

# UTILIZATION OF STANDARD SCORES IN REPORTING PUPILS' ACADEMIC ACHIEVEMENT: A NECESSARY OPTION IN THE NIGERIAN PRIMARY AND SECONDARY SCHOOLS

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## **Abstract**

The fact that the primary and secondary school teachers still report the result of students in raw score form, is the worry of this paper. Raw score in a Norm Reference test is meaningless without it being transformed into a uniform frame of reference. The use of raw scores nullifies the result in terms of using it for comparisons, interpretations or when used in finding the relative standing of a student in a test. To worsen it, the Continuous Assessment (C.A) of students in internal examinations is sent to West African Examination Council (WAEC) and National Examination Council (NECO) also in raw score form. This is done irrespective of the differences in assessment instruments exposed to the students (the difficulty levels of the different tests), the teachers that marked the tests, etc. This paper looks at these differences extensively and recommended the transformation of the raw scores of the C.A and final scores (internal examination) to T-score before sending the results to parents and the examination bodies. It also made other necessary recommendations.

## **Introduction**

Generally, a child's achievement score on a subject typifies the extent this child possesses the fundamental facts, skills, knowledge, competences exposed to him under this subject. Achievement score therefore quantifies the extent of a child's potential on these attributes. It is also the sum total of a child's score in tests, assignments, projects, administered to him within a given term or period. Teachers in the Nigerian primary and secondary schools make use of this information by collating the achievement scores of students in various subjects and officially, report it to parents, students and for the school as terminal results. The terminal results show at a glance the scores of students in each subject, his class average, his position in the class and the number of students that participated in the examination.

Anastasi (1976), says that the score should help us discover where a student falls in the test or examination. It should also help to answer the question: does his score coincide with the performance of the class or group? Or is he slightly average or falls near the upper end of the class. The use, this result (also when the result is assembled over a long period of years) could be put, is enormous. The teacher uses it for diagnostic, placement, guidance and counseling purposes. It could also be used for certification, promotion, research, etc consequently the conduct and reporting of students' performance should not be done haphazardly.

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When these results get to parents, they tend to compare them in terms of their children's performances in each subject and from subject to subject. They also view it from inter-school performances and give them varying interpretations. Teachers in primary and secondary schools erroneously, report these results using the raw scores of students in these tests and exams. Teachers not only report results of their students with raw scores they also send the Continuous Assessment(C.A) scores of these students in their original scores to West African Examination Centre (WAEC) and National Examination Council (NECO) for the final computation of their final grades in each subject.

Procedurally, since these results receive parents', students', public and teachers' comparisons, interpretations and also used for the computation of students' final results, the use of raw scores in doing these is wrong. Anastasi (1976) says that to determine the individuals exact position with reference to a class or group, the raw score is converted into some relative measure. This opinion must be in line with the views of most measurement and evaluation experts (if not all). These relative measures put these scores in the same frame of reference. It normalizes the distribution of scores before comparability and interpretation could rightly be made. Ohuche and Akeju (1988) assert that raw score is a poor way of reporting because it is not comparable from subject to subject. Ukwuije (1996) in his opinion says that the raw score cannot competently answer questions like

- i. Which subject did different students perform best or worst?
- ii. Which students had the best result?

Reacting to this Anastasi further argues that in the absence of additional interpretative data, a raw score on any psychological test is meaningless. 65% pass in one subject might be equivalent to 30% in another or 80% in a third and that it depends on the difficulty level of the item making each test. Anastasi concluded that raw scores could be interpreted only in terms of a clearly defined and uniform frame of reference.

### **Implications of Normalization of a Distribution**

Scores are interpreted in terms of norms and criterion. In the latter according to Iwuji (1997), individual performance in a test is evaluated with reference to an absolute standard specified prior to the administration of the test to the students. This simply means that, a teacher, before the test can peg mastery or the pass mark to be 50% and above. This reference frame relates achievement to perfection and ensures mastery learning. The problem with it is that the proficiency of the teacher to fix this standard is sometimes queried.

When interpretation is based on norms, individual's performance is evaluated with reference to the performance of other students in the group. Individual scores are evaluated with reference to their relative standing to the group mean. Norms could be classmates, age mates, sex norm, location, school

## *Utilization Of Standard Scores In Reporting Pupils' Academic Achievement: A Necessary Option In The Nigerian Primary And Secondary Schools*

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norm, State or National norm. Norm interpretation is more popular and mostly used in Nigerian schools.

There cannot be better comparability and interpretation of performance when the distribution of scores are not in the same frame of reference i.e. normalization of the distribution. It is likened to the comparability of two heights where, from observation the two heights are on an unequal platform with one having a fair advantage over the other. There could not be any basis for the comparison. So it is, when raw scores are compared. The different scores are sourced differently with differences in quality of tests, assessment instruments or marking schemes and constructed by different teachers. Iwuji summarizes this by saying that information supplied by tests depends on how representative and adequate the sample of test items are of the behaviour associated with the attribute. Again a history achievement test constructed by a class four teacher in one school would differ from that constructed by another form four history.

