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The Influence of Architects' Sensing-Intuitive Personality Characteristics on Design Morphology in Selected Nigerian Universities

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Abstract: Little or no record of the personality characteristics of the architectural design studio teachers and students has been made in schools, in the world over. This study employed a survey research designs in the architectural design studios of four (4) selected universities in South-West Nigeria. Five hundred (500) architectural students population study, out of which a sample of 498 was drawn while seventy five (75) represent teachers population study, out of which a sample of 49 was drawn, (N=49). Structured questionnaire patterned after Myers-Briggs (MBTI Indicator, 1997-2009) was used. This paper examined the influence of intuitive-sensing personality characteristics of design studio teachers' and students in the determination of architectural forms and structures. The key findings yielded seven (7) dimensions pedagogic perceptive indices to Life in Architectural Design Studio (iN-intuitive, S-sensing); iN-S1, iN-S2, iN-S3, iN-S4, iN-S5, iN-S6, and iN-S7 across the spectrum. The most significant index in the pedagogic spectrum was iN-S5 across the selected schools (iN= 15.8s, 4.0t; S= 63.4s, 85.7t) with higher sensing but skewed intuition indices for students and teachers respectively. It recommended a controlled engagement of intuition and sensing personality characteristics in fostering design products. This was to enable proficiency and competency rating of teachers, students and professionals in practice.

Key Word: Architectural design, Form-Structure, Morphology, Nigeria, Sensing-Intuitive

1.0 Introduction

Morphology is the form and structure of organism studied as a science (OALD.8, 2010; 2015). In architecture, designs have always been treated as organic systems and on a part studied as a science and on the other hand, as arts. The evolution of architectural form and structure has been phenomenally influenced by the perceptual indices of intuitive and sensing personality characteristics domicile in the architects. But the underutilization and misappropriation of these tools by architects during designing has led to misrepresentation, ambiguity, myth of architectural objects, malformation and malfunction of architectural forms and images on the cityscapes. The futuristic ways of thinking is imaginative and gave rise to evolution of form and structure in architecture has been influenced phenomenally by the intuitive and sensing personalities purposely engaged by the designers, especially in its futuristic sense (Ostwald and Williams, 2015).

The synergy obtained from the interdependent-interactional studio activities has shown varied indices on the design outcomes and other pedagogic-curve parameters in design studio works in most schools all over the world. During design tutelage both the architecture students and teachers engages certain confluence factors that produced crucial relationship between perception, production, meaning and formulation of design ideas.

The issues of perception had paved way to ambiguity, myth, and inappropriate representation of architectural objects, especially during civic engagement service in the eyes of the beholders, clients-individual, group, community and national. From the past and up till now, there has been little or no record of evidence-based research (EBR) in architectural design studio, specifically on the personality characteristics of the architect-designers and its effects on their design outcomes. The strength of a good design lies in the personality characteristics of a designer to perceive the world with both emotion and reason; so as to achieve a good architectural design which is sensuous and intuitively composed; therefore, this study examined the roles of intuitive and sensing personality characteristics of architecture students and teachers as determinants of architectural forms and structures in four selected schools, south-west Nigeria.

1.0 Literature

1.1 *Perception of Architectural Design Studio: Sensing and Intuitive-Sensing Personality Characteristics*

The sensing side of our brain notices the sights, sounds, smells, and all the sensory details of the present. This found great usefulness in design endeavour as it helps architectural designers to categorize, organize, record and store the specifics from our experiences; especially in the design endeavour. It is reality based, dealing with “what is.” It also provides the

specific details of memory and recollection from past. It engages the conscious strata of the mind to analyse, measure, detail e.t.c, and such that deals with realities of *superstructure*.

The application of sensing personality characteristic often engages in analytic task like precision marking, logic, algorithm, specifications, production drawings and details. It could also find usefulness in rational analysis in between initiation and preparation stage of a design process. In essence, both the teachers and the student need to put to work these characteristics to concentrate their effort on the limited set of energies needed to achieve a specific task.

The intuitive (N) side of our brain seeks to understand, interpret, and *form* overall patterns of all the information that is collected and records these patterns and relationship. Such personality characteristic is very useful in architectural education training; especially in design studio. It involves a total engagement of subconscious strata in a designer's mind. It forecasts, conceives and perceives the future of any pattern, object and concepts. Intuitive is imaginative and conceptual-the key player in the generation of forms and images.

Adequate knowledge of personality characteristics of students often assists the architectural design studio teachers in handing out assignments, developing a brief for students, quick approach designs and proposal presentations. During design works, the intuitively inclined personalities; teachers would be versatile in facilitation and students would as well be skilful in architectural design projects pertaining to modelling and generating architectonics forms and structures-morphology.

The following key questions were used to stimulate responses from four selected schools of architecture to identify perception of respondents as either sensing or intuitive: *(i) I am mentally live in the now, attending to present opportunities rather than future (ii)I prefer common sense and creating practical solutions to imaginations (iii) My memory recall is rich in detail of facts and past events rather than ordinary pattern and connections (iv) I like improvising from past experience rather than theoretical applications (v) I like clear and concrete information; dislike guessing when facts are fuzzy" (vi) I like categorizing, organizing, recording and storing the specifics from the here and now (vii) I prefer reality based work, dealing with specific meaning of things than imaginations.*

1.2 Life in Design Studio and the Side Effects of Blind Spots

Blind spots are features of targets' (architect-designers) personalities that others are aware of, but which are oblivious to the targets themselves (Luft and Ingham, 1955; Gallrein, Carlson, Holstein, and Leising (2013). The intuitive aspect of a designer's mind releases ideas in expressionist form. In this schema, the architect-designer has privileged access to 'feelings, motives, and thoughts on his design works. In principle, it also

enable to observe personality behavioural characteristics in all situations (Hofstee, 1994; Vazire, 2010), especially, when design serves ideas imaginatively. The impressions others (i.e a client or user) have of an individual's personality (i.e architect) can provide valuable information above and beyond the individual's self-perception (Connelly and Ones, 2010; Vazire and Mehl, 2008), suggesting that others sometimes know things the self (intuitive) does not know or will not tell.

