While foreign scholars may have the awareness and ability to undertake such research in China, they have limited authority to access relevant data and information (The 11th National People’s Congress, 2010), especially in the context of fundamental differences in concepts of governance, social systems and the complex changes in international relations over time. Therefore, to date, only very little domestic or international research has focused on Chinese school libraries. These studies are introduced below.

One case study outlined how the China Evergreen Rural Library Service (CERLS), sponsored by the USA-based Evergreen Education Foundation (EEF), used the public school infrastructure in rural China to introduce computers and information literacy. The author concluded that the study confirmed the general observation by other researchers that joint school-public libraries can be a good solution for sparsely populated rural areas, that is, school libraries can serve the dual functions of providing information access to the general public of their local communities, as well as to teachers and students (Liu, 2005, 2008). Wei, Jiang, Niu, Zou, and Dong (2013) took Tianzhu and Tongwei high schools also funded by EEF as examples and drew almost the same conclusions as the above study. Moreover, Liu and Zhang (2008) did a survey of Chinese K-12 school libraries in health education, and indicated that Chinese school libraries’ support of, and involvement in, health education has been rather limited (both in terms of collection development and services). Based on a questionnaire survey of 116 middle school libraries in Tianjin, Chen (2007) delineated the basic states of these libraries from several aspects including staffing, collection development, building area and management. They asked questions about whether the library staff was too small, or if there was a lack in the proportion of professionally qualified staff. Although the paper collected and analysed empirical data, arriving at enlightened and meaningful conclusions, the depth and precision of the data processing were inadequate and their development of scientific theory primarily relied on their subjective judgement. Several domestic Chinese researches (Fan, Lv, & Hu, 2012; Yu, 2012, 2013) reported similar
problems in Chinese school libraries studies such as inadequate data processing and subjective judgement.

A Comparison between School Libraries Research in China and Abroad

There is a progressively significant gap between China and developed countries in terms of the levels of school library development. In detail, there is a great disparity between them in terms of the attention given to school libraries and research in school libraries, which has resulted in their slow development in the PRC (Fan, 2012; Hu, Wang, Zhi, & Li, 2013). The development and improvement of theories on school libraries has been undervalued by domestic Chinese scholars; correspondingly, school librarianship lacks relevant theoretical guidance. The subject of school library roles and work has not yet formed a systematic theory. After reviewing the previous research (Xie, 2012; Zhang & Rong, 2015; Zhuo, 2012), we propose that at present, the obstacles to the development of primary and secondary school libraries generally lie in lack of attention and resource inputs, and lack of qualified library staff and the use and support of reader groups.

In contrast, after more than a century of continuous exploration, scholars overseas (especially in developed countries) have established a mature and stable theoretical system in this field, and formed a virtuous circle of ‘conceptual attention – scientific research methods – convincing research results – strong support for research and practice – remarkable results’ (Zhang & Wang, 2014). Although there are obvious and even serious imbalances in the development of school libraries in developed countries (Eyre, 2000; Rollandini, 2009), the above-mentioned extensive research reflects the concern and investment in the development of school libraries in their societies. Meanwhile, the school libraries in underdeveloped and developing countries (such as African countries) are struggling with inadequacy, neglect by school administrators, administrative departments and even the whole society, and lack of qualified library staff (Magara & Batambuze, 2009; Mojapelo, 2016; Wickramanayake, 2016). Establishing and maintaining functional school libraries can be a difficult even impossible task for them.

Most overseas research has shown researchers’ close attention to the practical operation of the library services (Kleijnen, Huysmans, Ligtvoet, & Elbers, 2017; Rollandini, 2009; Smith et al., 2014). Much research has focused directly on the life and death of the school libraries (Eyre, 2000; Mojapelo, 2016; Owate & Iroha, 2013; Priestly, 2008), and most research (especially in the last 20 years) has adopted empirical research methods and a rigorous research process; thus, their results are more convincing than those of subjective domestic Chinese studies (Kang, 2017; Liu & Tang, 2018; Lu, 2017).

