

Beyond Cognitive Assessment: Teachers Attitudes towards Assessing Psychomotor and Affective Domains of Students' Behaviors in Classrooms in North Central-Nigeria

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Abstract

Education is one of the best patrimonies a nation can give to her citizens. Education is imperative in the development of any nation or community of the world. To achieve quality educational goals as prescribed in the National Policy on Education, education should focus on students in totality-cognitive, affective and psychomotor skills in order to produce students that are balanced physically, emotionally and intellectually and this can be done achieved via assessment. This study was carried out to investigate secondary school teachers' attitudes toward assessing the affective and psychomotor domains of students' behaviors in classrooms. The study adopted a survey research design. The population for the study consisted of all the secondary school teachers in North Central geo-political zone, Nigeria. A sample of 450 teachers was randomly composed for the study. Data was collected using a questionnaire developed by researchers and validated by experts in Psychology and Measurement and Evaluation.. The data collected was analyzed using descriptive statistics of Means and Standard Deviation to answer the research questions parametric statistic of dependent t-test to test the hypothesis at 0.05level of significance. The findings revealed that, the secondary school teachers have positive attitudes towards assessing affective and psychomotor domain of students' behaviors in classrooms. It was also found that, their attitudes towards assessing affective and psychomotor domains of students' behaviors do not differ significantly. The researchers recommended that, Government should make efforts to ensure the sustainability of comprehensive assessment by using the school administrators to continue to stress its relevance in schools. Workshops/seminars should be organized for teachers to enable them acquire more skills required to effectively carry out non-cognitive assessment.

Keywords: Education, Assessment, Attitudes, Affective domain, Psychomotor domain, Cognitive domain

Introduction

Education is one of the best patrimonies a nation can give to her citizens. Education is imperative in the development of any nation or community of the world. It is one of the most important aspects in human development. Education aims at revealing systematic and scientific results toward meeting the needs of individuals and society. In general, education aims at transmitting common set of beliefs, values, norms, and understanding among people. It focuses on providing individuals that will be lifelong learners, passionate, ready to take risks, able to solve problems and think critically, look at things differently, work independently and with others, creative, caring and wanting to contribute positively to their community, morally courageous and able to use the world around them well among others. In achieving quality educational goals, education focuses on developing students/learners in totality of cognitive, affective and psychomotor skills in order to produce intellectually, emotionally and physically balanced individuals. This means that, focusing only on one of the three domains is not enough to tell it all about a student. Teachers as key figure in education shoulder this task of assessing and reporting on the three domains of learning.

Assessment has been viewed as the process of getting information for the purpose of decision making. Emaikwu (2011) defines assessment as data-gathering strategies, analysis and reporting processes that provide information that can be used to determine whether or not, intended outcomes are being achieved. It is thought of as occurring whenever one person or group of persons, in some kinds of interaction, direct or indirect with another is conscious of obtaining and interpreting information about the knowledge/understanding, abilities, skills and attitudes of another person. It is a method used to enhance and improve the quality of education for life-long learning skills and elevate performance in various educational contexts. Assessment is important to provide a depiction of curricular goals attainment and quality of instruction. To meet these curricular goals in Nigeria, the National Policy on Education (NPE, 2004) laid strong emphasis on assessment to be comprehensive that is, encompassing the cognitive, affective and psychomotor domain of behaviors. While the cognitive domain is geared towards acquisition and use of knowledge, the affective domain focuses on feelings and emotions

involving attitudes, interests, appreciation and models of adjustment, and the psychomotor domain deals with motor activities (Adejoh & Obinne, 2015)

In today's educational reform, assessing students' achievement is kingpin. Schools have driven educational reform in an attempt to raise academic achievement for all students. As a result, much value/ emphasis has been placed on test results. Test results have become an important indicator of school performance. Parents want to see their kids succeeding, their test scores to rise, and assurances their students are getting a top-notch education. Nowadays, it appears that acquiring good achievement grades as possible have been the main objective in education because it guarantees placement in prestigious institutions and places of employment. The cognitive domain hence is of central focus during these times of educational reform. As such, most teachers do not give their efforts towards addressing the affective and psychomotor domain and even fewer fail to assess it (Hall, 2010). As most classroom teachers emphasize achievement testing, focus shift away from the affective and psychomotor domain and as much emphasis is laid on cognitive aspect of what students need to learn. Whilst teachers are successfully responding to the cognitive needs of students in today's educational reform, it is unknown if they also attempt to address the affective and psychomotor needs of students when utilizing classroom assessment. No wonder, Rashid, Abdul, Ghani, Shaik and Malik (2006) stated that, assessment practices today emphasis so much on assessing content mastered by the students and little attention is given to students' emotions and physical/manual skills.

