



Development and Standardization of Inventory for Measuring Students' Integration into University Academic Culture

Nkechi Patricia-Mary Esomonu*
Nnamdi Azikiwe University, NIGERIA

James Uzoma Okeaba
Nnamdi Azikiwe University, NIGERIA

Abstract: The study developed and standardized an Inventory for measuring Students' Integration into University Academic Culture named Inventory for Students' Integration into University Academic Culture (ISIUAC). The increase in dropout rates, substance use, cultism and other deviant behaviours in Nigerian universities makes it necessary for one to ask the extent to which university students are integrated into the university academic culture. This necessitates the development of standardized instrument for the assessment of students' integration into university academic culture. The Study employed an instrumentation design in which a five point scale inventory were developed and standardized. An initial draft of 60 item instrument was developed and standardized. After corrections a 58 item instrument emerged and was administered to 500 University students. The data collected were subjected to factor analysis. The result from factor analysis showed that 27 items loaded well on three factors with minimum loading of 0.35. The 27 items were administered to 1,000 students to establish norms. The norm for the entire instrument was 105.19, the norms of male and female students were 100.96 and 109.21 respectively. Cronbach alpha statistics was used to establish the reliability of the instrument, its result shows an internal consistency of 0.926 for the 27 items. Hypotheses were tested using t-test statistics; the result shows that there is a significant difference between the norms of male and female students. The manual of the ISIUAC shows the administration and scoring procedure of the inventory and its psychometric properties. The instrument ISIUAC is recommended therefore for assessing students' integration into the university academic culture.

Keywords: *instrumentation, academic culture, students integration, inventory, standardization.*

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Introduction

Every community is represented or identified by a shared set of belief or pattern of behaviour, attitude, values and traditions that are widely held, which are necessary or required for its continuation. The university, being a community of people, also has a pattern of belief and values which they adhere to. These values are social, academic, organizational, ethical, etc. which points to the academic culture of the university. Academic culture, consists of simple practices introduced into the school system and have been practiced repeatedly over time; hence they form the basic values, beliefs and practices of the academic environment. According to Dill (1982), because of the distinctive nature of academic institution, academic culture plays a significant role in its functioning. Furthermore, he said that for individuals to function in any organized setting, the university inclusive, they must have some continuing sense of reality with which they work. He further noted that it is the expressive social fabric surrounding them that give meaning to the individual task and objectives they pursue. The characteristics of universities suggest that universities

display a high frequency of societal interactions resulting in the development of a highly specific organizational culture (Becher & Clark, 1984) Deal and Kennedy (1982) viewed university culture as the values and beliefs of those associated with the universities (including administration, facilities, students, and board members and staff), developed in a historical process and conveyed by use of language and symbols. Wallace & Schirato (1999) noted that universities are based on certain traditional values. These values they referred to as university academic culture. According to them, these values include: an interest in knowledge of its own, critical thinking, exhaustive inquiry, specialized knowledge, disputation, openness, skepticism, tolerance, reflection, honesty, respect for intellectual property, collegiality; critique and academic freedom.

Many students fail in school not because they lack the necessary cognitive skill, but because they feel detached, alienated and isolated from others and from educational process. When students feel rejected by others, they internalize the rejection and learn to hate themselves or externalize the rejection and learn to

* Corresponding author:

Prof Nkechi Patricia-Mary Esomonu, Department of Educational Foundations, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria.
Email: nkechipmesomonu@gmail.com

hate others (Hake, 1998). One cannot say for certain the percentage of students' disconnectedness in universities in Nigeria, but little picture and statistics available on school dropout, violence, cultism, sexual harassment and low quality of higher education are indications of very unpleasant situations. Saint, Hartneet, & Strasser, (2003) observe that institutional statistics are notoriously unreliable and universities in Nigeria do not monitor their dropout rates. However in 2002, the National Universities Commission (NUC) attempted to calculate dropout rates within the federal university system; its preliminary findings suggested that, dropout rates may be as high as 50% in six universities while in federal universities at Kano, Maiduguri and Owerri dropout rate were 10% or less.

