

The School Facilities towards the Improvement of Students' Academic Achievement: Case Study — Secondary Schools in Klang

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Abstract: The aim of the study is to determine the improvement of academic achievement towards the facilities provided by secondary school. The main objective of this study is to determine school facilities that may improve student's achievement for secondary school. The data was collected using the structured interview and questionnaire. The data were collected from 144 students and 3 teachers of respondents which were selected from 3 selected secondary schools within Klang. Stratified random sampling technique was used to sample the respondents. The data was analyzed using descriptive analysis for questionnaire while content analysis for interview. For questionnaire, the result is explained in two forms which are demographic information and descriptive analysis. The findings of the study indicate that students from adequate physical facilities which in good condition may influence students to perform well in learning process and examination. Thus, the research concludes that school facilities may improve students' academic achievement. Finally, recommendations were given to educational administrators and school districts.

Key words: school facilities, secondary schools, academic achievement

1. Introduction

Educational institutions have a linked with the society at all. The school is as a medium of knowledge and agent of student social change and transformation (Bakar, 2015). The general condition of school, universities and colleges will be great attention to the country. So, it plays a role to form students' personality. School environment is as responsibilities towards students who spend more time at a school than at other places.

Other than that, the school building design features and components used will give influence on student learning process (Earthman, 2002). That design features and components will affect lighting, temperature, age and acoustic of the school building. The example of features and components are air conditioning, presence windows, adequate classroom, age of the building and others elements. So, the effect of school building on student can be positive or negative depending on condition of the building.

Based on Adesua (2016), the physical facilities can help students to enhance their motivation on learning. The physical facilities like laboratory, library, toilet facilities, canteen, classrooms, field and computers may increase students' interest to learn in many ways. Roberts (2009) said that facility quality may not directly affect

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on teaching and instruction. On the other ways, Urick (2011) said the facility maintenance is important to maintain students' and teachers' convenience and effective learning process because it can provide clean and safe environment.

2. Literature Review

There have many factors which can influence students' achievement such as behavior, attitudes, attendance, environment, convenience, physical facilities and others. Physical facilities are one of the factors which can encourage high academic achievement in school. The factors that can improve school facilities on students' achievement are age of building, facilities condition, thermal factor, lighting, noise, interior color, school size and class size.

Building age can encourage many of individual factors used in evaluating the condition of an educational facility (Mcgowen, 2007). On the study of McGowen (2007), behavior and student achievement had significant impact on the age of school building. The age of building is depended on building conditions such as temperature control, lighting, support facilities, sound control, laboratory condition and aesthetic values. As school building age, the building not only gives hurdles for both teacher and student, but older building that had been found can cause loss of instructional time (Mcgowen, 2007).

Young (2003) stated that new facilities can influence higher achievement of student. Physical condition of facility also can give impact positively and negatively for teachers in effectiveness in the classroom, attire school, morale and personal safety (Barbra, 2006). According to Barbra (2006), the facility which in poor condition will give high rates of teacher absenteeism, reduce effectiveness on teaching, low morale and reduce job satisfaction. This stated on Young (2003) research which the higher score on test or examination were comes from better science laboratories. So, the better condition of facilities will come out with better attitude of students and teachers.

The surrounding and physical environment can give impact on the students' behavior which can become discipline problems (Mcgowen, 2007). According to Earthman & Lemasters (1996), they found that the classroom with the thermal environment can be important to children well-being (Mcgowen, 2007). Another finding has shown that the significant impact of temperature level is upon how long attention of student in classroom. In the study of Young (2003), they found that eight of nine studies had found the academic achievement and student behavior had significant relationship with thermal environment in classroom.

Then, lighting is one of the most important factors for a positive learning environment (Mirrahimi, Ibrahim & M. Surat, 2013). The benefits of natural daylight are increasing students' and teachers' attendance, increasing achievement rates, reducing fatigue factors, and improving student health and enhancement of general development (Edwards & Torcellini, 2002; Mirrahimi et al., 2013). The students in classroom without windows had negative attitudes than the students who were exposed to the natural lighting (Mcgowen, 2007).