Gallrein, Carlson, Holstein, and Leising (2013) investigated the existence of so-called ''blind spots"; that is, features of targets' personalities that others are aware of, but which are oblivious to the targets-designer themselves (Luft and Ingham, 1955). In architectural design education and practice, the blind spots poses a hazardous threats to clients' ideas, because an ideally sustainable designs should garnish the useful designs in the schematic and truthful representation of (i) clients desires, (ii) architects' personality and user needs. In this case, empathy is the key focus; where a designer establishes satisfaction to all and sundry; be it architect or client serving as the prospective user of the designs and buildings.

Therefore, it is pertinent that architect need to constitute sustainable features for designs sellable to clients, enjoyable by the users; whether the user is client, architect or anyone else. At any level of architectural design projects, it is professional and traditional that people should of necessity be able to value practicality especially in design collaborative engagements.

It follows that, co-design ideally engages architect-designer expertise skills (Sanders and Stampers, 2014) with the participants' voices (Robertson and Simonson, 2012) to shift paradigm from end user-centered (Reich, Konda, Levy, Monarch and Subrahmanian 1996; Sanders 2002a, Sanders 2002b, 2005, 2005) services to co-design professional rendition and services; where both the architects, clients and or users makes inputs through participatory engagements in an inclusive manner. Because, inclusive design is 'a general approach to designing in which designers ensure that their products and services address the needs of the widest possible audience, irrespective of age or ability' (Design Council, 2008).

It is essential to consider inclusivity across all design disciplines for legal, social, and business reasons (Waller, Bradley, Hosking and Clarkson, 2015) and much research has focussed on how designers can achieve accessible designs (Clarkson and Coleman, 2015); that the end user or client and the designer can both drive the need for inclusivity (Warburton, Desbarats, and Hosking, 2015).

1.3 Geometry as Determinants of Architectural Forms, Structure and Designs'

The nexus between architecture and mathematics as generation of forms and structure through linear algebra is not just a tool for solving structural problems but mathematicians and architects regarded it as an interpretative key to architectural

forms. Those modern architectural structures are simile of mathematical taxonomy; though such formulae have by no means influenced the creativity of designers. In this way, the designer engages the sensing-and intuitive personality characteristics as denominator indices and principal determinants of form and structure in the architectural design activities. In the past, such solitary decisions made on the designs geometrical forms and structural evolution had been vehemently criticized as individualistic, fantasia, and non-democratic.

But in another investigation, the notion of persistence of forms" in Art and Architecture remarked that "not only geometrical forms do persist, crossing centuries and Ages, but also "natural forms". (Conversano, Francaviglia, Lorenzi, & Tedeschini, 2011) as most natural forms are geometrical in structure as well. Also, many instances on human endeavours have not only imitated the figures and the notions of "natural geometrical" forms, but have also set in action the strictly different imitation of the "process of growth" in itself, constructing not only forms that are natural but even trying to work as nature would work in situations in which nature has not yet attempted to act but humans have had the courage to do it. Capanna, Francaviglia, & Lorenzi (2012) observed that 'no tree in nature has reached elevations of several hundred meters, while human constructions have done it so to adopt to these magnified scales the same natural principles upon which a tall and slim object (like a tree) can grow vertically and remain stable against gravity and against the torsional stresses generated by natural forces like winds. These achievements have only been made possible by the essence of deliberate engagements of geometrical ingredients into architect-designers' works. It is pertinent that such collaborative works needs to include the stakeholders or the would-be users of the creative works- the building.

The interactive engagement between the architect-designers, clients or end-users may be a step higher in advancement of architectural design and evolution. On the Contrary, all the final syntheses are dependent upon the consensus of the group dynamics. In a situation where group members brainstorm to reach a consensus (feeling, reasoning and agreeing together), the continuous intercommunication between group members, a collective agreement on the final note is taken, but barriers are posed in terms of time consumption, argumentation, and conflict within the group dynamics.

2.0 Methods

2.1 Study Design

This study employed a survey research designs.

2.2 Population of Study, and Sample Size

Both students and the members of staff constituted the population of this study. Students were 500 while their teachers were 75 in number, resulting in 575. Out of these figures, a sample of 546 (Ns=498; Nt=49) was drawn. Ns represent a sample of 497 students while Nt represented a sample of 49 members of the teaching population.

2.3 The Design Studio in Universities under Study.

This section presents architectural design studio and the description of each of the four universities under study as indicated below:

2.3.1 Covenant University, School of Architecture, Ota

The department of architecture Covenant University was established in 2002. The design studios of the department are located on the top most floors of the College of Science and Technology.

It is operated under the auspices of College of Science and Technology with other courses like Estate Management and Building Technology. The department is in conformity with the two-tier system recommendation of accreditation- four (4) years B.Sc. and two years M.Sc. degrees.

2.3.2 Ladoke Akintola University of Technology (Lautech) School of Architecture, Ogbomoso.

The Department of Architecture is located within the School of Environmental Sciences; with other courses like Urban and Regional Planning, Fine and Applied Arts, Estate Management and Building. It occupied its own building (bungalow) with five studios for B.Tech and two studios for M.Tech degrees. The staff offices and other administrative offices are located within this building.

2.3.3 Obafemi Awolowo University, Ile-Ife, Osun State

Obafemi Awolowo University, Ile-Ife established Architectural department as a distinct academic unit in 1982 when the faculty of environmental design and management was created. It is situated on a hilly side and geometrically constructed with a taste of creativity. It consists of four (4) interlocking studios for B.Arch. and two (2) studios for M. Arch. Adjoined to these studios are staff offices which are circumferentially located to suit the purpose and mode of operations of studio pedagogy i.e to make communication and teaching easier with the students in their studios.

It possessed a serene interior showing studio setting and lighting systems of 200 Level Studio. It depicts required elegance, artistic and comfortable atmosheric appellation of an undiluted marriage between a piece of architecture and natural day lighting system in the built environment.

2.3.4 University of Lagos

Professor J.S Myers of the school of architecture, Minnesota started the school of architecture university of Lagos as one of the university projects. Academic programme commenced in 1971/1972 with the enrolment of eighteen (18) students for the B.Es programme. The first product of the masters' degree programme graduated in 1975/1976. The school later metamorphosed the programme leading to the award of B.Es, B. Arch professional degree in architecture. Today, B.Es and M.Es degrees are awarded in conformity with the NIA/ARCON accreditation standards. Other programmes are run in parallel like the postgraduate Diploma executive and M.Es programmes.

2.4 Research Techniques

Multistage research technique was applied to select respondents from the

population. The population was divided into four universities.

