SKILL REQUIREMENTS OF GRADUATES OF DEVELOPMENTAL UNIVERSITIES: CULTURAL CONTRADICTION OR CONVERGENCE FOR SCIENCE, TECHNOLOGY AND ENGINEERING STUDENTS IN A NIGERIAN UNIVERSITY

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Abstract
Literature suggests that for graduates of developmental universities to contribute to national development, they need to possess certain High Order Thinking skills such as critical thinking, problem solving, team building, communication and evaluation skills. This paper examines how indigenous cultural influences may affect the development of these skills among students in a Nigerian University. Data was collected from final-year science, technology and engineering students of Obafemi Awolowo University, Ile-Ife using an online survey form. The students' level of agreement that there are opportunities to develop the skills was measured on a five-point Likert scale. Their perspective of the Hofstede's cultural dimensions particularly power distance; individualism-collectivism; uncertainty avoidance; and masculinity-femininity were all measured using a similar scale. The constructs and the relationships among them were analysed using mean scores and correlation analyses respectively. Results of the mean ratings of the skills all showed neutral outcomes. The study revealed a high power distance culture in classes depicting teacher-centered learning modes. Findings of the study showed predispositions towards an individualist culture illustrating lack of clannish and tribal inclinations in class, group and teacher/student relationships. Measures for uncertainty avoidance and masculinity-femininity dimensions however showed neutral scores. The study also shows that high power distance and high uncertainty avoidance seem to hamper the development of these skills. The study recommends teaching strategies that recognize the effects of cultural influences to enhance the development of these High Order Thinking skill sets among students.
Keywords: High order thinking skills; Developmental universities; Cultural dimensions; Nigeria

Introduction

Universities have been one of the key actors in the development of knowledge-based economies around the world. In view of the lack of progressive improvement of the economies of most sub-Saharan African countries, development practitioners have advocated that universities in the region assume the responsibility

of being development agents especially when very little research activities take place outside the university system and dedicated research institutions in the region (Arocena *et al*., 2018). The notion that African Universities should take up developmental roles has been advocated since the 1960s when African countries were gaining independence from colonial powers. Similar to land grant universities, African universities were advised to add to their customary functions of teaching and research, developmental activities to justify the huge budgetary allocations allotted to them and contribute to enhancing economic, cultural and political development. Thus, African Universities have been called upon to expand their functions from preparing students for professional fields in public and private service, to establishing a strong research culture at all levels that will provide solutions to national developmental problems (Fredua-Kwarteng, 2015). According to Coleman (1986), a developmental university is one that seeks to promote poverty alleviation, employment and equality through structural transformation. Unfortunately, African universities, especially in most parts of sub-Saharan Africa have not lived up to their developmental roles in sub-Saharan Africa in terms of impact on socio-economic, cultural and political development (Zeleza, 2017). This shortcoming has been a concern of policy makers and development practitioners.

The trajectory of Western-based universities has mostly been influenced by philosophies borne out of the cultural, religious and environmental influences of the development of the West. Through colonialism and globalization, these higher educational institutions have had the most influence on the forms of organizational structure, course contents, methodology and pedagogy among others, in higher education around the world (Alemu, 2018).

Hofstede (1984; 1986; 2010) emphasizes that cultural patterns matter when people or institutions are required to adopt new concepts or standards developed in other settings. The literature particularly stresses caution when implementing new management concepts, organizational innovations and new forms of institutions developed in western cultures in non-western settings. Perhaps the model of the development university structured after western models of the modern university makes it a cultural contradiction for Africa?

In what can be perceived as a rather critical assessment of the trajectory of post-colonial transformation of two of the most prominent universities in sub-Saharan Africa at the time of gaining independence from Great Britain in the 1960s, the University of Ibadan, Nigeria and the University of Nairobi, Kenya, Eisemon (1980) documented how western academic and intellectual traditions were transformed by indigenous cultural influences in the Universities. The author reported that as the Universities were increasingly being staffed by Africans, western intellectual traditions of autonomy, individualism and cosmopolitanism were gradually replaced by African concepts of academic life - autonomy, collectivism and specificity respectively. Eisemon (1980) reports that this transformation had adverse effects on the ability of the institutions to set up appropriate scientific research infrastructure to address the developmental challenges of their immediate

environment. Though the author made no mention of Hofstede's work on cultural dimensions while using similar constructs, his study details how culture can affect the adoption of western style institutions.

