Students’ Satisfaction with Teaching Spaces: Study of a State-Owned University in Southwestern Nigeria

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Abstract: Teaching spaces are needed for direct or physical contact between lecturers and students. The degree of students’ satisfaction with teaching facilities and services provided in our universities are likely to influence their academic performance. This study examined the factors influencing students’ satisfaction with learning spaces in Osun State University, Osun State, Nigeria. A sample size of 591 respondents drawn from 300 level and 400 level in the College of Science, Engineering and Technology (Osogbo Campus) and the College of Management and Social Science (Okuku Campus) were sampled through a structured questionnaire on a 5-point Likert scale using a random cluster sampling technique. The results revealed that students were very satisfied with the spatial and physical configurations of the teaching spaces. Attitude to learning and students’ subject understanding were highly and positively related to students’ satisfaction, their respective values were 0.751 and 0.721. The paper concluded with suggestions on how students’ satisfaction can be improved by providing facilities that will enable electronic teaching and learning.

Keywords: Relative satisfaction index, Spatial qualities, Students’ satisfaction, Teaching methods, Teaching spaces, University.

I. Introduction

Education is often referred to as the bedrock of national development for any country. There is a general belief that a country cannot rise above the quality of her educational system. Most developing countries in a quest to be globally competitive among the committee of nations usually redesign and improve their education sectors through policies and reforms. These range from the establishment of more universities, specialized institutions, increased financial allocation to existing institutions, staff training and development programmes among others.

Research shows that countries like Malaysia and Singapore have experienced a sharp increase in their economy due to the investments of their governments in the educational sector [1-2]. Owing to the peculiar situation in Nigeria, Universal Basic Education (UBE) was introduced in order to correct the deficiencies of previous educational policies and reposition the country to achieving the Millennium Development Goals (MDGs). This policy prepares the Nigerian child for tertiary education, which has also enjoyed significant attention from the government.

Tertiary education, being the last phase of training for students, provides qualitative teaching, research and learning experience that will produce well-rounded graduates capable of impacting positively on their societies and the world at large. It also serves as a platform to acquire knowledge and apply such knowledge to societal, scientific, economic and technological challenges. Tertiary institution is an important key to the technology, productivity and other components for international competitiveness and economic growth. The evolving trends in the economy necessitate a new approach to teaching by universities in other to produce employable or
relevant graduates [3]. The economic development of a nation depends on its tertiary institution because professionals, technocrats and policymakers are trained there [4]. Methodologies to learning and teaching in educational settings are changing from the traditional centred models, where good teaching which is conceptualized as the passing on of sound academic, practical or vocational knowledge are being replaced with students-centred approaches which emphasize the construction of knowledge through shared situations. The shift from an instruction paradigm to a learning paradigm has changed the role of the higher institution from a place of instruction to a place to produce learning [5].

There are three key learning styles; learning through reflection, learning through doing and learning through conversation [6]. Annually, secondary school leavers jostle for admission into tertiary institutions to advance their academic pursuit; however, a small percentage of these students gain admission owing to the few available institutions in Nigeria. According to the regulatory body for monitoring universities, National Universities Commission (NUC), there are 112 universities, broken down into federal, state and private universities in Nigeria.

Osun State, in particular, has the following universities; Obafemi Awolowo University, Ile-Ife, Osun State University, Osogbo, Joseph Ayo Babalola University, Ikeji-Arakeji, Fountain University, Osogbo, Oduduwa University, Ipetumodu, Bowen University, Iwo, Redeemers’ University, Ede, Kings University, Ode-Omu and Adeleke University, Ede [7].

Nevertheless, researchers are bothered by the adequacy of these universities in both quantitative and qualitative terms [8-9]. Scholars have divergent views on how this shortfall can be properly addressed; some believe quantity and quality be improved simultaneously while others believe in the qualitative improvement of existing universities, further research is needed in this direction. Against this background, this research examines the quality of teaching spaces in a state-owned Nigerian university using the students’ satisfaction approach. The aim of this research is to evaluate students’ satisfaction with teaching spaces in Osun State University, with a view to highlighting factors that could influence the decisions of policymakers and designers in improving the quality of learning spaces and services in universities.