2.5. Research Instrument

Structured questionnaire was used to collect information from the sample (Ns=497; Nt=49), where Ns is number of respondent students and Nt is number of respondent Teachers. The questionnaire reflected the personality characteristics of architecture students as designed by the Myers-Briggs Type Indicator (AAP, MBTI 1997-2009). The Myers-Briggs personality assessment tool is based on four different measures, with each pole designated by descriptive word and a corresponding letter: (i) Orientation to life: Extravert (E) versus Introvert (ii) *Perception: Sensing (S) versus Intuitive (N)* (iii) Decision-making: Thinking (T) versus Feeling (F), (iv) Attitude to outside world: Perceptive (P) versus Judgmental (J).

2.6 Limitation of Study

The generic results of perceptual indices in this study did not directly and individually measure the comparism of the participants responses weighed over the design content, form and expressions.

3.0 Results, Analysis and Discussion

The results indicates that across the four selected schools, there were more 23(47.9%) respondents as Teachers with sensing Personality characteristics and far less 12(25%) respondents with Intuitive Personality Characteristics.

Table 1: Teachers who are '*Mentally Alive Now to Present than Future Opportunities'*

University	**Mentally Alive Now to present than Future opportunities**					**Total**
	not like me	very little like me	a little like me	like me	a lot like me	
CU	2(11.8)	2(11.8)	5(29.4)	5(29.4)	3(17.6)	17(100.0)
LAUTECH	3(30.0)	2(20.0)	2(20.0)	3(30.0)	0(.0)	10(100.0)
OAU	0(.0)	0(.0)	4(44.4)	5(55.6)	0(.0)	9(100.0)
UNILAG	0(.0)	3(25.0)	2(16.7)	**6(50.0)**	**1(8.3)**	12(100.0)
Total	5(10.4)	7(14.6)	13(27.1)	19(39.6)	4(8.3)	48(100.0)
	Intuitive Personality Characteristics= 12 Respondents (25)		*13(27.1) Undecided*	**Sensing Personality Characteristics =23 Respondents (47.9)**		

3.1 Pedagogical Predilections and Implications

The result shows a stronger pedagogic predilection for sensing personality trait or characteristics, which means that across the four (4) selected schools, majority of the respondents as Teachers perceived architectural design studio as analytic, logical, specific, and conscious activities. Whereas, few numbers of respondent Teachers handled design studio as imaginative, intuitive, sudden inspirations, and revelations.

According to Schwarting (1984), a teacher in Columbia University Graduate School of Architecture and Planning; on the attitudinal perception of architectural design studio teaching and learning, he asserted that *creativity* involves sensing (analysis) and

intuition, the conscious as well as the unconscious. In the same vein, he added that the formulators of architectural programme held the premise that insight and intuition, or "sudden, penetrating coercive… revelation" had to be dialectically contrasted with "discursive analytic knowledge sense, reason and analysis".

Also, in the same vein, Russell (2004) also stated that: as "the scientific attitude becomes imperative.....insight, untested and unsupported (task) is an insufficient guarantee of truth, in spite that much of the most important truth is first suggested by its means." Also, from table 2, more respondents 33(67.4%) as Teachers had stronger predilection for sensing personality characteristic. It therefore means that there were more teachers of pedagogic disposition in architectural design studio teaching with common sense to get practical solutions than imaginative and intuitive methods. Out of the four selected schools, the personality characteristic trait was strongest and dominant (39.4%) in CU (frequency of 13/33), while least in UNILAG with frequency of 6/33.

Table 2: Sensing and Intuitive Personality Characteristics: Respondents as Teachers who '*Like using Common Sense and Practical Solutions than Imaginations'*

University	Like Using Common Sense and Practical Solutions than Imaginations					Total
	not like me	very little like me	a little like me	like me	a lot like me	
CU	1(5.6)	1(5.6)	3(16.7)	9(50.0)	4(22.2)	18(100.0)
LAUTECH	0(.0)	1(10.0)	2(20.0)	4(40.0)	3(30.0)	10(100.0)
OAU	0(.0)	1(11.1)	1(11.1)	4(44.4)	3(33.3)	9(100.0)
UNILAG	1(8.3)	4(33.3)	1(8.3)	4(33.3)	2(16.7)	12(100.0)
Total	2(4.1)	7(14.3)	7(14.3)	21(42.9)	12(24.5)	49(100.0)
	Intuitive Personality Characteristics =9Respondents (18.4)		*Undecided*	Sensing Personality Characteristics =33Respondents (67.4)		

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

But on the contrary, the intuitive characteristic was highest in UNILAG with respondents' frequency of 5 out of total 9 respondents with intuitive personality characteristics. It therefore suggests that "more architectural design studio teachers in CU need to diet their perceptions on architectural design studio with some more imaginative instructional techniques to prevent the outcome of their teachings from getting rigid results in forms and functions of their design solutions. In UNILAG, there were more predilections for intuition. More so, architectural design studio teachers need to be cautious in their instructional package and pedagogic

perception; for danger of fantasies; taking cue from Russell (2004), who stated that the "assertions of dangers of insight, intuition and imagination as 'untested and unsupported ideas that may lead to insufficient guarantee of truth". The truth in this case is attributed to practical truth of architectural design solutions that can be offered through an intuitive approach. In addition, it is a pitfall for subjects of intuition to become too detached from sensing , rational and everyday reality, so it is advisable that the instructional methods in the architectural studio learning need to (i) avoid becoming too academic and theoretical (ii) the exam is concerned with practice and the examiners need to draw out contractual or professional implications from your work (iii) the theory is interesting but its practical application leads to problem-based learning which allows a designer to demonstrate the ability to act decisively and effectively (Russell, 2004).

3.2 Sensing and Intuitive Personality Characteristics: With Respondents as Teachers

The sensing-intuitive personality characteristics of the selected schools asked for a key component question that can help expressing the personality characteristics of teachers across the selected schools**;** therefore, an assessment of the likert scale revealed in the results in Table 3.