Noise can be considered as noise on human functioning which is related to situation of student learning in noisy environment (Steve Higgins, 2005). Based on same research, the noise can affect student in conducting the narrow task and the subject that involves memory. However, Steve Higgins (2005) said in his study the noise annoyance, distraction and direct masking of cognitive process which have tendency of noise will affect impairing performance. Then, outside noise will dissatisfy student in their classroom and can cause stress on student (Young, 2003). According to Young (2003), less external noise can give positive impact as higher student achievement.

The color can give impact on the students' attitudes and behavior. According to McGowen (2007) and Young (2003), early research found that color was taken place on the industrial setting and color could give impact on workers on their performance in work place. Color also could give impact on the educational building whichever for learning and teaching process (Mcgowen, 2007).

According to McGowen (2007) and Schneider (2002), small school environment can give positive impact than large school. Other than that, the school size can give impact on the cost or budget to maintain the school at acceptable condition and the construction cost (Mcgowen, 2007; Schneider, 2002). There have many benefits on the small size of school which can reduce negative behavior of student, improve positive attitude and achievement, improve teachers' attitude, and control cost effectively on school (Mcgowen, 2007; Schneider, 2002).

Lastly, the class size can determine the number of teachers that will teach in that school and indirectly will determine cost of education (Schneider, 2002). According to Schneider (2002) and Pascal Ngoboka (2002), size of class can give factors on the academic outcomes or achievement. In another research it found that class size does not have significant impact on the students' performance but large class gives outperforming in attendance and achievement in examination than small school (Pascal Ngoboka, 2002).

Thus, every school must have physical facilities to complete learning process in school. Enough school facilities may help learning activities in class or school more interesting and convenience to students and teachers. So, the physical school facilities are including school building, classroom, laboratory, library, toilet facilities, instructional materials, landscape, recreational facilities, health facilities and other that would likely motivate students towards learning. So, the following are the availability school facilities which can enhance students' academic achievement.

3. Research Objective

- (1) To determine school facilities that may improve student's achievement for secondary school.
- (2) To compare existing school and students' academic achievement.

4. Research Question

- (1) How the school facilities can improve students' academic achievement?
- (2) What the availability school facilities that can improve students' achievement?

5. Methodology

5.1 Research Design

In this study, there are two methods used as primary data which are qualitative method and quantitative method. Interviews will be conducted to the teachers at the school which used qualitative method. While, quantitative method used a questionnaire which will randomly selected from the students of secondary school.

5.2 Population

The population of this study consists of 4,648 secondary school students and 291 of teachers from 3 secondary schools that were selected from 39 schools within district of Klang, Selangor. From the population of secondary schools in Klang, there just 3 schools were selected from the 39 schools.

5.3 Sample

The sample is a portion of population which were selected to represent and generalize the whole. Therefore, 144 students and 3 teachers as respondents were selected from 3 different secondary schools within district of Klang, Selangor. It means that 50 students and 1 teacher as respondents were approximately taken from each secondary school to form the sample size.

5.4 Instrument

The instruments used for this study are a structured interview and questionnaire. The structured interview was to determine schools facilities that may improve students' academic achievement. There have 5 structured questions designed to interview the respondents who are teachers of secondary school. Then, the questionnaire was to compare existing school facilities and students' academic achievement. The questionnaire contained two parts which Part A (demographic information) and Part B (availability school facilities).

5.5 Procedure Data Analysis

The data collected was analyzed using content analysis and statistical package for social science (SPSS). Content analysis was analyzed through audio recordings or message for producing transcripts. The approaches that can be used by using SPSS are demographic analysis and descriptive analysis.

6. Data Analysis

The result of this study as explained above is presented in three forms, thus, content analysis, demographic characteristic and descriptive analysis. Therefore, the result and analysis are as follows:

6.1 Content Analysis

From the interview, every school has basic physical school facilities like classrooms, canteen, library, laboratories, Muslim prayer house, field, computer room, counseling room and health facilities. All the facilities provided by school have their impacts. The impacts school facilities on students' academic achievement are students' convenience, focusing, mood, behavior, interest, motivation and their scores. Furthermore, the school facilities can bring negative impact on students when the school facilities are inadequate such as disturbing learning process and dropping students' results in examination.

6.2 Demographic Information

The analyses of one hundred and forty four (144) respondents were selected as sample size for this study. The respondents were chosen from four different secondary schools in Klang, Selangor. They are selected by stratified random sampling technique. They are stratified by gender which are male and female. That means almost half of the respondents are male and the other half are female. Then, after classified them on gender, the simple random sampling technique is used to select the request sample size.

