ASSESSMENT OF AFFECTIVE DOMAIN IN SENIOR SECONDARY SCHOOL GEOGRAPHY STUDENTS IN NORTH CENTRAL NIGERIA.

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Abstract

The Universality and the importance of affective domain in teaching and learning of Geography cannot be overemphasis. This research seeks to assess the difference in the affective mean rating of students in Geography based on gender and school type. To achieve this, two research objectives with corresponding two research questions were raised and two hypotheses formulated. Survey research design was employed for this study. The population of the study comprised all the 111,699 SS II Geography students from both public and private Senior Secondary Schools in North Central Nigeria and the sample consisted of 1177 students from an intact class of SS II Geography Students from 43 Secondary Schools. Multistage sampling procedure was used to select the sample size along, local government area and school type. The instrument used for data collection was a developed instrument for evaluation of Affective Domain in Geography (IEADG). It was validated based on content and appropriateness of language by five experts and construct validity done using principal component factor analysis and the cronbach Alpha reliability was used to determined the reliability coefficient of 0.89. Furthermore, data analysis was also done by subjecting the data to mean and standard deviation for answering research question 1 and 2 while t-test was used to test the two hypotheses respectively. The study found out that there was no significant difference in the affective mean of students rating in Geography based on gender and school types. Finally, the study found that, gender and school type are not significant factors on the students' affective domain. Based on the findings and conclusions, the research made the following recommendations: Teachers and school administrators should always assess students' affective domain towards various subjects before making student placement into subject or make appropriate encouragement where necessary. Finally, regular encouragement of affective domain towards Geography should be done by Geography teachers since affective domain is gender and school type friendly.

Introduction

To teach is to engage students in learning; thus teaching consists of getting students involved in active construction of knowledge. A teacher requires not only knowledge of subject matter, but knowledge of how students learn, what makes them learn and how to transform them into active learners. Learning, however, is not just a cognitive (thinking) function, but also entails the non-cognitive functions of affective and psycho-motive domain. These different categories create three domains of learning which are: cognitive (knowledge), psychomotor (skills), and Affective (attitudes). The West African Examination Council (2007) affirmed that assessment of students' learning behaviour is expected to be carried out in totality. That is assessing the students in all the cognitive, psychomotor and affective domain. However, Rahman, Pasongli and Purwati (2018) reviewed that social science teachers, Geography inclusive, have not been able to formulate an affective character evaluation plan and do not inform students of affective assessment plans. The study also revealed that social science teachers are still focused on cognitive assessment and the affective tend to be neglected. The study of Purwati, (2018) further revealed that the affective assessment techniques chosen by teachers are observation techniques in the form of observation sheets. In developing the assessment instrument in the form of an observation sheet, the teacher still has limited abilities such that in the assessment of the attitude of massive students it is narrative. According to Rahman, Pasognli, andPurwati (2018). The implementation of teachers' assessment is considered not objective because it has not been based on existing assessment criteria. Offorma, EsereandIdowu as cited by Nworgu (2014), revealed that continuous assessment has continued to focus only on the cognitive domain to the exclusion of the affective and psychomotor domains. This is in line with popham's view cited by Umakalu, (2016) that most classroom teachers do not devote attention directly to students' affective constructs, and even greater number of teachers give poor attention to the assessment of affective construct in all subjects including Geography. Umakalu (2016) also revealed that Mathematics teachers possess the competencies in developing affective assessing instrument but do not possess the competencies in scoring and interpreting of affective instrument as well as in using data from affective instrument to direct instruction. Akanni (2019) revealed that teachers' competence towards continuous assessment significantly impact on the implementation of continuous assessment policy.

The affective domain which includes the feelings, emotion, and attitudes of an individual is categorized into: receiving phenomena; responding to phenomena; valuing; organization; and characterization (Anderson, Krathishl, Airasian, cruckdhank, Mayer, Pintrich, Raths, &Wittrock, 2011). The sub domain of receiving phenomena creates the awareness of feeling and emotions as well as the ability to utilize selected attention. This can include listening attentively to lessons in class. Sub domain of responding to phenomena involves active participation of

the learner in class or during group discussion (Cannon & Feinstein, 2005). Valuing involves the ability to see the worth of something and express it. This includes the ability of a learner to share their views and ideas about various issues raised in class. The ability of the student to prioritize a value over another and create a unique value system is known as organization. This can be assessed with the need to value one's academic work as against their social relationships. Characterization explains the ability to internalize values and let them control the bahaviour of individual. In view of this, a student considers the academic work highly important as it plays an important role in deciding the career path chosen rather than what may be available.