Many higher institutions have been found by researchers to be breeding grounds for all sort of corrupt practices and problems ranging from examination malpractices, cult activities, sexual harassment, institutional unrest, violence amongst others (Rotimi, 2005; Olujuwon, 1999; Deuga & Deuga, 2004; Ezebube, 2006; Azelarua et al 2005). Since disconnectedness from academic culture relates to students' deviant behaviours, disengagement from school activities and other health risk behaviours that adversely affect the academic achievement level of students, with the picture of Nigerian universities in view, one is persuaded to ask, to what extent are university students in Nigeria integrated to the university academic culture?. To answer the above question, it is necessary to pursue the concept of university integration with comprehensive data. To generate the data, an instrument must be developed and standardized and its content used to assess students' integration into university academic culture. A key to increasing students' integration, is finding efficient ways to measure it (Jones, 2009). When something is measured, summarized and reported, it becomes important and people pay attention to it. Many schools are working deliberately to improve students' integration. Frustration can occur however, if universities embrace this goal without a systematic approach to measure students' sense of belonging, acceptance to university rules and values and participation in university activities which are indicators of students' integration.

Literature Review

Researchers have used words like school bonding, school climate, school engagement and school connectedness, over the years to address the concept of academic integration. According to Brower (1992), integration is defined as a product of the interaction between students and their college environment. Elaborately, Its definitions usually comprise psychological components pertaining to sense of belonging at school, acceptance of school values and behavioral component pertaining to participation in school activities (Finn 1989 Goodnow; 1993; Vioelki,

1996). In the last decade, educators and school health professionals have increasingly pointed to school integration as an important factor in reducing the likelihood that adolescents will engage in health-risk behaviors (Blum, 2005). Furthermore, Blum noted that increasing the number of students who are integrated into the academic culture is likely to influence critical accountability measures such as; academic performance, incidents of fighting, bullying and vandalism, absenteeism and school completion rate. According to him, strong scientific evidence demonstrates that increased students' integration to academic culture promotes motivation class engagement and improved school attendance. These three factors in turn increase academic achievement. Likewise, there is strong evidence that a student who is integrated into the university academic culture is less likely to exhibit, disruptive behaviours like, school violence, substance and tobacco use, emotional distress and early age of first sex (Blum, 2005). In line with this, the research conducted by McNeely and Falci (2004) showed that when students are integrated into the academic culture, they exhibit less deviant behaviors like substance use, early sexual activity, gang membership and violence. Persistent research on college dropouts finds that students remain enrolled when they learn the subtle and overt rules governing study and classroom habits, when they develop routine and pleasurable social relationship and when they develop cognitive map of the campus in which specific and personal meaning are attached to specific locations. In short, students stay in school when they become engaged in school daily life (Brower 1992). Kovalik '[2007) observed a gender difference in students participation in school activities, according to him

Girls are more likely to do their home work even if the assignment doesn't interest them because they want the teacher to like them. Boys need to find, the homework assignment meaningful to them, having the teacher like them is not a necessity. A boy who works well with his teacher may have his status lowered with other boys or may be considered a geek. Girls are responsive to voice and tone. Boys tend to be more responsive when focusing on the problem only-with little or no eye contact. Also small group learning tends to work for girls because they are more comfortable asking the teacher for help if they need it. If a boy gets stuck, chances are that he won't ask for help and may even become rowdy to get attention. His status in the eyes of the boys in the classroom is raised if he disrupts the teacher. Competition and time-constrained task draw boys' attention. When they have to work as a team to answer a question, they collaborate and work hard not to let the rest of the team down, p6.

According to Sax (2006), ignoring gender differences does not break down gender stereotypes; ironically,

neglecting hardwired gender differences more often results in a reinforcement of gender stereotypes. Furthermore he opined that the solution is not necessarily to have gender-specific classes, although in some situations that has been shown to work very well and is a growing trend in some states. However, knowing about these hardwired differences can inform and direct what we do in the Classroom, which will help ensure that students of both sexes are integrated 'and eager to participate in learning.

Blum (1976) noted that it can be expected that students' attitude towards school and their participation will strongly affect their academic performance and their decision to stay in school. He also noted that students' integration is a predictor of academic performance, inferring that being disengaged in school causes poor academic achievement. Studies consistently reveal that students who experience a sense of belonging in educational environments are more motivated, more engaged in school and classroom activities, and more dedicated to school (Osterman, 2000). Moreover, existing research suggests that students who feel that they belong to learning environments report higher enjoyment, enthusiasm, happiness, interest, and more confidence in engaging in learning activities, whereas those who feel isolated report greater anxiety, boredom, frustration, and sadness during the academic engagement that directly affects academic performance (Furrer & Skinner, 2003).