Table 1 is the demographic information which reveals the distribution of respondents based on demographic characteristic. The table shows that 73 students (50.7%) from 144 students were male, while female students were 71 students (49.3%). Based on age of respondent, 94 students (65.3%) were from 16 years of until 17 years old and 50 students (34.7%) were between 13 to 17 years old. Then, based on the race 67 students (46.5%) were Malay, 33 students (22.9%) were Chinese and 44 students (30.6%) were Indian. That indicated that all secondary schools were dominated by Malay students.

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Table 1 Distribution of Respondents

	Gender		Age		Race		
	Male	Female	13-15	16-17	Malay	Chinese	Indian
Frequency	73	71	50	94	67	33	44
Percentage (%)	50.7	49.3	34.7	65.3	46.5	22.9	30.6

6.3 Descriptive Analysis

Table 2 Means of School Facilities

School Facilities	Mean		
	SAMT Sultan Hisamuddin	SMK TelukGadong	SMK Sultan Abdul Samad
Enough classrooms	4.34	4.31	4.29
Enough furniture and seat for teachers	4.30	4.35	4.24
Enough furniture for student	4.55	4.55	4.43
Laboratories well equipped	4.70	4.45	4.51
Library service and adequate reference books	4.59	4.39	4.49
Adequate health facilities	4.74	4.27	4.29
Adequate recreational facilities	4.51	4.55	4.39
Adequate toilet facilities	4.87	4.24	4.33
Adequate instructional materials	4.49	4.47	4.46
Landscape	4.47	4.27	4.22

Based on Table 2, the overall mean in which score high is SAMT Sultan Hisamuddin, then SMK TelukGadong and last is SMK Sultan AbdulSamad. SAMT have higher mean for overall school facilities such toilet facilities (mean: 4.87), health facilities (mean: 4.74) and laboratories (mean: 4.70). The second school that has mean is SMK TelukGadong whose higher mean are recreational facilities (mean: 4.55), furniture for student (mean: 4.55) and instructional materials (mean: 4.47). SMK Sultan Abdul Samad has lower means which laboratories (mean: 4.51), library (mean: 4.49) and instructional materials (mean: 4.46). The mean of school facilities can indicate the availability and condition of school facilities in those schools. Thus, SAMT Sultan Hisamuddin has enough school facilities with good condition.

7. Findings

Findings are from the data analysis which is the way to know whether the objective of this study would be achieved or not. So, the following are the findings which are based on the objectives of this study.

7.1 The School Facilities That May Improve Students' Academic Achievement

Based on the literature review, there have eight factors that can improve of school facilities on students' academic achievement which are school age, school facilities condition, thermal factor, lighting, noise, interior color, class size and school size. All the factors have their impacts on students' achievement either positive or negative. It depends on the conditions of school facilities provided in secondary schools.

Based on data analysis, thermal factor can effect students' convenience and focus on learning process. Then, lighting can impact on students' mood, behavior and sigh of student in classroom. Noise can impact on students' focus on reading and memorizing. While, interior color can affect students' interest and motivation to score in

examination. Size of school can impact on their management of schools to handle the number of students and the number of students is depended on the size of classroom.

Then the age of school is important to preserved building in good condition and safe to use. On the other hand, one of the respondents has mentioned that it is important to preserve and maintain the physical school facilities. So, from the interview the researcher can conclude that the impacts of school facilities on students' academic achievement are students' convenience, focusing, mood, behavior, interest, motivation and their scores.

7.2 The Availability School Facilities That Can Improve Students' Academic Achievement

The second objective in this research is to know the availability schools facilities that can improve students' academic achievement. Based on the literature reviews, there have eight schools facilities that important to improve students' academic achievement. There are classrooms, laboratories, library, health facilities, recreational facilities, toilet facilities, instructional materials and landscape.

Table 3 was average mean of schools facilities and result of Malaysian Certificate of Education (SPM) and Lower Secondary evaluation (PT3) from three sample schools.