This paper focuses on the resourcing of staffing and book purchasing that affects the development of China’s public school libraries in Guangzhou. This research has two objectives. The first is to investigate whether the public school libraries in Guangzhou have adequate staffing and book purchasing funds since Guangzhou is one of the most developed cities in China. The second objective is to explore whether there is a balanced supply of resources among the public primary and secondary school libraries in Guangzhou with different characteristics. The purpose of the research is to arouse the
attention of both domestic Chinese scholars and international scholars to the development of China’s public school libraries and Chinese school librarianship.

**Methodology**

We surveyed 138 public schools in urban and suburban Guangzhou. We also interviewed four people (principals, librarians, subject teachers and students) in each of three schools. More details on this follows. Three of them were also interviewed. Our questionnaire investigates the main aspects of the management of school libraries. In addition to the basic information of the survey sample, it originally contained the following six parts: school overview (11 topics in all), establishment of library management team (nine topics), construction of library (room) venues and facilities (10 topics), collections of books (six topics), library (room) management and reader services (nine topics), and others (two topics). The questionnaire and interview questions were developed mostly in accordance with the objectives of the present research and requirements of the Ministry of Education of China. The topics of library collections and services of public primary and middle schools was published in 2016 (Zhang et al., 2016). This paper presents the findings on book-purchasing funds and personnel of the primary and secondary school libraries in Guangzhou.

Statistical analysis was performed using SPSS on the data collected through the questionnaires regarding library budget, staff, and other indicators. Interviews were conducted at three schools with the principals, the librarians, the subject teachers and the students in order to collect opinions on the status of school libraries, adequacy and efficiency of utilising allocated resources. The collected qualitative data was annotated and processed using NVIVO.

Concerning the indicators we investigated, book-purchasing funds are a vital indicator of library funding. Staffing is another important indicator of the professional services that libraries provide. As one type of information resource, books are the most important source of information (Cheng & Pan, 2004), especially for teachers and students as a whole. Based on this, the current paper addressed indicators relating only to book and human resources of school libraries.

We surveyed the school leaders and the librarians of school libraries in 138 schools selected by random stratified sampling of participating schools from April 2015 to May 2015 using the questionnaire and then analyzed the collected data. Tables 1–3 list the general information of these participating schools with regard to SLs (School Location), STs (School Types) and SA (School Authority) levels. The first six regions mentioned in the tables are urban districts of Guangzhou, while the other six are suburban districts (see Tables 1 and 2). Table 1 displays the total numbers of surveyed middle or primary schools by district and administrative level, and the percentage of the schools of a district. Table 2 shows the total numbers of surveyed middle or primary schools by district and school types and the percentage of the schools in a district. Table 3 shows the total numbers of surveyed schools by administration levels and school types.

Moreover, we classified the 132 schools into three categories according to their book-purchasing funds in 2013 and 2014 (i.e. rich, moderate and poor schools). After all the schools in the tables below were surveyed, three schools were selected with one from each of the three categories respectively in consideration of their convenience and availability.
for interviewing. The interviewed schools were A (omitting the real name due to privacy), which had a large amount of book-purchasing funds, B which had a moderate amount of book-purchasing funds, and C which had a small amount of book-purchasing funds.

We interviewed four people from each of these three schools in January of 2017. The four people included one school leader, one library director, one teacher of a course and a student. The interviews were completed by the first author with the guidance of the corresponding author. All of the basic information can be found in Table 4.
Research Instruments

The prototype for the questionnaire, entitled ‘The current school libraries situation in Guangzhou’, was based on ‘The survey into the current school libraries situation in Guangzhou’ (hereafter referred to as ‘the survey’), which was acquired from the Guangzhou Bureau of Education. The latter is a daily monitoring tool to estimate school library development for decades, which was previously used for general surveys organised by Guangzhou Education Equipment Centre (which is directly under the Guangzhou Education Bureau) every year. We revised the original questions to meet our research needs (Zhang et al., 2016). The questionnaire included seven sections. This paper reports the questions (see Appendix A) and data that were relevant to the current paper.

The four sets of interviewing questions focused on the recognition of the status and function of the school libraries, as well as the satisfaction degree of resource investment (including staffing and staff’s knowledge and skill level) (see questions in Appendix B).