According to Jones (2009), some school improvement initiatives such as reading level are carefully constructed, viewed appropriately, through the lens of a school mission, driven by data, and accountable to many stake holders. Other initiatives such as students' integration however are not so meticulously conceived. According to him, rather than allowing data to drive goal setting and decision making, some schools still are guided by good intentions, hunches and impressions. He concluded that often, these schools inadvertently lose sight of learners' needs as they struggle to ensure compliance with state regulations. The quest for students' integration must be conducted in the context of a comprehensive data system. Therefore, the need arise for an instrument to be developed and validated for the assessment of students' integration into the university academic culture. Using sense of belonging, acceptance of university norms and values and participation in university activities as indication of students' integration,

The summery of literature reviewed show that;

1) integration is defined with psychological concept pertaining to sense of belonging, acceptance of school values and behavioral components pertaining to participation in school activities. Hence integration must be measured using these indicators: sense of belonging, acceptance to school

rules and values and participation in school activities.

- 2) Students will exhibit less deviant behaviors like substance use, early sexual activities, gang membership and violence when they are integrated into the university academic culture.
- 3) Students remain enrolled in school when they are integrated into the university academic culture.
- 4) Also from the review, it is clear that the quest to improve students' integration into the university academic culture has been pursued with good intentions and not with data since there is no valid instrument to measure it. From empirical studies reviewed, many instruments have been developed and validated, amongst them are; test anxiety inventory, teachers motivation inventory, emotional intelligence inventory, councilor interview rating scale etc. but as at the time of this study, there is no instrument developed and standardized for the measurement of students integration into the university culture in Nigeria. For this reason, the researchers set out to develop and validate an instrument whose content will be used to access students' integration into university academic culture using sense of belonging, acceptance to university rules and values and participation to university activities as indicators of Integration.

Purpose of the Study

The aim of this study was to develop and standardize an inventory for students' integration into university academic culture (ISIUAC). Specifically, the study aimed at:

- developing an inventory for student's integration into university academic culture (ISIUAC)
- establishing the construct validity of the inventory (ISIUAC)
- carrying out the reliability analysis of the instrument
- establishing the norms for the inventory
- developing a manual for the instrument

Research Questions

The following research questions were formulated for the study.

- How valid are the items of the inventory for students' integration into university academic culture (ISIUAC) in terms of their factor loadings?

- What is the reliability co-efficient of the inventory for students' integration into university academic culture (ISIUAC)?
- What is the norm of the inventory for students' integration into university academic culture (ISIUAC).

Hypothesis

The following null hypotheses were tested at 0.05 level of significance:

- The norm of males and females in the ISIUAC will not differ significantly.
- There is no significant difference between the norms of the male and female students in the sense of belonging to school section of the ISIUAC.
- The norms of the male and female students in the acceptance of university rules and values section of the ISIUAC will not differ significantly.
- The norm of males and females will not differ significantly in the participation in school section of the ISIUAC.

Methodology

Design

This is an instrumentation research. A study belongs to instrumentation research if it involves introducing new or modified content, procedure, technology or instrument of educational practice (Ogoamaka, 1999). Ali (1996) pointed out that a study which is surely geared towards the development and standardization of instrument in education is an instrumentation study. This study involves development and standardization of an instrument for the assessment of students' integration into the university academic culture.

Population and Sample

The population size of the study is 55,078 students of Abia State University, Uturu (ABSU) and Michael Okpara University of Agriculture, Umudike (MOUA). 33,856 students of Abia state university Uturu and 21,222 students of Michael Okpara University of Agriculture, Umudike made up the population. This population was as at 2013/2014 academic session. Sample of 1500 students was used for the study; 500 for validation and 1000 for standardization. For the validation, 250 students from Michael Okpara University of Agriculture, Umudike and 250 students from Abia state University Uturu were used. For the standardization, samples of 500 students each from both universities were used. , Simple random sampling technique was done in a multi stage way to select the

sample. 5 out of the 11 Colleges and 5 out of 9 faculties were selected from MOUA and ABSU. Then 2 departments each were selected from each faculty and college respectively. For the validation, 25 students were randomly selected from each of the sampled departments while for the standardization, 50 students were randomly selected from the sampled departments. 600 females and 400 males made up the sample for the standardization of the inventory.

