

Towards Innovative techniques in the Appraisal of Secondary School Teachers for quality STM Education

By

Dr Elizabeth I.D. Offor

Department of Educational Psychology,
Guidance & Counselling and Measurement & Evaluation, Faculty of Education
Imo State University, Owerri
Imo State, Nigeria.
Lizoffor@yahoo.com
+2348037091426

Abstract

Academic qualifications of teachers most times, do not directly equate to professional functioning in the classroom. This makes it imperative that teachers should be monitored through appraisal to maintain agreed standards. Where standards are maintained quality is assured because the students will be adequately exposed to all that they should know. Appraisal that leads to the upgrading of teacher is an indication that the teacher has performed creditably well and merits motivation to do more. Events in education in recent times posed concern regarding the credibility of the appraisal processes used in teachers' appraisals. The processes were identified and critiqued and innovative techniques were proposed

Keywords

1. Introduction
2. Appraisal
3. Method
4. Current Appraisals
5. Innovative techniques
6. Summary
7. References

Introduction

Teachers occupy central position in educational system. Their inestimable role determines the tone of the school and the entire educational system. It implies that quality of education can be sustained and enhanced from the standpoint of teachers. Science, Technology, and Mathematics (STM) education has taken a central stage in meeting with the challenges of globalization. Emphasis on STM education stems from its importance in the on-going efforts in transforming Nigeria from the current scavenger (consumer) status to a producer country

(Offor 2007). It becomes imperative that STM education should be made more qualitative in order to produce such individuals that will blaze new trails and cope adequately with demands of globalization. The concern for quality is most apt in the current Education For All (EFA) programmes which had made tremendous increase in the population of the students in schools. Adequate appraisal procedures need to be put in place to ensure teachers commitment without which quality might be compromised for quantity.

The problem of this study is derived from the dismal performance of students in senior secondary school certificate examinations (SSCE) which has caused a great concern to the general public. This has made the stakeholders to view the process and products of education with suspicion (Afe 2003, Acholonu and Offor 2012). The worry is that the dismal performance had continued despite great pool of high ranking teachers in the school system (Sofowora and Bimbo 2012). This casts aspersions on the basis for their promotion to higher status. Is it possible for a teacher whose students all failed his/her subject to be promoted? What appraisal processes yielded data for such promotion? The researcher is so intrigued.

The purpose of the study therefore is to;

- (i) identify the procedures used in appraising STM secondary school teachers in Imo State.
 - (ii) evaluate the procedures in terms of potential to improve and enhance quality.
 - (iii) prescribe innovative appraisal procedures for quality enhancement
- Perhaps, it is better to first undertake the conceptual clarifications as they pertain to this work.

Appraisal

Oxford Advanced Learners Dictionary explained that to appraise means to consider or examine something or somebody and form an opinion about him or it. Appraisal is a judgement of the value, performance or nature of something or somebody. An Evaluator would rather argue that appraisal precedes evaluation (judgement of value), for while appraisal tilts more to information gathering processes, evaluation provides decisive statements about the value and direction for further action. Thus, appraisal of teachers entails gathering information about the teachers' conduct and services in relation to professional ethics and expectations. Nwana (2008) posited that appraisals are processes, strategies and protocols which enable the educational system to determine and take action on the professional standing of teachers. The Teachers Registration Council of Nigeria (TRCN) is the statutory body that stipulates standards of teachers expected performance at secondary school level.

Paraphrasing the TRCN (2010) handbook Anugwo (2012) enumerated sets of standards of teacher performance as follows;

A) What teachers should know;

- subject they teach
- how to teach the content pedagogy to the students and related assessment and monitoring strategies
- literacy and numeracy
- application of modern computer systems and ICT.
- how the students learn

B) Professional skills

- planning of learning programmes, teaching and learning, selection and organization of content with preparation of notes of lessons
- resourcefulness in terms of selection, development and use of instructional materials
- teaching and communication-effective communication and classroom interaction, grouping of students, teaching methods and strategies.
- evaluation of learners' performance-ability to administer valid and reliable tests, ascertain periodically the progress of learners and identify through assessment learners who are deficient or gifted.
- reporting: providing feedback to students, parents, guardians and other stakeholders.
- record-keeping: proper keeping of records of students' performance and other statutory records in acceptable format.
- programme monitoring and evaluation: teachers should be able to monitor and evaluate programmes
- health: safety and human rights-teacher should adhere to laws and educational policies pertaining to human right, safety and health.
- learning environment: they are to create and sustain exciting learning environment through excellent management and leadership skills.
- team work: should work as a team with other teachers.