Students’ opinions about all aspects of academic life are now being sought by educational institutions worldwide, generally in the form of a satisfaction feedback questionnaire. Students are considered to be the most important customers of a university; this is because students are direct recipients of the services provided [10]. Consequently, measuring students’ satisfaction with teaching spaces will enable university management to determine the performance of the spaces provided and make necessary improvements for students’ satisfaction [10]. In recent times, new teaching methods and learning spaces have emerged in tertiary institutions; there are seven spatial types of learning spaces: group teaching/learning, simulated environments, immersive environments, peer-to-peer (social learning), clusters, individual learning and external spaces. Numerous studies established that students’ satisfaction affects the university’s image and rating, which also influences students’ enrolment and retention [11-13]. Students’ satisfaction with learning facilities in a university is expressed through students’ interest to study at a higher level with the same institution, how frequently and recently students use ancillary services such as the library, Information Technology services and lastly the willingness to recommend the
institution to friends, neighbours and fellow employees [14].

Similarly, some researchers have found a positive correlation between students’ retention and overall satisfaction [15-17] cited in [18]. Price [19] surveyed a number of universities over two years in order to determine students’ reasons for selecting a particular university; the top eight reasons being: it had the right courses, availability of computers, quality of library facilities, good teaching reputation, availability of quiet areas, availability of areas for self-study and quality of public transport. However, contradictions exist in literature regarding the relationship between students’ academic performance and students’ satisfaction. For instance, Liu [20] observed a moderate relationship while Bean [21] found no relationship. The view that cordial interaction between students and staff promotes students’ satisfaction and performance was reinforced by Palmer [22] cited in [23]. On the other hand, factors leading to students’ dissatisfaction are lack of opportunities to participate in research projects and insufficient offer of study materials.

Students are likely to be satisfied with their educational institutions when the services provided meet their expectations, or they will be very satisfied when the services exceed their expectations. Contrarily, students are dissatisfied when the service provided is less than their expectations and the gap between perceived and expected service quality is high.

Simply defined, satisfaction is the fulfilment of one’s expectations or needs or the pleasure derived from this. In the higher education context, satisfaction is seen as an indicator of the institution’s responsiveness to students’ needs and a measure of institutional effectiveness, success and vitality [26-27]. Students’ perception can be useful to determine the actual performance of facilities, infrastructures and staff in a given tertiary institution. It is also a potent tool for the university management to identify areas for improvement.

Scholars posit that students’ satisfaction is multi-dimensional owing to the complex relationships among different factors influencing the perceived satisfaction of students in universities. The most prominent factors are the prevalent teaching methods, quality of teaching spaces, social and recreational facilities, quality and attitude of staff and the general environmental settings of the university [28]. Students’ satisfaction, originates from the concept of customer satisfaction, as students are considered to be customers of educational institutions.

Educational institutions that understand consumer-oriented principles may have a better chance of satisfying the wants and needs of their students more effectively [29]. Students’ satisfaction is a short-term attitude that results from the evaluation of their experience with the educational services received [30]. The concept of a service-product bundle for students’ satisfaction consists of three elements: the physical or facilitating goods, the sensual service provided (explicit service) and the psychological service (implicit service) [31].

For a university, the facilitating goods include the lecture and tutorials, presentation slides, supplementary handout documents and the recommended texts. It also includes the physical facilities such as the lecture theatres, their level of furnishing, lighting and layout as well as ancillary services such as recreation and social spaces. The explicit service includes the knowledge levels of staff, staff teaching ability, the consistency of teaching quality irrespective of personnel, ease of making appointments with staff, the level of difficulty of the subject content and the workload. The implicit service
includes the treatment of students by staff, including friendliness and approachability, concern shown if a student has a problem, respect for feelings and opinions, availability of staff, capability and competence of staff. It is the cumulative perception of students regarding this bundle of goods and services that determine students’ satisfaction with the university [32].