Instrument Development

- 5) Pool of attributes/item generation: at this stage a preliminary draft was constructed based on the various indicators of integration. The draft had 60 items.
- 6) Organization of items: the draft instrument consisting of 60 items covering the 3 indicators of integration was arranged in 4 parts, the 1st is the bio-data of the respondent while the 2nd, 3rd and 4th parts sought information on students' sense of belonging, acceptance of school norms and values and participation in school activities respectively.
- 7) Preliminary Validation of Instrument: the draft of instrument was face and content validated by two experts in educational measurement and evaluation, one expert in English language and two experts in Sociology. These experts were required to assess the relevance, adequacy and comprehensiveness of the items of the instrument. To guide the experts in the validation exercise, the topic of study, purpose of study, statement of problem, research questions and hypothesis together with the draft instrument were given to the experts. In the process of validation, two unacceptable items were removed, the instrument sections were pulled together to have just two sections, the bio-data and the integration inventory items.
- 8) Assembling the initial draft instrument: the corrections, comments and experts' observations were incorporated in the modification of the instrument.
- 9) Construct Validation: after the face validation, the 58-item draft instrument was produced and administered to 500 students from Abia State University, Uturu and Michael Okpara University of Agriculture, Umudike. This was done for the purpose of establishing construct validity. The items were subjected to factor analysis. After the factor analysis, 27 items loaded adequately on 3 factors.
- 10) Standardization of Instrument: These items were administered to 1000 students, 500 each from both schools. This was done to establish the norm and reliability of the instrument.

Analyzing Data

Exploratory Factor analysis was used for research question one, a decision rule of 0.35 according to Meredith (1969) factors loading was used as the benchmark for acceptance of an item. Also, a factor which had at least four items adequately loaded on it was accepted as valid. Cronbach Alpha statistic was used to answer research question two. Research questions three and four were answered using mean deviation and standard deviation. For the hypothesis, t-test of difference between two means was used. All data was analyzed with the statistical package for social sciences (SPSS version 15.0).

Results

Table 1 shows the factor loadings for all the 58-items analyzed. 12 factors were extracted. 27 items loaded up to 0.35 (acceptance level for factor loading according to Meredith 1968) on 3 factors.

The items are 7, 8, 10, 11, 14, 15, 17, 22, 23, 27, 32, 33, 37, 38, 39, 40, 42, 45, 47, 50, 51, 52, 53, 55, 56, 57, and 58. Item 35 did not have minimum loading on any of the 12 factors

22 items were found to be complex, appearing in more than one factor. They are 2, 3, 12, 16, 19, 21, 24, 25, 26, 28, 29, 30, 31, 34, 36, 41, 43, 44, 46, 48, 49, and 54. They were consequently discarded because a factorial pure item should load or appear in only one of the factors. The table also revealed that some factors have few items adequately loaded on them (i.e. less than 4 items). According to Meredith (1969) it's not easy to explain such factors that have few items loaded on them, such factors were eliminated. The factors include 5, 6, 7, 8, 9, and 10. Also factors 4, 11 and 12 has no item adequately loaded on them and hence were dropped. The factor that has at least 4 items adequately loaded on it is accepted as valid (Meredith 1969). Hence 9 factors were dropped leaving behind 3 factors with 27 items considered factorial pure and valid.

Table 1. Factor Loading Summary

Item	7, 8, 10, 11, 14, 17, 22, 27, 32, 33, 37.	loaded on factor one
Item	15, 23, 38, 39, 40, 42, 50, 51, 52, 56, 57	loaded on factor two
Item	45, 47, 53, 55, 58	loaded on factor three
Item	35	not loaded
Item	1	loaded on factor five
Item	4, 5	loaded on factor six
Item	8, 20	loaded on factor seven
Item	13	loaded on factor eight
Item	6	loaded on factor nine
Item	9	loaded on factor ten
Item	2,3,12,16,19,21,24,25,26,28, 29, 30, 31, 34, 36, 41, 43, 44, 46, 48, 49, 54	loaded on more than one factor

