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ASSESSMENT OF REVOLUTIONARY PEDAGOGIC PRACTICES IN THE ARCHITECTURAL DESIGN STUDIOS OF SELECTED NIGERIAN UNIVERSITIES

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ABSTRACT

Over the years, there has been a strong criticism against traditional pedagogic practices in architectural design studio education practices. Consequently, several pedagogic approaches have been engaged consciously and unconsciously by different design studio teachers. Along these Chronicles of investigations, little or no empirical record-data has been documented in these regards. Therefore, this study carried out a spectral investigation of Ten (10) revolutionary pedagogic models as didactically practiced in four(4) selected universities in Nigeria. The research methodology employed a survey research design strategy and the primary data were sourced using questionnaires, observations, focus group, and oral interviews. The secondary data was sourced from the literature, archives and other record types. Also, the sampling frame consisted of the design studios, students and teachers in the selected design studios; the unit of analysis was obtained for the teachers and students, design studios of year three (3), four (4) and MSc levels. A multi-stage stratified purposive sampling technique was adopted. Questionnaire responses were analysed using SPSS while content analysis was used for the interviews and observations. The results revealed across the four schools that: participatory pedagogic model had most dominant characteristics within the pedagogic spectrum of these schools. OAU had the most dominant characteristics in revolutionary pedagogic practices than other three schools. Further in-depth revelations showed another layer of dominant characteristics in analogical model by CU teachers and students; while LAUTECH had inherent characteristics in these models. In terms of the teachers and students, this study established that the pedagogic practices employed in these schools behaved differently in the significant indices across the four selected schools. The parametric indices of revolutionary pedagogy as

recorded in these findings can be optimized as valid data and pedagogic applications in the Teachers' instructional guides, Studio Culture policy and Implementation strategy manual, and other forms of Curriculum applications perquisites to the revolutionary architectural education and practice in the society.

Keyword: Architecture, Design studio, Pedagogic, Practices, Revolutionary.

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1. INTRODUCTION

The inquiries about pedagogical practices on curriculum, teaching, learning and assessment of students' works in educational landscape indicated that most teachers and instructors treat curriculum as investments in banking; to keep records for accountability and yield profits futuristically. The curriculum of architectural design studio has for some time now been operationalized in terms of "learning by doing". Over time now, there has been vehement reactive criticism against traditional pedagogic practices in architectural design studio education. Although, teachers and other educational stakeholders generally spend so much time in restructuring, planning, and meditating on curricular matters. Currently now in educational setting, pedagogic issues in the context of smart learning campus environment and sustainable education are hot debates in a few higher institutions of learning (Popoola, Atayero, Badejo, John, Odukoya, Omole, 2018) [9]; these are targeted to improve learning outcomes in both short and long term projections. On the other hand, the pedagogical practices engaged by the Teachers who are operating solely by instinct or applying teaching styles of pedagogic models are under evaluative assessments because the operationalized curricula in a few years may not really be able to meet up with revolutionary canonizations in progress. Also, under assessment check are the assumptions; that a few Teachers have been undergirded with conviction that they have the intellectual acumen and professional mastery of teaching as premised on the accumulated experiences. Much more than these, many have always operated by rules of thumb, even the self-acclaimed "brilliant teachers" can neither explain the why, how, and what of teaching-the essence of didactics. As pedagogy raises the achievement goals by policy making; while didactics spell out the scientific strategies of how, what, when, and where to teach the students for effective learning outcomes and achievements.

Therefore, it is expedient that Teachers all over the world need to be sensitised to the effects of the pedagogic practices in education process and the influence of Teachers' personality factors (Atayero, Alao, Odukoya, 2014) [3] needed to establish a specific pedagogical model or curriculum for a typical school condition. Instituting a pedagogic framework to identify the specific needs of students, institutionalizing the needed curriculum diets (Aderonmu, 2012; Olukanni, Aderonmu, and Akinwunmi, 2014) [1,8] viable for competency and professional practice beyond school would rather give a breakthrough in the educational landscapes. The pedagogic inclusions for learners should be to integrate the contents of the curriculum into their minds, hands, hearts and daily lives.

The expression here does not connote an insurgence of an unpopular pedagogical canonization (Gallagher, 2001) [5], but it studied the existing pedagogic models hinged on the revolutionary approaches to the architectural design studio teaching and learning. This was premised on the pedagogical practices as engaged in the four (4) selected universities with schools of architecture in south-west Nigeria. The investigation was epitomized after the ten

pedagogic models of teaching architectural design (Salama, 1995; 1998; 199; 2005; 2006) [10, 11, 12, 13, and 14].

It problematized the criticism of the traditional approach to studio teaching, which showed some kind of inappropriateness to the contemporary needs of society. The essence is to create a higher level of awareness of these models, although, revolutionary pedagogy is a conscious and deliberate activity but still, some of these practices were being employed unconsciously in most schools. Therefore, the architects and engineers on the field, architect-teachers and students in the classrooms have been well immersed in these experiences and with sense of obligation to respond to design problems in the societies.

This work presented the few literature that exists and consequently discussed the results of the data derived from the investigations, observations and questionnaire survey on the respondents' reactions to revolutionary pedagogic models of design studio as practiced in four selected schools. The aim of this study is to examine the existing revolutionary pedagogic practices of students and teachers in four (4) selected Nigerian universities.

2. LITERATURE: REVOLUTIONARY PEDAGOGIC MODELS AND THE DESIGN PROCESS FOCUS

From previous studies (Archer, 1976; Ledewitz, 2009) [2, 7], this study identified, described, and analyzed ten categories of revolutionary models (experimental, analogical, participatory (community design), hidden curriculum, pattern language, concept-test model, double-layered, energy conscious, exploratory, and interactional models). The pedagogic styles across the ten revolutionary (10) strata addressed the following: (i) conception of architectural design studio (ii) the design process and teaching - learning styles of staff and students. The teaching and learning styles in relation to processes of revolutionary models are presented in Table 1. The essence of these is to interpolate the data derived from the questionnaire survey to report on how much characteristics of these models are practiced specifically or symbiotically in these schools.

Table 1 Teaching and Learning Styles in Relation to Processes of Revolutionary Models

Teaching and Learning Styles Focus(X)	**The Design Process Focus (Y)**	**Case Problem**	**Analogical**	**Participatory**	**Hidden curriculum**	**Pattern language**	**Concept test**	**Double Layer**	**Energy conscious**	**Exploratory**	**Interactional**
Design Knowledge is applied pragmatically	Programming phase as crucial	x	x	x	x	x	x	x	x	x	x
Motivation as major aspect in design studio	Acquiring knowledge while producing design alternatives	x		x	x	x	x	x		x	
Focus on group and individual works	Design as integral part of the social, political and cultural relations of the society	x	x	x	x	x			x	x	
Holistic approach to design	Reviewing the literature before design phase	x	x		x	x	x	x			x
Intelligence-sorting relevance from ambiguities	Group discussions for identifying design intentions	x	x				x	x	x	x	x
Desk crits and group interviews	Schematic proposal as a starting point for design			x			x	x		x	
Self and peer evaluation	Reaching consensus in decision making		x	x	x	x					
Individual work activities	Simulation games to respond and act						x	x	x		x

Teaching and Learning Styles Focus(X)	The Design Process Focus (Y)	Case Problem	Analogical	Participatory	Hidden curriculum	Pattern language	Concept test	Double Layer	Energy conscious	Exploratory	Interactional
Instruction and reaction model	Explore design problem rather than reach a solution	x					x	x			
Linear approach	Information gathering and definition of imperatives as a primary steps to design			x					x		
Under a controlled pedagogic orientation	Interaction with clients while defining design principles		x	x							
Self-Evaluation	Transforming behavioral information into architectural form		x	x							
Individual differences as a major concern	Designers' subjectivity to personalize the programme					x		x			
Developing students contingent abilities				x			x				
Utilization of creative problem solving Techniques				x							
Process of change in a dynamic environment				x							

Source: adopted from Ledewitz, 2009[6]

The table 1 was adopted to demonstrate the existing interactive synergy between the teaching styles of teachers and learning of students, the process of designing as related to the interlocking properties of the ten (10) revolutionary pedagogic models. Each of these models was illustrated in terms of the conception of architectural design, the design process, the teaching style and respondent. In the same vein, the models are also applicable to the engineering designs involving working drawings.

3. MATERIALS & EXPERIMENTAL PROCEDURES

3.1. Methodology

The research methodology employed a survey research design strategy and the primary data were sourced using questionnaires, observations, focus group, and oral interviews. The secondary data was sourced from the literature, archives and records. Also, the sampling frame consisted of the design studios, students and teachers in the selected design studios; the unit of analysis was obtained for the teachers and students, design studios of year three (3), four (4) and MSc levels. A multi-stage stratified purposive sampling technique was adopted. Questionnaire responses were analysed using SPSS while content analysis was used for the interviews and observations.

4. RESULTS AND FINDINGS

4.1. The Experimental (Case Based) Model

4.1.1. The Conception of Architectural Design Studio

The model conceives architectural design studio as a method that emphasizes how the *multiple contribution of professional architectural culture can proffer solutions to design problems;* this is coupled with the role of design 'thinking' and 'reflection'-extraverted and introverted

personality characteristics of teachers and students as developed by the Myers-Briggs type indicator.

The model is based upon true cases (or past and existing) of architectural design as a vehicle for demonstrating the relevance of social analysis. This indicated three (3) pathways, namely: (i) areas of the design methods used, (ii) design negotiations, and (iii) new roles for stakeholders; the practicing architects, teachers, students and community.

The aspect of the design methods detail out the research findings on the case studies and engender its applicability to new design situations. In the same vein, the design negotiations clarify the personal (personality and professional expertise) values of the designer, role adaptation and his constant (consultant) interactions with institutions or organizations (clients).

4.1.2. The Design Process

The aim combines theory with design and education with practice by helping the student to develop a knowledge base and by stimulating effective learning by preparing the student to design for real life situation. The design studio teaching process develops a design brief (programme) that allowed the users' intentions to be clearly represented. The design process involves students in three design phases or procedures: Students are instructed through three (3) basic stages: (i) Generation of possible design approaches (ii) Evaluation of Concepts using data from multiple criteria/generated alternatives and (iii) Presentation of the developed schemes. Table 2 shows the respondents' preference for case based experimental model across selected schools.