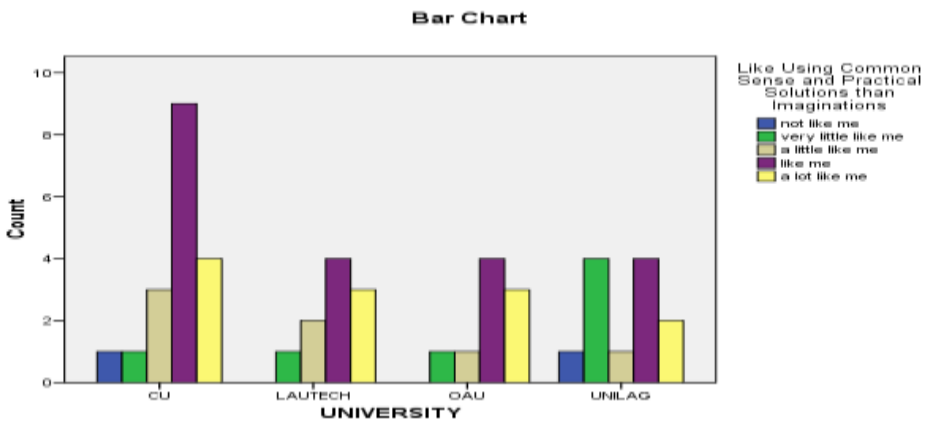

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Figure 1 Respondents who 'like Using Common Sense and Practical Solutions than Imaginations'

Table 3: Sensing and Intuitive Personality Characteristics: Respondents as Teachers who's *'Memory Recall is Rich detail of facts of past events than Ordinary Patterns Connections'*

University	My Memory Recall is Rich detail of facts of past events than Ordinary Patterns & Connections					Total
	not like me	very little like me	a little like me	like me	a lot like me	
CU	0(.0)	2(11.1)	3(16.7)	7(38.9)	6(33.3)	18(100.0)
LAUTECH	0(.0)	2(20.0)	2(20.0)	4(40.0)	2(20.0)	10(100.0)
OAU	0(.0)	1(11.1)	1(11.1)	4(44.4)	3(33.3)	9(100.0)
UNILAG	2(16.7)	1(8.3%)	3(25.0)	4(33.3)	2(16.7)	12(100.0)
Total	2(4.1)	6(12.2)	9(18.4)	19(38.8)	13(26.5)	49(100.0)
	Intuitive Characteristics= 8 Respondents (16.3)		Undecided	Sensing Characteristics= 32Respondents (65.3)		

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

It indicates that a majority 32(65.3%) had sensing personality characteristics; which means that most respondents as staff handled their architectural design studio teaching and instruction dominantly by applying the techniques and facts of past events possibly on how they experienced it in schools or practice. The respondents claimed that their memory is rich in detail of past events than ordinary patterns connections of current events.

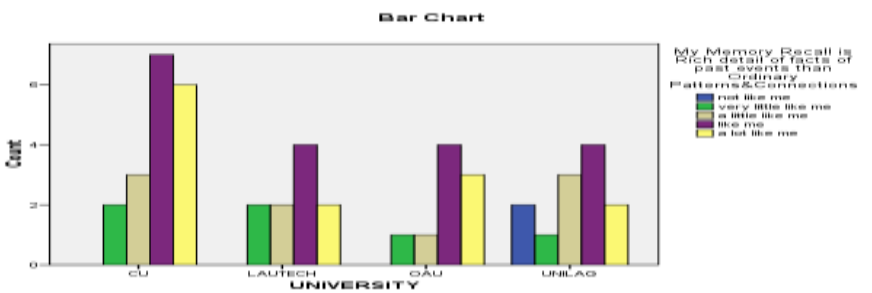

Figure 2: My Memory Recall is Rich detail of facts of past events than Ordinary Patterns Connections

While very small fraction 8(16.3%) maximized opportunities of contemporary contexts, patterns, and connections. However, this result may not favour the revolutionary paradigm shift required to meet up with the best sustainable practice in the field of architecture. Therefore, there is a great need to phaeton the existing pedagogy of handling architectural design studies with current sustainable trends and standards

3.3 Respondents as Teachers who 'Like Improvising from Past

Experience than Theoretical Applications'

In the same manner as in Table 4, a majority36 (73.5%) of the respondents still had sensing characteristic than only few 3(6.1%) with intuitive traits. The indication is simply a pattern of teaching and instruction which could be logical, mathematical, and analytic.

Table 4: Sensing and Intuitive Personality Characteristics: Respondents as Teachers who '*Like Improvising from Past Experience than Theoretical Applications'*

University	Like Improvising from Past Experience than Theoretical Applications					Total
	not like me	very little like me	a little like me	like me	a lot like me	
CU	0(.0)	0(.0)	2(11.1)	13(72.2)	3(16.7)	18(100.0)
LAUTECH	1(10.0)	0(.0)	4(40.0)	3(30.0)	2(20.0)	10(100.0)
OAU	0(.0)	1(11.1)	0(0)	6(66.7)	2(22.2)	9(100.0)
UNILAG	1(8.3)	0(.0)	4(33.3)	5(41.7)	2(16.7)	12(100.0)
Total	2(4.1)	1(2.0)	10(20.4)	27(55.1)	9(18.4)	49(100.0)
Intuitive Characteristics= 3Respondents (6.1)			Undecided	*Sensing Characteristics= 36Respondents (73.5)*		

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

It is not totally disadvantageous but such personality characteristics could be useful at preparation stage of design process. But at proposal stage, such traits need to be controlled because it impedes creativity, innovation, intuition, and flexibility.

3.4 Pedagogic Predilections and Paradigm Shift

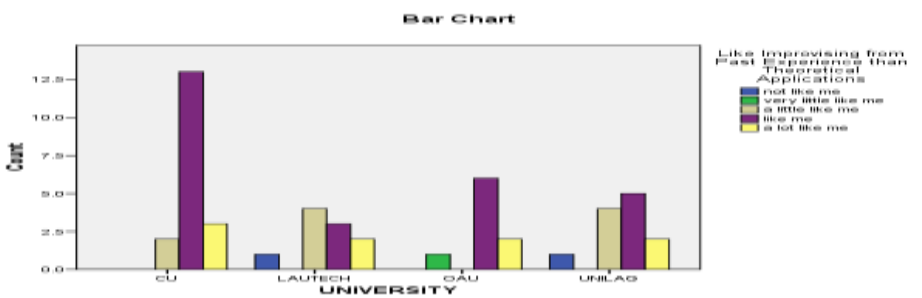

Figure 3: Showing Respondents who like Improvising from Past Experience than Theoretical Applications

In a situation where there is a strong likeness by the teacher to hand out assignments, teach and instruct based on improvisation from past experience, there is a danger of repeating the same mistakes of the past and also limitation could set be set against innovations. In table 4, O.A.U had a stronger predilections with 6(66.7%) and 2(22.2%) of like me and

a lot like me respectively. It is suggested by this work that though it is good to improvise from the past experience. The majority (85.7%) of Teachers (as respondents) had sensing personality characteristics exhibited towards design studio teaching, while only few (4%) had introverted characteristics in discharging their design studio teachings.

