

Statistical analysis was done using SPSS version 20 to analyse the frequency, percentages, mean and standard deviation of candidates' scores. The pass rates were calculated based on the pass rates scores set for each of the method.

Table 1: Gender Distribution of Candidates

Gender	Frequency	Percentage (%)
Male	222	34.3
Female	426	66.7
Total	648	100

Table 1 revealed that out of the six hundred and forty eight candidate who choose courses of study in education 34.3% were male and 66.7 were female. This indicates that the numbers of prospective female who are interested in becoming teachers and research fellow are more than their male counterpart.

Table 2: Score Distribution of Candidates

Score	Frequency	Percentage (%)			
9	1	.2	39	20	3.1
16	1	.2	40	17	2.6
18	2	.3	41	13	2.0
19	1	.2	42	14	2.2
20	1	.2	43	20	3.1
21	1	.2	44	13	2.0
22	4	.6	45	19	2.9
23	2	.3	46	35	5.4
24	1	.2	48	16	2.5
25	4	.6	49	28	4.3
26	4	.6	50	29	4.5
27	1	.2	51	28	4.3
28	6	.9	52	26	4.0
29	1	.2	53	18	2.8
30	6	.9	54	21	3.2
31	4	.6	55	25	3.9
32	6	.9	56	29	4.5
33	7	1.1	57	29	4.5
34	9	1.4	58	15	2.3
35	5	.8	59	18	2.8
36	4	.6	60	20	3.1
37	11	1.7	61	19	2.9
38	13	2.0	62	14	2.2
			63	10	1.5
			64	12	1.9
			65	9	1.4

66	2	.3	72	1	.2
67	6	.9	73	3	.5
68	5	.8	74	1	.2
69	2	.3	75	2	.3
70	3	.5	77	1	.2
71	1	.2	Total	648	100.0

Table .2 shows the scores of candidate with the mode score of 50,56 and 57 ,This indicates that majority of the candidates scored between 50 and 57.

Table 3 Descriptive Statistics of Candidates

No of Candidates	Minimum score	Maximum Score	Mean Score	Standard Deviation
648	9	77	49.38	10.78

Table 3 shows the mean score of candidate as 49.38 with the standard deviation of 10.78. It also indicates the minimum score of candidate to be 9 and maximum score of candidate to be 77. Using the above result to calculate the norm-reference method of standard-setting we have mean score minus 1 SD. That is $49-10 = 38.6$ approximately 39. The Angolf modified method reached for the cut-off point according to the University Admission Committee was 50.

FINDINGS

Research Question 1: What is the agreement between the two standards when used to analyse the candidate scores in Post UTME?

Table 4: Passing Scores and Rates for the two Methods

Parameter	Angolf Method	Norm Reference Method
Passing Score	50	39
Passing Rate	54%	85%
Percentage Agreement	5%	

Table 4 revealed that passing rate for Angolf modified to 54% whilst the Norm-reference method was 85%. It also indicates the percentage agreement of the two methods to be 5%.

Research question 2: What is the pass rates resulting from the application of the two standard setting methods on candidate scores in Post -UTME?

Table 5: Percentage of Candidates that Passed and Failed the Post-UTME

Methods	Pass Rate	Fail Rate
Angolf Modified	54%	46%
Norm-reference	85%	15%

Table 5 under the Angolf modified method revealed that the percentage of candidates that passed the Post-UTME was 54% and 46% failed the examination. Also, under the Norm-reference, the percentage of candidates that passed the Post-UTME was 85% and 15% failed the examination.

RESULT, DISCUSSION, AND SUGGESTIONS

The results of the study revealed that there was very little agreement between the two methods used to determine the cut-off point. The pass rate was found to be 54% with the Angolf modified method, whilst by the norm-reference method was 85%. Thus, these two different standard of settings yielded different standards and the percentage agreement between the two methods was 5%. It shows that the best method of setting cut-off point was the Angolf method. This finding is similar to the reported study (Elfaki and Salih, 2015) when two methods of standard-setting in a medical students MQC exam in internal medicine were compared and found them to be significantly different with failure rates of 61% and 12% respectively.

Also, Verhoeven, et al (2002) compared the pass/fail rates derived from the modified Angolf method and norm-reference method (mean minus 1 SD) and found them to be significantly different with failure rates of 56.5% and 10.1% respectively. However, it has been fairly well established that different standard setting methods result in different cut-off points or passing scores, they can be made credible, defensible and acceptable by ensuring the credibility of judges and using a systematic approach. to collect their judgments (Downing, Tekian and Yudikowsky 2006). Similarly, researchers who had worked on methods of standard settings have not agreed on the most appropriate number of judges, but they all agreed that larger numbers of judges might yield more valid and reliable results.