According to the practice in this model, the first stage is the generation of alternative design concepts by the use of precedents. The teachers organized students in work groups, and each group is asked to present its own manifesto (proposals) by illustrating with a design prototype. During this process, the teacher suggested possible design philosophies which in turn was beefed with supported readings by the students; in order to develop the ideas theoretically. The second stage is the evaluation of the concepts that have been generated in the first stage.

The evaluation is directed along the eight aspects: the (i) spatial organization (ii) semantic rating (iii) insulation (iv) Natural lighting (v) wind patterns (vi) Noise control (vii) construction resources (viii) economic analysis.

Table 2 Respondents' Preference for Case Based Experimental Model across Selected Schools

University	**Respondents' preference to organize studio in small groups and generate ideas based on past works**	
	Teachers' Significant Indices (per cent)	Students' Significant Indices (per cent)
CU	31.2	18.9
LAUTECH	12.5	15.4
OAU	10.4	17.3
UNILAG	14.6	14.8
Total	68.7	66.4
Average total degree of preference across schools	33Respondent (68.7)	327Respondents (66.4)

The figures outside the brackets are frequencies and the one inside the brackets are in Percentages

In table 2, the key question posed to the respondents was the status of their preferences for the "case problem (experimental) model. The key mode of operation in experimental (Case Based Problem) model is to '*organize Studio in Small Groups and Generate Ideas Based on Past Works'*. There are a lot of potentials based on the key question on group organization and

idea generation. Figure 1 shows the experimental (Case-Based) Model The case base model of Teaching and learning styles aims at combining theory with design and education with practice by helping students to develop a knowledge base, and by stimulating effective learning by preparing the student to design for real life situation.

From table 2, the results show the respondents preferences for the experimental (case problem) revolutionary pedagogic model; it revealed that, in respondent students, the highest percentage of preference (18.9%) was from Covenant University; next to it was O.A.U (17.3%), followed by L.A.U.T.E.C.H (15.4%) and least preference (14.8%) from UNILAG; For the respondents as Teachers, coincidentally, CU (31.2%) also had the highest degree of preference to organize studio in small groups and generate ideas based on past works; next to it was UNILAG (14.6%), followed by LAUTECH and least degree from O.A.U. Each group is involved in a project from stage to stage. Within the group, individual performances are quantified and evaluated in order to develop their capacities- since all individuals have to make a positive contribution to the development of the design.

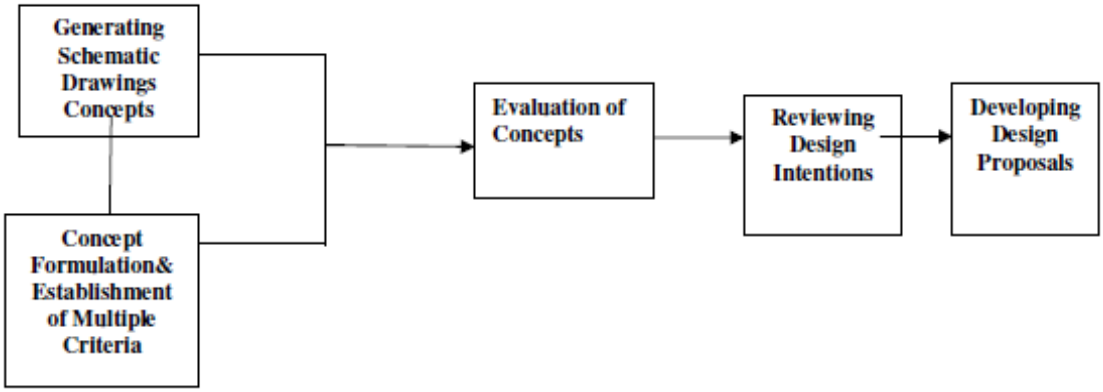

Figure 1 Showing Experimental (Case-Based) Model

Figure 2 presents the respondents' significant indices for case based experimental model. In reality, no teacher (or instructor) can expect to develop different models of teaching for each individual student. Rather, for the experimental model, architectural design studio teachers would strive to first make a choice of their preferences and maximize the group dynamics and synergy that exists within it.

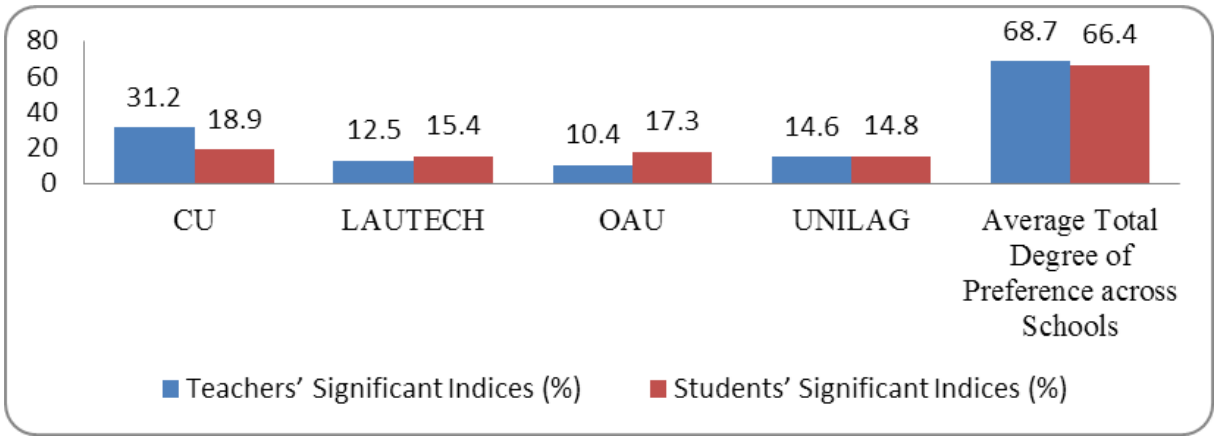

Figure 2 Showing the Respondents' Significant Indices for Case Based Experimental Model

The degree of preference by Teachers/ Students ratio in Covenant University (31.2: 18.9), LAUTECH (12.5:15.4), O.A.U (10.4:17.3) and UNILAG (14.6:14.8). In these results, the respondents as teachers in CU were more inclined to the employment of case problem

(experimental) model of teaching design studio than their students, while their students too had the highest index (18.9) when compared to the three (3) other selected schools. The findings revealed that the current practice in architectural design studio programme in CU is described as 'module method' of architectural design studio which accommodates the experimental pedagogic model. There were about four distinct modules (group); the institutional and complex buildings module, the housing module, the industrial module and urban design module. This was only applicable to year three (3) and four (4) for undergraduates programmes. The first year (200 level classes) studio were excluded from the modular grouping because they were still at formative stage; only involved in basic design studio. The essence is to acquire first a mastery of the fundamental principles before navigating into the modular groups.

4.1.3. Pedagogic Behaviours of Experimental Model across the Selected Schools

The learning and Teaching style is based on March's ideas in the year 1976. Learning is done by first engaging the students in *productive thinking* in design studio. The design teacher teaches by tasking the *mental aptitude simultaneously with attitude* of the students. This is achieved by handing out specific information about a project sufficient enough to permit investigation of the design problem and its solutions.

The positive contributions of this pedagogy are numerous, to mention a few: The experimental model (a) link the theory with practice by examining the impact of generic ideas and philosophies on architectural design (b) It considers multiple criteria involved in a design problem (iii) there is ample opportunity to initiate ideas based on precedence (real life situation or experiential based), test it to destruction and come back again with another better approach (iv) Ideas testing deepens the learners' knowledge to proffer acceptable alternative ideas to (workable) design solutions.

4.1.4. Optimization of Group Dynamics in Experimental (Case Based Problem) Model

The engagement of group dynamics was evident in the way studio members were broken into small groups. This generated ideas based on past works which yielded positive interdependence among members, individual and group accountability, face-to-face intellectually-mutual interaction, interpersonal skills, and group processing (Johnson, Johnson and Holubec, 1998) [6]. This structured the basic element into group learning situations, ensure cooperative efforts (between the studio teachers and students and between students and students) and enables the disciplined implementation of cooperative learning for long-term success; in the architectural design studio activities and programming.

(1) Positive Interdependence

The teacher gives a clear task and a group goal so that students believe they "sink or swim together." Positive interdependence is successfully structured to enable group members perceive that they are linked with each other in a way that one cannot succeed unless everyone succeeds. The failure of one ensures the failure of all and vice versa. Group members know that each member's efforts benefit not only him/herself, but all group members. For instance, when an architectural design studio brief is handed in for an industrial design project; the studio mentors may divide a particular studio module into discrete groups i.e one group may focus on the background information, another on materials, documentation by writing and sketching, analysis of physical properties e.t.c. Therefore, "When students clearly understand positive interdependence, they understand that each group member's efforts are required and indispensable for group success and that each group member has a unique contribution to make to the joint effort because of his or her resources, role play and task responsibilities" (Johnson, Johnson, & Holubec 1998[6].

(2) Individual and Group Accountability

The group must be accountable for achieving its goals, and each member must be accountable for contributing his or her share of the work. The group has to be clear about its goals and be able to measure (a) its progress in achieving them and (b) the individual efforts of each of its members. Individual accountability exists when the performance of each individual student is assessed and the results are given back to the group and the individual in order to ascertain who needs more assistance, support, and encouragement in completing the assignment (Johnson, Johnson, and Holubec, 1998) [6].

(3)Interactive Engagement (preferably Face-to-Face)

Architectural design studio students need to do real work together in which they promote each other's success by sharing resources and helping, supporting, encouraging, and praising each other's efforts to learn. Cooperative learning groups are both an academic support system and a personal support system. There are important cognitive activities and interpersonal dynamics that can only occur when students promote each other's learning. This includes orally explaining how to solve problems, discussing the nature of the concepts being learned, teaching one's knowledge to classmates, and connecting present with past learning. It is through promoting each other's learning face-to-face that members become personally committed to each other as well as to their mutual goals (Johnson, Johnson, & Holubec, 1998) [6].