However, it has been proved beyond reasonable doubt that students assessment needs to be done in totality. For instance, the domains of educational objectives (cognitive, affective and psychomotor) are said to be inseparable (Hall, 2010; Garritz, 2010). Mohamed and Jacqueline (2012) supported this with the notion, "to reach a level of creativity in problem solving or utilizing reality, a learner should at least reach the upper half of the development of the cognitive domain; to value pursuing a creative solution, the learner should reach the upper half of the affective domain and to reach the skill level needed to initiate and develop a creative solution, the learner should reach at least the upper half of the pyramid of psychomotor domain". This entails that these domains works in tandem and one without the other leaves the first incomplete and the other unnecessary. Malikow (2006) asserted that "affective domain teaching occurs simultaneously with teaching in the cognitive domain, never in lieu of it." Stenzel (2006) supported this notion that "academic success require(s) that instruction and assessment be focused on the levels of the affective domain of learning and teaching. Theodore Roosevelt once said, "To educate a person in mind and not in morals is to educate a menace to society" (Morris, 2009). Stiggins (2005) said of the affective domain; "motivation and desire represent the very foundation of learning, if students don't want to learn, there will be no learning, if they feel unable to learn, there will be no learning. Desire and motivation are not academic achievement characteristics bur rather affective characteristics". As such, the affective domain has been shown to have an important impact on student learning (McConnell & van der Hoeven, 2011). Mohamed and Jacqueline (2012) said of psychomotor domain "Psychomotor abilities not only facilitate the learner's practices but also motivate the learner to try different alternatives. Considering the frequent negligence/less emphasis placed on the affective and psychomotor domains of behavior by classroom teachers in today's education reforms despite their importance and immense contribution to an individuals' life in complete realization of their academic goals, the research is undertaken to find out teachers attitudes towards assessing these domains.

Literature Review on Affective and Psychomotor Domain

The Affective domain refers to learning objectives that emphasize a feeling tone, an emotion, or a degree of acceptance or rejection. The affective domain is most often referred to as the attitudes, interests, and values of students and the resulting behaviors associated with learning (Savickiene, 2010). According to the author, a short list of what may possibly be included in the affective domain are attitudes, values, motivation, beliefs, emotions, acceptance or rejection, perception, preference, interests, academic self-esteem, anxiety, locus of control, behavior, personal growth, group dynamics, morality, ego development, creativity, independence, curiosity, mental health, and feelings. The relevance of this domain in educational reformation cannot be overemphasized.

Hyland (2010) in discussing the educational reform movement expresses a concern over the "timid, lackluster and indiscriminate" way that the affective domain learning outcomes have emerged. The author also believes that there should be a more vigorous and systematic re-emphasis of affective learning objectives stating that "an education that fail(s) to address such issues is bound to be one-sided and incomplete." It is worth determining if classroom teachers are becoming "one-sided and incomplete" in their day-to-day lesson planning through neglect of the affective domain as commented on by the author. Wight in Eastern Newyork University (n.d) stated that, affective domain is commonly addressed in district and school objectives but rarely given precedence in the classroom where learning actually occurs. Wight stated, "Man's cognitive processes alone, no matter how well

developed, can be of little service to him and to mankind unless he has learned to manage his feelings and to mobilize his total resources in the pursuit of meaningful, personal goals". According to Main (1992), the lack of incorporating the affective domain in classroom objectives ignores the fact that interests and motivations drive meaningful learning which will be applied in life beyond school. This is why Hall (2010) suggests that to better refresh, recapture, and motivate learners; regular affective assessment should be utilized by teachers in the classroom..