Statement of the Problem

Fredua-Kwarteng (2015) contends that for developmental universities to fulfill their mission to produce a band of change agents that will contribute national development, a certain learning culture is required. The author argues that students must be trained to develop critical and analytical skills to question prevailing practices, knowledge and ideas in external bodies of knowledge. They must also be given opportunities to develop communication, problem solving and team building skills. Furthermore, students must develop skills on how to critically assimilate, evaluate and synthesize information from a variety of sources rather than having lecturers dictate notes for them to copy and consume. They should also be able to participate actively in classroom discussions through debate, questioning and critique. Fredua-Kwarteng (2015) reports that these skills are crucial for a research culture which should be at the epicenter of developmental universities and may be a necessary foundation of the pedagogy for developmental universities in Africa. However, this pedagogy that may be required to prepare students for their role as development change agents has not been examined for conformity with the present cultural contexts within which African universities operate. This paper therefore examines how indigenous cultural influences may affect the development of these skills among students in a Nigerian University. In view of the foregoing, this paper;

a) evaluates the opportunities to develop these skills in a Nigerian university;
b) examines the cultural perceptions of students in the university; and
c) assesses the influence of these perceptions on the assimilation of these skills

The study was conducted among science, technology and engineering final-year undergraduate students at the Obafemi Awolowo University, Ile-Ife; a federally owned university in Southwestern Nigeria. It is expected that the findings would be useful for recommending necessary cultural reforms to enhance the impact of African Universities. The post-communist education authorities in Romania were able initiate successfully cultural reforms to improve the quality of learning processes in the country's education sector. These reforms were necessary to change the educational culture characterized by rote learning during the transition from the communist era to one that stimulates critical thinking (Morera and Galvin, 2019). Phuong-Mai *et al*. (2005) also made recommendations on how western models of learning can be matched with Confucian collectivist culture.

The next section will reveal literature on the required skills and how cultural dimensions may relate to these skills set required of graduates of developmental universities. This is followed by the methodology, results, discussion and concluding sections.

Literature Review

The Skills

a) Analytical skills

Analytical skills have been considered to be High Order Thinking (HOT) skills needed to understand the constituent parts or constructs of a concept and the ability to explain the relationship among the parts. This understanding helps students in logical thinking, solving problems and rationalizing the arguments behind the strategies adopted in solving problems (Prawita *et al*. 2019; Blegur *et al*. 2023).

b) Critical skills

Critical thinking is a basic foundation of creativity and innovation. It is a competence that assists students in formulating novel solutions to challenging organizational situations. Educational institutions that aim to develop critical thinking and analytical skills in students must implement teaching strategies that emphasize the active participation of students in learning rather than content, and focus on assessment techniques that highlight intellectual challenges rather than memory recall. Critical thinkers possess knowledge and an attitude to always think critically. They are also creative and employ logic in assessing and judging current practices and norms (Prawita et al. 2019; Blegur et al. 2023).

c) Problem solving skills

This skill involves applying prior extensive specialized knowledge in solving problems. While problems may appear in different contexts, the development of this skill is enhanced when experience is accumulated in as many contexts as possible. This is particularly relevant in medical education where students learn in the settings of a hospital. This method of gaining skills has been effective in learning and the recall of concepts (Norman, 1988). The foregoing stresses that the knowledge gathered in African tertiary institutions must be proprietary to local problems rather than generalized/imported if graduates are to contribute to developmental challenges in Africa.