(4)Teaching Students the Required Interpersonal and Small Group Skills

When working in a team, students need to possess interpersonal skills and group skills in addition to knowledge of the subject matter. "Group members must know how to provide effective leadership, decision-making, trust building, communication and conflict-management, and be motivated to use the prerequisite skills" (Johnson, Johnson, and Holubec, 1998) [6].

(5)Group processing

The final element necessary to make the work group efficient is structuring group processing. This element is present when students discuss and review their design intentions and synthesize it to develop proposals. This indicated how well they are achieving their goals and maintaining relationships (Johnson, Johnson, & Holubec, 1998) [6] within the group. Otherwise, the group presentation would clearly show the level of disharmony that exists. The design teacher can have the students assessed either by desk crits or jury examination. The suggestion here is that presentation could first be done in group and later individually. This is to ascertain how much justice they have done to the subject-matter and the use of their intelligence in design solutions.

4.2. The Analogical Model

The analogical model was developed by Gordon Simmons in 1978[11, 12]. The pedagogic format is an architectural design studio. It ratified that design is not a process of invention, but one of selection. Ideas for solutions cannot be built up from nothing. The analogical model portraits that the entity which appears to be an invention is actually a combination and development of other ideas.

4.2.1. The Conception of Architectural Design Studio

The design ideas are conceived as intuitive hypothesis which are rationalized afterward. It also conveys architecture as one with many factors involved in architectural design, economic, political, structural, functional, technological, etc. Table 3 shows the cross tabulation for analogical model across the selected universities. This model is based on analogy as a rich

source for creative ideas, since architects have imported inspirations from outside disciplines; such as nature, literature, and sciences.

Table 3 Cross Tabulation for Analogical Model across the Selected Schools

University	I frequently like referring to technologies& vocabularies of famous architects in my works			
	Students' Preference	Students' Significant Indices	Teachers' Preference	Teachers' Significant Indices
CU	97(73.4)	19.6	16(88.9)	33.3
LAUTECH	71(55.1)	14.3	7(77.8)	14.6
OAU	58(49.2)	11.7	6(66.6)	12.5
UNILAG	62(53.4)	12.5	6(50)	12.5
Average Total	288(58.2)	58.2	35(72.9)	72.9

The figures outside the brackets are frequencies and the one inside the brackets are in Percentages

4.2.2. The Design Process

The design process is based on the epistemological distinction of theoretical and empirical descriptions of how knowledge is obtained whether through deduction of particulars from general principles or through building up general solutions inductively through observation and accumulation of sense data. This model is divided into two: Building technology model and formal vocabulary model. Figure 3 shows the respondents' significant indices for analogical. The Formal vocabulary model examines formal vocabulary examples, using the vocabulary of famous architects. The students' task is to design in the vocabulary and philosophy of architects they choose. The process is also divided into different steps: (1) Literature review of details of at least four famous architects (2) Presentation (by slides) about theories and significant buildings of the famous architects (3) Individual working of design solutions based on the algorithm of 'famous' architect's model which includes the formula, personal ideals or philosophy, specificities of site, technology structure, and other design factors. (4) Evaluation of the students' performance.

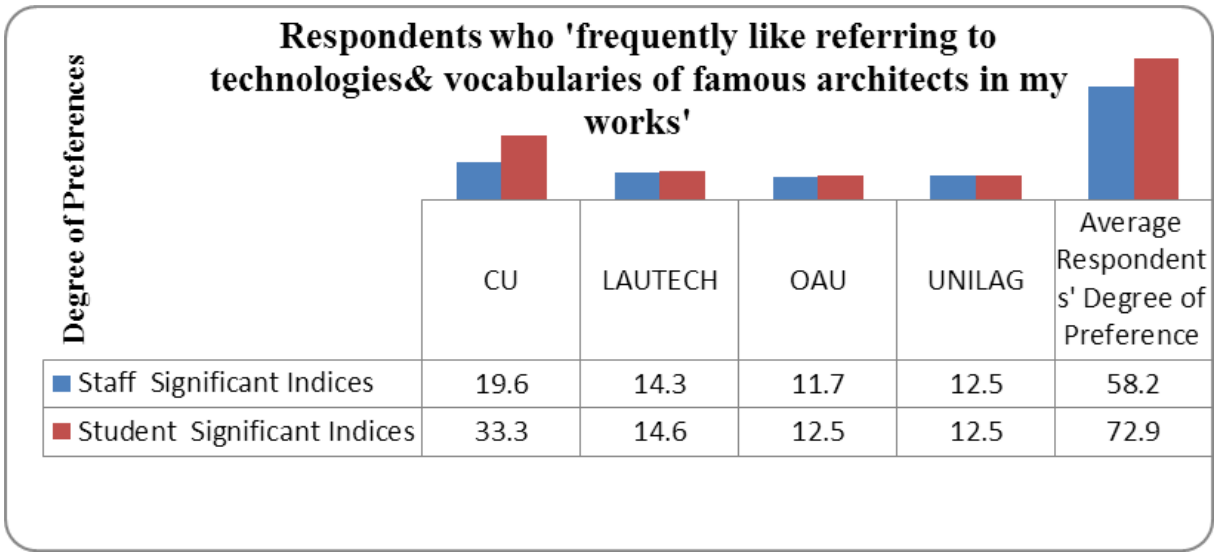

Figure 3 Showing the Respondents' Significant Indices for Analogical Model

4.2.3. The Learning and Teaching Styles in Analogical Model

Although, the analogical model aimed at developing the students' capabilities to use analytical data in design, to perceive limitations as well as positive data from the information at hand. In this medium, the students work in group and individually. In Figure 3, Across the Schools (for Studio Instructors and Students), during the instructional studio classes, the investigation showed most Instructors(CU;19.6 Index) predicated upon referring to technologies and vocabularies of famous Architects and Engineers, next (LAUTECH; Index 14.3), and the least in OAU (11.7 Index). Also, along the students *spectrum*, the results revealed that highest (33.3i) Index was recorded in CU. The implication is that the design studio Teachers' predication was reflective, effective and domineering over the students. When compared with the results in OAU; where the design studio Teachers' (Staff index-11.7i) and the Students index were the least across the *spectrum.* It is then logical to say that there is a strong connection between the Teachers preferences and the Students'.

Table 4 Cross Tabulation for Energy Consumer Model Preferences across the Selected Schools

University	I frequently prefer to explore relevant theories and translate it to practical use of design solutions					
	like me	a lot like me	Staffs' Significant Indices	like me	a lot like me	Students' Significant Indices
UNILAG	5(41.7)	6(50.0)	22.5	35(28.9)	50(41.3)	17.0
O.A.U	2(22.2)	2(22.2)	8.2	50(42.4)	20(16.9)	14.0
CU	8(44.4)	8(44.4)	32.6	37(28.0)	58(43.9)	18.9
LAUTECH	6(60.0)	1(10.0)	14.3	58 (44.6)	39(30.0)	19.3
Average Total Degree of Preference across Schools	**38(77.6)**		**77.6**	**347(69.2)**		**69.2**

Also, Table 4 presents the cross tabulation for energy consumer model preferences across the selected schools. The inferences of this are that for any revolutionary method or ideology to be effective: there is a greater need to establish a common pedagogic consensus between the Teachers' and the students' preferences. This would enable the studio teachers/instructors to align their pedagogical aim, objectives, policies and implementation strategies. It also points to the brief development, re-development and handling to the students. This can also be enhanced by breaking the entire studio into groups. In this dynamics, each group can be given assignment or seminar presentations pertaining to the Vocabularies of Famous Architects; by placing focus on the Architect's name, philosophy, concept, societal impact of his works and fitness to the contemporary styles.

Most (Staff index=32.6i) CU Staff and LAUTECH Students (Student index=19.3i) operationalize their pedagogic instructions and teachings by taking the students through the didactic jungles of relevant theoretical underpinnings which aid the students in evolving practical solutions from their design works. This may at times involved series of seminar presentations, case studies evaluation and consolidated by an algorithm of design framework. The respondents' significant indices for energy consumer model are presented in Figure 4.

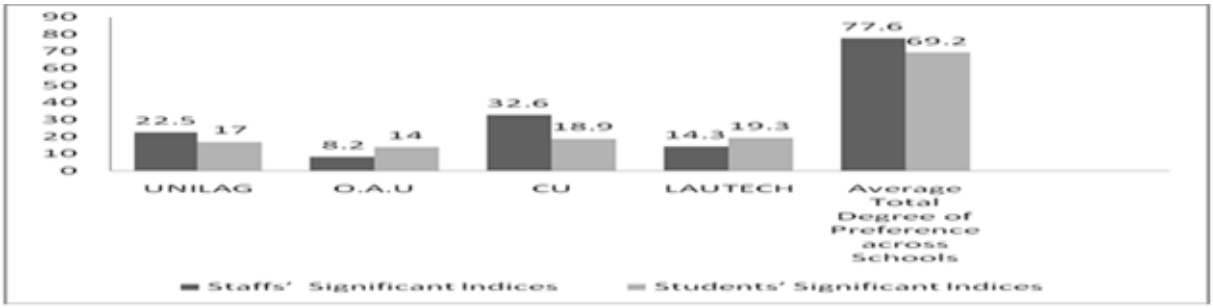

Figure 4 Showing the Respondents' Significant Indices for Energy Consumer Model

Likewise, exploratory model of revolutionary pedagogy engages the architectural design process and makes enquiry on case studies of the existing buildings very similar to the project at hand. This method makes use of the relevant existing buildings as a Template for the new design proposal. It gives quick directional guidelines and prevents architectural designers from deviation from the fundamental principle of architectural designing.

In accordance with Table5, in the four (4)selected schools, during architectural design studio classes, most (30.6i) CU Staff and LAUTECH Students(index=19.1i) had greater preferences for exploratory works on the relevant case studies; and incorporated ideological information as fitted to cultivate a new design scheme. On the part of the professional training, this method guarantees thorough investigations of relevant case studies and fittingly workable blue prints which can be adopted in any future cases for similar projects.