Table 5 Sensing and Intuitive Personality Characteristics: Respondents as Teachers Who '*Like Clear &Concrete Information than Guessing & Fuzzying'*

University	Like Clear &Concrete Information than Guessing&Fuzzying					Total
	not like me	very little like me	a little like me	like me	a lot like me	
CU	0(.0)	0(.0)	0(.0)	13(72.2)	5(27.8)	18(100.0)
LAUTECH	0(.0)	0(.0)	0(.0)	9(90.0)	1(10.0)	10(100.0)
OAU	0(.0)	0(.0)	2(22.2)	4(44.4)	3(33.3)	9(100.0)
UNILAG	1(8.3)	1(8.3)	3(25.0)	6(50.0)	1(8.3)	12(100.0)
Total	1(2.0)	1(2.0)	5(10.2)	32(65.3)	10(20.4)	49(100.0)
	Intuitive Characteristics 2Respondents (4)		Undecide d 5(10.2)	*Sensing Characteristics 42 Respondents (85.7)*		

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

It suggests that most design studio Teachers go out for clear and concrete information at initiation and preparation stage of design activities and they involved their students in the like manner.

Table 6 Sensing and Intuitive Personality Characteristics: Respondents as Teachers who *'Like Categorizing, Organizing, Recording &Storing the Specifics'*

University	Like Categorizing, Organizing, Recording & Storing the Specifics					Total
	not like me	very little like me	a little like me	like me	a lot like me	
CU	1(5.5)	0(.0)	2(11.1)	10(55.6)	5(27.8)	18(100.0)
LAUTECH	0(.0)	0(.0)	4(40.0)	4(40.0)	2(20.0)	10(100.0)
OAU	0(.0)	0(.0)	2(22.2)	4(44.4)	3(33.3)	9(100.0)
UNILAG	1(8.3)	0(.0)	4(33.3)	6(50.0)	1(8.3)	12(100.0)
Total	2(4.1)	0(.0)	12(24.5)	24(49.0)	11(22.4)	49(100.0)
Intuitive Personality Characteristics 2Respondents (4.1)			Undecided 12(24.5)	*Sensing Personality Characteristics 35 Respondents (71.4)*		

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

The application having an apt predilection for categorizing, organizing, recording and storing the specifics assist in project execution and planning.

From table 6, most 35(71.4%) teachers had sensing personality characteristics across the four selected schools with the highest from CU 5(27.8) and the least (1(8.3%) from UNILAG. But this could be a demerit when architectural design expectations are desired intuitively.

Table 7: Sensing and Intuitive Personality Characteristics: Respondents as Teachers who *'Prefer Specific Reality Based Work than Imaginations'*

University	Prefer Specific Reality Based Work than Imaginations					Total
	not like me	very little like me	a little like me	like me	a lot like me	
CU	1(5.6)	1(5.6)	5(27.8)	7(38.9)	4(22.2)	18(100.0)
LAUTECH	0(.0)	0(.0)	1(10.0)	6(60.0)	3(30.0)	10(100.0)
OAU	0(.0)	0(.0)	2(22.2)	3(33.3)	4(44.4)	9(100.0)
UNILAG	1(8.3)	1(8.3)	2(16.7)	8(66.7)	0(.0)	12(100.0)
Total	2(4.1)	2(4.1)	10(20.4)	24(49.0)	11(22.4)	49(100.0)
Intuitive Personality Characteristics 4Respondents (8.2)			Undecided 10(20.4)	*Sensing Personality Characteristics 35 Respondents (71.4)*		

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

4.0 Perception of Architectural Design Studio: Sensing and Intuitive Personality Characteristics of Students as Respondents

The perception of architectural design studio varies from one person to another. Some perceived design issues as sensing, rational, logical and analytic, while others perceived it as intuitive, imaginative, mimetic and conforming. The mind of a designer is divided into two; conscious and subconscious strata. Sensing has to do with rational stratum of the designer's mind. It deals with issues that are mental, mathematical, commonsensical, memory and other concrete experiences. While the other stratum engages intuition, imagination, sudden illumination of ideas and at times fantasy of unreal world. But there is a great need for learners to strike a balance between the operations of these strata in design endeavour. Because each has its own benefits when correctly engaged and disadvantages and fatal consequence when badly engaged.

Until quite recently (Uji, 2002), designers relied almost exclusively on intuitive methods, and, thus, design ability was widely held to be innate, and largely intuitive, and therefore, unteachable. This was disguised under creativity; that students acquire creativity in design by picking it up on their own innateness as they came along. It was believed that subjects like technical drawing and graphics were far easier to teach than the more ambiguous qualities of design buried under the inexplicable term-creativity in architectural design studio. Therefore, for this aspect of study, the architectural design studio issues shall consider the students perception in the order of the personality characteristic engaged in their studio learning.

4.1 Sensing and Intuitive Personality Characteristics: Respondents as Students who *'Mentally alive now to present than Future opportunities'*

The result indicates that across the four selected schools, there were more 264(54.0%) respondents as students with sensing Personality characteristics and less 109 (22.3%) respondents with Intuitive Personality Characteristics.

Table 8: Respondents as Students who are 'Mentally Alive Now to Present than Future opportunities'

University	Mentally Alive Now to present than Future opportunities					Total
	not like me	very little like me	a little like me	like me	a lot like me	
CU	2(1.8)	12(10.8)	20(18.0)	52(46.8)	25(22.5)	111(100.0)
LAUTECH	10(8.1)	19(15.4)	25(20.3)	40(32.5)	29(23.6)	123(100.0)
OAU	14(11.1)	10(7.9)	38(30.2)	46(36.5)	18(14.3)	126(100.0)
UNILAG	18(14.0)	24(18.6)	33(25.6)	44(34.1)	10(7.8)	129(100.0)
Total	44(9.0)	65(13.3)	116(23.7)	182(37.2)	82(16.8)	489(100.0)
Intuitive Personality Characteristics 109Respondents (22.3)			Undecided 116(23.7)	*Sensing Personality Characteristics Respondents 264(54.0)*		

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

4.2 Pedagogical Predilections and Implications

The pedagogic predilection for sensing personality characteristics of respondents as students was stronger than with intuitive personality characteristics. It signifies that across the four (4) selected schools, majority of the respondents as staff perceived architectural design studio as analytic, logical, specific, and conscious activities. Whereas, less respondents as students perceived design studio as imaginative, intuitive, sudden inspirations, and revelations. On the general analysis, more respondents are *'mentally Alive Now to present than Future opportunities'*; students 264(54%) and staff 23(47.9%) had dominant sensing characteristics with stronger predilections from CU students; on the likert scale, 77(69.3%). UNILAG staff 7(58.3%), respectively.