Sampling

Based on the fact that the numbers of primary, middle and senior high schools in Guangzhou are changing rapidly (Chen, 2015; Du, 2016), we can only provide a reliable total number at the moment of sampling, which is 1,440 schools (Liao et al., 2015), with total numbers of 1,430 (including 936 primary schools and 494 middle schools) at the end of 2013 (Guangzhou Bureau of Education, 2014) and 1,451 schools (including 941 primary schools and 510 middle schools) at the end of 2015 (Guangzhou Bureau of Education, 2016). We selected 138 schools (9.58% of all schools) using a random stratified sampling technique. First, we identified the types of schools in each of the 12 districts based on their actual percentages in the districts. In each district, we further determined the various types of schools based on the total number and proportion of different types of schools in each area. Subsequently, the schools were numbered according to their names’ pinyin alphabetical order. A random number generation table was used to select schools using unique serial numbers of a particular type for each region. Because of the difficulty (i.e. refusal of research, scattered school locations) in the execution of investigation for this research, the selected schools and their percentages in the ranks of Tables 1–3 were further adjusted for convenience for implementation, for example, only one nine-year school in Tianhe District agreed to the survey, and all other
schools under the leadership of the District Education Bureau resisted the survey, so the samples that Tianhe District could not collect were supplemented in other regions.

**Data Collection and Statistical Analyses**

The selected 138 schools in all districts of Guangzhou were given the questionnaires. Only one questionnaire was returned per surveyed school. We removed four questionnaires with more than 10 questions not answered. The return ratio of valid questionnaires was 95.65% (that is, among the total number of returned questionnaires was 138, and 132 were valid). SPSS 20 (English edition) was used for statistical analysis. We did a descriptive analysis of book-purchasing expenditure using a contingency table, and performed multi-factor variance analyses of different school characteristics.

The interviews were recorded, transcribed into text, and analysed using Nvivo 11. Themes were developed and used to code the qualitative data. A second coder coded a small portion of the data for the purpose of testing inter-coder reliability. She was asked to code the designated part of the interviews separately. The inter-coder agreement (measured by Kappa) values are 0.74, 0.71, 0.7 and 0.77 for coding the transcripts of subject teachers, principals, students and chief librarians, respectively. This indicates substantial inter-coder agreement and high reliability of the coding process (McHugh, 2012).

**Research Results**

**The Status of School Libraries**

All three principals think their school libraries are ‘a necessary unit’ in their schools. In the encoding of the interview data, the importance of the libraries in their schools was encoded as one of the following four nodes: ‘core’, ‘key position’, ‘importance’ and ‘necessity’, with the status of importance from high to low. The frequency of the four nodes in the interviewing data was five, 11, one and three times, respectively (see Table 5). All three school principals thought their school libraries were in a ‘key position,’ whereas the principals of schools A and C thought their libraries were in a core position. The total numbers of the four nodes in different schools were quite different. This indicates that each school’s principal has recognised the importance of his/her school library and paid attention to the development of the school library but that the degree of their recognition of the importance differs.

When asked about the status of the libraries in their schools, one subject teacher thought her/his school library was a necessary unit of the school. The second teacher thought the school library was in a key position in her/his school. There was no direct reference to the status of the school library in the third teacher’s speech, but she described her satisfaction with the supplied new bibliographies from the school library and bookstores and her advocacy of graded reading in a lengthy way, which shows that she believed that the role of the school library is at least important or above. The word frequency of the status of their school libraries being ‘in a core position’, ‘in a key position’, ‘in an important position’, or ‘a necessary unit’ from the perspectives of the
<table>
<thead>
<tr>
<th>Status of the School Library</th>
<th>School A</th>
<th>School B</th>
<th>School C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staffing, status, and treatment</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Professionalism</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Necessary unit</td>
<td>42</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Job positions</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Important position</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Teaching assistant</td>
<td>5</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Key position</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Continued education and training</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Core status</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Student volunteer</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Summary</td>
<td>10</td>
<td>9</td>
<td>21</td>
</tr>
</tbody>
</table>
three subject teachers in schools A, B, and C was one, one, and zero, respectively (see Table 6). This indicates the teachers’ limited recognition of their school libraries.