Table 3 shows the average mean score of school facilities and students' examination result for year 2016. From the observation, SAMT Sultan Hisamuddin had higher average mean of school facilities and students' academic achievement than SMK TelukGadong and SMK Sultan Abdul Samad. The school facilities that provided by schools can give impact on improvement students' academic achievement for secondary schools. Thus, the school facilities can give positive impact on students' academic achievement in secondary schools when they have adequate schools facilities in good condition.

Table 3 Average Mean and Students' Examination Result

Secondary Schools	Average Mean Score of Schools Facilities	Result of examination 2016 (5A's to 8A's)	
		PT3	SPM
SAMT Sultan Hisamuddin	4.56	109	103
SMK TelukGadong	4.39	12	13
SMK Sultan Abdul Samad	4.37	2	2

7.3 Discussion of Findings

This study shows that school facilities enhance students' academic performance. From the analysis data of 144 students and 3 teachers from difference school in district of Klang, Selangor, school facilities appeared to have significant influence on students' academic achievement. Based on the interview, the respondent agreed that schools facilities can gives impact on students' achievement. Then, analyzing the questionnaire there also has significant influence on student's achievement when the result of the analysis is compared to academic achievement of students which are SPM and PT3.

The results of the data proves that the availability of school facilities with good condition and modern equipments such as Wi-Fi facilities, computers, laboratories and library may make students more interested and motivate students more productive. But the students' behavior, attendance, discipline, student relationships with creation, parents, teachers and friends also may facilitate learning development. Thus, all of those may be advantage to students in achieving high scores in examinations.

8. Conclusion

The findings of this research indicate that school facilities may improve students' academic achievement. From the observation of this research, students from adequate physical facilities which in good condition may influence students to perform well in learning process and examination. Thus, the research concludes that school facilities may influence students' academic achievement.

9. Recommendations

(1) The ministry of education should handle more courses related to school facilities like how to preserve or upkeep and maintenance of the facilities provided.

(2) The school districts also can allocate funding to provide head of schools training on schools facilities and maintenance. It helps school principals recognize the facilities issues before it gives negatives impact on students and teachers.

(3) In research suggestion the further study in low income areas, old schools and private schools which conduct on the students, parents and teachers perception.

References

- Adesua D. C. O. A. a. D. V. O. (2016). "The impact of physical facilities on students' level of motivation and academic performance in senior secondary schools in South West Nigeria", *Journal of Education and Practice*, Vol. 7, No. 4, pp. 38–42.
- Bakar M. I. U. N. A. (2015). "The influence of school environment on academic performance of secondary school students in Kuala Terengganu, Malaysia", in: *International Conference on Empowering Islamic Civilization in the 21st Century*.
- Barbra Z. E. (2006). "Georgia school principals' perceptions of the impact of school facilities on student achievement". Available online at: <http://digitalcommons.georgiasouthern.edu/cgi/viewcontent.cgi?article=1214&context=etd>.
- Earthman G. I. (2002). "School facility conditions and student academic achievement", UCLA's Institute for Democracy, Education, and Access UCLA.
- Edwards L. and Torcellini P. (2002). "A literature review of the effects of natural light on building occupants", National Renewable Energy Laboratory: U.S. Department of Energy Laboratory.
- Mcgowen R. S. (2007). "The impact of school facilities on student achievement, attendance, behavior, completion rate and teacher turnover rate in selected Texas high schools", Dissertations & Theses, Gradworks.
- Mirrahimi S., Ibrahim N. L. N. and Surat M. (2013). "Effect of daylighting on student health and performance", *Computational Methods in Science and Engineering*, pp. 127–132.
- Roberts L. W. (2009). "Measuring school facility conditions: An illustration of the importance of purpose", *Journal of Educational Administration*, Vol. 47, No. 3, pp. 368–380.
- Schneider M. (2002). "Do school facilities affect academic outcomes?", *National Institute of Building Sciences*, pp. 1–24.
- Steve Higgins E. H., Kate Wall, Pam Woolner and Caroline McCaughey (2005). "The impact of school environments: A literature review".
- Urick A. J. B. A. (2011). "High school facility quality and achievement", Teachers College, Columbia University & University of Oklahoma, pp. 1–12.
- Young E. (2003). "Do K-12 school facilities affect education outcomes?", available online at: <https://www.tn.gov/assets/entities/tacir/attachments/SchFac.pdf>.