Researchers generally agree that the quality of service in university positively affects students’ satisfaction [33]. In summary, given the importance of students’ satisfaction, scholars have studied various aspects of it in tertiary institutions. For example, student’s satisfaction with college experience, satisfaction with online courses, satisfaction with assessment, satisfaction with academic departments to mention but a few [33]. In this study, satisfaction is conceptualized as a service-product bundle; this implies that students’ satisfaction is dependent on the physical or facilitating goods, the explicit service and the psychological service (implicit).

II. Materials and Methods

A. Study Area

Founded on December 21, 2006, Osun State University (UNIOSUN) became the 30th state university and 80th in the Nigerian university educational system. However, it became fully operational on September 21, 2007. The University is a multi-campus institution operating a collegiate system. There are eight colleges in six campuses located in the six geopolitical zones of the state. Osun State University has enjoyed a very rapid infrastructural growth in its short period of existence. The university started on permanent sites simultaneously across all campuses and physical developments were developed to match the academic and programme requirements of each campus.

Osogbo is located in the northeastern part of Osun State. It is the capital city of Osun State. The city is also a prominent transit point between Offa, Iwo and Ile-Ife. It is also a connecting city by rail to the northern parts of the country. Fig. 2 and 3 show Osogbo within Osun State and the location of the Main Campus of the University within Osogbo. Osogbo is accessible to all parts of the State and Nigeria by road and rail. Among the most important road networks linking Osogbo to the rest of the state and Nigeria are: Osogbo–Iwo, Osogbo–Ogbomoso, Osogbo–Offa, Osogbo –Ife, Osogbo–Ibadan expressways, meaning that the University is well positioned and accessible to all parts of the state and the country.

B. Research Methodology

Quantitative survey method was engaged to evaluate students’ satisfaction with teaching spaces in Osun State University. Sampling was done at two levels; simple random sampling was used to select both Osogbo and Okuku Campus from the six campuses of the university. A questionnaire measuring instrument was used to capture students’ perceived assessment of the teaching spaces. A pilot survey of 135 respondents was earlier conducted to test the questionnaire, afterwards, amendments were made to the final questionnaire, influenced greatly by previous studies [10]. It was subdivided into sections covering students’ biodata, various aspects of teaching spaces, the explicit service and the implicit service in addition to the prevalent teaching methods. The effects of these independent variables on class attendance, attitude to learning, subject understanding and student’s overall satisfaction were asked at the end of the survey; students were also asked whether they were willing to recommend the university to others.
Students between parts 3 and 4 in the College of Science, Engineering and Technology (Osogbo Campus) and the College of Management and Social Science (Okuku Campus) were purposively sampled owing to the number of years they have spent in the university. With the support of 8 trained research assistants, random cluster sampling technique was used to select 600 students from the two campuses. This size, is justified and has 95% confidence level with 5% margin of error [34]. Students’ perceptions were sought using 5-point Likert scale of 1-5 where 1 is very unsatisfactory, 2 is unsatisfactory, 3 is neutral (neither satisfactory nor unsatisfactory), 4 is satisfactory and 5 is very satisfactory.

The data collected were analysed using descriptive statistics and Relative Satisfaction Index (RSI). RSI, is the frequency of response divided by the total frequency of all the responses, usually expressed as a percentage [36-37]. To this end, 23 variables relating to student’s satisfaction were identified and subdivided into facilities and services, each group had 15 and 9 variables respectively. Eq. (1) represents how the RSI for each variable was calculated and computed.

\[
RSIV = \frac{5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1}{n}
\]

where, \(n_5\) = frequency of respondents that chose very satisfactory, \(n_4\) = frequency of respondents that chose satisfactory \(n_3\) = frequency of respondents that chose neutral, \(n_2\) = frequency of respondents that chose unsatisfactory, \(n_1\) = frequency of respondents that chose very unsatisfactory. \(n\) = total number of respondents. \(RSIV\) = Relative satisfaction index for variable. Recall that students were instructed to rate each variable using one of the five ratings where 5 was very satisfactory, 4 was satisfactory, 3 was neutral, 2 was unsatisfactory and 1 was very unsatisfactory. It is expected that variables with high values of RSI are satisfactory as perceived by students and have a positive effect on them. The closer the RSI of a variable to 5, the higher
III. Results and Discussion