Overall, regarding the status of school libraries, the principals mostly thought their libraries were in a ‘key position’ and emphasised their importance, but it does not necessarily mean that they really support the development of librarianship (especially in their own schools) from heart. These words may be spoken to show their respect for the interviewers (i.e. the scholars in library and information science), or to maintain interpersonal relationship or due to other factors. This applies to the similar wording of other interviewees introduced below. Each school paid a different level of attention to its library. The teachers’ cognition of the status of their school library was relatively low. Although their evaluation of their school libraries tended to be positive, they had more obvious reservations.

**Library Budget- Allocation for Book-purchasing**

The total funds available in the budget for book purchasing in 2013 was approximately US$ 601,900.2 for the 132 participating school libraries and the average budget per school is US$ 4,559.9 based on the research survey (according to the average currency exchange rate in 2013); the total in 2014 was US$ 1,106,376.9 for 132 school libraries, and the average budget per school is US$ 8,381.6 (according to the average currency exchange rate in 2014). The funds in 2014 were nearly twice as much as that in 2013. Based on the 132 valid samples of book-purchasing funds, 73 school libraries (accounting for 55.3%) did not have any book-purchasing funds; the book-purchasing funds of 24 school libraries (accounting for 18.2%, the cumulative percentage is 73.5%) were below US$2,891.3 in 2013, whereas the funds of 20 school libraries (accounting for 15.4%) were equal to or between US$2,891.3 and US$9,295.4, and the funds of 15 school libraries (accounting for 11.4%) were above US$9,295.4. The budget increased in 2014: they were 49 (37.1%), 17 (12.9%, the cumulative percentage is 50%), 33 (25.0%) and 33 (25.0%) for the same ranges. The above data are better than the published data (Zhuang, 2013) of the city of Quanzhou (in Fu Jian Province in Southeast China) and of Taiwan Province (where most schools do not have regular funding for libraries; the primary source of funding is donations from other agencies) in 2009 (Lv & Zhou, 2013) and 2011 (He, 2011).

<table>
<thead>
<tr>
<th>Subject Teachers/The status of the school library</th>
<th>School A</th>
<th>School B</th>
<th>School C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Necessary unit</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Important position</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Key position</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Core status</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Summary</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Students/Staffing, status and benefits</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

*represents the node or other results belonging to the classification of ‘students/staffing status and benefits’.

<table>
<thead>
<tr>
<th>Professional Qualifications</th>
<th>School A</th>
<th>School B</th>
<th>School C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staffing, status and benefits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching assistant</td>
<td>15</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Continued education and training</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Open hours</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Summary</td>
<td>17</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>Student volunteer*</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 6. Frequency of nodes in the interviews of subject teachers and students.
It can be seen that even in developed cities, there was a lack of funds for book-purchasing in school libraries.

**Multi-factor Variance Analyses for the Book-purchasing Funds**

There was a great difference in book-purchasing funds between 2013 and 2014; the amount of 2014 was nearly twice that of 2013. Table 7 shows the results of one-way ANOVA and one-variable two-factor analysis of variance. We can see the book-purchasing funds (2014) of school libraries with different SLs and SA*SL are statistically significantly different from each other. We also found that 12S and 9S had the largest book-purchasing funds in 2014 but these schools did not necessarily have largest number of students (see Tables 8 and 9). Their book-purchasing funds were statistically significantly greater than those of any other type of school. The above data indicate that book-purchasing funds were greatly disproportionate between different STs, although the school scale was taken into account.

**Table 7.** Tests of between-subjects effects (Dependent variable: the book-purchasing funds in 2014).

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>df</th>
<th>F</th>
<th>Significance(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL</td>
<td>11</td>
<td>4.6</td>
<td>0.000</td>
</tr>
<tr>
<td>SA*SL</td>
<td>7</td>
<td>4.1</td>
<td>0.001</td>
</tr>
</tbody>
</table>

**Table 8.** Paired comparisons (Dependent variable: the book-purchasing (LSD)).

<table>
<thead>
<tr>
<th>(I) ST</th>
<th>(J) ST</th>
<th>Mean Difference(I-J)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMS</td>
<td>9S</td>
<td>−140162.8*</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>12S</td>
<td>−121234.3*</td>
<td>0.041</td>
</tr>
<tr>
<td>PS</td>
<td>9S</td>
<td>−152404.5*</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>12S</td>
<td>−133475.9*</td>
<td>0.006</td>
</tr>
<tr>
<td>JMS</td>
<td>SHS</td>
<td>−50916.8*</td>
<td>0.010</td>
</tr>
<tr>
<td></td>
<td>9S</td>
<td>−142743.0*</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>12S</td>
<td>−123814.4*</td>
<td>0.013</td>
</tr>
<tr>
<td>SHS</td>
<td>PS</td>
<td>60578.2*</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>9S</td>
<td>−91826.2*</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The mean difference is statistically significant at the 0.05 level (the same as below). Repeated pair-wise comparisons of the independent variables in different sequences are omitted from this table (the same as below).

