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SATISFACTION LEVEL OF STUDENTS TOWARDS FORMAL LEARNING SPACES IN UNIVERSITI TEKNOLOGI MARA PERAK BRANCH, SERI ISKANDAR CAMPUS

[1]Siti Nor Anis Ab Hadi and [2]Thuraiya Mohd

[12]Department of Estate Management, Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA Perak Branch, Seri Iskandar 32610, Perak

Email : nuranies95.na@gmail.com and thura231@perak.uitm.edu.my

Abstract

Learning space is the place to study, to research, and to engage in intellectual pursuit for the betterment of mankind. The use and design of learning space in higher education (HE) is a theme that has come to the forefront of educator interest in the past few years, particularly as competition for student applications and retention issues in the university sector have increased. It has long been accepted that space quality and design impacts the educational experience and working life, and environmental factors figure substantially in terms of psychology and sociology. Researchers have found that increased satisfaction on learning space has improved students' learning performance. Thus, this research paper aims to discuss the satisfaction level of students on formal learning spaces in Universiti Teknologi MARA. The survey was conducted in Universiti Teknologi MARA (UiTM), Perak Branch, Seri Iskandar Campus, Malaysia. A questionnaire was administrated and collected from 400 students, where respondents were asked to select their preferences based on a four-point Likert scale of agreement and satisfaction. The analysis was conducted using the Statistical Package for Social Sciences (SPSS) in the form of descriptive statistics comprising mean analyses to examine the level of students' satisfactions on formal learning spaces. Findings of this research indicated that the majority of students are satisfied with the moderate level of the three (3) major aspects surveyed which are environmental, design and facilities provided. These findings will provide a significant input for Higher Education Institutions, Ministry of Education, and other stakeholders for considering implementing a strategic action plan to boost the students' satisfaction level.

Keywords: Learning Space, Environment, Design, Facilities, Satisfaction

1.0   INTRODUCTION

Design of learning spaces has stimulated a great deal of discussion in school contexts, and in contrast to an HE consideration has been an interest for some time. Jensen (2005) discusses the importance of classroom design in terms of basic environmental impact. He demonstrates that providing movable seating and maintaining a flexible view of classroom arrangements according to the task in hand can reduce stress in students and thus improve their responsiveness and learning performance. Scott-Webber (2004) considers classroom desk layout in terms of an "assembly-line learning pattern" developed from the Industrial Age to create a heavily teacher-led approach. In recent years more research has been conducted into the format of classroom and environmental issues influencing student behaviour and quality of teaching. However, limited research conducted on a determination of satisfaction level towards formal learning space. The satisfaction among students will increase their performance in learning knowledge. Thus, it is essential for the HE institution to get the feedback from students on their satisfaction towards learning space to provide an effective learning space. Hence, this research is to provide emphasis in examining the satisfaction level among students at said UiTM in the aspects of environment, design, and facilities provided at the higher learning space.

2.0   LITERATURE REVIEW
The learning spaces that contribute as an 'intelligent building' include the key features which are adaptability, capability, compatibility, controllability and sustainability (Todhunter, 2015). It discusses a better idea on more accurate dimensioning of spaces using the correct tools and equipment. The learning space is divided into two different types of environment that are traditional and non-traditional (Whiteside et al., 2010). The traditional is known as formal while non-traditional is known as informal learning space (Andreatos et al.., 2003). Many researchers define formal learning as a well-organized learning environment while informal learning as an environment that is not structured (Marsick et al., 2000). In sum, learning spaces can be categorized into two different types, formal learning space and informal learning space. The learning space should have a principle and guideline which is the design space of a formal learning space with flexibility and it supports several teaching and learning process.

2.1   *Formal learning space*
Formal learning space which is education places in higher education institutions with facilities and a comfortable environment for studying. The formal learning space is provided for student to study and learn with a good conducive environment. Formal learning is referring to the classroom, lecture hall, laboratory lab and others. Formal learning spaces with good facilities and comfortable surroundings can increase the students' satisfaction (Lomas & Oblinger, 2006). Basically, formal learning space is a place for learning and constructing the knowledge about education. Formal learning space is a space that usually holds large numbers of groups or large numbers of students whom are learning from the educator about their subject of learning. Besides that, the advocates of technologies in formal learning spaces and flexibility of classroom spaces can contribute achievements in education among students' (Christopher, 2012).