Table 9: Relationship between the Respondents Perception of Being 'M*entally Alive Now to Present than Future opportunities'*

Respondents	*Intuitive Characteristics*	Undecided	*Sensing Characteristics*	*Respondents Ratio of Perception*
Students	*109(22.3)*	Undecided 116(23.7)	*264(54.0)*	Intuitive-Sensing Relationship 1:2.4(1:2 approximately)
Teachers	12 (25)	*13(27.1) Undecided*	23 (47.9)	Intuitive-Sensing Relationship 1:1.9(1:2) approximately

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

It indicates that, where respondents as students had dominant sensing personality characteristics of *mentally alive now to present than future opportunities.* The negative effect lies in their approaches to architectural design studio project creativity. These respondents are likely to be more conscious, analytic, logical, and mimetic. The outcome of such endeavour could be based too much on reason while the unconscious strata of their minds would be underutilized. In other words both the sensing (analytic) personality traits and intuition needs to be simultaneously engaged for a successful design endeavour.

4.3: Respondents who 'like using common sense and creating practical solutions rather than imagining future possibilities'

In the recent past, architectural designers have relied almost exclusively on intuitive methods, then, the design ability was widely held to be solely innate, largely intuitive, and therefore unteachable (Uji,2002). But according to the current investigation in these studies, the result indicates that, more respondents 241(48.7%) as students perceived based on their common senses while only about half size 130 (26%) respondents perceived the architectural design studio intuitively. In order words, there were more respondents across the four (4) selected schools who involved common sense in creating practical solutions to architectural design studio problems a few (26%) respondents across the selected schools preferred to design by intuition and imaginations.

This few respondents across the four schools would likely approach their design works by looking for future possibilities, links and bridges between what is 'there' and what may be generated from it. Reasonably, one would expect the creative architects to be on the alert to future possibilities, especially in a dynamic society where sustainability is expressed as currency of development. Almost in line with a previous study by Myers-Briggs scheme (Broadbent, 1988) on architects and personality studies, most architects (75%) in the united states concentrates on existing facts as perceived by their senses. The other (25%) perceived by intuition

(imagination); but even MacKinnon was surprised to find that 100% of them perceived this way (intuitively). Against this, 84% of his architects in category II and 59% of architects in category III were intuitive in their approaches.

Table 10: Intuitive-Sensing Personality Characteristics: Respondents who '*like using common Sense and creating practical solutions rather than imagining future possibilities '*

University	I like using common sense and creating practical solutions rather than imagining future possibilities					Total
	not like me	very little like me	a little like me	like me	a lot like me	
UNILAG	0(0)	26(22.6)	24(20.9)	40(34.8)	25(21.7)	115(100.0)
OAU	2(1.7)	26(21.5)	36(29.8)	35(28.9)	22(18.2)	121(100.0)
CU	5(3.9)	26(20.3)	40(31.3)	35(27.3)	22(17.2)	128(100.0)
LAUTECH	2(1.5)	43(32.8)	24(18.3)	43(32.8)	19(14.5)	131(100.0)
Total	9(1.8)	121(24.4)	124(25.1)	153(30.9)	88(17.8)	495(100.0)
	Intuitive Characteristics 130Respondents (26.2)		Undecided 124(25.1)	*Sensing Characteristics Respondents 241(48.7)*		

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

4.4 Pedagogic Implications and Paradigm Shift

If more respondents create practical solutions through common sense and reasoning, the pedagogue (teacher) needs to engage in paradigm shift; by balancing his instructional techniques in order to favour both groups of respondents (students). But surprisingly, the results from table 2, it was mentioned that more respondents as teachers 33(67.4%), also handled the design studio class by common sense, reasoning, analytic and logic. Therefore, the intuitive-sensing personality characteristics ratio in Teachers as respondents was 18.4:67.4 (1:4 approximately), while in respondents as students was (1:2 approximately). This indicates that, there were more respondents as staff who had more sensing characteristics than respondents as students. In Table 2, the sensing personality characteristics was stronger in UNILAG respondents(students) than the three other selected schools; while the sensing personality for respondents was strongest among CU (Teachers) respondents (39.4% out of total 67.4%) sensing personality characteristics. In this scenario, a significant point for discussions is tied to the purpose of concept formulation, practical design realization, and creativity in architectural design studio. If a pedagogic clique is dominated by sensing personality characteristic people (respondents); UNILAG respondents as students and CU respondents as Teachers. The obligation lies on the teachers in both UNILAG and CU; to navigate a shift in their approaches to solving design

studio problems. The conclusion here is, creativity in architectural design studio is not simply exclusive privilege of intuitive thinkers, nor is intelligence the exclusive preserve of sensual design thinkers.

Table 11: Cross Tabulation of Respondent Students who's '*My memory recall is rich in detail of facts & past events than ordinary patterns and connections'*

University	My memory recall is rich in detail of facts & past events than ordinary patterns and connections					Total
	not like me	very little like me	a little like me	like me	a lot like me	
UNILAG	3(2.8)	12(11.0)	32(29.4)	34(31.2)	28(25.7)	109(100.0)
OAU	4(3.2)	15(12.1)	25(20.2)	46(37.1)	34(27.4)	124(100.0)
CU	2(1.6)	8(6.3)	25(19.5)	58(45.3)	35(27.3)	128(100.0)
LAUTECH	20(15.3)	21(16.0)	13(9.9)	40(30.5)	37(28.2)	131(100.0)
Total	29(5.9)	56(11.4)	95(19.3)	178(36)	134(27.2)	492(100.0)
Intuitive Personality Characteristics 85Respondents (17.3)			Undecided 95(19.3)	*Sensing Personality Characteristics Respondents 312(63.4)*		

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

Both spheres of the human mind possess a balance of both sensing and intuitive abilities and personalities. These personalities or abilities need not be equal measure (Uji, 2002), in either case, to constitute the required balance to solve an impending problem creatively or intelligently. Although, the ordinary patterns and connections (table 11) could be adventurous when simple design elements are intuitively (17.3%) juxtaposed. But the sensing (63.4%) or conscious strata of the student-designer's mind could be engaged by the studio teachers through the brief handling. The brief may have to emphasize details, working drawing and other productive tools that will help in feasibility studies.