Table 5 Cross Tabulation for Exploratory Model across the Selected Schools

University	I prefer to explore relevant information to proffer solutions to design problems					
	like me	a lot like me	Staffs' Significant Indices	like me	a lot like me	Students' Significant Indices
UNILAG	4(33.3)	7(58.3)	22.5	34(28.6)	23(19.3)	11.6
O.A.U	4(44.4)	4(44.4)	16.3	44(38.9)	11(9.7)	11.2
CU	5(27.8)	10(55.6)	30.6	53(40.5)	21(16.0)	15.1
LAUTECH	7(70.0)	1(10.0)	16.3	67(52.3)	27(21.1)	19.1
Average Total Degree of Preference across Schools	42(85.7)		85.7	280(57)		57

On the totality, the Staff-Teachers' index and predilection was far greater than Students'. The implication on the pedagogic practice requires that to engage exploratory model (figure 5) in the use for operational curriculum, strategies needed to be put place via: design brief formulation, goals and objectives, instructional methods, mentoring styles, and pedagogic process, praxis and product evolutions. If at all the model method is going to be operationalized as exploratory, the investigation procedures should be emphatic on the minutest details in order not to lose the ingredients of the analytic process; since the act of generating design solutions to design problems is the ultimate goal of any design process.

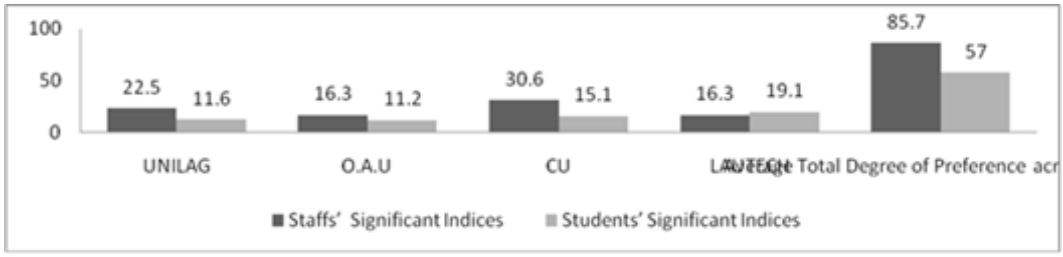

Figure 5 Showing the Respondents' Significant Indices for Exploratory Model

More so, when inquiry was made on the stakeholders disposition on the engagement of interactional revolutionary model. A question was asked *"I Prefer to Identify and Define Problems to Generate Design Solutions*": both the Staff-Teachers and Student-learners responded differently.

Reasonably, there is a concordance between interactional revolutionary model practice and John Dewey (YP, 2012) [4, 15] ideology on the 'internal conditions' of educational transactions. The pedagogic interaction between the Staff-Teachers and Students within school system; he inclined that 'The learner's (child's) own instincts and powers furnish the material and give the starting point for all education' (Dewey, 1897: 4) [4] -so is the design studio one-on-one tutelage and pupilage.

However, Dewey's ideology of revolutionary education was student (child) centered, because he required the educator to take due regard of the desires, interests and inclinations of the learner.

Table 6 Cross tabulation for Interactional Model across the Selected Schools

University	***I Prefer to Identify and Define Problems to Generate Design Solutions***					
	like me	**a lot like me**	**Staffs' Significant Indices**	**like me**	**a lot like me**	**Students' Significant Indices**
UNILAG	5(41.7)	5(41.7)	20.4	30(25.9)	63(54.3)	18.7
O.A.U	4(44.4)	4(44.4)	16.3	42(34.7)	41(33.9)	16.8
CU	5(27.8)	9(50.0)	28.6	31(24.2)	51(39.8)	16.6
LAUTECH	5(50.0)	2(20.0)	14.3	42(32.3)	40(30.8)	16.6
Average Total Degree of Preference across Schools	39(79.6)		79.6	340(68.7)		68.7

Many a times, when the instructions engaged are not interactive, the Teachers' pedagogic powers underplay the hidden potentials embedded in the learners. In Table 6, most (28.6i) CU Staff –Teachers' mentoring pattern reflected in the preliminary analysis. Next (20.4i) was UNILAG Teachers and Students with the highest index among others. In these two (2) scenarios (CU Teacher and UNILAG Teachers and Students), the students' design works during Jury presentation contained an avalanche of repertoire of information. This helped to acquire knowledge first in the areas of design studies; then the cognitive schemata were fortified with basic principles and analogical findings useful to such design type. Subsequently, the design students were guided by the studio Teachers through conjectural analysis. A design problem first identified and then properly defined would naturally elicit amicable solutions in the mercy of algorithmic design procedures.

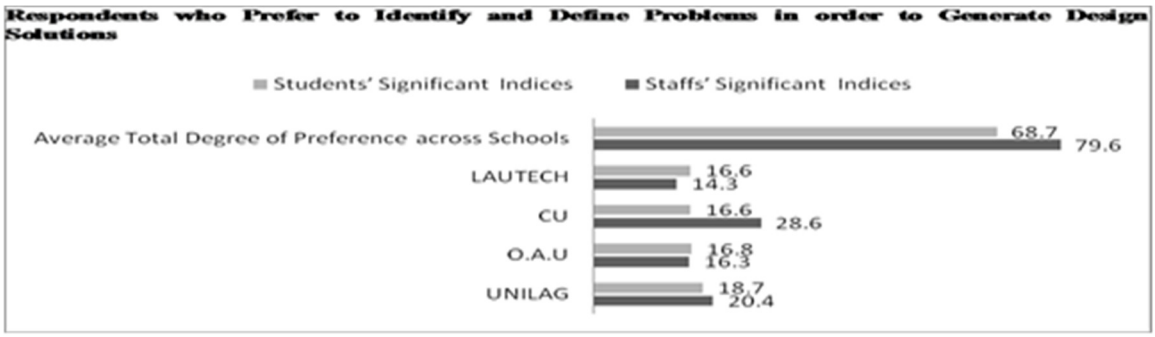

Figure 6 Showing Interactional Model across the Four (4) Selected Schools

Therefore, from figure 6, for both Staff-Teachers and Students, inferences from all the tables and charts depicted that the four (4) selected schools behaved differently on the pedagogic curves for different indices along the spectral layers. The aggregation of these models shows deeper understanding of pedagogical interconnectedness between these revolutionary models.

4.3 Aggregates Description of the Ten (10) Revolutionary Pedagogic Models as Practiced by Respondents in the Selected Schools

Therefore, it is necessary to interpolate the scored indices for each school as analyzed and interpreted.

Table 7 Aggregates of the Ten (10) Pedagogic Models as Practiced by Respondents in the Selected Schools

Model	Experimental		Analogical		Participatory		Hidden Curriculum		Pattern Language		Concept-Test		Double Layer		Energy Consumer		Exploratory		Interactional	
Significant Indices	TSI	SSI	TSI	SSI	TSI	SSI	TSI	SSI	TSI	SSI	TSI	SSI	TSI	SSI	TSI	SSI	TSI	SSI	TSI	SSI
CU	31.2	18.9	19.6	33.3	*22.9*	*8.9*	*18.8*	*17.8*	*14*	*17.9*	*16.3*	*13.3*	*20.4*	*18.1*	*22.5*	*17.0*	*22.5*	*11.6*	*20.4*	18.7
LAUTECH	*12.5*	*15.4*	*14.3*	*14.6*	*18.8*	*8.6*	*16.7*	*11.8*	*4.0*	*14.1*	*16.3*	*12.2*	*8.2*	*16.5*	*8.2*	*14.0*	*16.3*	*11.2*	*16.3*	*16.8*
OAU	*10.4*	*17.3*	*11.7*	*12.5*	37.5	*13.8*	27.1	*15.6*	24.0	*16.4*	30.6	19.9	32.7	*18.7*	32.6	*18.9*	30.6	*15.1*	28.6	*16.6*
UNILAG	*14.6*	*14.8*	*12.5*	*12.5*	*18.8*	17.2	*14.6*	19.0	*8.0*	18.3	*12.3*	*15.3*	*14.3*	19.2	*14.3*	19.3	*16.3*	19.1	*14.3*	*16.6*
Average Total Degrees of Preference	*68.7*	*66.4*	*58.2*	*72.9*	98	48.5	*77.1*	*64.2*	*50.1*	*66.7*	*75.5*	*60.7*	*75.6*	*72.5*	*77.6*	*69.2*	*85.7*	*57*	*79.6*	*68.7*

' TSI' means Teachers' Significant Indices and 'SSI' means Students' Significant Indices

This is to inform the policy formulators and other stakeholders in their dealings. It should also be noted that this arrangement is not an out–of-shelf formula but a pedagogic-indexing spectrum (Table 7) to guide the pedagogical operation in the dialectic and didactic transactions of architectural design studio course in schools.

TSI indicates the Design studio Teachers Significant Indices of the pedagogic models and SSI Signifies the Design studio Students Significant Indices (Figure 7 and Table 7) as preferred and inclined to pedagogic practice in the four (4) selected schools. The highlighted values indicated the index and in-depth of practice by the respondents Teachers and Students (TSI and SSI).

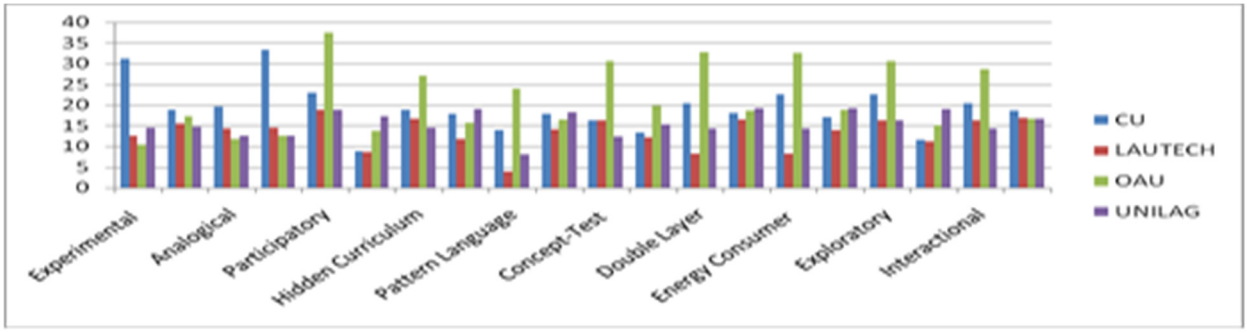

Figure 7 Showing the Aggregates Description of the Ten (10) Pedagogic Models as Practiced by Respondents in the Four(4)Selected Schools

5.0 SUMMARY OF THE REVOLUTIONARY PEDAGOGIC MODELS

On the account of these results, the experimental (case based) Pedagogic model(TSI=**31.2**,SSI=**18.9**) was the dominant pedagogic practice in Covenant University (CU), next to this was Analogical model (TSI=**19.6**,SSI=**33.3**) also was another dominant pedagogic practice in CU.