Given the importance placed on the affective domain in the classroom it is necessary for teachers to take interest on this domain because teachers are good providers of good learning environment therefore it is important for teachers to understand the importance of affective domain and its assessment. It is also noted that interpersonal skills are necessary skills for teachers in managing their classes effectively. These skills are associated with encouraging students in the class and making teaching and learning interesting by motivating students and developing positive emotions, feelings and attitude towards learning, (Russell, 2004) cited in (White, 2014). In school, there is a general agreement that both teachers and students behaviour contribute to classroom atmosphere. Although the two groups (teachers and students) did not necessarily share the same concerns or attribute importance to the same behaviours. However, both teachers and students believed that classroom behaviour is at least partly attributable to personal issues the individuals concerned brought into school with them. In other words, a lot that happen in classroom are perceived to have its origins elsewhere, hence teachers and majority of students agreed that the behavior of students in class are highly significant; they believed that students behavior can make or break a class therefore the need for a proper assessment instrument to assess this affective domain becomes very necessary (Russell, 2004) cited in (White, 2014).

The affective skills are assumed to be of Universal importance in learning and growth, and that the skills can be facilitated equally as well as those in the other domain. Affective domain provides guidance for assessing the level of competency a learner has achieved with specific affective learning skills. It is also said that the success of students in learning is not only caused by their intelligence, but also the goodness of their affective. (Irg. Zain, Hermawati&Aleven 2017). This is because the performance of a learner in a subject depend on the learners' interest, willingness, participation and attendance to classroom activities or phenomena. It is also concerned with the worth or value learners attach to a particular phenomenon.

Iran, Zaim, Harmawati and Alwen (2017) revealed that the English teachers said that the progress of students' affective is very important to be known in order to rank the best students in a classroom. This mean, the first rank will be given to the student who has higher intelligence and best affective

only. In other words, even though there is a student who is good in cognitive, but has a negative affective domain towards subject or learning, the first rank cannot be given to him/her (Ira, Zaim, Hermawati, & Alwen, 2017). However, the relevance of intelligence to the affective domain is that intelligence like logical/mathematical intelligence has the ability to study problems, to carry out Geographical Mathematical operations logically and analytically, and to conduct scientific investigations. Widayant and Pratiwi, (2018) founded that students with high Geographical Mathematics logical intelligence have better achievement in affective domain than students with low Geographical Mathematics logical intelligence.

Gender refers to the characteristics of women, men, girls and boys that are socially constructed. This include norms, behaviours and roles associated with sex. Gender assessment in this research used an affective domain instrument developed under high validity and reliability to examine how Geography students behavioural construct addresses and response to gender disparities in the subject Geography. Thus, the data collected from the affective instrument developed was organized and interpreted, in a systematic way in relation to gender with clear importance of gender difference for achieving high levels of learning in Geography. Just as teachers may teach broad spectrum of subject matter from Mathematics, Science, English, to Foreign languages, Technology and the Arts, they also teach across a wide age range and in many different classroom setting around the country known as school type that is, public and private schools. Public schools are primary or secondary schools offered to all children with low school fees. They are funded and controlled by the State or National Government, which means they are wholly or partly funded by taxation. The curriculum of public schools is decided at state or national levels. Admission to public schools is determined by the address of the students. The schools are obliged to take in students who belong to their respective geographical zone. Although technology and other facilities vary according to schools, public schools generally have fewer facilities than private schools. The number of students in a class may sometimes be drastically high due to lack of facilities or resources. It is also important to note that public schools always hire highly qualified teachers where they must meet all state- mandated requirements and be proficient in their specialized subject.

Private schools therefore, are schools founded, conducted, and maintained by a private group rather than by the government, usually charging tuition fees and often following a particular philosophy and viewpoint. It is also under the financial and managerial control of a private body or charitable trust accepting mostly fee-paying students. The fees are usually higher in private schools to accommodate better facilities and up-to-date technology. Although private schools follow the same curriculum decided by the government, the method of delivery varies in that it is decided by the school board. The fees and admission of students in private schools are regulated by the administration. The school has the authority to decide whether a student meets the requirements for

admission or not. Following that, the school administrators are in control of the recruitment of teachers in which the requirements needed to be a qualified teacher depends wholly on the school. The size of a classroom in a private school is also smaller than that of a public school. This is mainly due to the availability of resources and facilities. (https://schooladvisor.my).

