



Assessing the Effectiveness of Academic Facilities Among Teachers in Urban Schools: A Case Study in Cyberjaya

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Article Information

Keywords

Academic Facilities, Teaching Performance, Educational Effectiveness, Teacher Perceptions.

Abstract

Academic facilities are one of the important factors that can support the teaching performance of teachers and make the learning environment effective in school. These facilities encompass classroom infrastructure, computer and internet access, as well as teaching equipment that allows teachers to teach efficiently. However, despite Cyberjaya being recognised as a technology-oriented urban city, challenges related to the adequacy, accessibility, and maintenance of academic facilities may still affect teaching effectiveness. Hence, the purpose of this study is to evaluate the effectiveness of academic facilities of teachers in urban schools in Cyberjaya. This study employed a quantitative using cross-sectional research design involving 152 teachers from public and private urban schools in Cyberjaya. The data was obtained by distributing the questionnaires through online tools, and analyzed through descriptive analysis in the form of frequencies, percentages, mean scores, standard deviations and reliability analysis. The results showed that the academic facilities in the schools were found to be effective, with mean score of 4.24, and generally teachers had a positive perception of the academic facilities. Besides, the research instrument showed the most excellent internal consistency with Cronbach's Alpha of 0.915. The results of this study show that academic facilities are not only important for enhancing teaching efficiency, but they also have a significant contribution in the development of classroom management, teacher motivation, and 21st century teaching and learning. The study suggests that school administration and the relevant educational authorities should continue to strengthen technological infrastructure and facility management for effective teaching and improve the quality of education in urban schools.

INTRODUCTION

Conducive schools play an important role in shaping a quality nation. Based on the presentation of the 2025 budget by Prime Minister of Malaysia, a total of RM 64.1 billion has been allocated to the Education sector in Malaysia, especially to the Ministry of Education Malaysia to improve development, infrastructure and welfare of students. This indicated that government is very much concerned about conducive schools to have better quality students.

According Oladagba et al., 2025, student satisfaction is a crucial aspect to contribute to the overall well-being of students that will impact on their academic performance. A facility is a place that offers services, buildings and equipment for a specific activity. Moreover, facilities can be categorized into two types which is a permanent and semi-permanent structure such as laboratory equipment, teaching aid, blocks of the classroom, libraries, toilets, storage space, tools, and consumables (electricity and water) (Zurainan et al., 2021). Factors such as poor classroom lighting, noise, low air quality, and substandard building conditions negatively impact student performance. Research has shown that students achieve better in well-designed and equipped buildings than in those that are poorly designed. This clearly shows that the effectiveness of facilities plays an important role in influencing students' academic achievement.

Although academic facilities play an important role in the process of effective teaching and learning, there are still many problems in urban schools that concern the adequacy, accessibility and maintenance of their academic facilities. While Cyberjaya is known as an urban city with a focus on technology, there is little empirical evidence to determine the effectiveness of the academic facilities that are provided to support teachers in fulfilling their teaching duties. It is therefore important to assess the facilities provided to see if they can support teacher needs and contribute to their effective teaching. The purpose of this study is to determine the effectiveness of academic facilities in schools in Cyberjaya in urban areas, the role of academic facilities in supporting the teaching performance of teachers and the factors that affect academic facilities.

The overall contribution of this study is to emphasize the need to have good academic facilities as part of improving the quality of education in urban schools. The results can be used to improve the knowledge of the situation of schools and the effect that their buildings have on teaching and learning. This study can also contribute to the relevant authorities in making a better decision about the allocation of educational resources, improvement strategies in the school, and long-term educational development to create a better educational climate for teachers and students.

LITERATURE REVIEW

Schools serve to play an important social function in urban environments as well as an educational one. In addition to academic roles and responsibilities, schools are part of a broader urban landscape and are also crucial to public services and community development (Cilliers et al., 2024). In today's cities and in a technologically advanced context, the attractiveness and viability of urban areas are influenced by the public infrastructure and urban design especially in cities like Cyberjaya (Komak et al., 2023). As such, schools in Cyberjaya should be able to offer quality educational facilities to facilitate effective learning and teaching processes. But fast urbanization does not necessarily bring other countries the same access to quality educational opportunities. The study by Bowen Zhang et al. (2025) pinpointed accelerated urbanisation as a potential factor in the disparities of educational resources and school quality. Therefore, it is important to measure the academic facilities from the teacher point of view, in order to be able to determine the feasibility of the facilities in making academic learning.

The use of technology is a necessary part of today's educational settings, especially in urban areas. Yap et al. (2024) concluded that technology, technical support and internet connectivity all affect teachers' capabilities. Digital learning facilities such as computers, internet connectivity and digital learning platforms have been appointed as an important part of the academic infrastructure of urban schools like Cyberjaya. However, Apaza et al. (2024) pointed out that even if schools have good facilities, there can still be issues with resource quality and availability in the urban context. Thus, the assessment of academic facilities is still appropriated even in the technologically advanced cities in which it is applied.