**Table 9.** The respective number of students between different STs.

<table>
<thead>
<tr>
<th>STs</th>
<th>No. of schools</th>
<th>Average no. of Students per school</th>
<th>Median</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMS</td>
<td>9</td>
<td>2294.8</td>
<td>2000.0</td>
<td>1550.5</td>
</tr>
<tr>
<td>PS</td>
<td>56</td>
<td>745.8</td>
<td>752.0</td>
<td>403.0</td>
</tr>
<tr>
<td>JMS</td>
<td>26</td>
<td>1077.7</td>
<td>982.0</td>
<td>541.1</td>
</tr>
<tr>
<td>SHS</td>
<td>23</td>
<td>2493.6</td>
<td>2448.0</td>
<td>1163.0</td>
</tr>
<tr>
<td>9S</td>
<td>15</td>
<td>2100.9</td>
<td>1780.0</td>
<td>1401.1</td>
</tr>
<tr>
<td>12S</td>
<td>2</td>
<td>3600.0</td>
<td>3600.0</td>
<td>2828.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>131</td>
<td>1423.7</td>
<td>1030.0</td>
<td>1173.7</td>
</tr>
</tbody>
</table>
**Library Staffing**

**Number of Full-time Staff**

The average number of staff in 132 school libraries in Guangzhou was 1.39 (±1.92); the median value among them was one (see Table 10). The number of full-time staff in school libraries was inadequate. In such a context, the enrichment of the school library full-time staff is extremely important.

In the transcripts, one principal thought the librarians in her/his school had a satisfactory professional skill set. The three principals thought that, due to labor shortage, student volunteers were essential for the operations of their school libraries, especially at the beginning of each semester. Table 5 shows the frequency of the three principals referring to library staff taking a ‘teaching assistant’ role, which was four, five and 13 times for schools A, B and C, respectively. They emphasised the auxiliary teaching role of school librarians. School C’s principal emphasised the bridge and back-supporting roles of their librarians. Other two principals believed their school libraries should be actively involved in information technology teachings and extensive reading programs. All three principals thought that the staffing of their school libraries was very important and that their school libraries were short of staff to accomplish various tasks. Accordingly, the three chief librarians also recognised the need to increase the number of professionals to ensure their professional work and routine service rather than just clerical and administrative duties. Two chief librarians indicated that service improvement depends on expertise enhancement; another chief librarian thought daily clerical and administrative work had almost occupied all of his/her time and there was no time to perform additional tasks (see Table 5).

On the gender structure of library staff, one chief librarian believed the current structure of the librarians in her/his library had been optimised, as the number of male staff who are generally have better physical strength and higher career goals in order to cope with multiple and partly physical work tasks in China had reached a reasonable level. One chief librarian believed the working ability of their redeployed staff was limited, and her/his library needed more healthy men (see Table 11).

**Professional Qualification**

There are four kinds of Chinese qualifications for professional personnel that are different from technical personnel in school libraries; the senior professional titles (research librarian and associate research librarian), the middle professional title (librarian), the junior title (assistant librarian) or no title, or equivalent titles of other series. The distribution of school libraries’ staff with professional titles in STs of Guangzhou shows obvious differences (see Table 12). Meanwhile, in the various professional title series, the all participating school except 12S libraries had the most ‘staff with different titles’, more than any other types of professional and technical personnel (especially for PS, 9S) (see Table 12). The above data shows that the professional librarians at the school libraries were primarily teachers who had moved

**Table 10.** The total staff and percentages of visited school libraries in different intervals.

<table>
<thead>
<tr>
<th>The frequency and percentages of no full-time staff in libraries</th>
<th>1-2 staff</th>
<th>3-5 staff</th>
<th>6-7 staff</th>
<th>8 and above staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>39(34.8%)</td>
<td>56(50%)</td>
<td>12(10.8%)</td>
<td>3(2.7%)</td>
<td>2(1.8%)</td>
</tr>
</tbody>
</table>
Table 11. Frequency of nodes in the interviews of chief librarians.