Geography is often defined in terms of two branches: human Geography and physical Geography. Human Geography is concerned with the study of people and their communities, cultures, economics and interactions with the environment by studying their relations with and across space and place. While Physical Geography is concerned with the study of processes and patterns in the natural environment like the atmosphere, hydrosphere, biosphere and geosphere (https://en.m.wikipedia.org). The unpopularity of the subject Geography, lack of counseling and lack of interest by students to enrolled in the subject justified the reason for the present study to focus on the subject.

Objective of the Study

The aim of the study is to develop and validate affective instrument for senior secondary schools Geography students in North Central Nigeria. Specifically, this study:

i. determine if there is any significant difference in students' mean affective rating based on gender
ii. determine if there is any significant difference in students' mean affective rating based on school type.

Research Questions

The following research questions were raised to guide the study:

1. What is the affective mean rating of students' in Geography based on gender using (IEADG)?
2. What is the affective mean rating of students' in Geography based on school type using(IEADG)?

Statement of Hypotheses

i. There is no significant difference in the affective mean rating of students in Geography based on gender using the valid and reliable instrument developed.

ii. There is no significant difference in the affective students' mean of students rating in Geography based on school type using the valid and reliable instrument develop

Research Design

This study was a survey research design. The reason for the choice of this research design has being appropriate for the study is that, survey research design is typically used to determine the opinions, preferences, attitudes and perceptions of people about issues, (Emaikwu, 2019).

Population of the Study

The 111,699 Senior Secondary II (SS II) Geography Students from both Public and Private Senior Secondary Schools in North Central Nigeria constituted the population for this study. According to various State Ministries of Education Resource centres in North Central Nigeria and the FCT, there are 10611 senior secondary schools made

up of both 8492 co-educational and 2119 single school with a population of 111,699 SS II Geography Students in the zone distributed as follows: Benue having 2343 secondary schools, 21612 Geography students. Kogi have 1392 schools and 11,824 Geography students while Kwara have 2682 secondary schools with 29,234 Geography students. Nasarawa State also have 906 secondary schools with 11,584 Geography students and Niger having 1398 schools with 12296 students. Finally, Plateau have 1410 schools with students' population of 14,282 and the FCT having 480 secondary schools with a population of 10,867 Geography students (FCT and State Ministries of Education, 2020).

Sample and Sampling Techniques

The sample for the study was 1177 students from an intact class of SS II Geography students from 43 co-educational secondary schools in North Central Nigeria including the FCT to avoid distraction and ensure good sample size. The 43 secondary schools were selected using Multistage sampling procedure along state, Local Government Area, and school type. Simple random sampling techniques was used. At the second stage after 3 states and the FCT were sampled, the same simple random sampling techniques was used to select 3 LGA from Benue, 2 from Nasarawa, 2 from Plateau state and 1 from the FCT. This is to justify that every state and LGA have equal chance to be used in the study.

The sampling stages that was involved in this study was sampling of schools using intact classes for the subjects based on the school type that is, public and private.

Instrument for Data Collection

The instrument for data collection was an instrument for Evaluation of Affective domain in Geography (IEADG). After factor analysis, a refined instrument covering mainly nine levels of affective domain with corresponding item numbers as follow: Receiving (17), Honesty (4), organization (5), self-control (6), characterization (3), Responding (4), Perseverance (3), Valuing (1) and imitativeness (2) was developed and used for data collection. The first section of the instrument contains the variables to be study which are, gender and school type while the second section contained 83 items at the item generation stage and the refined instrument contained 45 items in affective domain with four-point continuum response option rating scale; Strongly Agreed, Agreed, Disagreed and Strongly Disagreed.

Validation of the Instrument

The validation of this instrument was carried out in different stages. The instrument was first given to five experts two in Measurement and Evaluation and one from psychology from Joseph SarwuanTarka University, Makurdi. Also one in Psychology from the Benue State University, Makurdi and a Geography teacher to determine the content validity. The experts checked the appearance and arrangement of the items under content validity. They vetted the items in terms of relevance to the subject matter in terms of different fields of Geography, coverage of the content areas based on the levels of affective domain, appropriateness of Language usage and clarity of the items, adequacy of the items in addressing the purpose of the study and the research

questions. The experts checked and added some items. At the initial stage 72 items were generated by the researcher and 11 items were added after content validation increasing the items to 83. The Geography teacher specifically checked the geographical content. The experts also checked and eliminate the irrelevant items where necessary. The second stage was the establishment of construct validity. The retained items from content validation were trial tested on SS II Geography students and the data collected was subjected to exploratory factor analysis (EFA) which employed principal component matrix. The researcher employed exploratory factor analysis which help to know the number of levels of affective domain that emerged, and Quartimax rotation was used in rotating the axes (Field, 2005).