C) Professional values, attitudes and conducts

- relationship with learners, colleagues, parents, society, employers, guardians, academic and administrative relationship.

D) Professional membership obligations such as;

- induction of education students at the point of graduation
- registration with TRCN, licencing, internship.
- continuous professional development

Thus, these form the fulcrum around which the teachers' appraisal revolves. Appraisal of teachers should be geared towards ascertaining compliance to these standards and by extension fostering quality. Nwana (2008) maintained that results of appraisals are used for promotions, appointments, annual increments, stagnation, termination or retirement. Indeed, appraisals intended for promotion should show the difference in the professional standing of teachers who benefit or did not benefit from it. By this approach quality can be maintained through the instrumentality of appraisal. Thus, quality assurance through appraisals is intended to ensure that STM education is made more

responsive to the needs of the students (Obomanu and Adaramola 2011). Affirming the idea Adedeji (2010) stressed that maintenance of quality of STM education is aimed at the following;

- cultivating and maintaining a culture of continuous performance and improvement for teachers and students.
- Developing and validating self evaluation reports
- Providing information to the stakeholders about the tone of the school
- Enabling the regulatory body to obtain baseline information through a common set of audit criteria.

Nevertheless, appraisal is a veritable instrument for quality maintenance and in this study it is looked at in terms of fitness of purpose, conformity to standards and satisfaction of intended objectives (Iwuchukwu 2012). This idea tallies with the general public's perception of quality education which is exemplary performance of learners and poor achievement depicts poor quality. Pertinent question is; what strategies are used in appraising secondary school STM teachers in Imo state? Are the strategies suitable for maintaining quality? Can there be better methods?

Method

This study is a descriptive survey. It is also an evaluative study because current procedures were critiqued in terms of their strengths and weaknesses in fostering quality. The researcher carried out a field survey of the nine (9) secondary (junior and senior) schools in Owerri Municipal Council of Imo state and interviewed STM teachers on how they were appraised for promotion. The population of STM teachers per teaching subject and the sample interviewed were summarized in table 1 below.

Table 1: Population and sample of respondents according to school subjects and teachers' ranks.

Subject	Population	Sample	Master III GL7	Master II GL8	Master I GL9	Senior master II G10	Principal III GL12	Principal II GL 13	Principal I GL14	Principal special GL 15	Director GL 16
Physics	13	3			1	3	6	2	1		
Chemistry	12	2				4	4	2	2		
Agricultural science	14	3		1	2	4	2	3	2		
Biology	16	3		2	3	2	4	3	2		
Basic science & technology	11	2		2	1	2	3	2	1		
Mathematics	13	3			2	1	2	5	1		
Total	79	16		5	9	16	21	17	9		
			20.3%				79.7%				

Status was arranged in ascending order of seniority. GL = grade level. The principal as in the status did not mean duty principals. 20.3% of the respondents were in the rank of master III to senior master II while 79.7% fell

within the ranks of principal III to principal I. The sample was constituted by the use of proportionate random sampling techniques by which the researcher drew 20% from each subject area. Interview schedule termed Teachers' Appraisal procedures (TAP) was actually a checklist of open-ended simple and straight forward questions requiring direct responses from the interviewees. First, the researcher exchanged pleasantries with the interviewees and made known to them the purpose of the visit and the use to be made of the results (Research purpose). Some of the interviewees the researcher happened to know in the past and this made the session very free, cordial and rewarding. The researcher made the first round of the visit to ascertain from the duty principals the population of STEM teachers and their status while the second visit which lasted for 3 days was for the interview proper. Some of the interview questions included; have you been promoted? How were you appraised? Who carried out the appraisal? At what interval period do you expect to be promoted? Did those who carry out the promotional appraisals watch teachers teach in the classroom? How often did they visit? Did they rate materials produced by teachers for purposes of teaching and learning? Have you been denied promotion when you were due and why? In the process of the interview a copy of the appraisal form which was given to teachers to fill by the Imo State Secondary School Management Board (SEMB form 03) and which was popularly known by teachers as APER form was made available to the researcher. It was captioned Annual Performance Evaluation Report for Teachers in Imo State Secondary School System. This could have halted the interview session given that information needed would be contained in the form but this was not to be because the APER form method had been discontinued. It might be informative to briefly explain the processes involved in APER method that gave way to the present interview method of appraising teachers' performance in the state secondary schools.