<table>
<thead>
<tr>
<th></th>
<th>Staffing, status and benefits</th>
<th>Education experience</th>
<th>Funding</th>
<th>Staff specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Job positions</td>
<td>Teaching assistant</td>
<td>Continued education and training</td>
<td>Book series in qualification</td>
</tr>
<tr>
<td>School A</td>
<td>6</td>
<td>37</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>School B</td>
<td>9</td>
<td>34</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>School C</td>
<td>6</td>
<td>36</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Associate Degree</td>
<td>Bachelor's Degree</td>
<td>Postgraduate degree</td>
<td>Summary</td>
<td>Funding</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>C</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
from a teaching position or were professionals and technical personnel who were trained or educated in library management systems. The data also reflects the professional majors and skills of the staff in the visited school libraries in Guangzhou. According to Table 13, we can infer that in the professional and technical staff in Guangzhou school libraries, the vast majority had received no LIS (Library and Information Science) education up to the first half of 2015. If education level and professional qualifications are viewed as indicators with which to assess professional qualification, these data indicate that staff with no or low qualification account for the majority of school library staff, especially those with ‘other’ titles (mostly teachers who had been redeployed) (Lv & Zhou, 2013; Quan, 2013; Zhuang, 2013). Although most Chinese schools may not fully realise the benefits of hiring professional librarians, international studies have shown it is valuable for every school library to recruit and hire professional librarians (Krueger, 2013).

On the topic of ‘personnel education experience’, three nodes of associate, bachelor and graduate degrees were mentioned by two chief librarians in the interviews. Concerning the specialisation of library staff, seven disciplines (see Table 11) including archival science, have a relatively balanced distribution in the three schools’ interviews. This indicates that the chief librarians know their staff’s education backgrounds and expertise, which were sufficient for the operation and professional development of their libraries. The frequency of professionals in schools A, B, and C was 18, 10 and 21, respectively, indicating that the professional quality of librarians in each school had received attention and that continued education and other training had become a part of the job of the staff. Moreover, the three chief librarians indicated the lack of professional librarians, instead of the temporary personnel and staff transferred to the librarian position (see Table 11).

This indicates that the professional development of library staff should be further strengthened. Business time for library professionals must be guaranteed. Teachers who

<table>
<thead>
<tr>
<th>STs</th>
<th>The distribution of staff with different professional titles among various STs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMS</td>
<td>The average number of professional personnel</td>
</tr>
<tr>
<td>CMS</td>
<td>3.3</td>
</tr>
<tr>
<td>PS</td>
<td>0.6</td>
</tr>
<tr>
<td>JMS</td>
<td>1.1</td>
</tr>
<tr>
<td>SHS</td>
<td>2.5</td>
</tr>
<tr>
<td>9S</td>
<td>0.6</td>
</tr>
<tr>
<td>12S</td>
<td>2.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 13. The averages of the professional titles of staff and the related educational background.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Different staff</td>
</tr>
<tr>
<td>number of professional and technical personnel</td>
</tr>
<tr>
<td>number of research and associate research librarians</td>
</tr>
<tr>
<td>number of librarians</td>
</tr>
<tr>
<td>number of staff with assistant librarian or no professional title</td>
</tr>
<tr>
<td>number of other titles</td>
</tr>
<tr>
<td>number of rehired full-time staff older than 60</td>
</tr>
<tr>
<td>staff without an LIS degree</td>
</tr>
</tbody>
</table>
have curriculum and teaching duties but don’t understand library professional work should receive a training on how to use the library (see Table 6).

Findings and Discussion

From the survey and interviews about school libraries in Guangzhou, we found that the recognition of school libraries in Guangzhou’s primary and middle schools had considerable room for improvement, especially from the perspectives of subject teachers. Moreover, these libraries all received inadequate funding according to international comparisons and common sense, which has been ongoing for many years. After considering school size, we also found a statistically significant difference in the book-purchasing funds among the 6 types of schools. Finally, with regards to staffing of school libraries, there was a serious lack of professional personnel, particularly professionals with post-graduate and LIS degrees.