Table 12: Respondent Students who 'like improvising from past experience rather than theoretical applications'

University	Respondents who 'like improvising from past experience rather than theoretical applications'					Total
	not like me	very little like me	a little like me	like me	a lot like me	
UNILAG	6(5.5)	5(4.5)	34(30.9)	25(22.7)	40(36.4)	110(100.0)
OAU	6(4.8)	21(16.9)	16(12.9)	40(32.3)	41(33.1)	124(100.0)
CU	1(.8)	18(14.3)	33(26.2)	26(20.6)	48(38.1)	126(100.0)
LAUTECH	6(4.6)	23(17.7)	15(11.5)	37(28.5)	49(37.7)	130(100.0)
Total	19(3.9)	67(13.7)	98(20.0)	128(26.1)	178(36.3)	490(100.0)
Intuitive Personality Characteristics Respondents 86(17.6)			*Undecide d 98(20)*	*Sensing Personality Characteristics Respondents 306(62.4)*		

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

Most respondents 306 (62.4) had sensing personality characteristics than with intuitive 86 (17.6%) personality characteristics. In this case, more students across the selected schools like improvising from past experience i.e. from such established works of the great masters in architecture. The design concept, philosophy, and methods of construction may be advantageous in this regard in practical terms, clear and concrete information are essential ingredients in design studio situation, especially, if it has to do with client/ community related projects.

Table 13: Respondents who 'Like clear and concrete information; dislike guessing when facts are fuzzy'

University	Respondents who 'Like clear and concrete information; dislike guessing when facts are "fuzzy"					Total
	not like me	very little like me	a little like me	like me	a lot like me	
UNILAG	3(2.6)	5(4.3)	36(31.0)	32(27.6)	40(34.5)	116(100.0)
OAU	3(2.4)	23(18.5)	20(16.1)	37(29.8)	41(33.1)	124(100.0)
CU	2(1.6)	17(13.3)	28(21.9)	39(30.5)	42(32.8)	128(100.0)
LAUTECH	17(4.6)	9(17.7)	19(11.5)	33(28.5)	52(37.7)	130(100.0)
Total	25(5.0)	54(10.8)	103(20.7)	141(28.3)	175(35.1)	498(100.0)
	Intuitive Characteristics Respondents 79(15.8)		*Undecided 103(20.7)*	*Sensing Characteristics Respondents 316(63.4)*		

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

In this way, information that is fuzzy would be discarded, because it has to do with meeting the needs of specific users.

Table 14: Respondent Student who '*likes categorizing, organizing, recording and storing the specifics from the here and now.*

University	*Respondents who 'like categorizing, organizing, recording and storing the specifics from the here and now.'*					Total
	not like me	very little like me	a little like me	like me	a lot like me	
UNILAG	0(.0)	8(6.9)	15(12.9)	30(25.9)	63(54.3)	116(100.0)
OAU	7(5.8)	12(9.9)	19(15.7)	42(34.7)	41(33.9)	121(100.0)
CU	4(3.1)	10(7.8)	32(25.0)	31(24.2)	51(39.8)	128(100.0)
LAUTECH	18(13.8)	5(3.8)	25(19.2)	42(32.3)	40(30.8)	130(100.0)
Total	29(5.9)	35(7.1)	91(18.4)	145(29.3)	195(39.4)	495(100.0)
Intuitive Personality Characteristics Respondents 64(13)			*Undecided 91(18.4)*	*Sensing Personality Characteristics Respondents 340(68.7)*		

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

Therefore, in this study, most respondent students had predilections for such personality characteristics which may directly influence their design decisions in providing solutions to the would-be users of their designs.

The respondents in the table 14 could optimize the personality characteristics in project planning, management and execution as referred to in table 5. In this situation, issues of record keeping, categorization of project items and storing of project information and data would be essential. The table 16 and 17 spelt out the pedagogic spectrum in seven (7) dimensions of the scope of respondents' (teachers and students) perception to life in architectural design studio. It spanned from iN-S1 to iN-S7.

Table 15: Respondents who '*prefer reality based work, dealing with specific meaning of Things than imaginations'*.

University	*Respondents who 'prefer reality based work, dealing with specific meaning of things than imaginations'*					Total
	not like me	very little like me	a little like me	like me	a lot like me	
UNILAG	11(9.6)	13(11.4)	41(36.0)	33(28.9)	16(14.0)	114(100.0)
OAU	7(5.8)	17(14.2)	46(38.3)	38(31.7)	12(10.0)	120(100.0)
CU	20(15.6)	10(7.8)	54(42.2)	22(17.2)	22(17.2)	128(100.0)
LAUTECH	6(4.6)	23(17.7)	49(37.7)	25(19.2)	27(20.8)	130(100.0)
Total	44(8.9)	63(12.8)	190(38.6)	118 (24.0)	77(15.7)	492(100.0)
	Intuitive Characteristics Respondents 107(21.7)		*Undecided 190(38.6)*	*Sensing Characteristics Respondents 195(39.7)*		

Figure in Bracket Presents Percentages, Number outside the Bracket represents Frequencies

The most significant pedagogic pigment was iN-S5. It indicates that generally across the selected schools, there were more respondents with sensing personality characteristics with more in teachers (85.7%) than in students (63.4%). The most significant response was 'like clear and concrete information; dislike guessing when facts are fuzzy'. There intuitive characteristic was also generally skewed in students (15.8) and teachers 4.0 respectively. The result from the frequency chart revealed that, the average perception of the respondents with intuitive personality characteristics being higher for students as respondents than staff as respondents.