Findings

The APER form was divided into six (6) parts A-F. Part A which sought for personal data was to be completed by individual teacher. They were to supply information on a number of items among which were the duties they performed, post held either as acting or substantive and any other con-curricular activities the teacher was involved including attendance to seminars and workshops after the last promotion. There was no indication regarding verification of the information the teachers gave about themselves. In part B the principals were to rate the teachers on a 5-point scale based on clusters of personality attributes identified as (1) work habit and attitude towards supervision, attendance to school assemblies, appearance and composure. (2) Teacher effectiveness: The principals were to rate the teachers on classroom control, quality of teaching and the performance of students in internal and external examinations. (3) Interpersonal relationships of the teachers were to be rated in terms of their relationship with other members of staff, students,

principal, community and involvement in co-curricular activity. Special achievements made by the teacher or students taught by the teacher such as earned honors should be rated. The principals were to summarize their assessments in the form of percentages and to comment on their promotability. In part C the teachers were given opportunity to comment on the principals' assessment of them. The last part of the APER 03 form requested director of schools to agree or disagree with the principals' rating while the SEMB (Secondary School Management Board) was to take the final decision.

Much as these procedures were exhaustive in content and captured most of the standards of performance as stipulated in the TRCN (2010) handbook, the implementation was lump-sided. The major flaws were that the principal was the sole assessor, meaning that the data used for decision-making came from one source. It is worthy to note that the director of schools that was to ratify the principals' ratings was not part of the appraisal and so his/her decision can rarely be based on facts. The implication was that the director could make recommendations based on personal inclinations. The same goes for the principals' assessment which can be bias-laden in favour of teachers who are his/her friends. Moreover, the ability of the principal to give accurate reports of the individual teacher's professional effectiveness depends on his/her capability to monitor instructions and other school activities. Where the principal lacks adequate information, the whole exercise might degenerate to a situation of rancour, rivalry and bickering, especially when most of the teachers disagree with the principal's appraisal of them. In that case, appraisal loses its potential as an instrument for quality maintenance. Moreover, there was no guidelines to indicate that the principal actually appraised the teachers based on students' achievements. Perhaps, the APER form method was discontinued because of the observed operational lapses. How have the current methods taken care of the anomalies is a cogent question? What processes were involved in the current teacher appraisal methods in Imo State Secondary School System as given by the participants?

Interview results on current appraisal strategies

The current appraisal processes involved oral and/or written interview of STM teachers by personnels of SEMB, an organ of Imo State Ministry of Education. This is a group interview that featured few questions from subject area and current affairs. It is a one-short assessment conducted in a designated venue for all teachers. The results of this interview were used to take decisions for promotion (for those who have worked for 3 years and above), annual increment, retirement, stagnation, appointments or termination as earlier noted by Nwana (2008). The school principals and personnels of inspectorate division of the ministry of education whose duty it is to monitor instruction in classrooms do not make inputs in the assessments. It is doubtful that these appraisals are meant to ascertain the teachers' professional expertise because classroom experience is not incorporated. It is at best a certificate showing

exercise (teachers attend with originals all their credentials). Worse still, answering questions in a teacher's subject area correctly does not indicate the teaching of it properly in the classroom because academic qualifications according to Anugwo (2012) does not directly equate to teacher effectiveness. Going by this method of appraisal one can make bold to say that promotion which translates to growth in teaching profession is automatically given whether the teacher has done well or not. This type of appraisal will hardly, if ever, challenge teachers to do more, improve and seek new ways of doing things. Rather it will extol redundancy in skills, routine and lack of innovative ideas. This explains the reason for poor students' achievement despite the fact that 79.7% of the STM teachers in the system were in the principal cadre. There is need to evolve innovative techniques that will spur the teachers to improve on the quality of their professional services.