Table 8 Cross Tabulation for Participatory Model Preferences across the Selected Schools

University	*I generally prefer to consider the would-be users and clients in my design criteria*					
	like me	a lot like me	Staffs' Significant Indices	like me	a lot like me	Students' Significant Indices
UNILAG	8(66.7)	3(25.0)	22.9	30(25.0)	15(12.5)	8.9
O.A.U	3(33.3)	6(66.7)	18.8	34(28.6)	9(7.6)	8.6
CU	6(33.3)	12(66.7)	37.5	41(31.1)	28(21.2)	13.8
LAUTECH	4(44.4)	5(55.6)	18.8	55(42.3)	31(23.8)	17.2
Total	47(98)		98	160(31.9)	83(16.6)	48.5

In the same order, *the Participatory Pedagogic Practice,* for the Teachers(**TSI=37.5**,SSI=13.8) in O.A.U, participatory teaching style was significant in their design studio teaching, while the design studio students in UNILAG(TSI=18.8, **SSI=17.2**) prefers the participatory learning styles in their design studio projects.

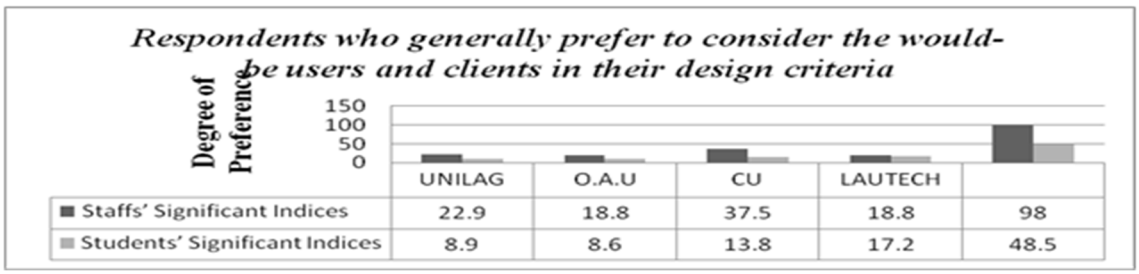

Figure 8 Showing the Respondents' Significant Indices for Participatory Model

The hidden Curriculum Pedagogic Practice was mostly engaged by O.A.U Teachers (**TSI=27.1**, SSI=15.6) and UNILAG Students (TSI=14.6, **SSI=19.0**).

Table 9 Cross Tabulation for Hidden Curriculum Model Preferences across the Selected Schools

University	*Respondents who always involve Clients in decision making process of design works.*					
	like me	**a lot like me**	**Staffs' Significant Indices**	**like me**	**a lot like me**	**Students' Significant Indices**
UNILAG	6(50.0)	3(25.0)	18.8	64(52.9)	25(20.7)	17.8
O.A.U	6(66.7)	2(22.2)	16.7	44(37.6)	15(12.8)	11.8
CU	8(44.4)	5(27.8)	27.1	29(22.0)	49(37.1)	15.6
LAUTECH	6(66.7)	1(11.1)	14.6	56(44.0)	39(10.9)	19.0
Total	26(54.2)	11(22.9)	77.1	193(38.6)	128(25.6)	64.2
Average Degree of Preference across Schools	37(77.1)			321(64.2)		

One great advantage obtainable in the hidden curriculum model is in the Pedagogic tenets of instructions as handled by the studio instructors. Apart from the official aspect of the curriculum which are openly published and documented, there is another essential aspect of the curriculum which is not clearly and definitively laid out; contains elements that are not included in the objectives and activities presented in the official curriculum, and are referred as "hidden curriculum." The hidden curriculum does not exist in the form of a written document. It consists of the order and regulations of the school, its physical and psychological environment, and the non-official or implied messages that the administrators or teachers convey to students (Yüksel, 2005) [16].

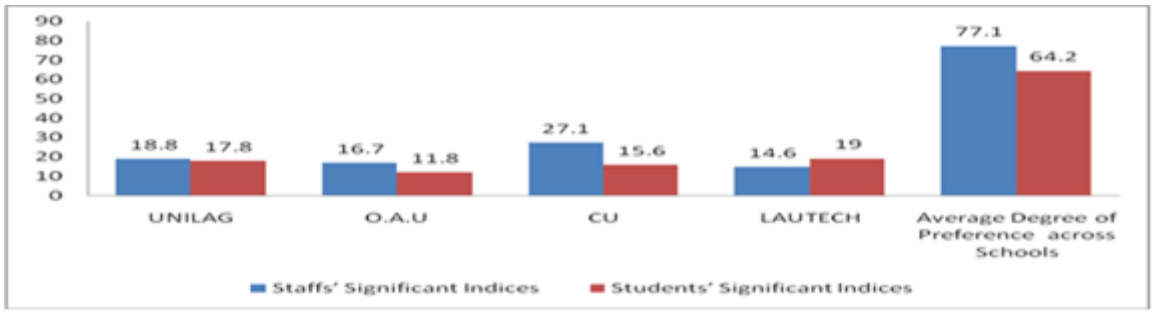

Figure 9 Showing the Respondents' Significant Indices for Hidden Curriculum Model

Also, in *Pattern Language Pedagogic Practice,* the Teachers in O.A.U (**TSI=24.0**, SSI=16.4) and UNILAG students (TSI=8.0**, SSI=18.3)** had more inclinations in pattern language pedagogic practice.

Table 10 Cross Tabulation for Pattern Language Model Preferences across the Selected Schools

University	*I frequently prefer to first work in groups on a particular design pattern to generating design solutions*					
	like me	**a lot like me**	**Staffs' Significant Indices**	**like me**	**a lot like me**	**Students' Significant Indices**
UNILAG	5(41.7)	2(16.7)	14	74(61.2)	16(13.2)	17.9
O.A.U	0(.0)	2(22.2)	4.0	53(44.5)	18(15.1)	14.1
CU	5(27.8)	7(38.9)	24.0	45(34.1)	37(28.0)	16.4
LAUTECH	4(44.4)	0(.0)	8.0	71(54.6)	21(16.2)	18.3
Total	14(29.2)	11(22.9)	25(50.1)	243(48.4)	92(18.3)	66.7
Average Total Degree of Preference across Schools	25(50.1)			335(66.7)		

Whenever pattern language is engaged in the architectural design process, the entire studio class is broken into modular groups. This allows each group to deal with a particular design style or patterns. By doing so, details of relevant design language and vocabularies are being mastered. This invariably guides the philosophy, conceptual developmental patterns within the systematic process. It also enables each group participants to be able to maneuver through from the initial to final stage of architectural design process.

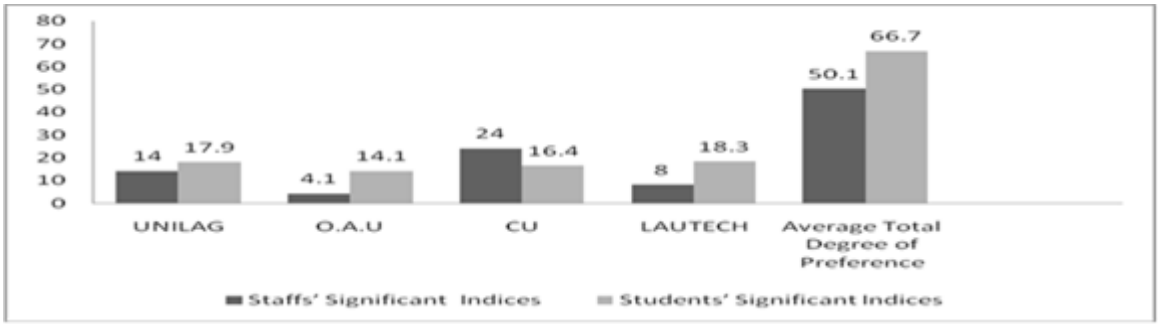

Figure10 Showing the Respondents' Significant Indices for Pattern Language Model

More so, the *concept-Test model* was characteristically dominant in O.A.U by both the design studio Teachers (**TSI=30.60, SSI= 19.9)** and their Students.

Table 11 Cross Tabulation for Concept-Test Model Preferences across the Selected Schools

University	*I prefer to first develop schematic proposals (in sketches), test it, before presenting the final proposals*					
	like me	**a lot like me**	**Staffs' Significant Indices**	**like me**	**a lot like me**	**Students' Significant Indices**
UNILAG	5(41.7)	3(25.0)	16.3	50(41.3)	17(14.0)	13.3
O.A.U	6(66.7)	2(22.2)	16.3	48(40.3)	13(10.9)	12.2
CU	5(27.8)	10(55.6)	30.6	51(38.6)	49(37.1)	19.9
LAUTECH	4(40.0)	2(20.0)	12.3	59(45.4)	18(13.8)	15.3
Total	20(40.8)	17(34.7)	75.5	208(41.4)	97(19.3)	60.7
Respondents' Average Total Degree of Preference	37(75.5)			305(60.7)		

The main aim of this model is to ascertain the feasibility, adaptability and workability of the design. Hence the objectives are to first develop schematic proposals in form of sketches, test it through its functional relationship-bubble diagrams or matrix before presenting the final proposals. The aspect of testing could mean that functional and spatial analysis is done to calculate for the space-dimensions and check its fitness for the given site(s).