Research conducted on the development of the affective domain suggests students are less likely to reach higher levels of learning if they are not exposed and encouraged to develop the affective domain (Buchanan & Hyde, 2008; Hansen, 2009). By emphasizing the development of knowledge through the affective domain, students will appreciate the learning process and develop a lifelong desire to continue learning (Noll, Oswald, & Newton, 2010). One then wonders why teachers seem not to take the issue of affective assessment seriously.

The most frequently reported obstacle by teachers purposely not addressing and conducting assessments on the affective domain is the lack of time because of the primary focus on cognitive development required by federal and state regulations (Buchanan & Hyde, 2008; Noll et al., 2010). In a survey conducted by Noll et al. (2010), few of the teachers reported systematically assessing the affective domain although most agreed it should be a priority in education. However, Noll et al.(2010) found that the majority of teachers interviewed by survey on encouraging students to learn in reading classes used motivational techniques that addressed the affective domain such as selecting reading material based on students' interest, modeling, scaffolding, coaching, and stating the purpose for reading. Instead of viewing teaching regulations on the cognitive domain as a barrier or separate learning domain, the teachers incorporated affective techniques in daily lesson plans by building on the students' motivation to learn (Noll et al., 2010).

Savickiene (2010) reported that, many teachers avoid affective objectives because the assessment of the affective domain is subjective in nature which may make grading difficult. However, affective assessments may be developed to minimize subjective grading by attending to the completion of reflective activities rather than personal opinions (Savickiene, 2010). In determining affective development, the author stated that, teachers may use questionnaires and also have students create portfolios, head personal and group projects, keep reflective journals, and perform real or imitated tasks in the classroom.

Although many studies suggest that the affective domain encourages cognitive and psychomotor development, school regulations on classroom learning revolve around the development of the cognitive and psychomotor domains (Buchanan & Hyde, 2008; Hansen, 2009; Noll et al., 2010; Tan & Goh, 2008;). Teachers have the opportunity to make education and student achievement better by incorporating affective development in the classroom while still attending to the cognitive and psychomotor domains. By recognizing their teaching skills already incorporate many techniques that currently address the affective domain, teachers can make simple changes in the classroom to increase student achievement (Noll et al., 2010). A study conducted by Eristi and Tunca (2012), teachers claim that their schools are not funded properly to look beyond cognitive achievement, suggesting that only the cognitive development of the student is what matters. Brimi (2009) discusses the need for teachers to strike a balance between acting as academic instructors for students and moral guides for young people in historical context reaching back beyond the modern era of education. Eisner (2010) suggests that while the cognitive domain is being addressed in the classroom, employers desire more positive affective traits in job applicants when hiring new workers. Part of succeeding in the job market is maintaining a job once hired. Hansen (2009) points out that "Hiring decisions clearly focus on skill sets, but firing decisions shift to other (affective) concerns." Eisner (2010) calls for future research, such as the research proposed here, to determine teachers' attitudes and if teachers are interested in facilitating the need to build the affective attributes that employees are lacking in today's job market.

The Psychomotor Domain is skill based and refers to the learning of physical skills. Physical skills are the ability move, act, or manually manipulate the body to perform a physical movement. Psychomotor domain are largely confined to the physical acts and behaviors of performing and ways of moving. They are composed of the physical activities individuals become involved in and the physical procedures they use to negotiate daily life (Marzano, 2001). Simpson in Agbir (2004) classified psychomotor domain into seven hierarchical levels which include: Perception-use of sense organs to select cues that direct motor activity; Set-readiness or mental adjustment to perform specific activity; Guided Response- performance of task guided by the teacher; Mechanism-learned behaviors that have become part of the pupil; Complex Overt Response-accurate smooth and quick performance of tasks with less exertion of energy; Adaptation-mastery of skills and their proficiency application to suit other situation and Organization- making new movement to suit a particular condition. Increased emphasis has recently been placed on skill development in secondary schools in Nigeria. In line with

this, the Federal Ministry of Education (FME, 2004) re-emphasized the vocational and technical subjects such as Introductory Technology, Business Studies, Agricultural and Home Economics it earlier introduced. Such Vocational subjects according to Okoro in Agbir, (2004) are intended to equip students with useful skills and improve their employability.