Table 2. Loaded item summary

S/N	Factor	Items	Factor Loadings
1	Factor 1	7	0.631
		8	0.686
		10	0.845
		11	0.693
		14	0.677
		17	0.540
		22	0.375
		27	0.663
		32	0.741
		33	0.851
		37	0.810
2	Factor 2	15	0.581
		23	0.644
		38	0.797
		39	0.630
		40	0.732
		42	0.611
		50	0.574
		51	0.495
		52	0.712
		56	0.633
57	0.797		
3	Factor 3	45	0.806
		47	0.550
		53	0.665
		55	0.721
		58	0.663

Table 3. Summary of the result of the Cronbach Alpha test of ISIUAC

S/N	Factors	Items	Reliability Co-efficient
1	Factor 1	7,8,10,11,14,17,22,27,32,33,37	0.949
2	Factor 2	15,23,38,39,40,42,50,51,52,56,57	0.900
3	Factor 3	45,47,53,55,58	0.867
4	All items of ISIUAC	All of the above 27 items	0.926

The data on table 2 show that a total of 3 factors and 27 items emerged factorial pure and valid. Each of the factors is made up of more than 4 items with their corresponding factor loadings in line with the recommendation by Meredith (1969). The table also shows that closely associated items were pulled towards a particular factor.

Table 3 shows the internal consistency of the 3 factors; 0.949, 0.900 and 0.867 respectively and the reliability co-efficient of the entire inventory was 0.926.

Table 4: General norm of the ISIUAC

Mean	Variance	Standard deviation	Number of items	N
105.91	243.96	15.62	27	1000

Table 4 shows that the norm of the students' integration in inventory ISIUAC is **105.91** since the mean performance of 1000 students is **105.91**.

Table 5. Norms of male and female students on the ISIUAC

Sex	Mean	Standard Deviation	Number of Items	N
Male	100.96	15.29	27	400
Female	109.21	14.96	27	600

Table 5 reveals that average score of male students on the ISIUAC is **100.96** while the average score of female students on the ISIUAC is **109.21**

Table 6. Norm for parts of ISIUAC

Items related to	Mean	Standard Deviation
Sense of Belonging	43.20	9.27
Acceptance of university rules & regulations	18.39	3.40
Participation in university activities	44.33	7.83

Table 6 reveals the average performance of students in various part of ISIUAC. From the table, items related to factor 1 norm **43.20**, items related to factor 3 norm **18.39** while the 11 items relating to factor 2 norm **44.33**.

Table 7. t-test result on mean rating of male and female in the ISIUAC

Sex	N	SD	Decision
Male	400	100.96 15.29 0.05 8.51 1.96	Reject
Female	600	109.21 14.96 0.05	Ho

The table seven above reviews that (8.51) is greater than (1.96). Hence the hypothesis is rejected and its alternative accepted i.e. there is a significant difference between the norms of male and female students in the ISIUAC.

Table 8. t-test result on mean rating of male and female students on the sense of belonging to the university section of the ISIUAC

Sex	N	SD	Decision
Male	400	42.84 8.18 0.05 1.01 1.96	Do not reject
Female	600	43.42 9.94 0.05	

From Table eight above, we do not reject the null hypothesis as it is stated, since the is less than the. Hence in the part of the ISIUAC relating to sense of belonging, there is no significant difference between the norms of the male and female students.

Table 9. t-test result on mean rating of male and female on the acceptance of university rules and values section of the ISIUAC

Sex	N	SD	Decision
Male	400	40.2 9.0 0.0 13.2 1.9	Reject
Female	600	47.0 5.3 0.0	Ho

From the table nine above is greater than, hence we do not accept the null hypothesis which claims no significant difference.

Table 10. t-test result on the mean ratings of males and female on the participation in university activities section of the ISIUAC.

Sex	N	SD	Decision
Male	400	17.83 3.71 0.05 4.23 100.96	Reject
Female	600	18.73 3.12 0.05	Ho

From the above table, is greater than, hence we do not accept the null hypothesis.