d) Communication skills

Productive innovation spaces are characterized by successful interactions among people of different cultural, social and educational backgrounds. Building Communication skills in students will enable them explain their thinking, beliefs, and expectations clearly in such contexts. These skills are developed by creating space and opportunities for students to practice interpersonal communication skills (Liliane and Colette, 2009). These skills are also built by teaching strategies such as group assignments and shared project work.

e) Team building skills

A team is a group of individuals that have a shared responsibility to work collectively and interdependently to complete a task. Teamwork skills are abilities to cooperate and collaborate with members of a team to complete team tasks and goals. The interdisciplinary nature of successful innovation makes team building skill an essential asset (Liliane and Colette, 2009). Innovation team members are usually from different educational, social, cultural and organizational backgrounds. It is important that team members are able to closely work together to solve problems. Team building skills is a highly desirable trait among companies when looking to employ graduates.

The Cultural Dimensions

Hofstede (2011) defines culture as the collective programing of the mind that distinguishes the members of one group or category of people from other groups. The following Hofstede's dimensions and their likely relationships with the skills were explored in this study

a) Power Distance Dimension

This cultural dimension denotes the extent to which members of a society accept that power is unevenly distributed (Hofstede, 1984). The level of power of an individual can be symbolized by rank, age, wealth and ancestry among others. In high power distance cultures, both the less and more powerful individuals expect that there is a hierarchal order in which everyone accepts their place in the hierarchy of power. In low power distance cultures however, there is an expectation that individuals on any part of the hierarchy can freely demand for power equality (Hofstede, 1984. Low power distance cultures are usually associated with student-centered learning where the academic independence of students is nurtured (Hofstede, 1986). Students are also expected to initiate communication in class, criticize the teacher's point of view and stress on information obtained from any competent person (Hofstede, 1986; 2010). Teacher-centered education can mostly be found in large power distance cultures. It is expected that high power distance scores will be related lack of opportunities for students to be able to participate actively in classroom discussions through debate, questioning and critique. Therefore, the higher power distance scores may be related to lack of capabilities to develop these skill sets Hofstede (2010) reports that power distance scores tend to be higher in Eastern European, Latin America and African countries and lower in English- and Germanic-speaking western countries.

Individualism – collectivism Dimension

The individualism-collectivist continuum expresses the extent to which individuals believe they are integrated into groups (Hofstede, 1984). Persons on the individualism end of the dimension will be less integrated into groups and expects only to take care of himself and his immediate family (Hofstede, 2010). On the other

end of the continuum however, individuals feel strong kinship to a group or a clan. The clan is supposed to take care of its members in exchange for unalloyed loyalty (Hofstede, 1984). In collectivist societies, the aim of education is to learn and gain prestige from the possession of educational qualifications. Preferential treatment is expected from teachers from the same ethnic persuasion. In individualist cultures, the aim of education is to improve economic worth, ability and competence. Furthermore, teachers are expected to be impartial. High collectivism scores may be associated with loyalties and protection from teachers/students from the same clan, preference for in-group homogenous study/research teams, teacher-centered education and respect for age (Hofstede, 2010). Hofstede (2010) reports that in individualist cultures, people feel comfortable speaking up in groups. Furthermore confrontation in teams is seen as favorable. In collectivist cultures however, individuals may only be comfortable speaking when in small groups with members of the same clan. Formal harmony within groups is seen as beneficial for learning. High collectivism scores may be related to lower capabilities to develop team building skills. High index scores for individualism are mainly reported in developed western countries while collectivism predominates in West Africa and other developing and Eastern and Asian countries (Hofstede, 2010). It is expected in this study that scores nearer the individualistic continuum will be associated with opportunities to develop communication, problem solving and team building skills.