The shortage of resources invested in school libraries has resulted in a lack of professionalism. Most libraries do not have sufficient funding and well-trained staff for educational or recreational functions. Because school libraries are not meeting these demands, theoretically very few can be described as real libraries. These school libraries require further transformation to assume their multi-functional roles. Many libraries were barely functioning, and their prospects are apparently gloomy without further support (Henri, Warning, & Leung, 2011).

The results of the surveys show that PS libraries received little to no funding compared with libraries of other types of schools. CMS and JMS libraries only had acceptable amount of funding, while 12S, 9S and SHS had significantly more funding. Such distribution of funding is not completely determined by the school size (see Table 7). It appears that this imbalance in library resource investment may continue (Henri et al., 2011), with only some libraries experiencing a substantial increase in investment, while others experience no improvement. Different types of schools purchased significantly different number of books in 2014, among which 9S and 12S were dominant in terms of the amount of book-purchasing funds. SLs was another influential factor, with different SA levels varying significantly in book-purchasing funds as a proportion of the total equipment expenditures.

STs and SLs interactively influenced book-purchasing funds in 2014. In terms of location, the school libraries in YX District had the largest amount of funds in 2014 among 6 urban districts and all 12 metropolitan districts. The YX District has a household population of more than 1,174,400, and a resident population of more than 1,161,100 at the end of 2016, and has been the city centre since the founding of Guangzhou (Guangzhou Municipal Bureau of Statistics, 2017). Because there has been no cross-regional research on book-purchasing funds in Chinese school libraries until this research, no comparative analysis can be made at this stage. However, similar studies abroad have also found differences in library resources and services based on school ownership, enrolment, education quality, economic conditions and other school features (Krueger, 2013; Pribesh et al., 2011). Therefore, based on these variables, this study confirms the differences in library development, such as school type, location and management level. In addition, for the first time, this paper studies school libraries in mainland China using a qualitative method.
Conclusion, Limitation and Implications

School libraries’ development was found to be influenced by the school’s grades (or years of schooling), which is connected to the school’s student size. Meanwhile, students in higher grades tend to have more library funding. For example, 12S, 9S and SHS had significantly more funding. SL was another influential factor, and different SA levels varied significantly in book-purchasing funds in proportion to what was required for teaching expenditures. Based on this finding, we suggest prioritising the distribution of resources for school libraries in China based on general equality.

This study verified the relatively insufficient staffing at most school libraries, even in the most well-developed regions such as Guangzhou, as a result of a long-term shortage of investment. Meanwhile, only a tiny minority of the surveyed schools had received a satisfactory level of resource investment when viewed from an international perspective. This study may help other scholars understand the situation at Chinese school libraries and encourage them to fill in the research gaps in LIS and educational technology in developing countries. This study also provides useful information for future studies conducted by educational authorities, school administrators and school libraries to help them develop a deeper understanding of library services.

The limitation of the study mainly arise from the small sample size. Although the Bureau of Education of Guangzhou has previously investigated the basic conditions of school libraries, the respondents received no feedback on the impacts of those investigations may have had on them. Therefore, when the general public asks for information from them, they often show indifference, resistance and rejection. Under these unfavourable conditions, this survey only collected 132 valid questionnaires, which was not sufficient for massive advanced statistical analyses. To successfully complete the research, this study adopted stratified random sampling to create samples and adjusted the participating schools several times based on the actual availability of the survey results (i.e. see Table 1; as we were unable to find enough participating schools in the TH and HP regions, we increased the samples in the remaining regions, i.e. HZ, BY, and PY), which may have reduced the representativeness of the conclusions to some extent.

The findings of this study has the following implications, which can be considered as recommendations for the development of school libraries in China.