The findings of this study made the researcher to conclude that percentage agreement of the pass rates by the two methods is very low and this means that the methods are significantly different. Also the research support and recommend the use of Angolf modified method to determine Post-UTME cut-off points by the Universities.

REFERENCES

- Ado, A.B (2015) .*Analysis of UTME and Post-UTME scores of Education students at Northwest University Kano-Nigeria*. Paper delivered at a Conference: 1st International Conference On Education, Beijing China 2015, At Beijing China
- Amatareotubo, M. (2006). Post-UME screening: Matters arising. Posted to the Web: 8/30/2006
- Angoff WA. (1971). *Educational Measurement*. Washington DC:American Council on Education;
- Elfaki, O.M and Salih K,M,A (2015). Comparison of Two Standard Setting Methods in a Medical Students MCQ Exam in Internal Medicine. *American Journal of Medicine and Medical*. 5(4): 167 DOI; 10.5923i).ajmms.20150504.04
- Kane M. (2003). Validating the performance standards associated with passing scores. *Rev Educ Res.*,64:425–61. doi: 10.2307/1170678.
- Norcini J.J. (2003). Setting standards on educational tests. *Medical Education*,37:464–469. doi: 10.1046/j.1365-2923.01495.x.

- Boursicot K, Roberts T. (2006). Setting standards in a professional higher education course: Defining the concept of the minimally competent student in performance based assessment at the level of graduation from medical school. *Higher Education Quarterly*,60:74–90. doi: 10.1111/j.1468-2273.00308.x.
- Case SM, Swanson DB. (1998).Constructing written test questions for the basic and clinical sciences. Philadelphia: National Board of Medical Examiners;
- Cusimano M. (1996). Standard-setting in medical education. *Acad Med.*;71:112–120. doi: 10.1097/00001888-199610000-00062.
- Downing SM, Tekian A, Yudkowsky R. (2006). Procedures for establishing defensible absolute passing scores on performance examinations in health professions education. *Teaching and Learning in Medicine.*;18:50–57. doi: 10.1207/s15328015tlm1801_11.
- Kilminster S, Roberts T.(2004) Standard setting for OSCEs: Trial of borderline approach. *Advances in Health Sciences Education.* 2004;9:201–209. doi: 10.1023/B:AHSE.0000038208.06099.9a.
- Impara JC. (1997).*Setting standards using Angoff's method: Does the method meet the standard?* Invited address to Division D of the Midwestern Educational Research Association, Chicago.
- Impara JC, Plake BS. (1998).Teachers' ability to estimate item difficulty: A test of the assumptions in the Angoff standard setting method. *Journal of Educational Measurement*, 35:69–81. doi: 10.1111/j.1745-3984.1998.tb00528.x.
- Isaac O.B.(2010). *Post-UME Screening Examination in Nigerian Universities: The University of Education, Ikeri-Ekiti (Tunedik) Experience.* Library Philosophy and Practise
- National Research Council (1999). *Setting reasonable and useful performance standards.* In: Pelligrino JW, Jones LR, Mitchellw KJ, editor. *Grading the Nation's report card: Evaluating NAEP and transforming the assessment of educational progress.* Washington, DC: National Academy Press; pp. 164–184.
- Olayemi, I. K. &Oyelekan, O. S (2009). Analysis of Matriculation and Post-Matriculation Examination Scores of Biological Science Students of Federal University of Technology, Minna Nigeria.*Ilorin Journal of Education*, 28 pp.11-18
- Oyedele, A. (2008). *Post-UME should not be scrapped-UNAD VC.* *The Punch* (December 30): 41.
- Searle J. (2000). Defining competency-the role of standard setting. *Medical Education.*;34:363– 366. doi: 10.1046/j.1365-2923.2000.00690.x.
- Talente G, Haist SA, Wilson JF. (2003). A model for setting performance standards for standardised patient examinations. *Evaluation and the Health Professions*, 26:427–446. doi: 10.1177/0163278703258105.
- Ume, T. A. (1979). "Centralization of University Co-ordination in Nigeria. Environmental Analysis". *African Journal of Educational Research*, 2(2), 41-56. Busa
- Verhoeven BH, Van der Steeg AFW, Scherpbier AJJA, Muijtjens AMM, Verwijnen GM, van der Vleuten CPM. (1999). Reliability and credibility of an Angoff standard setting procedure in progress testing using recent graduates as judges. *Medical education*, 33:832–837. doi: 10.1046/j.1365-2923.1999.00487.x.

Verhoeven BH, Verwijnen GM, Muijtens AMM, Scherpbier AJJA, van der Vleuten CPM. (2002).Panel expertise for an Angoff standard setting procedure in progress testing: item writers compared to recently graduated students. *Medical Education*, 36:860–867. doi: 10.1046/j.1365-2923.2002.01301.x.