b) Uncertainty Avoidance Dimension

This measures the degree of comfort individuals feel with uncertain present or future situations (Hofstede, 2010). Societies with high degree of uncertainty avoidance would prefer rigid social structures, strict codes of behavior and rules and non-fluid traditional institutions to ensure that future conditions can be comfortably predicted. In low uncertainty avoidance cultures on the other hand, deviations from accepted norms and social constructs are more easily tolerated and even expected. It is accepted that the future may bring uncomfortable situations. Implications of strong uncertainty avoidance societies imply a preference for teacher-centered education with rigid rules for class comportment, curriculum and timetables (Hofstede, 1986). For societies on the weak end of the uncertainty dimension, students feel comfortable in unstructured classroom exercises. Teachers also reward innovative ideas to problem solving and stimulate intellectual debates among the students (Hofstede, 2010). High uncertainty scores have been recorded in East and Central Europe, Japan and Latin countries, low in English speaking, Nordic and Chinese cultures and medium scores in West Africa. High uncertainty avoiding scores may then be related to fewer opportunities for developing critical and analytical skill as students and teachers may not be comfortable with anything outside the prescribed curriculum and teaching methods. High uncertainty avoidance may be related to poor problem solving skills and ability to evaluate information from external sources may also be poor.

c) Masculinity – Femininity

This refers to the extent a society adopts traditional masculine or feminine values (Hofstede, 1986). Men are generally known to be competitive, assertive, and ambitious and strive for material success and heroic acts. Women on the other hand are known for nurturing roles and striving for a higher quality of life. Higher femininity scores indicate a culture where the weak and vulnerable are respected and taken care of. In masculine related cultures, being assertive and ambitious even among women is expected. Countries high in femininity scores include the Nordic countries and the Netherlands and low in Germany, Japan, Italy and Mexico. High masculinity scores are expected to be related to expectations for high achievements in strict learning environments. Competition among students is fierce and high performing students are praised and rewarded. On the other side of the spectrum, average performing students are nurtured and solidarity rather than competition among students is encouraged. High feminism scores are expected to be related to opportunities to develop through debates, questioning and critique in classroom discussions.

Methodology

The study adopts a quantitative research design. A multi-stage sampling technique was used to select the respondents. Convenience and purposive selection was used to select Obafemi Awolowo University, Ile-Ife, Nigeria. The University currently ranks second in the country on the Webometrics ranking of world universities. The next stage involved the purposive selection of final-year science, engineering and technology students at the Faculty of Technology of the University. This background of the students was preferred because of the potential of these disciplines for economic development. Seven-hundred and seventy students of the Faculty who registered for a compulsory 500-level faculty-wide course were targeted as respondents. Data was collected from the students using an online survey form administered through a google form link posted on the students' instant messaging group platform for the course. The questionnaire elicited information on whether they were trained to acquire the skills and the Hofstede's dimensions of national culture. These were measured on a five-point agreement Likert scale (1 = strongly disagree to 5 = strongly agree). The skill sets were measured using the following statements (The codes depicting them are also shown)

(Sk1) Students are trained to develop critical and analytical skills to question prevailing knowledge, practices and ideas; (Sk2) Students are trained to develop communication skills; (Sk3) Students are trained to develop problem solving capabilities; (Sk4) Students are trained to develop team building skills; and (Sk5) Students are trained to critically assimilate, evaluate and synthesize information from a variety of information other than lecture notes

The cultural dimensions were measured on a similar five-point Likert scale using the following variables

i. Power Distance: (PD1) Students freely debate, question and critique

lecturers' notes during classes; (PD2) Students are allowed to interject teachers during lectures; (PD3) In this university, students question their teachers when in disagreement/obey their teachers without question); (PD4) In this university, power is shared equally among students, lecturers and university; and (PD5) In this university, power is concentrated with the universities Management/Faculty Deans/Heads of Departments

ii. Individualism/Collectivism: (IC1) In this university, teachers encourage tribal loyalty; (IC2) In this university there is favoritism by teachers for students from the same tribe; (IC3) Membership of study groups is defined by tribe; (IC4) In this university, only academic excellence and accomplishment is valued; and (IC5) In this country, obtaining academic qualifications is for prestige

iii. Uncertainty Avoidance: (UA1) There is preference for unstructured learning environment at this university; (UA2) The curriculum is sacrosanct and revisions are not allowed, and (UA3) In this university, accepting the status quo is a means of survival and basis for long-term planning.

iv. Masculinity – Femininity: (MF1) In this university, people are generally very assertive; (MF2) In this university, boys are encouraged more than girls to attain higher education, and (MF3) In this university, men are more likely to serve in a position of high office than women

Means and standard deviations were used to evaluate the opportunities to develop these skills and the cultural perceptions of students. The influence of these perceptions on the assimilation of these skills was analyzed using Kendall's Tau, a non-parametric correlation test appropriate for ranked data.