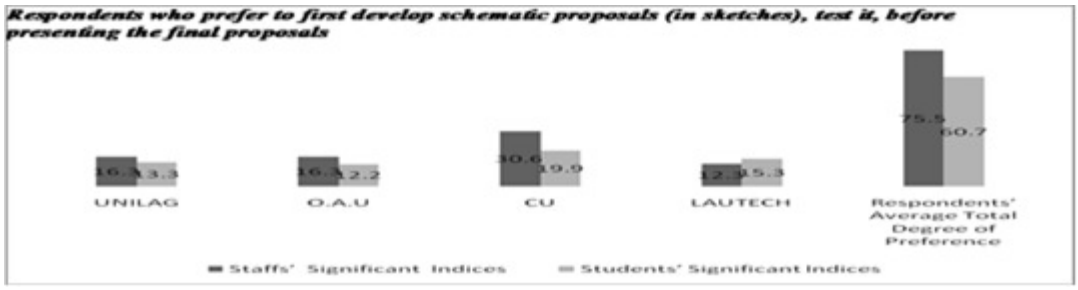

Figure 11 Showing the Respondents' Significant Indices for Concept-Test Model

The results also show that in *Double Layer Pedagogic Practice,* the O.A.U Teachers **(TSI=32.7**, SSI=18.7) and **UNILAG (**TSI=14.3, **SS1 19.2)** students had most pedagogic predilections than other respondents.

Table 12 Cross Tabulation for Double Layer Model Preferences across the Selected Schools

University	*I prefer to first explore all opportunities in creative forms before choosing the best alternatives for design solutions*					
	like me	**a lot like me**	**Staffs' Significant Indices**	**like me**	**a lot like me**	**Students' Significant Indices**
UNILAG	5(41.7)	5(41.7)	20.4	58(47.9)	33(27.3)	18.1
O.A.U	2(22.2)	2(22.2)	8.2	61(51.3)	22(18.5)	16.5
CU	8(44.4)	8(44.4)	32.7	39(29.5)	55(41.7)	18.7
LAUTECH	6(60.0)	1(10.0)	14.3	74(56.9)	22(16.9)	19.2
Average Total Degree of Reference across Schools	37(75.6)		75.6	364 (72.5)		72.5

The design studio Teachers in OA.U demonstrated more characteristics of double layer pedagogic model; and similar characteristics in UNILAG design students design studio assignments. Its benefits are that intelligent forms are easily derived from creative explorations; the best alternative could arise from one of the several alternatives or merger of one (1) or two (2) alternatives. In choosing the best alternative, sustainability factors such as creativity, functionality, fluidity, adaptability and dynamism of forms and spaces may come into play.

Figure 12 Showing the Respondents' Significant Indices for Double Layer Model

Also predominant in *Energy Consumer Pedagogic Practice were* O.A.U design Teachers **(TSI=32.6,** SSI**=** 18.9) and UNILAG (TSI=14.3, **SSI=19.3)** students. *The Exploratory Pedagogic Practice* was found also preponderating in O.A.U Teachers **(TSI=30.6,** SSI=15.1**)** and UNILAG students **(**TSI**=**16.3, **SSI=19.1**). And lastly, the *Interactional Pedagogic Practice* was also noticed as domineering in O.A.U Teachers (**TSI=28.6**, SSI=16.6) and CU (TSI=20.4, **SSI=18.7**) students.

The most significant (TSI Index=98) pedagogic practice by the design Teachers and the least understood by the design students (SSI index=48.5) was found to the participatory pedagogic revolutionary model. The implication is that since most teachers carried out their instructional techniques, mentoring, and teaching based on participatory, it has good prospects for schools of architecture selected for this work and for others yet to be explored.

Table 13 Synthesis of the Respondents Pedagogic Practice Preferences across the Four Selected Schools

Average Total Degrees of Preference	Experimental (TSI,SSI)		Analogical (TSI, SSI)		Participatory (TSI,SSI)		Hidden Curriculum (TSI, SSI)		Pattern Language (TSI, SSI)		Concept-Test (TSI, SSI)		Double Layer (TSI, SSI)		Energy Consumer (TSI, SSI)		Exploratory (TSI,SSI)		Interactional (TSI,SSI)	
	68.7	66.4	58.2	72.9	98	48.5	77.1	64.2	50.1	66.7	75.5	60.7	75.6	72.5	77.6	69.2	85.7	57	79.6	68.7

5.1. Optimization for the Best Pedagogic Practice in 'Participatory' Revolutionary Model

The following linear equations of the design studio Teachers in the four selected schools. In the trendline (1) equations, the degree of preference was plotted against revolutionary model inclination of respondents, the results in figure 13 shows there is a relationship that exists for degree of preferences(y), inclination indices(x) and

Teaching styles*, in:*

O.A.U $y=\mathbf{1.787x+16.74}$, $R^2=0.366$); next was

CU $y=-0.435x+23.25$, $R^2=.112$;

UNILAG: $y = 0.029x + 13.84$; $R^2 = 0.001$; and

LAUTECH, $y = -0.109x + 13.76$, $R^2 = 0.004$.

From Figure 12, 13 and 14, it is clear that O.A.U school had stronger characteristics (predilections) across the ten (10) pedagogic practices. See Tables 13, 14 and Figure 13, from the total average indices, with TSI=98 and SSI=48.5; among the four selected schools, O.A.U had the highest index in the practice of revolutionary pedagogy under the specificity of *participatory pedagogy.* Although, the least SSI (CU=48.5i) was also traced to the same type of revolutionary pedagogic model (participatory). It implies that on the average opinion, the students in the four schools need a didactic alignment of the Teachers' methods of instruction to effect a positive change in their outcomes.

But considering the participatory model approach, O.A.U Teachers most (**TSI=37.5**) Significant Index matches more with UNILAG students' (**SSI=17.2**) awareness or inclinations than the O.A.U (SSI=13.8) students. Although it is not a logical reasoning to say that the Teachers in O.A.U should go to UNILAG or the students should leave UNILAG to study in O.A.U, but a more logical point could imply that the two (2) schools can be undergo symbiotic engagement in either *student exchange programmes or the staff exchange programmes*. This could as well be optimized by other schools' stakeholders.

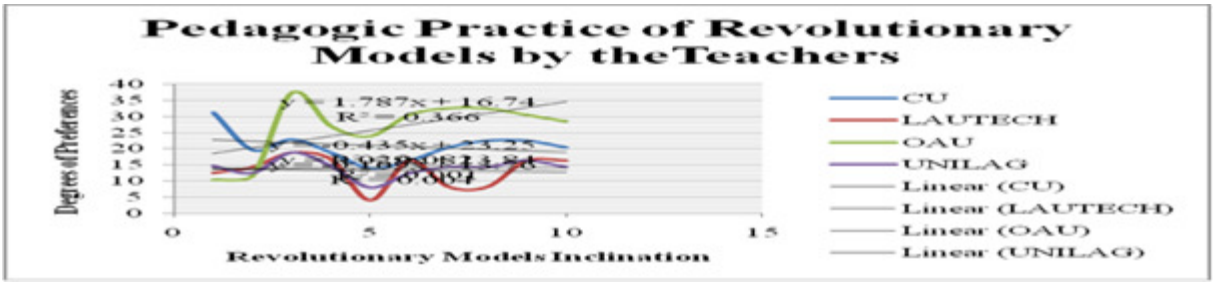

Figure 13 Showing the Linear Relationships of Design Studio Teachers' Pedagogic Preferences and Inclinations to Revolutionary Models

From Figure 13, It is conspicuous that the significant index of revolutionary pedagogic practice as investigated in the four (4) selected schools was more dominantly rooted in O.A.U, next to it CU, then UNILAG and least in LAUTECH. This was so because the OAU Teachers inclination to participatory model of instruction matches with the UNILAG students' awareness

of the participatory model. It is possible that in UNILAG, the atmospheric conditions of pedagogic practices favors the students' experiences i.e. the learning environment allows direct experience of community participation; the essence of the participatory design studio experience.

In this study, it has been discovered that it is one thing to prefer a pedagogic model and it is another thing to have a good atmospheric condition, awareness, skillfulness, and inclinations or exposures towards a favourable learning and working conditions. It is also noteworthy that 'no model is superior over the other and worthless to describe any set of teachers or students as superior or inferior. But, this study establishes that in most schools and especially the four (4) selected ones, revolutionary pedagogic practices were either done unconsciously or its benefits are yet to be obtained.

Table 14 The Pedagogic Practice of Participatory Revolutionary Model in the Selected Schools

The 'Dominant' Revolutionary Model	Participatory(TSI, SSI Indices)	
Respondents' Significant Indices(RSI)	TSI(Teachers' Significant Indices)	SSI(Students Significant Indices)
CU	22.9	8.9
LAUTECH	18.8	8.6
OAU	37.5	13.8
UNILAG	18.8	17.2
Average Total Degrees of Preference	98	48.5

Therefore, as in Gestalt psychotherapy, as the need arises for an organism (respondents), so shall the therapy be applied pragmatically to proffer solutions to design and environment challenges. It is possible, because this work is situated in the learning environment of the design studio; it is thus an indication that the dominant pedagogic practice in these selected schools be more of community involvement than individualistic approach that is mindless of the users' participation.

5.2. Teaching and Learning Styles Paradigm Shift

Having discovered that participatory model has been the dominant ideological practice in the four selected schools. Therefore, it would be logical to conclude that more knowledge, skills and acumen should be sought after by the stakeholders in the study area.