### **Challenges of Poor Comparability to the Primary and Secondary Educational System**

This is going to be discussed in two dimensions. One as it affects internal examinations and secondly as it affects external examination.

#### **Challenges in Terms of Internal Examination**

This paper has discussed extensively why it is wrong to report results with raw scores as done in Nigerian schools. The results sent to parents have little information to offer to parents. Parents are led to misconstrue the results of their wards. They therefore blame or appraise their children's performance without knowing their exact relative standing. Students in themselves cannot compare and interpret their results. This underscores the result as well as the aim of preparing it.

#### **Challenges on Terms of External Examinations**

One of the problems of continuous assessment (C.A) implementation in Nigeria according to the Federal Ministry of Education Science and Technology (FEMEST, 1985) is "comparability of standards". By this according to them, means "differences in the quality of tests and other assessment instruments used in different schools". Unfortunately, since 1985 when this observation was made till now, this problem still persists. In Nigeria both WAEC and NECO send continuous assessment forms to all the schools (secondary) for continuous assessment of students' performances while in the school.

According to FEMEST (1985), in the junior secondary school level, the following recommendations are made: In the first year 10%, second year 20%, third year 30% summing up to 60% of C.A and 40% of final examination. In the senior secondary school level, schools collect the scores of each student in all the subjects for SS 1, SS 2 and SS3. These scores which are raw scores (and

Dr. Margaret N. Anugwo

calculated in percentage) are averaged. The outcome becomes the child's C.A for a particular subject. This is also done in all the subjects.

The final examination is assumed to be standardized. It contains the same questions which are administered to all the students for the Junior ( in each state or in the federation, as the case may be) and Senior WAEC and NECO exams. This is unlike the C.A scores, conducted and received from various schools with different: tests (number of questions in the tests, difficulty level, content areas, etc), teachers, school environments, teaching and learning facilities, quality of teachers, teaching methods etc.

**The Challenges are discussed in this Table**

**Table I: Differences in Schools' Test Construction and Administration**

Teachers in one school	Teachers in another school
Teachers are stingy with marks.	Moderate or lenient with marks.
Qualified, can develop valid and reliable assessment instruments	Teachers here cannot
Teacher are hardworking, ingenious and versatile in exposing the students to practical teaching and using varying teaching methods	Teachers and principal are not and they bother less about the extent students learn
Teachers are over-burdened by the carryover of content areas from students' previous classes	Teachers here are strictly following the scheme of work
The rates at which the teachers try to meet up with the scheme of work differ and no checks and balances are put in place to checkmate the activities of teachers to this effect.	
Teachers here train their students to be committed to their studies, assignments are carried out by them, feedback given, learning is faster	Assignments are not given, when given at all and are marked, no feedback, learning is slow.

**The List of the Differences is Endless**

At the end of the day C.A is calculated and sent in raw score form, with all these differences to WAEC and NECO. It is interpreted as poor, good or excellent, added to the final examination score and stannine score is assigned. This becomes the student's final grade. With this, those who are exposed to valid and reliable tests, good marking scheme and have better grip of content, might have a C.A of 20/60 or 40%. Where as the students who went through very simple tests with lenient scoring teachers will be having 50/60 or have higher percentage scores and used in the final computation. This is wrong.

This paper therefore asserts that instead of sending raw scores to these examination bodies, the scores should be transformed to a derived score first. In

other words, all C.A scores must have already been converted to one relative measure or the other. This paper recommends the T-Score which is one of the standard scores.

### **The Standard Scores**

The relative measures are the percentile rank, the standard scores; Z-score, T-score and the Stannine. In simple language standard scores are scores that have the same mean (starting point) and the same standard deviation i.e. each score is of the same distance from the mean.

Thorndike and Hagen (1992) define it as a standard unit of measure having essentially the same meaning from one test to another. This implies that, with the standard scores, students' performance for different streams, schools, states or nations in one or more subjects can be compared.

This paper recommends the use of T-score. It is easily understandable and also interpretable. It has a mean of 50 and standard deviation of 0 such that after transformation of the raw scores, any student with a T-score of 50 has an average result. Any one above 50 has above average performance, lower than 50 failed it, in comparable to the students that took the test.

### **Conclusion**

This paper concludes that the use of raw score in reporting results or used in sending C.A scores to examination bodies is wrong. This is because these raw scores will be used to compare and interpret result and this is beyond the use of the raw scores. The raw score therefore should be transformed to a relative measure before it is used. This paper recommends the use of the T-score which is one of the standard scores. It normalizes the distribution of scores and put them in the same frame of reference.

### **Recommendations**

Government should ensure the immediate use of the T-score in reporting of results in the Nigerian primary and secondary schools.

Continuous assessment scores sent to WAEC and NECO should be first converted to T-scores before they are sent.

Government should organize a train-the-trainer program on how the T-score is calculated. This researcher is willing to be involved in the training, if called to do so. Each school will have one or two representatives who come(s) back to the school to train the other teachers.

Parents should also be enlightened about T-score during the Parents Teacher Association (P.T.A) meeting, to enable them interpret their children's results.

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