Classroom facilities refer to physical and environmental factors including layout, lighting, ventilation and furniture. Brink et al. (2022) have reported that poor indoor environmental factors including inadequate ventilation, poor lighting and acoustic issues can have a detrimental effect on how students think about their school, their thinking and on their short term academic outcomes. Furthermore, Hoekstra et al. (2023) pointed out that flexible learning spaces and furniture can facilitate co-operative learning and good classroom management. Hence, classroom conditions could be important factors that affect the effectiveness of academic facilities.

The incorporation of computers and Internet facilities is especially significant in Cyberjaya as the technology orientated area in which it operates. The use of digital learning platforms like Google Classroom and DELIMa has increased and schools require high-speed Internet and resources to support digital learning. Yap et al. (2024) highlighted that stable internet connectivity is important for successful digital teaching while technical issues and unstable connections may limit the integration of technology in teaching activities. Thus, the assessment of the quality and accessibility of digital infrastructure is important in evaluating academic facilities in urban schools.

Teaching equipment such as projectors, smart boards, laboratory equipment and library materials are another significant feature of academic facilities. Tapscott-Stewart et al. (2023) proposed that modern teaching equipment promotes a student-centered, interactive teaching model, while poor equipment can limit the types of teaching methods to traditional ones. Oliveras Ortiz et al. (2023) also found that troublesome teaching equipment can stifle teaching styles and favor traditional approaches. Because teachers use academic facilities most of the time, these perceptions can be useful in determining the availability, accessibility, and appropriateness of academic facilities for instructional use. Similarly, Olivos and Yuan (2023) found that school infrastructure has a strong impact upon the effectiveness of teaching and effectiveness of student learning, as perceived by teachers.

Provision of academic facilities depends not just on availability, but also on being adequate, accessible, maintained, safe, and comfortable. Sukkurwalla et al. (2024) identified the importance of having sufficient infrastructure for teachers which contributes to making their working environment conducive and improves teaching efficiency. Similarly, Harun et al. (2021) stated that quality learning facilities support the teachers to conduct the learning activities effectively while Yuniarti and Walajro (2024) stated that the facilities should support the instructional needs to improve teachers' performance.

Academic maintenance and accessibility are also the key elements in determining the effectiveness of academic facilities. According to Devayani et al. (2024), without proper management and accessibility of educational facilities, teaching effectiveness cannot be realized. Likewise, Shen et al. (2024) found that when there were still operational barriers present and adequate technological support inadequate, technological infrastructure did not improve instructional performance. Besides, poorly maintained facilities can decrease the functionality as well as impact the educational outcomes (Iqbal et al. 2024). What is more important is that inadequate ventilation, high noise level, and physical discomfort have a negative impact on teaching quality and concentration of the students (Tong et al. 2024).

The role of academic facilities becomes more significant with the creation of 21st-century learning environments. Academic facilities should be available, functional, accessible and appropriate for contemporary teaching and learning. Schools are expected to offer digital literacy, critical thinking, collaborative learning, flexible learning space and technology supported environment. Bekiroglu et al. (2022) indicated that flexible and technology-enhanced learning environments facilitate student interaction, collaboration, and teacher's ability to adapt teaching activities to learning needs. Oliveras Ortiz et al. (2023) emphasized that versatile learning environments, sound and stable digital infrastructure, and new teaching materials are needed to improve education and learning. While there has been previous literature that has discussed the role of school infrastructure and educational resources, few studies have focused on measuring the effectiveness of educational facilities as viewed by the teachers in an urban school. Apart from that, even though Cyberjaya is known to be a technologically advanced city, there is hardly any evidence available to determine that the academic facilities serve as an effective support for teachers to carry out teaching and learning. Based on this, this study will focus on the effectiveness of the academic facilities provided to teachers in Cyberjaya in urban schools, specifically in relation to classroom facilities, computer and internet facilities, and teaching facilities in Cyberjaya.

METHODOLOGY

This study employed a quantitative cross-sectional research design to examine the effectiveness of academic facilities among teachers in urban schools in Cyberjaya. A total of 150 teachers from public and private urban schools in Cyberjaya were selected using a convenience sampling method. Data was collected through an online questionnaire distributed via Google Forms, WhatsApp, Telegram, and email. The questionnaire consisted of three sections: demographic information, perceptions of academic facilities, and perceptions of the effectiveness of academic facilities in supporting teaching performance and educational effectiveness. Academic facilities examined in this study included classroom infrastructure, computer and internet access, and teaching equipment, while effectiveness was measured through indicators such as teaching efficiency, quality of teaching and learning (PdP), classroom management, student engagement, and teacher satisfaction. Responses were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Descriptive statistical analysis, including frequency, percentage, mean score, and standard deviation, was used to analyze the data, while Cronbach's alpha coefficient was employed to assess the reliability of the research instrument, with values above 0.60 considered acceptable. Ethical considerations were observed throughout the study, ensuring voluntary participation, informed consent, anonymity, and the confidentiality of all information provided by the respondents.