2.2   *Factors of formal learning space*
The theoretical framework for this research, theorized that there are three learning space factors that influence students' satisfaction which leads to perceiving the performance of respondents in an academic building. These factors include 1) Environmental Factor, 2) Design Factor and 3) Facilities provided on formal learning space. The proposed initial conceptual model for the research is as presented in Figure 1.
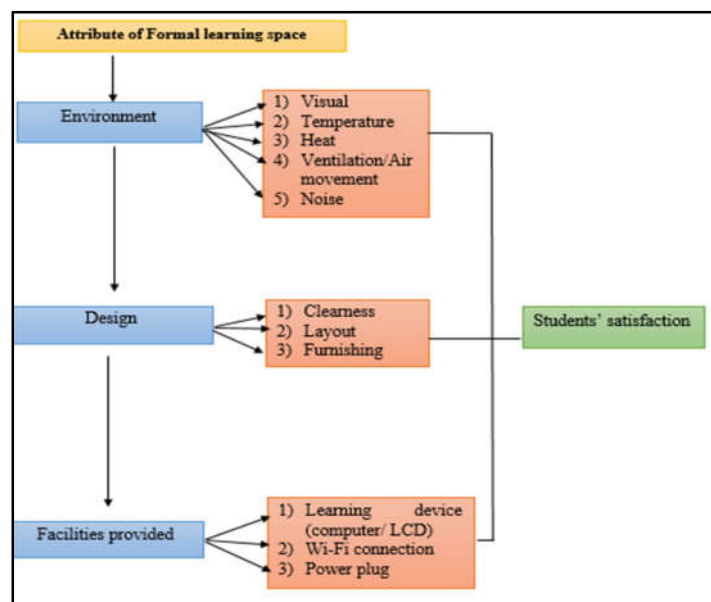

Figure 1: Theoretical framework: Attribute factors on formal learning space

2.2.1   Environment Factors

According to Lenita (2014), the learning environment in formal learning spaces is the entirety of the learning space related with the physical state of an environment, psychological factor and social relationship. Therefore, learning environment should be conducive to making sure all the occupants are healthy and comfortable with the space. The environment factor that consists with the five element factors which are visual, temperature, heat, air movement or ventilation and noise (Higgins et al., 2002). In the formal learning space, space should be versatile, comfortable and compatible with the technology and creation of knowledge (Wilson & Cotgrave, 2016). The temperature in formal learning spaces should not be too cold nor too hot in the building for the occupants. The formal learning buildings in higher education institutions should be in lower heat because the process of learning can be good while the building is comfortable to students. The ventilation of air is air conditioning or a way to moving the air naturally. The environment controls the building and transfers the fresh air to the occupants in the building. The sound in the building can be described as a physical entity (Wilson & Cotgrave, 2016). In sum, physical environment such as lighting, temperature, air quality, noise, and space organization can have such an impact on student's satisfaction, which then may lead to bettering their performance.

2.2.2   Design Factors

Design learning space in higher education institutions should be connected with the building and its occupants. The design factors of a building and its users consists of several modules that are building features; background of the occupants; location and description of workspaces; availability of space; office layout; visual privacy; ease of interaction; furnishings; colours and textures; and visual privacy (Zagreus et al., 2014). Fister (2009) claimed that comfortable furniture and warm colours are the most important features of learning spaces. The design of higher education institutions physical learning environment must develop into suitable learning spaces. Good design of a building can improve the level of higher education studies (Oblinger, 2004) and make a formal learning space have a cheerful atmosphere (Dennis, 2009). The openness of the layout is important to make sure the building is clean and comfortable to make sure the process of learning in good. In fact, a student is more attentive when learning in a clean room (Fister, 2009). The layout designof the space should be flexibile in that it supports the various ways of teaching and learning and should select a variety of room size, location of formal learning space to ensure high level of satisfaction (Ali et al., 2013). Furnishing is defined as the decoration in the building. In fact, a student can give more attention to learning in the building that uses a pastel colour theme in the building and can improve the attention when using the soft colours in the interior of the building (Temple, 2007).

2.2.3   Facilities Provided

The concept of the physical learning environment concerning physical structures relates to spaces, equipment and tools within the learning space (Lehtinen, 1997). Cleanliness and maintenance are also one of the characteristics of facilities. Additionally, access to food is one of the most important design features of learning spaces for students (Fister, 2009). According to the Lee (2016), facilities in formal learning spaces will consist of space, lighting, temperature, ventilation and furniture for students and lecturers. The formal learning space should be more flexible arrangements made possible by moving laptop and wireless networking. The formal learning space should have locations for computer learning or enough learning devices for students' and lecturers' use in studies. Wi-Fi connection should cover the whole space in the formal learning space for students to connect with internet coverage. These services should be provided with high speed internet.