The numbers of affective indicators under each of the five initial levels are presented as follow: Receiving which had a total number of 5 items is followed by responding having a total of 28 items. While valuing had 18 items, organization had 11 items and characterization had 21 items. This was used to generate total pole of items to be 83 based on factor weight of the indicators, that is, the items were drafted using the indicators. However, after factor analysis it revealed that 24 factors were extracted from the instrument with eigen-value ≥ 1 but when subjected to the use of scree plot only 9 major factors emerged with 45 items selected.

The items that fail to have minimum factors of 0.40 were discarded. This is in accordance with the recommendations of Hair, Black and Babin (2010) that only factor loadings with an absolute value $\geq$ 0.40 should be selected. The items that load in more than one interpretable factor were also discarded. Therefore, out of 83 items that were subjected to factor analysis, 45 scale through and were retained while 38 failed and were eliminated.

Reliability of the Instrument

To established the internal consistency of the developed instrument, the instrument was administered on different schools and data collected were subjected to analysis of internal consistency to determine the reliability coefficient. The reliability coefficient of 0.896 was established using Cronbach's Alpha. According to Gay and Peter (2000) if items have more than two scores, then Cronbach's Alpha should be used. Gay and Peter (2000) also said that if numbers are used to represent the response choice as it is in the four point response continues scale; analysis for internal consistency can be accomplished by using Cronbach's Alpha reliability (Gay & Peter, 2000). Cronbach's Alpha is commonly reported for the development of scales intended to measure affective constructs and where the reliability coefficient is above 0.70 it mean the instrument is highly reliable (Taber, 2016).

Method of Data Collection

The data for this study was collected three times from SS II student of Geography by the researcher and research assistant to ensure uniformity in instrument administration across the sample schools. It was also used for factor analysis, reliability of the instrument and assessing Geography student affective possession base on gender and school type. To ensure a high

percentage of immediate return of the completed instrument and smooth process of data collection a letter of notification and request to use the school and teachers as research assistance was first sent to the school principals. At their approval the researcher visited the schools and used the research assistant to administer the generated affective domain instrument to an intact classes of SS II students in North Central Nigeria. Geography teachers, one from each of the schools were used as research assistant to help administer the instrument and to retrieve it back from the students. The instrument was scored based on four-point rating scale of Strongly Agreed, Agree, Disagreed, and Strongly Disagreed. The response options weighted as 4, 3, 2 and 1 points respectively. After subjecting the data collected to factor analysis and ensuring that the instrument is valid the final form of the instrument was administered again on different group of students to determine the reliability of the instrument and to find out the students' difference in their affective behavior when segregated according to gender and school type to ensure the instrument developed is valid, reliable and can be used for its purpose in North Central Nigeria.

Data Analysis Techniques

To find out the extent to which public and private school students differ in their attitude towards Geography and the extent to which male and female students also differ in their affective towards Geography in research question one and two mean and standard deviation were used to answer the research question respectively. While Hypotheses one and two were tested using t-test at Alpha level of 0.05 in order to compare the discrepancies between the expected results and the actual results of the study in the affective of students towards Geography when segregated according to gender and school type to take final decision.

Results and Discussion

This section presents results of data analysis and discussion of findings. Results are presented under this section in tables and figure according to the research questions raised and hypotheses formulated to guide the study.

Presentation of Results

Research Question 1: What is the affective mean rating difference of students' in Geography based on gender using IEADG?

Table 1: Mean and standard Deviation of affective Domain scores of male and female Geography students

Group	N	Means	Standard Deviation
Male	591	2.8029	0.4181
Female	586	2.7948	0.4062
Difference		0.0081	0.0119

Table 1 shows that the mean score of male students as 2.8029 while that of the female students as 2.7948 respectively. This shows that the male students and female students have a mean difference of 0.0081 in affective domain toward Geography. The male students also had a higher standard deviation of 0.4181 compared to that of the female students' 0.4062. The data suggested that the affective domain of the two gender groups may not be equal. However, in order to take a final decision, the corresponding hypothesis one was tested.