Discussion of Findings

The 58-items of the inventory for students integration into the university academic culture (ISIUAC) were subjected to construct validation procedures using principal component analysis with varimax rotation as shown in Table 1. Twelve factors were extracted from the analysis. From the table, only 27 items loaded up to 0.35 (acceptance level for factor loading according to Meredith 1969) on three factors. Specifically, Factor 1 pulled items related to sense of belonging to school and factor 2 pulled items relating to acceptance of school rules and values while factor 3 pulled items related to participation in university activities. With the questionnaire items loaded on the factors, the factors can be explained or named thus

- Factor 1 - sense of belonging to the university
- Factor 2 -Acceptance of university rules and value
- Factor 3 -participation in university activities

From the above it is evident that students integration can be defined by 3 factors sense of belonging to school, acceptance of school rules and values and participation in school activities The loading of at least 0.35 on 27 items confirms the validity of the ISIUAC. Findings from the factor analysis show that 3 factors and 27 items can explain the inventory for students' integration into the university academic culture. Each of the factors was made up of four or more items. The 58 items have been reduced to 27 items and 12 factors reduced to 3.

The 27 items that survived the factor analysis were subjected to a test of internal consistency using Cronbach alpha. Table 3 indicates the reliability analysis of the various part of the inventory (ISIUAC), they are; sense of belonging 0.949, acceptance of college rules and values 0.900 and participation in university activities 0.867. The general reliability of the entire inventory is 0.926, this imply that the instrument is very reliable. It is a confirmation of high internal consistency which is very dependable. From table 4, it is clear that the norm of the ISIUAC is 105.9; any score below the norm implies low integration while scores above the norm implies high integration. Also from table 5, the norms of males and females are 100.96 and 109.22. The difference in mean of male and

female student was subjected to hypothesis test (see table 7) and the result shows that there is a significant difference between the norm of the male and that of the female students in the ISIUAC. However, the result from hypothesis 2,3 and 4 show that there is no significant difference between the norm of male and female students in the part of the ISIUAC patterning to sense of belonging to school while in the parts patterning to acceptance of college values and participation in school, there is a significant different.

Conclusions from the Study

The 27 item ISIUAC passed through factor analysis with varimax rotation and loaded adequately on 3 factors namely; sense of belonging to school, acceptance of university rules and values and participation in university activities. These 3 factors have high internal consistency of 0.95, 0.90 & 0.87 respectively and a general reliability of 0.93. With the above in view, the researcher concludes that the instrument (ISIUAC) is valid and highly reliable.

Recommendations

Based on the implications and findings of this study, the following recommendations are made:

- The inventory for students' integration into the university academic culture (ISIUAC) should be adopted by university administrators as tool for measuring students' integration into the university academic culture.
- Students should use the ISIUAC for self-assessment
- Academic advisers and guidance counselors should adopt the ISIUAC as a diagnostic tool for accessing students' integration.
- Improvement of integration into university academic culture should be pursued with data using the ISIUAC as a tool to for data collection.
- University administrators should give attention to students' integration by forming efficient ways to improve it.

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APPENDIXES

The ISIUAC

Name _____ DATE _____ SEX: M ___ F ___

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and on a scale of one to five tick the appropriate circle to the right of the statement to indicate the extent of your feelings about it. There is no right or wrong answers. Do not spend too much time on any one statement. Just give the answers which seem to describe how you generally feel.