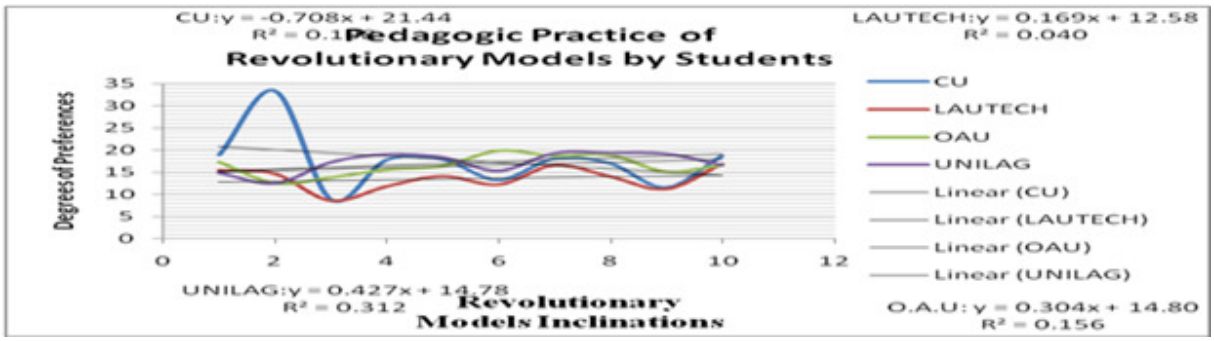

Figure 14 Showing the Relationship Chart between the Students' Revolutionary Inclinations and Degree of Preferences of the Pedagogic Practice

Among many other recommendations, the following suggestions can be deduced from the results yielded from the pedagogic information in Table 12, 13 and figure 12 , that the stakeholders should consider the inclusion of the following in their pedagogic operations and programmes: (1) staff and student exchange programme,(2) Conferences and Workshops, (3) Joint Design Competition organized by the stakeholders, (4)Monitoring and Evaluation Board

by senior teachers and expatriates (external and internal), (5) brainstorming activities and public awareness programmes between Town and Gowns.

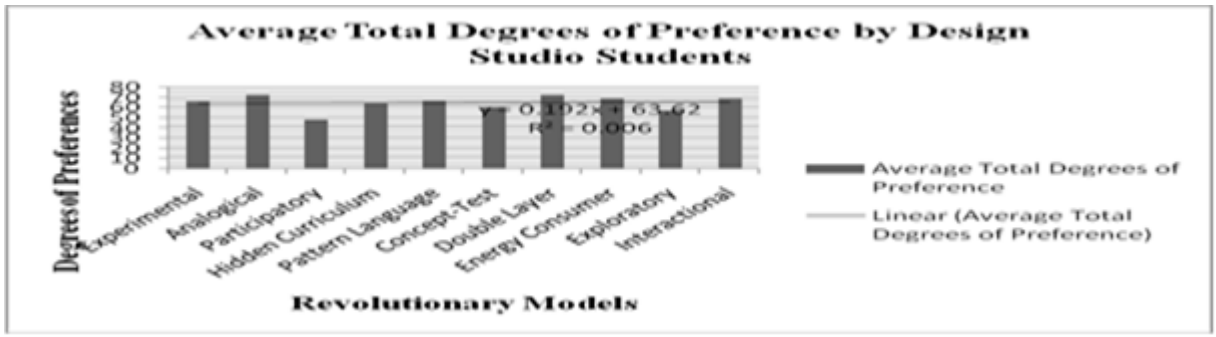

Figure 15 Showing the Average Degree of Students Preferences of the Revolutionary Pedagogic Practice across the Four(4) Selected Schools

5.3. Respondents' Pedagogic Orientation to Design Studio in Covenant University (Experimental Unit 1)

There is a psychological inference from figure 15, in Covenant University, the results shows that the students were more oriented and understood design through analogical ideologies and references. CU in their pedagogic practice, the facilitators, for the sake of students' performance in design studio, may need to develop analogical revolutionary model as their area of strength , and do more inquiry on pattern, double layer and interactional models for alternative, pragmatic and creativity reasons.

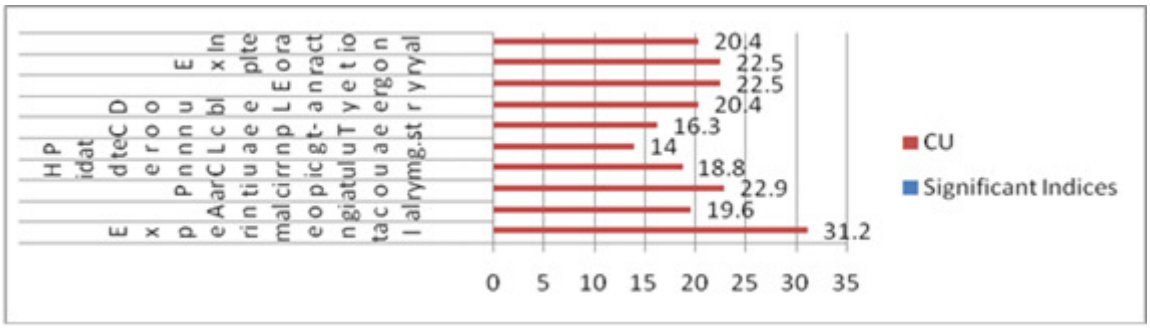

Figure 16 Showing the Teachers' Pedagogic Orientation (inclination) to Revolutionary Models of Design Studio

While on the contrary, because the Teachers instructed and taught better through experimental (case- based problem) model. This suggests that there was a pedagogic gap yet to be bridged in this nexus.

Therefore, it is possible that the studio teachers may need to understudy the modus operandi required for analogical way of teaching and learning suitable for students and at interval handle their design studio teaching with styles from case based (experimental) model. This could be done to throw surprises to students, stimulate their learning interest and preventing monotony of ideology. This in effect will provide varieties in form of spices and stimulants that can aid design studio learning.

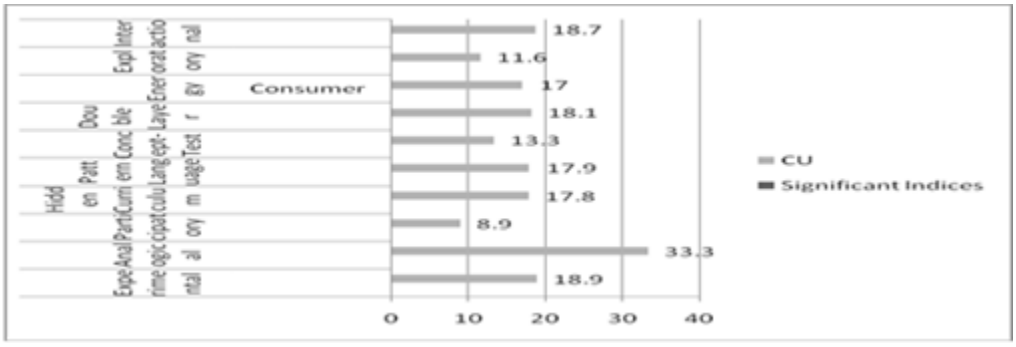

Figure 17 showing the Students' Pedagogic Orientation (inclination) to Revolutionary Models of Design Studio

5.4. Respondents' Pedagogic Orientation to Design Studio in LAUTECH (Experimental Unit 2)

The Teachers or Instructors in LAUTECH had pedagogic predilections mostly (Index=18.8) in participatory teaching style and least oriented in pattern language (Index=4.0) teaching style.The teachers' style is a pointer to the average preferred index (participatory) for the four selected schools. The important point here was the dialogic nexus between the teachers and students' orientation and their preferences.

Taking inference from figure 19, the respondents as students preferred mostly (Index=16.8) interactional model and least understood the participatory learning model.

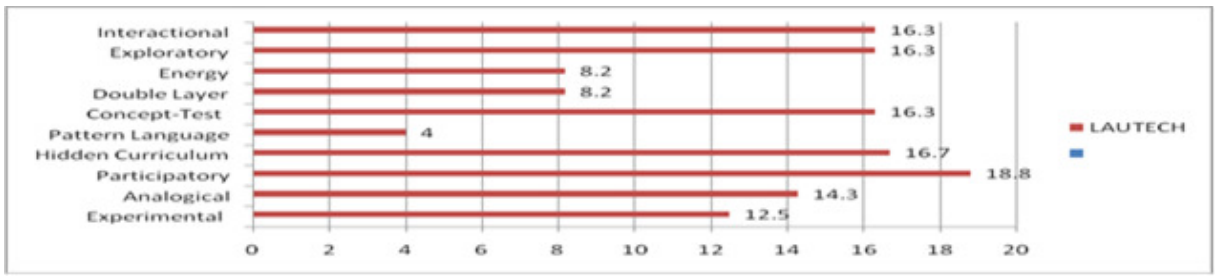

Figure 18 Showing the Teachers' Pedagogic Orientation (inclination) to Revolutionary Models of Design Studio

Next to this predilection was the preference for Double layer model (Index=16.5).

It is very interesting at this point that the most cherished instructional tool in the hands of the design studio teachers was the least (Index=8.6) understood and preferred by the students.

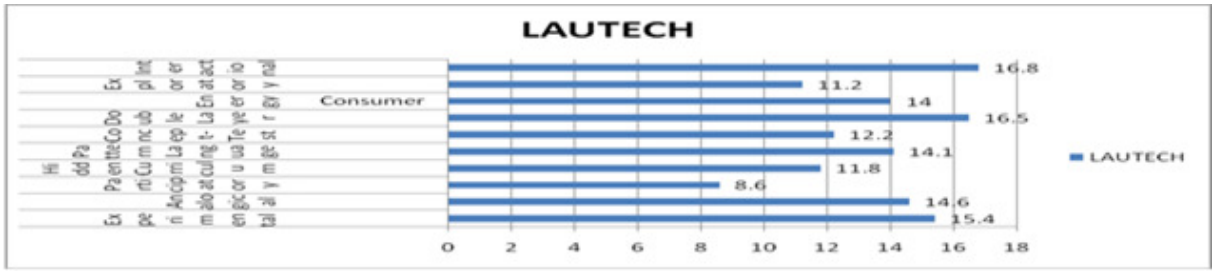

Figure 19 Showing the LAUTECH Students' Pedagogic Orientation (inclination) to Interactional Revolutionary Models of Design Studio

Therefore, this could suggest that the teachers may need to engage the tools in a new direction to captivate the interest of the students; in the same vein, the Teacher's hierarchy could be enhanced to a student-centred (dialogic) studio as against an authoritative approaches

enfaced with criticism. In this case, the instructors' roles move from authoritative to a facilitator.

The scatter diagram in figure 20 shows the linear relationship that exists between the degrees of preferences and inclinations to revolutionary pedagogic practices in O.A.U and UNILAG. O.A.U had a higher coefficient ($R^2 = 0.102$) than UNILAG ($R^2 = 0.074$). In this case, the revolutionary pedagogic system needs to be dynamic and pragmatic in order to respond to changes that may occur in the design studio transactions between the Teachers (instructors) and students.