Baharon, Khoiro, Hamid, Mutalib and Hamzah (2015) stated that, the implementation of psychomotor domain in teaching and learning is not something new but there has been lack of stress on the psychomotor domain perspective by teachers in the classroom. The authors opined that, in the past, assessment of psychomotor skills was seen as being less important than assessment of knowledge and cognitive skills. Researches have shown that, psychomotor testing (performance testing/assessment) has some shortcomings over cognitive testing, which makes the latter more popular. Okoro (2002) identified some of the shortcomings of performance testing. First, performance tests are costly to administer because of the tools, equipment and materials needed. Secondly, performance tests require much of the teacher's time in setting up, administering and grading the test. Next, performance test may test only a small sample of the skills possessed by students. If most of the required skills are not tested due to limitations of equipment or time, this could lead to low level of validity and reliability of performance tests. Again, bias of the rater, especially in the case of process measurement, can lead to unreliability of performance tests.

FitzGerald (1999) added that the problem with performance assessment is that it is difficult to devise dependable tests of this type. Research on educational performance (psychomotor) assessments has shown that tests of similar topics often produce dissimilar results. These situations are so because rating scale is used to test most psychomotor test; and rating scale is subjective rather than objective. There is therefore the need to reach objectivity in psychomotor testing. In order to achieve objectivity in psychomotor testing, checklist should be used in assessing the students' psychomotor performance (Ibezim & Igwe, 2016)

From the foregoing, it can be observed that, the affective and psychomotor domains of behavior are equally important in overall development of an individual. However, due to their continued negligence and less attention given to them by classroom teachers in their assessment of students, the research is undertaken to determine teachers' attitudes towards assessing these domains of behaviors in their classrooms.

Purpose of the Study

The study sets out to investigate teachers' attitudes towards assessing affective and psychomotor domain of students' behaviors in their classrooms. The study specifically seeks to

- 1). Determine Secondary School teachers attitudes towards assessing affective domain of students' behaviors in their classrooms
- 2). Determine Secondary School teachers attitudes towards assessing psychomotor domain of students' behaviors in their classrooms

Research Questions

The following research questions in correspondence to the objectives guided the study

- 1). What are the Secondary School teachers attitudes towards assessing affective domain of students behaviors in their classrooms?
- 2). What are the Secondary School teachers attitudes towards assessing psychomotor domain of students behaviors in their classrooms?

Hypothesis

- 1). The attitudes of secondary school teachers towards assessing affective and psychomotor domain of students' behaviors does not significantly differ

Methodology

The research design adopted for this study was a survey. The population for the study comprises all secondary school teachers in North-Central geo-political zone, Nigeria. A sample of 450 teachers was randomly sampled for the study. A self-developed structured questionnaire validated by experts in Psychology and Measurement and Evaluation was used for data collection. The questionnaire was developed in conformance to the affective and psychomotor domain items in the secondary school students' dossier. To establish the reliability of the questionnaire, it was trial-tested on a sample of teachers that did not constitute the subjects for the study. The reliability coefficient of the questionnaire was established using Cronbach alpha method which yields a reliability index of 0.89 and 0.61. 450 copies of the structured questionnaire were administered by the researchers through mails and personal contacts. 439 copies were retrieved. Data analysis was done using Mean

and Standard Deviation to answer the research questions and t-test to test the hypothesis at 0.05 α level of significance. A benchmark of 2.50 was used for decision/Remark. For items that are positively worded, a Mean of 2.50 and above was considered 'agreed' and those with a mean below 2.50 were 'disagreed' while for items that are negatively worded, a mean of 2.50 and above was disagreed and those with a mean below 2.50 was agreed.

Results

Research question one: What are the Secondary School teachers' attitudes towards assessing affective domain of students' behaviors in their classrooms?