Hypothesis 1: There is no significant difference in the affective mean of students rating in Geography based on gender using instrument for evaluation of affective domain in Geography developed. The hypothesis was tested by subjecting data from the affective domain instrument to t-test. The result is presented in Table 2.

Table 2: t-test of significance difference between male and female Geography students in affective domain.

Gender	N	Mean ($\bar{x}$)	Standard deviation	Df	tcal	α	Sig.	Remarks
Male	591	2.8029	0.4181	1175	0.337	0.05	0.738	NS Ho is not rejected
Female	586	2.7948	0.4062					

P > 0.05

Table 2 revealed that, at the gender level the P value of 0.738 is greater than p at 0.05 level of significance (P>0.05). Based on this result the test statistics is not significant and therefore the null hypothesis is not rejected. This therefore, implies that there was no significant difference in the affective mean of students rating in Geography based on gender using instrument for evaluation of affective domain in Geography developed. Hence the null hypothesis was not rejected.

Research Question 2: What is the affective mean difference of students' in Geography based on school type.

Table 3: Mean and standard Deviation of affective scores of public and private schools Geography students.

School type	N	Means	Standard Deviation
Public school students	537	2.7813	0.4084
Private school students	640	2.8137	0.4148
Difference		0.0314	0.0064

Table 3 indicates that the mean score of public schools Geography students was 2.7813 with a standard deviation of 0.4084 while that of the private schools Geography students was 2.8137 mean and a standard deviation of 0.4148 respectively. This shows that the private school Geography students and public school Geography Students have a mean difference of 0.0314in affective domain towards Geography. The data also suggested that the students from the private schools may possess more affective domain toward Geography. In order to take a decision on this, the corresponding hypothesis 2 was tested.

Hypothesis 2: There is no significant difference in the affective students' mean of students rating in Geography based on school type using instrument for evaluation of affective domain in Geography developed. The hypothesis was tested by subjecting data from the affective domain instrument to t-test. The result is presented in table 4.

Table 4: t-test of significance difference between public and private schools Geography Student in affective domain.

School types	N	Mean ($\bar{x}$)	Standard deviation	Df	tcal	α	Sig.	Remarks
Public school	537	2.7813	0.4084					NS
				1175	1.345	0.05	0.179	Ho is not rejected
Private school	640	2.8137	0.4148					

P > 0.05

Table 4 shows that the P value of 0.179 is greater than p at 0.05 level of significance (P>0.05). Based on this result, the test is not significant the null hypothesis is therefore not rejected. This implies that there was no significant difference in the mean affective domain rating of students in Geography based on school type using instrument for evaluation of affective domain in Geography developed.

Discussion of findings

The discussion of findings in this study was based on the two research questions raised and two hypotheses formulated. The finding revealed there was no gender difference in the affective domain of male and female Geography students using the instrument developed. The implication is that both male and female Geography students have similar affective domain toward Geography. Finding from research questions two also revealed that there was no school type difference in the affective domain of public and private schools Geography students using the instrument developed. This implies that both public and private schools Geography students have the same affective domain in Geography. Thus, the result from research question 1 and 2 is in agreement with the work of Kyrinzos and Stalikes (2018), Maisarah et al (2019) and Esomoun and Okeaba (2016) and Hidalogo (2010) who

after instrument development and validation tested the instrument on a sample. However, the result is in disagreement with Vincent (2020), Iorbee (2020), Malhotra et al (1988), Hassad (2007) Rogers (2016), Wyalt (2016) Jared (2016), Saptono and Najah (2018), Ugodulunwa and Adeyemo (2016), Ezeudu et al (2013) and Ebrahim and Salim (2012) who did not test the difference in mean of students according to gender and school type using the instrument developed.

Also, the result revealed that the affective mean difference of students based on gender and school type are P.>0.05 (0.738>0.05). and P>0.05 (0.179>0.05). The findings is an improvement on studies which did not make use of these moderating variables.

Conclusion

The study concluded that there was no disparity in students' affective domain as it is found in some literature review, this results suggested that gender was not a significant factor on some construct in the students' affective domain, the male and female Geography students shows the same level of affective domain towards Geography. Finally, it was concluded that school type was not a significant factor on the students' affective domain in Geography. The public and private school Geography students do not showdisparity in their level of affective domain towards Geography.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Teachers and school administrators should always assess students' affective domains towards various subjects before making students placement into subjects or make appropriate encouragement where necessary.
2. Regular encouragement of affective domain towards Geography should be done by Geography teachers since affective domain is gender group and school type friendly.

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