5.5. Respondents' Pedagogic Orientation to Design Studio in O.A.U and UNILAG (Experimental Unit 3 and 4)

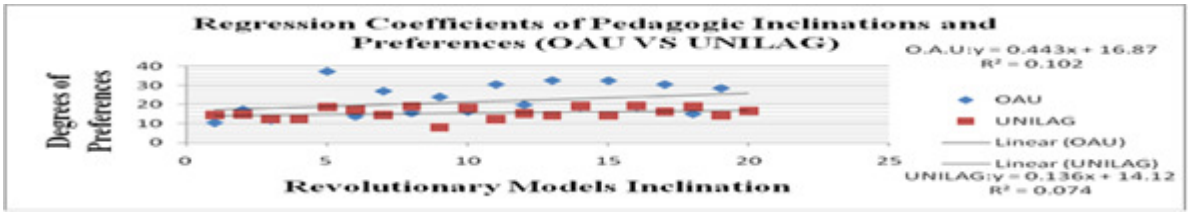

Figure 20 Showing the Linear Graph of Pedagogic Inclinations and Preferences between O.A.U and UNILAG Respondents

In figure 20, the linear equation in O.A.U ($y = 0.443x + 16.87$) expressed a higher dynamics for pragmatic change than that of UNILAG ($y = 0.136x + 14.12$). In a simple linear graphical relationship, $y= mx+c$, in essence, the rate of change (m) in O.A.U is more dynamic (O.A.U>UNILAG: 0.443>0.136) than in UNILAG.

Among the four (4) selected schools, Table 15 shows the dominant characteristics of revolutionary type of pedagogic practices by O.A.U architectural design studio Teachers. These occurred prevalently across the spectrum of the ten (10) revolutionary models under investigation.

Table 15 Dominant Characteristics of Pedagogic Practice by O.A.U Design Studio Teachers

Model	Experimental	Analogical	Participatory	Hidden Curriculum	Pattern Language	Concept-Test	Double Layer	Energy Consumer	Exploratory	Interactional
Significant Indices	TSI	TSI	TSI	TSI	TSI	TSI	TSI	TSI	TSI	TSI
OAU	10.4	11.7	37.5	27.1	24.0	30.6	32.7	32.6	30.6	28.6

Inference from Table 15 shows clearly that out of the ten(10) revolutionary pedagogic models, O.A.U Teachers' significant index (TSI index) had the strongest predilections in eight different ideological spectrums of pedagogic practices namely: participatory (TSI=37.5), Hidden Curriculum (TSI=27.1), Pattern Language (TSI=24.0), Concept-Test (TSI=30.6), Double Layer (TSI=32.7), Energy Consumer (TSI=32.6), and Exploratory (TSI=30.6), Interactional (28.6).

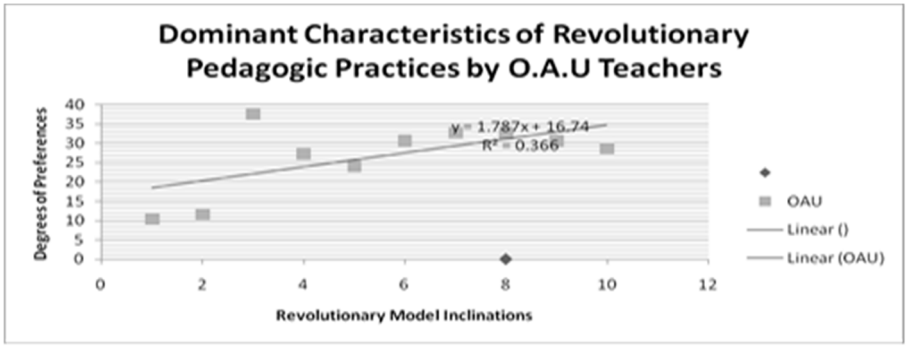

Figure 20 Showing the Dominant Characteristics of Revolutionary Pedagogic Practices By O.A.U Teachers: y=1.787x + 16.74; R^2=0.366.

The architectural design studio students prevailed and were only rooted in one (1) pedagogic model (concept-Test). It means they had passive reception or assimilation for other nine (9) revolutionary pedagogic practice and strongest (SSI=19.9) predilection for just one (1) revolutionary ideology.

Table 16 The Passive Characteristics of O.A.U Design Studio Students in Revolutionary Pedagogic Practices

Model	Experimental	Analogical	Participatory	Hidden Curriculum	Pattern Language	Concept-Test	Double Layer	Energy Consumer	Exploratory	Interactional
Significant Indices	SSI	SSI	SSI	SSI	SSI	SSI	SSI	SSI	SSI	SSI
OAU	17.3	12.5	13.8	15.6	16.4	19.9	18.7	18.9	15.1	16.6

This suggests that if the teachers were more dominantly active in eight (8) revolutionary and the students were only active in one outcome, then it could be suggested that the teachers may necessarily need to first harp on the discovered (concept-Test) instructional tool preferred and inclined to by the students, before exploring the other areas of potentialities-other revolutionary pedagogic models.

5.6. Summary of Findings on the Ten (10) Revolutionary Pedagogic Models and Practices by Respondents

1. Generally, in the average degrees of preference for the four selected schools, the predominant practice was discovered as highest (TSI=98) in Teachers' preference and inclination for participatory revolutionary pedagogic practice, while the students were least (SSI=48.5) interested or carried along by their teachers with the same model.
2. The participatory revolutionary model was averagely, the dominant ideological practice by teachers in the four selected schools. Logically more knowledge, skills and acumen should be sought after by the stakeholders in the study area.
3. The revolutionary pedagogic practices had dominant characteristics among O.A.U teachers' teaching styles, either consciously or unconsciously in awareness, preferences and inclinations. But most pronounced was participatory (TSI=37.5) teaching practices and least was interactional model (TSI=28.6).
4. Also noticeable was the O.A.U design students' decline, unawareness and less (SSI=13.8) interest in the dominant pedagogic practices of their teachers. While UNILAG students had more indices (SSI=17.2) that matches with O.A.U Teachers more than O.A.U students (SSI=13.8).

5. Another interesting discovery was the O.A.U design students' area of strength in Concept-Test (SSI=19.9) Model, which may probably, allows the facilitators to maximize the benefits of this model. But much more, the O.A.U Teachers can cultivate a new approach to stimulate their students towards the teachers' dominant pedagogic practices (Participatory with TSI=37.5) in order to align up with the aim and objectives of the revolutionary agenda.

5.7. Pedagogical-Didactics Frameworks for the Selected Schools

The ten models of studio teaching have been motivated by several theoretical underpinnings. Therefore, the pedagogic-didactic framework could be further developed by schools in the simile of this order. The revolutionary measure of pedagogic framework in the *concept test, the double layered, and interactional model* are driven by the goal of developing a method of instruction that facilitates the effective transfer of design knowledge and influenced by Piaget's theory of developmental learning. The results for this framework had significant indices for O.A.U (Concept test: TSI=30.6, SSI=19.9), double layered (TSI=32.7), interactional model (TSI=28.6); UNILAG (Double layer: SSI=19.2), CU Interactional (SSI=18.7).

Therefore, the listed schools above could be said to have their strength in these areas: This would inform the stakeholders in focusing on their *institutional philosophy* and *goals achievement*; formulation of specific education policies and implementation strategies for the pedagogic objectification. This is also connected to the architectural design studio process of acquiring knowledge or developing new skill into the *Tabula rasa* schema of the architectural design studio learners. In this case, the student draws upon existing cognitive schemata and engages extra rational-artistic procedures to create new ideas. This could be described as pragmatic *transfer of knowledge*.

In the real design studio situation, learning takes place by the students when the design teachers or instructors employs the pragmatic instructional strategies i.e new skill can be developed in design students when the previous knowledge on the initially created schemata is fertile, simple and systematic enough to allow the assimilation of newly given instruction. But, if the newly given instruction is not integrated with the previously acquired skill and knowledge, it will be difficult for the designers' minds to assimilate relevant design knowledge and skill.

As the learners moves up the ladder of cultivating a new garden of skills, the design knowledge gained from the synergy of introductory courses (Introduction to architecture, history of arts, applied arts, architectural graphics and visual communication) would serve as fertile ground for the beginners' architectural design studio class(year two). This is because they require a systematic and gestalt-based pedagogic treatment.

For the *case problem-experimental (*Symes and Marmot*) revolutionary model*, a good match of the most significant indices was observed between CU Staff (TSI=31.2) and Students (SSI=18.9). It implies that, the pedagogic practice in this mode is driven by the need to prepare design students to deal with the problems of the profession. Therefore in CU, it is noted that briefs of realistic life projects of true cases are handed over to students while they are later involved on the school sites - a rapidly growing community. The design teachers hand over to students the problem packets with relevant information about real life design problems. This reflects a situation where there were imminent design problems and the students generate amicable ideas and design solutions in response to these crises. In a particular relevant design module, which they run, the students meet with their tutors to discuss in dialogic terms the sequential steps taken to arriving at such decisions.

6. CONCLUSION

This study summarized the revolutionary pedagogies of architecture in strata, techniques and modus operandi. It objectified that curricula of the multidimensional type of education have several methods of imparting knowledge, skills and capacity development. The motive is not to substitute the current with strange pedagogical canon; but recommended pragmatic solutions, innovation, alignment, and comprehensive integration of relevant emerging knowledge trends into the core and periphery of useful existing traditional pedagogics-as being careful not to divorce from the existing validated old-masters' formulae. In essence, this can now be regarded as effective tools which must be practiced, explicitly discussed, reflected upon and reviewed on regular intervals. In the same way, the parametric indices of these practices as evolved in these investigations can be used as valid data and pedagogic applications, empirical reference and guides to contemporary teaching, learning and assessment prerequisites to the revolutionary styles of architectural education. More so, when professionally engaged, future architects, architect-faculties and professionals would be able to respond to students, clients and society at large in meeting their culture and environment-specific needs accordingly.

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