Results and Discussion

Profile of respondents

A total of 168 responses were recorded out of the 770 students using the online platform. This represents 21% response rate. Fosnacht *et al*. (2017) report that college online surveys with at least 5% response rates are reliable for population sizes of more than 500. Table 1 shows the demographic characteristics of the respondents. About 28% percent of the respondents were female while 72.7% were male. Comparable data was recorded by Onile-ere *et al*. (2021) who reported 26.2% female and 73.8% male average enrolment figures for similar selected science, technology and engineering courses at Covenant University, Ota, Nigeria. A majority (73%) of the respondents were 21 to 25 years of age while the rest were between 26 to 35 years of age. Out of the six geopolitical zones in Nigeria, 82.8% of the students were indigenes of the South-west zone of the country while 7.1, 7.1 and 3% were from the South-south, South-east and North-central zones respectively. This implies that majority were from the Yoruba stock followed by the Ibo and indigenes of the Niger-Delta region of the Country. There were no respondents from the North-east and North-west zones. This result is expected as the university is located in the South-west zone of Nigeria and the zone is University's catchment

area. This catchment area policy was designed for federal universities in Nigeria to ensure admission for students who are indigenes of the University's locality and other nearby educationally disadvantages States. The largest share of respondents were students from the department of Computer Science and Engineering (26.7%) followed by students studying Mechanical (21.7%), Civil (16.8%) and Materials Science and Engineering (10.6%). Others were Electronic and Electrical Engineering (9.9%), Chemical Engineering (8.7%), Food Science and Engineering (4.4%) and Agricultural and Environmental Engineering (1.2%).

Table 1: Profile of the Respondents

No.	Characteristic	Frequency	Percentage %
1	Sex		
	Female	46	27.3
	Male	122	72.7
	Total	168	100
2	Age		
	21-25	119	73.0
	26-30	34	20.9
	31-35	10	6.1
		163	100
3	Geopolitical Zone	139	82.8
	South-west	12	7.1
	South-east	12	7.1
	North-central	5	3.0
	North-east	Nill	
	North-west	Nill	
		168	100
4	Major	2	1.2
	Agricultural and Environmental	14	8.7
	Engineering	27	16.8
	Chemical Engineering	43	26.7
	Civil Engineering	16	9.9
	Computer Science and Engineering	7	4.4
	Food Science and Engineering	17	10.6
	Material Science and Engineering	35	21.7
		161	100
5	Degree in View	162	96.4
	B.Sc.	6	3.6
	M.Sc.	168	100

Evaluation of opportunities to develop the skills

Table 2 shows the means of the ratings by the respondents of the variables used to evaluate the opportunities to develop the skills at the university. Standard deviation values are no greater than plus or minus 2 which indicates measurements are closer to true values. The mean ratings are interpreted as follows; strongly disagree = 0 – 1.44; disagree = 1.45 – 2.44; neutral; 2.45 – 3.44; agree = 3.45 – 4.44 and strongly agree = 4.45 – 5. The mean ratings of questions that the learning culture at the University helps to develop critical and analytical skills (3.23), communication skills (3.06) problem solving capabilities (3.41) and team building skills (3.42) and to critically assimilate evaluate and synthesize new knowledge (3.15) show neutral outcomes. It could not be deduced from the results that the respondents agreed nor disagreed that learning culture promotes promote these skills. A cross tabulation analysis showed no statistically significant difference in the pattern of rating among the departments.