		(1)	(2)	(3)	(4)	(5)
	PART 1 – SENSE OF BELONGING TO THE UNIVERSITY	(1)	(2)	(3)	(4)	(5)
1.	I feel a strong sense of belonging to my class group	(1)	(2)	(3)	(4)	(5)
2.	I prefer staying at home to going to school	(1)	(2)	(3)	(4)	(5)
3.	I feel lonely in class	(1)	(2)	(3)	(4)	(5)
4.	In the university, I feel awkward and out of place	(1)	(2)	(3)	(4)	(5)
5.	My lecturers makes me feel I am part of this school	(1)	(2)	(3)	(4)	(5)
6.	My interaction with university staff gives me a sense of belonging	(1)	(2)	(3)	(4)	(5)
7.	I feel close to my peers in the university	(1)	(2)	(3)	(4)	(5)
8.	My peers makes me enjoy university activities	(1)	(2)	(3)	(4)	(5)
9.	I feel like am an outsider or left out of things in class	(1)	(2)	(3)	(4)	(5)
10.	I feel I should be allowed to live as an adult in my university	(1)	(2)	(3)	(4)	(5)
11.	If I am allowed to choose again, I'll choose this university	(1)	(2)	(3)	(4)	(5)
	PART 2 – RELATED TO UNIVERSITY RULES AND VALUES					
12.	My lecturers rules are too strict and rigid	(1)	(2)	(3)	(4)	(5)
13.	Some of the rules in my university are irrelevant	(1)	(2)	(3)	(4)	(5)
14.	The rules in my university are mainly to protect the lecturers and the facilities	(1)	(2)	(3)	(4)	(5)
15.	Abiding by my university rules is practically impossible	(1)	(2)	(3)	(4)	(5)
16.	There should be rules but not the type in my university	(1)	(2)	(3)	(4)	(5)
17.	I do not agree with some of the rules in my university	(1)	(2)	(3)	(4)	(5)
18.	The university shouts about unnecessary rules and regulation	(1)	(2)	(3)	(4)	(5)
19.	The rules in my university are just ok	(1)	(2)	(3)	(4)	(5)
20.	My university rules are student friendly	(1)	(2)	(3)	(4)	(5)
21.	Rules in my school are highly relevant and should be adhered to	(1)	(2)	(3)	(4)	(5)
22.	My school rules are too rigid	(1)	(2)	(3)	(4)	(5)
	PART 3 – RELATED TO PARTICIPATION IN UNIVERSITY ACTIVITIES					
23.	I make use of learning resources like library and laboratories in my university	(1)	(2)	(3)	(4)	(5)
24.	I participated in classroom activities	(1)	(2)	(3)	(4)	(5)
25.	I complete class assignments on time	(1)	(2)	(3)	(4)	(5)
26.	I enter into co-operative learning with peers in my university	(1)	(2)	(3)	(4)	(5)
27.	I embark on group research with my classmates	(1)	(2)	(3)	(4)	(5)

ISIUAC Manual

Inventory for students' integration into the university academic culture (ISIUAC)

Author: Prof N.P.M Esomonu & Okeaba J.U.(2016)

Purpose: To measure the extent of students' integration into the university academic culture

Description: 27 items inventory is design to access students' integration into the university academic culture using

- a. Sense of belonging
- b. Acceptance of university rules and values
- c. Participation in class and university activities as indicator of students' integration.

Administration:

The ISIUAC should be administered individually or in groups after establishing adequate rapport with the client(s). Please encourage them to read and follow the instruction at the top of test form. You (the professional) may need to help the client carry out the instruction. There is no time limit for completing the ISIUAC.

Scoring:

There is direct scoring and reverse scoring of the items

- a. Direct Scoring: for the relevant item, the response are scored thus

Strongly Agree	5
Agree	4
Undecided	3
Disagree	2
Strongly disagree	1

- b. Reverse Scoring: for the relevant items, the responses as scored thus

Strongly Agree	1
Agree	2
Undecided	3
Disagree	4
Strongly disagree	5

- c. Direct Score Items: 1,5,6,7,8,11,19,20,21,23,24,25,26,27

- d. Reverse Score Items: 2,3,4,9,10,12,13,14,15,16,17,18,22

- e. Add the value of the direct score and reverse score items for each of the three component of the ISIUAC

- f. Add together the scores of the three sub-scales to obtain the overall integration score.

Psychometric Properties:**Norms**

The norms reported here are mean scores obtained from different categories of students (University Students)

A (relating to Sense of belonging)	male : 42.84
	Female : 43.42
B (relating to rules and values)	male : 40.29
	Female : 47.03
C (relating to participation)	male : 17.83
	Female : 18.76
D (entire test)	male : 100.96
	Female : 109.22

Reliability :A measure of internal consistency was established using the Cronbach Alpha statistic. The result is thus

	Reliability Co-efficient
1. Sense of belonging	0.949
2. University rules and values	0.900
3. Participation	0.867
4. The entire instrument	0.926

Validity:

Construct validity was established using factor analysis with varimax rotation. Only items that loaded adequately were picked.

Interpretation:

The norms or mean scores are the basis for interpreting the scores of the clients. Scores higher than the norms indicates adequate integration into the academic culture while scores lower than the norms indicate the clients are not adequately integrated into the university academic culture. The manual above shows the administrative and scoring procedure of the inventory. It also shows the psychometric properties of the inventory.