Table1: Mean and Standard Deviation of Teachers' Attitudes towards Assessing Affective Domain of Students' Behaviors in their Classrooms

S/N	Teachers attitudes towards assessing affective domain	X	SD	REMARK
1	I recognize students that have self- esteem	3.25	.72	Agree
2	I pay close attention to students' emotional state in class	3.40	.59	Agree
3	I do not care about students' punctuality	3.05	.75	Disagree
4	I recognize when students are not motivated to learn	3.30	.73	Agree
5	I attend to students with learning difficulties	3.40	.59	Agree
6	It does not matter to me if students show no interest in my subject provided I deliver my lesson	2.90	.68	Disagree
7	I do not care about my student's values	3.01	.69	Disagree
8	I do not care if students concentrate in my class or not	2.99	.51	Disagree
9	I like it when students are active/ responding in my class	3.27	.71	Agree
10	I encourage my students to organize their learning coherently	3.25	.72	Agree
11	I am always mindful of my facial expression in class	2.95	.58	Agree
12	I coerce my students to attending my class	3.55	.99	Disagree
13	I show no preferential treatment to my students	2.94	.63	Agree
14	I always ensure calmness among students in my class	2.81	.85	Agree
15	I recognize when students are intrinsically motivated to learn	3.55	.83	Agree
16	I dislike students who are truants	3.08	.88	Agree
17	I help students to get out of anxiety situation	2.82	.78	Agree
18	The characters my students exhibit matters to me	3.30	.72	Agree
19	I do not care about students unity in my class	3.41	.97	Disagree
20	I am sensitive to my students readiness to learn	3.16	.68	Agree
21	I notice when students appreciate my teaching	2.90	.87	Agree
22	I respect my students' beliefs	3.01	.51	Agree
23	I recognize students with leadership qualities and encourage them to do well	3.60	.89	Agree
24	I care less about my students' appearance	2.88	.83	Disagree
25	Politeness of my students do not really matter to me	3.25	.79	Disagree
	Grand Mean/SD	3.16	.74	

X=Mean, SD=Standard Deviation

Table1 presents results on teachers' attitudes towards assessing affective domain of students' behaviors in their classrooms. As shown, of the twenty-five (25) items, teachers agreed with 17 of the items favoring assessment of the affective domain and disagreed with eight of the items against assessment of the affective domain of students' behaviors with a grand Mean and Standard Deviation of 3.16 and .74 respectively.

Research question two: What are the Secondary School teachers' attitudes towards assessing psychomotor domain of students' behaviors in their classrooms

Table2: Mean and Standard Deviation of Teachers' Attitudes towards Assessing Psychomotor Domain of Students' Behaviors in their Classrooms

S/N	Teachers attitudes towards assessing psychomotor domain	X	SD	REMARK
1	I teach students with poor writing to better manipulate their fingers	2.99	.81	Agree
2	I recognize students with comic arts	3.33	1.05	Agree
3	I recognize students who can draw well and encourage them to improve	3.09	.55	Agree
4	I recognize students with bad reading skill and teach them to do well	2.81	1.12	Agree
5	I teach my students how to present their speech better	2.82	.78	Agree
6	I recognize students who are good at imitating others	3.10	.89	Agree
7	I observe students who are good at construction arts and encourage them to do better	2.60	1.16	Agree
	Grand Mean/SD	2.96	.91	

X=Mean, SD=Standard Deviation

Table2 presents results on teachers' attitudes towards assessing psychomotor domain of students' behaviors in their classrooms. As shown on the table, of the seven (7) items, the teachers agreed to all with a grand Mean and Standard of 2.96 and .91 respectively.

Hypothesis: The attitudes of secondary school teachers towards assessing affective and psychomotor domain of students' behaviors does not significantly differ

Table 3: Dependent t-test of teachers attitudes towards assessing affective and psychomotor domain of students behaviors in classroom

Pair	Mean	SD	Std error Mean	t	df	P-value	α level	Remark
Affective-Psychomotor	.306	.859	.324	94.39	438	.000	.05	Significant

P-value= (.000) is less than α level =.05. Hence H_0 is Rejected

Table 3 is a t-test analysis of the attitudes of secondary school teachers toward assessing affective and psychomotor domain of students' behaviors in classroom in North-Central Nigeria. As shown, the P-value (.000) < α -level (.05). Hence, H_0 was rejected. This means that there is no significant difference in the attitudes of secondary school teachers toward assessing affective and psychomotor domain of students' behaviors.