The cultural perception of students

Table 2 also shows the cultural perceptions of the students based on the Hofstede's cultural dimensions. Measures for power distance show a high power distance culture. The respondents disagreed that they could freely debate, question and critique notes given to them by their lecturers (2.15). They also disagreed with the notion that they are allowed to interject teachers (2.12) and question their teachers when in disagreement during lectures (2.01). The students also indicated that they strongly disagreed (1.34) that power is shared equally in the classroom between students and lecturers. They also indicated a similar outlook as they agreed (3.96) that power is concentrated in the management of the University. Hofstede (1986) reports that high power distance cultures are dominated by teacher-centered learning.

With regard to individualistic and collectivist measures, the students disagreed to notions of tribal or clannish attitudes among lecturers and students. The students also disagreed with the statement that lecturers encourage tribal loyalty among students (1.99) and that there is favoritism by lecturers for students from the same tribe (1.90). Masculinity results also revealed neutral scores. Questions on if people were generally very assertive in the university, whether boys were encouraged more than girls to attain higher Furthermore, the students disagreed (1.46) that membership of study groups is defined by tribe. However, on the objective of obtaining academic qualifications the students were neutral as to whether degrees were for prestige (3.36) or competence (3.04). On the uncertainty avoidance measures, the result was neutral (2.52) on preference for unstructured learning environment at the university. They were also neutral on the question on the flexibility of the curriculum and that accepting the status quo in the university is a means if survival (2.44; 3.40 respectively). education and if men were more likely to serve in position of higher authority all return neutral scores of 2.98, 2.50 and 3.35 respectively.

Discussion

The results on the cultural dimensions show a high power distance culture in the classroom and the running of the affairs of the university. This is consistent with Hofstede (1984; 1986; 2010) findings on high power distance cultures in West African Countries.

Table 2: Descriptive Statistics

Variables	Mean	Std. Deviation
Students are trained to develop critical and analytical skills to question prevailing knowledge, practices and ideas	3.23	1.271
Students are trained to develop communication skills	3.06	1.309
Students are trained to develop problem solving capabilities	3.41	1.214
Students are trained to develop team building skills	3.42	1.157
Students are trained to critically assimilate, evaluate and synthesize new information	3.15	1.208
Students freely debate, question, and critique lecturers during classes	2.15	1.356
Students are allowed to interject teachers during lectures	2.12	1.168
In this university students question their teachers when in disagreement	2.01	1.728
In this university power is shared equally among students and lecturers	1.34	1.286
In this university power is concentrated with the university management	3.96	1.561
High academic performance of students is highly valued by teachers	**2.51**	**1.257**
In this university teachers encourage tribal loyalty	1.99	1.567
There is favouritism by teachers for students from the same tribe	1.90	1.694
Membership of study groups is defined by tribe	1.46	1.477
In this university only academic excellence and accomplishment is celebrated	3.44	1.764
In this country obtaining academic qualifications is for prestige	3.36	1.614
There is preference for unstructured learning environment	2.52	1.683
The curriculum is sacrosanct and revisions are not allowed	2.44	1.240

Variables	Mean	Std. Deviation
In this university accepting the status quo is a means of survival and basis for long-term planning	3.40	1.440
In this university people are generally very assertive	2.98	1.268
In this country, boys are encouraged more than girls to attain higher education than girls	2.50	1.816
In this country men are more likely to serve in positions of authority	3.35	1.927

This is indicative of a teacher-centered learning style and a rigid curriculum in the University. On the individualist – collectivism continuum, there was tendency towards the individualist side of the continuum as certain values of individualistic cultures could be assumed to be imbibed by the respondents. This is a contradiction with Hofstede (1984; 1986 and 2010) who reported that countries in West Africa are majorly collectivist societies. These results also indicate a contradiction with Eisemon (1980) who reported that there were tribal tensions in the Universities of Ibadan and Nairobi in promotion exercises and appointments as Deans and Heads of Departments. Though this study does not examine if there are tribal tensions among the Faculty, this may indicate a generational shift and differences in tribal perceptions between students and lecturers. On the other two dimensions, degree of uncertainty avoidance and masculinity, scores were neutral. Hofstede's studies however report strong high uncertainty and masculinity scores for countries in West Africa.