        The learning space in higher education institutions should be conducive with an environment and complete with facilities. In higher educaion, the satisfaction of occupant is the most important thing in building users. The design used when building a learning space should include shaped experiences and relatable environment, ambience, furniture design and selection, choice of furniture and fittings, use colour, material, texture and lighting that is suitable to the formal learning space (Fister, 2009).

2.3   *Learning Space: Satisfaction and Perceived Performance*

Oblinger (2008) described that the brilliant outcome or product that could be produced by the students partly depends on the better spaces and tools provided to them. Therefore, it is vital to know what they need beforehand in completing a task. In sum, it can be concluded that student satisfaction influences their learning performance. Therefore, it is vital to know what they need beforehand in completing a task. In sum, it can conclude that student satisfaction influences their learning performance. The satisfaction of students depends on the better spaces and tools that is provided for them. Thus, it is essential to know what are their needs to provide and improve in a factor of environment, design and facilities provided in the formal learning space (Fadhlizil et al., 2016). The satisfaction among students will increase their performance in learning. Bluyssen et al. (2011) and Veitch et al. (2007) highlighted that occupant satisfaction was affected not only by indoor environmental parameters but also by workspace and building features, such as the view, control over the indoor environment, amount of privacy as well as layout, size, cleanliness, aesthetics, and furniture of office.

3.0   RESEARCH METHODOLOGY

This research applies analytic survey using cross sectional research design. The survey was conducted to determine the level of satisfaction among students on formal learning space and perceived performance in UiTM Perak Branch, Seri Iskandar Campus.

3.1   *Study Area*

This research applies analytic survey using cross-sectional research design. The survey was conducted to determine the level of satisfaction among students on formal learning space and perceived performance in UiTM Perak Branch, Seri Iskandar Campus.

3.2   *Design of Questionnaire*

The survey questionnaires used in this research consist of two main sections: 1. Respondent Profile and 2. Student's Satisfaction on Formal Learning Space. The question of section one is related with age, gender, races, study mode, a semester of study and faculty of study while the section two which is a question that is focused on satisfaction level among students on four major factors, i.e. environment, design and facilities factors on formal learning space.

3.3   *Data collection*

Perception survey through structured questionnaire was implemented. The sample was selected from the students of Architecture, Planning and Surveying Faculty (FSPU), and Faculty of Art and Design (FSSR) (Semester: March 2018 – July 2018) with the total population (N) 8,039 students. This research utilized the random sampling technique, which refers to a sampling procedure whereby a group of subjects is randomly selected from any one population as the study respondents. Thus, only part of the data is used in this research. The number of sample from a population was calculated using Slovin's formula. The methods are as follow:

Total population FSPU (N) = 6,574 students
Total population FSSR (N) = 1,465 students
Formula = n = N / (1 + N e^2)
Confidence level 95% (a margin of error of 0.05) or confidence level 97% (a margin of error of 0.03)
Plug the data into the formula: n = N/ (1 + N e^2)
N = Total population; e = margin of error

Calculation 1	Calculation 2
$\dfrac{8039}{1 + 8039\,(0.0009)} = 1100$	$\dfrac{8039}{+ 8039\,(0.0025)} = 399$

The total sample size in this research range 399 to 1100. Thus, our total sample size of N=400 was sufficient with confidence level 97% and margin of error of 0.03. The questionnaire survey was done on a face-to-face approach with the respondents to enable the researcher to explain the objective of research and show them how to answer the questions posed in the forms.

3.4   Data Analysis

In analysing and evaluating the results of this research, quantitative approaches were used. These approaches involve data and information analysed through the method of perception survey. Quantitative data which was obtained through structural questions involving likert scale type questions contained in structured questionnaire form were analysed by using the Statistical Package for the Social Sciences (SPSS) software. The data were analysed using descriptive statistics involving mean distribution. These data will be presented in the form of tables. Neuman (1994) argued that descriptive statistics provide a method to reduce large matrix data into suitable summaries to facilitate the understanding and interpretation of the data. This information is tabulated into percentages and frequency distribution form for univariate analysis.

4.0   ANALYSIS AND FINDINGS

The satisfaction levels of students on formal learning space in UiTM Perak Branch, Seri Iskandar Campus were assessed based on three major factors were environment, design and facilities provided. These factors were further breakdown into several elements that constitute each of the attribute factors on formal learning space. The findings on the data analysis will be discussed on two sections, i.e. 1) respondent profiles and 2) Satisfaction level analyses of students'.