RESULT AND DISCUSSION

Profile of Respondent

Table 1 presents the demographic profile of the 152 teachers who participated in this study. With respect to gender, most of the respondents were female teachers (52.0%, $n = 79$) and male teachers (47.4%, $n = 72$). Regarding age, most respondents were between 24 and 30 years old (27.6%, $n = 42$), followed by those aged 36–40 years (22.4%, $n = 34$). Respondents aged 46–50 years accounted for 14.5% ($n = 22$), while teachers aged 41–45 years, 51 years and above, and 31–35 years represented 13.8% ($n = 21$), 11.2% ($n = 17$), and 10.5% ($n = 16$), respectively. Academic qualifications were dominated by those holding a bachelor's degree (78.3%, $n = 119$), followed by master's or PhD academic qualifications (12.5%, $n = 19$) and diploma (9.2%, $n = 14$). The majority of the respondents were teachers from public schools (86.8%, $n = 132$), while 13.2% ($n = 20$) were from private schools. Finally, for teaching experience, 38.8% ($n = 59$) of respondents reported having over 10 years of experience, 31.6% ($n = 48$) reported less than five years, and 29.6% ($n = 45$) reported between 5 and 10 years of experience. Overall, the respondents represented teachers with diverse demographic backgrounds, academic qualifications, school types, and teaching experience.

Table 1
PROFILE OF RESPONDENT (N=152)

Profile	Category	Frequency	Percentage (%)
Gender	Female	79	52.0
	Male	72	47.4
Age	24-30 years old	42	27.6
	31-35 years old	16	10.5
	36-40 years old	34	22.4
	41-45 years old	21	13.8
	46-50 years old	22	14.5
	51 years old and above	17	11.2
Qualification	Certificate / Sijil	13	8.6
	Degree	119	78.3
	Master	18	11.8
	PhD	1	0.7
School Type	Government School	132	86.8
	Private School	20	13.2
Teaching Experience	Less than 5 Years	48	31.6

	5 – 10 Years	42	27.6
	More than 10 Years	59	38.8

Table 2
RELIABILITY TEST

Variable	Number of Items	Cronbach's Alpha	Reliability Assumed
The Effectiveness of Academic Facilities Among Teachers in Urban Schools: A Case Study in Cyberjaya	15	0.915	Excellent Reliability

Reliability analysis was conducted to determine the internal consistency of the measurement items used in this study. The research instrument was tested by Cronbach's Alpha coefficient. According to Hair et al. (2019), a Cronbach's Alpha value of 0.70 or above indicates acceptable reliability. An alpha value of 0.9 or above is considered excellent, between 0.8 and 0.9 is good, 0.7 to 0.8 is acceptable, 0.6 to 0.7 is questionable, 0.5 to 0.6 is poor, and below 0.5 is unacceptable. Table 1.1 shows the reliability analysis for the variables. Table 2 presents the reliability analysis for the research instrument. The overall Cronbach's Alpha was 0.915, which is considered to be excellent internal consistency. Thus, the instrument in this study was reliable and appropriate for further statistical analysis.

Table 3
LEVEL OF MEAN SCORE RANGE

Mean Score Range	Level
1.00 – 2.33	Low
2.34 – 3.67	Medium
3.68 – 5.00	High

Table 4
MEAN AND STANDARD DEVIATION

Variable	Mean	Standard Deviation	Interpretation
The Effectiveness of Academic Facilities Among Teachers in Urban Schools: A Case Study in Cyberjaya	4.24	0.51	High

Table 3 presents the interpretation scale used to classify the mean scores in this study. Mean scores ranging from 1.00 to 2.33 were interpreted as low, scores between 2.34 and 3.67 as moderate, and scores between 3.68 and 5.00 as high. Based on the descriptive analysis, the overall mean score for the effectiveness of academic facilities among teachers in urban schools was 4.24 (SD = 0.51), indicating a high level of perceived effectiveness. This finding suggests that the respondents generally perceived the academic facilities in urban schools to be effective. The interpretation scale is presented in Table 3, while the descriptive statistics, including the overall mean score and standard deviation, are reported in Table 4.

CONCLUSION

Finally, the overall findings of this study indicated that teachers in the urban schools in Cyberjaya generally had positive perceptions of academic facilities provided in their schools, which are effective in assisting teaching and learning activities. The respondents who come from various backgrounds and experience in teaching reported a high level of agreement on the effectiveness of academic facilities based on an overall mean score of 4.24. These findings suggest that adequate classrooms, teaching equipment, computer facilities, and internet access play an important role in improving teaching efficiency, classroom management, teacher motivation, and the implementation of 21st-century teaching and learning practices. This finding is consistent with previous studies by Haron et al. (2021), Ali (2024), and Yuniarti and Walajro (2024), which emphasized that well-managed and accessible academic facilities contribute significantly to effective teaching and educational quality. Although the overall perception of academic facilities was positive, continuous improvement in facility maintenance, technological infrastructure, and educational resources remains necessary to ensure that urban schools continue to provide a conducive learning environment that meets the evolving needs of teachers and students.

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