A total of 591 questionnaires, out of 600 sent out returned for analysis. As shown in Table 1, a significant fraction of the students were males (65%) whereas 35% were females. Age distribution of the respondents reveals that 64.9% were between 21-25 years, 27.3% of total respondents were below 20 years, and 7.8% were between 26-30 years of age. Data analysis shows that 56.3% of the students were in 400 level and 43.7% in 300 level. The prevalent teaching patterns were also revealed in the analysis, 63% of students claimed that the large lecture method was the most prominent teaching method, next in the category was small group discussion (30%), electronic-learning had only 7%.

Having computed the RSI for each variable, mean $\overline{RSI}$ was calculated for all variables, this was done by the summation of all RSI of all variables and dividing it by the total number of variables.

Table 1: Demographic Characteristics of Respondents.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>348</td>
<td>65</td>
</tr>
<tr>
<td>Female</td>
<td>207</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>591</td>
<td>100</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 20 years</td>
<td>161</td>
<td>27.3</td>
</tr>
<tr>
<td>20-25 years</td>
<td>383</td>
<td>64.9</td>
</tr>
<tr>
<td>26-30 years</td>
<td>47</td>
<td>7.8</td>
</tr>
<tr>
<td>Total</td>
<td>591</td>
<td>100</td>
</tr>
<tr>
<td><strong>Level of study</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300 level</td>
<td>258</td>
<td>43.7</td>
</tr>
<tr>
<td>400 level</td>
<td>333</td>
<td>56.3</td>
</tr>
<tr>
<td>Total</td>
<td>591</td>
<td>100</td>
</tr>
<tr>
<td><strong>Teaching pattern</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large lecture method</td>
<td>435</td>
<td>63</td>
</tr>
<tr>
<td>Small group</td>
<td>252</td>
<td>30</td>
</tr>
<tr>
<td>E-learning</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>591</td>
<td>100</td>
</tr>
</tbody>
</table>

\[
\overline{RSI} = \frac{\sum_{i=1}^{n} RSI_i}{n},
\]

The study subjected the data to further analysis by calculating the deviation of RSI. This was done by subtracting $\overline{RSI}$ from RSI of each variable; this is in agreement with [37]. The value of RSI has a direct variation with the satisfaction level derived from a variable. Results of the analysis as presented in Table 2 show that the variable with the highest RSI was 4.0 while the lowest was 2.9. This implies that students were very satisfied with the size of operable windows in their lecture rooms but rated the use of large lectures as a teaching method as very unsatisfactory. RSI values were ranked in their order of magnitude in the table to show the strength of variables students perceived important to their satisfaction with teaching spaces and services rendered in the university. The mean $\overline{RSI}$ of the variables was 3.4; their deviations around the mean of the highest and lowest were 0.6 and 0.25 in that order. Variables with positive deviations about the mean $\overline{RSI}$ were considered very important to students’ satisfaction with teaching spaces and services. However, it is important to state that variable with negative deviation can also have a significant impact on students’ satisfaction if adequate improvement can be given to them, this is because their respondent ratings were between neutral and unsatisfactory.

In the final analysis, students’ ratings regarding physical configuration and spatial qualities of teaching spaces, E-learning, fire safety, the use of group assessment teaching method, access for the physically disabled and maintenance of facilities were very satisfactory.