Discussion of Findings

Findings of the study as presented on table1 revealed that, teachers in North Central are favorably disposed to assessment of affective domain in their classrooms, i.e, the teachers have positive attitudes towards assessing affective domain of students' behaviors in their classrooms. This finding is at variance with Hyland (2010) who expresses a concern over the "timid, lackluster and indiscriminate" way that the affective domain outcomes have emerged. Hyland submitted that, an education that fails to address the issues of affective domain is bound to be one-sided and incomplete. In view of this submission, one could infer from the findings of this study that, education in north central is in totality (cognitive and psychomotor) and/or complete. In line with the submission of Hyland, Eristi and Trunca (2012) reported that that, teachers claim their schools are not properly funded to look beyond cognitive achievement. This also varies with the findings of this study in which the teachers are

favorably disposed to assessing affective domain of students' behaviors. The findings also varies with that of Savickiene (2010) who reported that, many teachers avoid affective objectives because the assessment of the affective domain is subjective in nature which may make grading difficult. The findings could be seen to answer the call of the suggestion of Hall (2010) who stated that "to better refresh, recapture and motivate learners, regular affective assessment be utilized by teachers in the classroom. The findings is similar to that of Noll et al (2010) who stated majority of teachers interviewed by survey on encouraging students to learn in reading classes used motivational techniques that addressed the affective domain such as selecting reading material based on students' interest, modeling, scaffolding, coaching, and stating the purpose for reading. According to the authors, by emphasizing the development of knowledge through the affective domain, students will appreciate the learning process and develop a lifelong desire to continue learning. This can be seen to be the case in North Cental, Nigeria as revealed from the findings of the study.

Findings of the study as presented on table2 showed that, teachers have positive attitudes towards assessing psychomotor domain of students' behaviors in their classroom in North-Central geo-political zone of Nigeria. The findings contradicts the report of Baharon, Khoiro, Hamid, Mutalib and Hamzah (2015) who stated that, there has been lack of stress on the psychomotor domain perspective by teachers in the classroom. The findings of the study could be seen as a response to NPE (2004) re-emphasis of the need to incorporate psychomotor domain in classroom teaching and learning. Despite the numerous shortcomings of psychomotor assessment as stated by FitzGerald (1999), Okoro (2002), it could be seen from the findings of this study that, the teachers in North-Central geo-political zone, Nigeria are favorably predisposed to the assessment of students' psychomotor domain of students' behaviors in their classrooms.

Lastly, the finding of the study as shown on table3 implied that, a significant positive attitude was displayed towards assessment in the two domains. This finding is line with the submissions of Hall (2010), Garritz (2010) who all raised a concern for assessment to be done in the two domains (affective and psychomotor) just like the cognitive in the classroom to promote learning. Hence in achieving quality educational goals, education should focus on students' in totality-Cognitive, Affective and Psychomotor skills in order to produce students that are balanced intellectually, emotionally and physically. In view of this, it could be inferred from the findings of this study that, education in North-central Nigeria is in totality of the cognitive, affective and psychomotor domain since the teachers are positively predisposed to assessing these domains.

Conclusion and Recommendations

The researchers concluded that, with the strong emphasis laid on assessment in totality of cognitive, affective and psychomotor domain by the National Policy on Education in Nigeria, classroom assessment should be all encompassing, meaning that, it must be comprehensive in terms of these domains. Therefore, to keep abreast with developing individuals to be intellectually, emotionally and physically stable, every secondary school teacher should endeavor to continue to show and embrace positive attitude towards this comprehensive assessment.

The researchers however recommended that, Government should make efforts to ensure the sustainability of comprehensive assessment by using the school administrators to continue to stress its relevance in schools. It was also recommended that, workshops/seminars should be organized for teachers to enable them acquire more skills required to effectively carry out non-cognitive assessment since the revelation from the findings of the study showed that teachers had positive attitudes towards the assessing these non-cognitive traits.

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