Proposed innovative appraisal techniques

For the purpose of this study innovative techniques entail introducing new ways of doing what was being done already, modified approaches geared towards obtaining better results. It is based on the principle of pool judgement regarding the professional standing of individual teacher. The under listed constitute the variables of the innovative techniques:

- (1) the principal
- (2) the peers
- (3) the inspectors
- (4) the teachers' productions
- (5) the students achievement

Figure 1: Summary of the Proposed Innovative Appraisal Procedures for Fostering Quality in STM Education

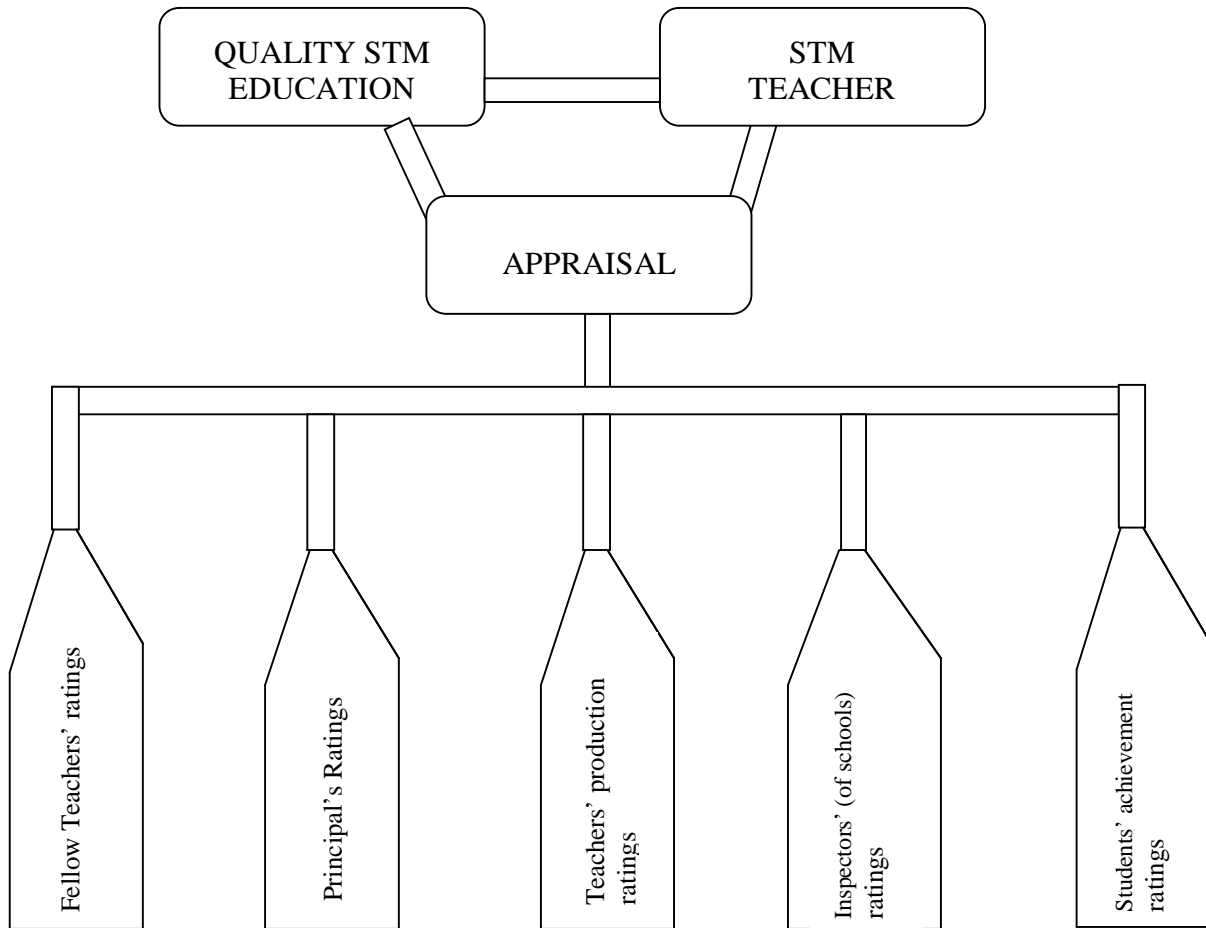


Figure 1 above is the summary showing relationship amongst variables that foster quality in STM education. The five variables of appraisal system are used to engender quality services which manifests as students' impressive achievements. It is pertinent to explain how each dynamic works and the importance.