Influence of the cultural perceptions on the assimilation of the skills

As shown in the correlation matrix in Appendix I, there were significant and positive relationships in the responses of the respondents to the statement that they could freely debate, question and critique notes given to them by their lecturers and opportunities to develop critical and analytical skills ($r = .25$; $p < 0.05$), communication skills ($r = .30$; $p < 0.05$) problem solving capabilities ($r = .27$; $p < .05$), team building skills ($r = .21$; $p < .05$) and to critically assimilate, evaluate and synthesize new knowledge ($r = .28$; $p < .05$). The mean ratings of the respondents on the skills were neutral and means for the power distance scores indicated that they disagreed with the statement. This result indicates that the respondents who disagreed that there are opportunities to develop the skill sets at the university also tended to disagree that students could interject teachers during lectures. There were also similar, significant and positive relationships between the statement that the students are allowed to interject teachers during lectures and developing critical and analytical skills ($r = .19$; $p < 0.05$) and to critically assimilate evaluate and synthesize new knowledge ($r = .19$; $p < .05$). Furthermore, respondents who disagreed that students were at liberty to question their teachers when in disagreement during lectures, also tended to disagree that there were opportunities to develop critical and analytical skills ($r = .17$; $p < 0.05$), communication skills ($r = .16$; $p < 0.05$) problem

solving capabilities ($r = .16$; $p < .05$), and to critically assimilate, evaluate and synthesize new knowledge ($r = .15$; $p < .05$). Similarly, there were positive and significant relationships between the ratings that power is shared equally in the classroom between students and lecturers and opportunities to develop critical and analytical skills ($r = .19$; $p < 0.05$), communication skills ($r = .18$; $p < 0.05$) problem solving capabilities ($r = .16$; $p < .05$), team building skills ($r = .14$; $p < .05$) and to critically assimilate evaluate and synthesize new knowledge ($r = .16$; $p < .05$). There were however, negative and significant relationships between the belief that power is concentrated in the management of the University and learning team building skills ($r = -.21$; $p < .05$). The negative relationship may be due to how the question was posed. Respondents that agreed that power is shared equally also tended to disagree that capabilities to develop team building skills exists.

There was a positive and significant difference ($r = .13$; $p < 0.05$) between the statement "in this university, teachers encourage tribal loyalty even if collective interests suffer" and opportunities for acquiring team building skills. There were however no statistically significant relationships with the other skill sets. Responses to the presence of favoritism by teachers for students from the same tribe was positive and significantly correlated with opportunities to develop critical and analytical skills ($r = .23$; $p < 0.05$), communication skills ($r = .12$; $p < 0.05$) problem solving capabilities ($r = .17$; $p < .05$), team building skills ($r = .14$; $p < .05$) and to critically assimilate evaluate and synthesize new knowledge ($r = .18$; $p < .05$). Similarly, there were positive and significant relationships to responses to the statement "membership of study groups is defined by tribe" and opportunities to develop critical and analytical skills ($r = .23$; $p < 0.05$), communication skills ($r = .12$; $p < 0.05$) problem solving capabilities ($r = .17$; $p < .05$), and to critically assimilate evaluate and synthesize new knowledge ($r = .18$; $p < .05$). However, there was no statistically significant relationship with team building skills ($r = .07$; $p > 0.05$). This result implies that respondents who disagreed with the statement are more likely to disagree that there were opportunities for team building skills. There were also no statistically significant relationships between the skill sets and the statements "In this university, only academic excellence and accomplishment is valued" and "In this country, obtaining academic qualifications is for prestige".