Contrarily, students were not satisfied with the use of large lecture teaching method, toilet facilities, the attitude of non-teaching staff and approachability of lecturers. With regard to whether students would recommend the
Students' satisfaction with teaching spaces and services at Osun State University, Nigeria. It examined and highlighted the significant factors influencing students' satisfaction. The results show that the satisfaction level of students with facilities and services provided was above average (i.e., satisfactory). It is evident that the basic requirements of teaching spaces were met by the architectural design of these facilities. Students' satisfaction with the air quality in lecture rooms (owing to the sizes of operable windows) was highest among variables, this is highly impressive because evidence abounds in the literature that stuffy rooms are mostly responsible for dissatisfaction in educational buildings.

However, students' satisfaction with services (explicit and implicit) can be significantly improved if changes are made to the prevalent

<table>
<thead>
<tr>
<th>S/n</th>
<th>Parameters</th>
<th>Frequency</th>
<th>RSI</th>
<th>RS1</th>
<th>[Deviation] 2</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Size of operable windows</td>
<td>591</td>
<td>4.0</td>
<td>0.6</td>
<td>0.36</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
</tr>
<tr>
<td>2</td>
<td>Pedestrian access to the building</td>
<td>591</td>
<td>3.9</td>
<td>0.5</td>
<td>0.25</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
</tr>
<tr>
<td>3</td>
<td>Fire safety provision</td>
<td>591</td>
<td>3.8</td>
<td>0.4</td>
<td>0.16</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
</tr>
<tr>
<td>4</td>
<td>Percentage of institution which is wireless enabled</td>
<td>591</td>
<td>3.7</td>
<td>0.3</td>
<td>0.9</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>5</td>
<td>Cleanliness of common areas within lecture rooms</td>
<td>591</td>
<td>3.7</td>
<td>0.3</td>
<td>0.9</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>6</td>
<td>Use of interactive technology in the class room</td>
<td>591</td>
<td>3.7</td>
<td>0.3</td>
<td>0.9</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>7</td>
<td>Provisions of course related materials online</td>
<td>591</td>
<td>3.4</td>
<td>0.1</td>
<td>0.01</td>
<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>8</td>
<td>Access for the physically disabled</td>
<td>591</td>
<td>3.3</td>
<td>0.1</td>
<td>0.01</td>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>9</td>
<td>No of students per lecture room</td>
<td>591</td>
<td>3.3</td>
<td>0.1</td>
<td>0.01</td>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>10</td>
<td>Air quality in lecture rooms</td>
<td>591</td>
<td>3.2</td>
<td>0.2</td>
<td>0.04</td>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>11</td>
<td>Relevant textbooks and teaching materials</td>
<td>591</td>
<td>3.2</td>
<td>0.2</td>
<td>0.04</td>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>12</td>
<td>Maintenance of facilities</td>
<td>591</td>
<td>3.2</td>
<td>0.2</td>
<td>0.04</td>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>13</td>
<td>Arrangement of furniture (distance between you and the lecturer)</td>
<td>591</td>
<td>3.1</td>
<td>0.3</td>
<td>0.09</td>
<td>10&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>14</td>
<td>Size of lecture rooms</td>
<td>591</td>
<td>3.0</td>
<td>0.4</td>
<td>0.16</td>
<td>11&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>15</td>
<td>Toilet facilities</td>
<td>591</td>
<td>2.9</td>
<td>0.5</td>
<td>0.25</td>
<td>12&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Table 2: Relative satisfaction index table.

IV. Conclusion

This paper has attempted to evaluate students' satisfaction with teaching spaces and services at Osun State University, Nigeria. It examined and highlighted the significant factors influencing students' satisfaction. The results show that the satisfaction level of students with facilities and services provided was above average (i.e., satisfactory). It is evident that the basic requirements of teaching spaces were met by the architectural design of these facilities. Students' satisfaction with the air quality in lecture rooms (owing to the sizes of operable windows) was highest among variables, this is highly impressive because evidence abounds in the literature that stuffy rooms are mostly responsible for dissatisfaction in educational buildings.

However, students' satisfaction with services (explicit and implicit) can be significantly improved if changes are made to the prevalent
large lecture teaching method (teacher-centred) by embracing emerging teaching methodologies that are student-based such as electronic or mobile learning (e-learning/m-learning), group teaching, immersive environment and social learning.

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