Table 16: Synthesis of 7-Dimension Stakeholders' Perception to Life in Architectural Design Studio

Personality Characteristics	7-Dimensions of Intuitive –Sensing Personalities Characteristics of Respondents in Four Selected Schools														Average Total (iN-S av)	
	Mentally live in the now, attending to present opportunities		like using common sense and creating practical solutions		Memory recall is rich in detail of facts and past events		Best improvise from past experience		like clear and concrete information ; dislike guessing when facts are fuzzy		Like categorizing, organizing, recording and storing the specifics from the here and now.		prefer reality based work, dealing with specific meaning of things than imaginations			
Frequency	iN 109	S 264	iN 130	S 241	iN 85	S *312*	iN 86	S 306	iN 79	S 316	iN 64	S 340	iN 107	S *195*	iN 94.3	S 282.0

Student (per cent)	22.3	54.0	26.2	48.7	17.3	*63.4*	17.6	62.4	15.8	63.4	13	68.7	21.7	*39.7*	19.1	57.2
Frequency	iN 12	S 23	iN 9	S 33	iN 8	S 33	iN 3	S 36	iN 2	S 42	iN 2	S 35	iN 4	S 35	iN 5.7	S 33.9
Teachers (per cent)	25	47.9	18.4	67.4	16.3	65.3	6.1	73.5	4.0	85.7	4.1	71.4	8.2	71.4	11.7	68.9

s means students and t means teachers

Table 17: Respondents' Perception to Architectural Design Studio Pedagogy

Respondents	7-Dimensions of Intuitive –Sensing Personalities Characteristics of Respondents in Four Selected Schools														Average Total	
	Mentally live in the now, attending to present opportunities (iN-S1)		like using common sense and creating practical solutions (iN-S2)		Memory recall is rich in detail of facts and past events (iN-S3)		Best improvise from past experience (iN-S4)		like clear and concrete information ;dislike guessing when facts are fuzzy (iN-S5)		Like categorizing, organizing, recording and storing the specifics from the here and now. (iN-S6)		prefer reality based work, dealing with specific meaning of things than imaginations (iN-S7)		(iN-S av)	
	iN	S	iN	S	iN	S	iN	S	iN	S	iN	S	iN	S	iN	S
Students (per cent)	22.3s	54.0s	26.2s	48.7s	17.3s	*63.4s*	17.6s	62.4s	15.8s	63.4s	13s	68.7s	21.7s	*39.7s*	19.1s	57.2s
Teachers (per cent)	25t	47.9t	18.4t	67.4t	16.3t	65.3t	6.1t	73.5t	4.0t	85.7t	4.1t	71.4t	8.2t	71.4t	11.7t	68.9t

s means students and t means teachers

But for the sensing personality characteristics, it was higher for staff across the four selected schools than students as respondents.

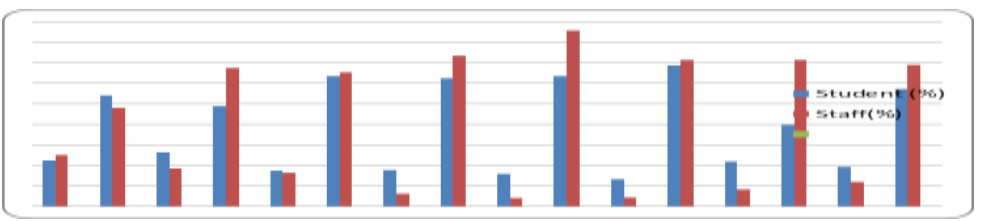

Figure4: Showing the 7-Dimensions of Intuitive –Sensing Personalities Characteristics of Respondents in Four Selected Schools *(Staff in the figure is synonymous to design studio teachers)*

4.5: Description of Intuitive-Sensing Personality Characteristics

iN-S1 connotes 'Mentally live in the now, attending to present opportunities';iN-S2 indicates 'like using common sense and creating practical solutions'; iN-S3 means 'Memory recall is rich in detail of facts and past events'; iN-S4 means 'best improvise from past experience; iN-S5- like clear and concrete information'; dislike guessing when facts are fuzzy; iN-S6- Like categorizing, organizing, recording

and storing the specifics from the here and now; and iN-S7- prefer reality based work, dealing with specific meaning of things than imaginations.
Therefore, the Average Intuitive Personality characteristics (Av. iN) of the students and teachers were (19.1, 11.7) % respectively while the average sensing personality (Av.S) characteristics for students and teachers were 57.2% and 68.9 %respectively.

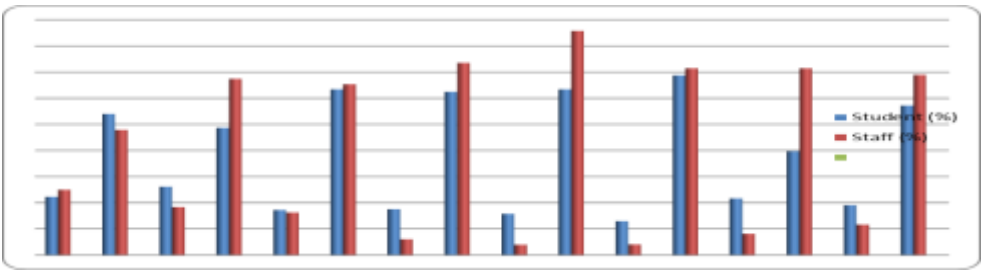

Figure 5: Showing Intuitive-Sensing Personality Characteristics across the Four (4) Selected Schools

5.0 Conclusion

This study established that architecture is a morphological product and its form-structure is composed together by intuition-sensing personality characteristics of the architect-designers. Greater synergy is established when the architectural design products in terms of images and forms (intuition-subconscious) is rationalized with concrete experiences (sensing-conscious). This study recommended that both personalities were viable means of evolving the cultural meanings of architectural style; but imperatively engaged with fundamental principles of architecture (order, arrangement, eurhythmy, symmetry, propriety, and economy). This would help to overcome the imminent dangers like ambiguity of forms and structural systems and other types of misinterpretation that could lead to design fantasy, decision bias which could also lead to design failures, project abandonments and societal suspicion of the teachers and the mistrust in the proficiency and competency rating of teachers, students and professionals in practice.

6.0 Suggestions for Further Studies

It therefore suggested an urgent need for advance study to diet the relevant areas of the curriculum with relevant context proportion of mathematics, philosophy, creative thinking class, brainstorming and other auxiliary subjects that can assist in the generation of functional morphological forms and structures in the trainings of architect-designers for competency and proficiency demands in the field of professional practice. Examining other MBTI faces i.e feeling and judgment is suggested for future study. Other areas of life related to team problem-solving engagement could be explored as related to learning and work situation models. Further to the above, we are of the view that the effect of interactions between the intution-sensing personalities should be investigated in a group work dynamics at school and

in practice; this would help to harvest a good outcome in interpersonal collaborative endeavour in the field of practice.

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