As far as measures of uncertainty avoidance are concerned, responses to the statement "there is preference for unstructured learning environment at this university" was statistically significant and positively correlated with opportunities to develop critical and analytical skills ($r = .13$; $p < 0.05$) and team building skills ($r = .05$; $p < .05$). There were also similar relationships with the statement that "the curriculum is sacrosanct and revisions are not allowed and opportunities to develop critical and analytical skills ($r = .13$; $p < 0.05$), and team building skills ($r = .16$; $p < .05$). The statement "in this university, accepting the status quo is a means of survival and basis for long-term planning opportunities" is also positively correlated to responses on opportunities to develop team building skills ($r = .21$; $p < .05$). These results indicate that respondents who disagree with these statements, that is,

indicating a high uncertainty avoidance culture, are likely to disagree that there are opportunities to develop these skill sets. None of the measures for Masculinity/femininity had any significant relationship with any of the skill sets.

Discussion

The results indicate that high power distance between students and lecturers in the classroom and in the University at large hampers the development of HOT skill sets. Hofstede (1986) reports that in high power distance cultures, students expect the teacher to initiate communication and outline paths for students to follow. In addition, students only speak up in class only when invited and the teacher is never contradicted nor publicly criticized. Morera and Galvan (2019) reported a similar culture in the communist era in Romania. The authors reported that students who received Romanian education during that era and went to obtain postgraduate degrees in Spain, a country with low power distance, adopted a passive demeanor in class discussions as they were not used to the small power distance levels in classes. Interviews with the Romanian students revealed that the lack of critical thinking skills and capabilities to develop new ideas made them passive in the class discussions as these skills were not nurtured when attaining previous educational qualifications in Romania. Rienties and Tempelaar (2013) also conveyed similar findings in a study of academic performance and social integration of foreign students studying in nine educational institutes in the Netherlands; a country with low power distance culture. The authors reported that students from high power distance cultures found it difficult to adapt to the problem-, project- and competence-based learning approaches commonly used in the institutes because they lacked the necessary skills to participate in class activities and thus obtained lower scores in the first year of study. The lack of requisite skills can make graduates insecure with unpredictable and changing situations in the work environment and unable to bring innovative solutions to developmental challenges.

There were also significant relationships between individualism and acquiring the skills. That is, the closer to the individualist culture, the more likely the skills may be acquired. In collectivist societies, teachers are expected to treat students who are members of the same clan or tribe favorably. It is within these groups that individuals find protection in exchange for loyalty. Morera (2019) examined the teacher and student spaces and infers that in the Romanian study that in the absence of a group to belong or a teacher to treat one favorably, students felt on her/his own. This restricted the level of intercommunication and cohesion when in groups with people from different backgrounds. They were afraid of losing face if they asked questions which may be considered unintelligent. In-groups in collectivist cultures provide face-saving mechanisms for members. The students in Morena (2019) study also rarely consulted with their teachers if they failed to understand topics in class. The absence of teachers to treat students favorably and in-group to belong to as these results suggests, may be detrimental to acquiring the skill sets.

The results show that the skills examined in this study can only be acquired in unstructured spaces where novel solutions are developed to solve unique challenges. A high uncertainty avoidance culture indicates a rigid and restricted atmosphere where initiatives and intellectual disagreements with teachers are discouraged. Students with accurate responses rather than innovative approaches are rewarded (Hofstede, 1986)

Conclusion

The study reveals a high power distance culture in classrooms and a shift in values to the individualism side of the spectrum. The latter indicates a disparity between this study and earlier studies which depict West African Countries as mainly collectivist societies. The study also establishes that there are cultural contexts to consider when developing strategies to enhance these skills sets. Most specifically, high power distance in the classroom should be reduced and more flexibility in learning styles can be adopted to enhance the development of these skills. That is, appropriate models of student-centered-learning may be needed for the development of these HOT skills. Future studies may employ a very large data set across Nigeria where there may be more variation in religion and tribe. Interviews should also be used to confirm the results obtained.

Recommendations

1. Concrete policy mechanisms should be developed towards the enhancement of HOT skills among Nigerian university undergraduates
2. Efforts may be made to create awareness among university lecturers on the effects of cultural influences and teaching styles on the development of these skills among university undergraduates.
3. University lecturers may be encouraged to cede some power to students in classrooms to create room for more active participation of students during lectures and adopt more flexible styles of teaching

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Appendix I: Correlation Analysis of the Variables of the Study