- The government is recommended to stipulate a minimum level of library funding, staffing and standards of development. Once there are funding and development standards, the attitude of teachers and the whole society towards school libraries will change accordingly. Furthermore there should be consistent resource allocations for all schools regardless of their locations, sizes and other factors.
- Local education administrative departments should first improve smaller-scale school libraries’ existing collections and facilities, which are serving the students of the younger age groups, increase the stability of the full-time staff and steadily enhance their professional qualifications.
- Good or average school libraries should also receive increased book-purchasing funds and more effective professional staff so that they can better serve their schools and students.
Notes

1. SMS stands for ‘Combined Middle School’.
2. PS stands for ‘Primary School’.
3. JMS stands for ‘Junior Middle School’.
4. SHS stands for ‘Senior High School’.
5. 9S stands for ‘9-year School’.
6. 12S stands for ‘12-year School’.

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Appendix A

Questionnaire on the Current State of Library Development at Elementary and Junior High Schools in Guangzhou Area
[original slightly modified for publication]

Questionnaire No. Data Entry Clerk March 2015

Hello, this is, an interviewer from the research team entrusted by the Centre for Educational Equipment at the Bureau of Education in Guangzhou. I am conducting a survey on the current state of library development at elementary and junior high schools in the Guangzhou area. This questionnaire is for research purposes only. All information provided will be held in the strictest confidence.

Thank you for your support and cooperation!
A. School Overview

A1. Operating Body of the School is ()
   1. Municipal department of education; 2. Prefecture department of education; 3. Other prefecture
departments; 4. Private
A2. School Type is ()
   1. PS; 2. JMS; 3. SHS; 4. 9S; 5. 12S
A4. SL is ()
A5. No. of Classes are as follows: Elementary School;___
   Junior High School;___ Senior High School____.
A6. Total Number of Teachers is___.
A7. Total Number of Students is___.
A8. Gross Expenditure on Educational Equipment in 2014: ¥___ (a variation of ___% compared
to that in 2013) in which the financial investment of ¥___ accounts for ___% of the gross
expenditure, and the amount of self-financing of ¥___ accounts for ___% of the gross
expenditure.
A9. Total Fund on Educational Equipment in 2013: ¥___. The book procurement fund is ¥___,
account for ___% of the total fund on educational equipment in 2013.
A10. Book Procurement Fund in 2014: ¥___(accounting for ___% of the total fund on educational
equipment in 2014) in which the procurement funds for paper books, journals and newspapers,
and digital resources are ¥___, ¥___, ¥___, and ¥___, respectively.

B. Establishment of Library Management Team

B1. For the library (reading room) at your school, total number of full-time librarians:___people, total
number of part-time:people___, total number of work-study: ___people. Students of all personnel:
___people.
B2. Of the full-time librarians, there are male librarians, accounting for ___% of all full-time employ-
ees; there are ___female librarians, accounting for ___% of all full-time employees.
B3. Number of employees holding a professional title: ___people,
in which are ___research librarians and ___associate librarians___, the total number of librarians
___, assistant librarians, employees without a professional title and holding other professional title
is ___and___, respectively.
B4. Number of employees without professional training in
librarianship: ___people, in which ___people hold an Associate’s degree or lower, ___people hold
a Bachelor’s degree, and ___people hold a Master’s degree.
Note: ‘Employees with professional training in librarianship’ are those who completed their study
of librarianship on a full- or part-time basis, including both Bachelor’s and Master’s degrees.

Appendix B

Related interviewing questions for the four types of participants in the schools
For the schools’ principals or the heads of the main departments
1. What is the status of the library in your school? How important is it in your school?
2. Currently, do you think the school library can perform its expected functions in terms of
personnel, financial, material and other aspects? Which aspects are acceptable? What aspects need
to be improved urgently?
For the schools’ chief librarians or senior librarians (some of the unrelated issues are omitted)

1. How many full-time librarians are there in your school library? What are their specializations?
2. What do you think of the staffing of your school library (from the perspectives of personnel quality, structure, and benefits, etc.)?
3. Currently, do you think the school library can perform its expected functions in terms of personnel, finances, material and other aspects? Which aspects are acceptable? What aspects need to be improved urgently?

For the subject teachers

1. What do you think of the importance of your school library to your job at present?
2. What do you think of the current resources and services of your school library in meeting your needs?

For the students in middle schools (some of the unrelated issues are omitted)

1. What roles do you think the school library play in supporting your courses, extracurricular learning and interest development?
2. To the best of your knowledge, what is the importance of the school library to other students at present?