4.1   Respondent Profile

Table 1 shows the detailed profile of students. It portrays that most of the respondents from a faculty of architecture, planning and surveying (72.5) while the most of respondent is degree student (27.5).

Table 1 : Respondent Profile

Description		Percentage (%)	Description		Percentage (%)
Age			Study Mode		
	18 - 20 years old	37.0		Diploma	42.0
	21 - 23 years old	13.0		Degree	55.3
	more than 23 years old	50.0		Master	2.8
Gender			Semester		
	Male	35		Semester 1 & 2	15.8
	Female	65		Semester 3 & 4	38
Races				Semester 5 & 6	46.3
	Malay	99	Faculty		
	Others	1		FSPU	72.5
				FSSR	27.5

4.2   Satisfaction among students' on formal learning space

All items in section two of the questionnaire survey were adapted and modified from previous research on different satisfaction literature. These items in the second sections of research survey were measured using a four-item scale and were analyzed using SPSS software. Table 2 summarizes the results of the students' satisfaction level on formal learning space in UiTM Perak. The overall factors consist of 11

items which are five (5) items for Environmental Factor, three (3) items of the Design Factor, and three (3) items for Facilities Provided. The analysis shows by the mean. The result of means that is chosen based on the highest mean in a questionnaire which is each of attribute factor that is selected the higher mean for comparing the level of satisfaction among students in formal learning space.

Table 2 : level of satisfaction among student in formal learning space

Major Factors	Factors attribute of formal learning space	Mean	Level
Environmental factors	Visual	3.06	Moderate
	Temperature	2.76	Moderate
	Heat	2.90	Moderate
	Air movement / ventilation	2.85	Moderate
	Noise	2.92	Moderate
Design factors	Clearness	2.96	Moderate
	Layout	2.83	Moderate
	Furnishing	2.92	Moderate
Facilities provided	Learning device / computer device	2.85	Moderate
	Wi-Fi connection	2.10	Low
	Power plug	2.62	Moderate

The environmental factors consist of visual, temperature, heat, air movement/ ventilation and noise. Finding indicates that majority of students satisfied with environmental factor especially visual provided with highest mean (3.06). It can be analyzed students satisfied with the visual comfort at the formal learning space in UiTM Perak. The second major factors which are design factors include clearness, layout and furnishing at the formal learning space. As has been shown in the table, most of the respondents in the survey felt satisfied with the clearness (2.96) aspect of design factor. This finding indicates that most students in UiTM Perak satisfied with the clearness aspect. The clearness is essential to make sure the building in cleanness and comfortable to make sure the process of learning for the good of learning. In facts, students give more attention when learning in the room of cleans. In addition, students also satisfied with furnishing aspect (2.92) in the design aspect. It shows that students satisfied with the decoration in the formal space at UiTM Perak. A finding shows that satisfaction towards three (3) elements of facilities provided low and moderate. Students are not satisfied with the wi-fi connection. The result shows that UiTM Perak still has loopholes in terms of its wi-fi connection. The improvement should be made to increase the wi-fi performance and provide an effective formal learning space. As a conclusion, overall students at UiTM Perak are pleased with the current condition of features at their formal learning space provided.

5.0   CONCLUSION

This research examines the level of satisfaction among students' towards formal learning space provided in UiTM Perak. Survey questionnaires were used as an instrument to gather data. The results were analysed using standard statistical packages and were found to fulfil the requirements of reliability and validity. The overall study fulfils its research objective. Finding indicates that majority of students UiTM Perak were moderately satisfied with the main elements provided by HE. However, there were few respondents in the survey felt dissatisfied with some of the features and elements presented at their formal learning space provided. The finding indicates that there is still improvement needs to be implemented especially by the HE in order to ensure that students have maximum satisfaction regarding the overall condition and features at their formal learning space. Indirectly, ensuring to provide an effective learning space to enhance the student's performance.

All research has certain limitations which provide future opportunities for new research. Therefore, as a future suggestion, similar research about the respondents with generalization to a wider

population of students in other universities should be done to identify further on the factors that contribute to student's satisfaction that will increase their performance. Overall, the HEIs are advised to reflect on the aspects of students' satisfaction in regards to learning space provided as a guide to enhance the student's performance thus making higher education a fun place for a flexible learning experience.

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