Peer ratings

Anugwo (2012) proved that teachers can assess themselves. It is true that an individual teacher exists as a member of a group of other teachers. Thus, they relate with themselves and students to the observation of others (Okegbule and Aparo 2008). Moreso, the teachers are in the majority of all the school staff and constitute significant source of valid data regarding effectiveness of a given teacher. The bias which arises out of human preferences will be cancelled out as a result of majority effect. Peer rating is no doubt a reliable source of information about teacher performance. Teachers therefore should be involved in their appraisals.

Principals' ratings

The principal is the academic and administrative head of a secondary school. He takes charge of all that happens in the school. Amongst all the duties he supervises instruction and sees to it that teachers carry out their functions properly. He delegates duties and assigns some other administrative functions to teachers and they report back to him. All the teachers are under the principal and the principal makes reports on them when necessary. He is closer to the teachers and observes them over a period of time. The principal therefore is in position to appraise the teachers' professional effectiveness. Given that a school has only one duty principal his ratings should be validated by results from other sources.

Inspectors' ratings

Inspection is a crucial factor in quality maintenance in STM education (Akpan 1999). Such inspection is somewhat external because it is carried out by those in the inspectorate division of the ministry of education and whose duty it is to monitor Universal Basic Education (UBE) programmes in Nigeria. They are persons with years of experience in the various subjects taught in secondary school (Akpan 1999). It is their duty to carry out routine checks of schools. They are the evaluators of schools' programmes and write reports on the moral and academic tone of the school in line with standard practice. During their visits they watch teachers teach in addition to checking of the statutory records. Their ratings are important but do not merit to be used as the sole determinant data for decision-making because their visits are infrequent.

Ratings of teachers' productions

Teaching is a profession which entails that teachers should have productions to buttress their professional skills/. Lawyers are promoted to the status of SAN (Senior Advocates of Nigeria) on account of the number of cases won in court. Medical doctors who successfully handle difficult cases in hospitals are always vied for by patients. Ones outputs speak volumes of his/her mental energy and functioning. Teachers need physical materials to illustrate abstract points for better understanding and achievement by the students. Also students need inspiring write-ups and book materials that emanate from the very teacher that handles them in classroom. The impact of these materials on the students' creativity is inestimable. Why would teachers delve into productions if growth on the job does not depend on them, one may ask? Realizing that some STM concepts can hardly be appreciated by the students without concrete illustrations that are sourced from their familiar environment, it behooves on the policy makers to incorporate teacher's productions into their appraisals to achieve quality education. Science Teachers Association of Nigeria (STAN) realized this fact and instituted science fair project which precedes her annual conference. This helps STM teachers to embrace global demands of the profession but because this was not tied to growth on the job it was no longer taken serious. Lecturers in tertiary institutions are ever eager to evolve and disseminate latest information in their field of study because policy demands that they must be innovative to grow in the job. Such policy can be extended to senior secondary schools which are feeder schools to tertiary institutions.

When teachers' works are made part of the conditions for growth, the teachers will be eager to seek new knowledge rather than the routine. Research findings will be put into practical use in the classroom. There will be genuine interest in attending government organized conferences by teachers rather than the present interest that hinged on accruing financial benefits. Uniqueness of the products and their impact value on teaching and learning should be the overriding considerations for high rating. The appraisal will be undertaken by members of Appraisal committee drawn from inspectorate departments of the state ministry of education. The teacher will be present to explain the use of the prototype to facilitate on-the-spot assessment by the committee members. The teachers' score on this segment will be a average of the ratings of the experts. Ratings of productions should be made part of the appraisal variables only for teachers going to senior master on grade level 10 and upwards to grade level 16. This is to allow the newly employed teachers, time to accumulate enough experiences.

Students' achievements

How can the promotion given to a teacher whose students all failed his/her subject in external examinations be justified? Stakeholders in education infer quality education from the impact the education makes on the students. Such impact as they know it, is the ability of the students to read, write and pass

well in examinations. Students' achievement mirrors the teachers' performance in the classroom. It takes a committed teacher to worry when students' performance is poor except there are compelling policies that will make him show concern. It is necessary to accord promotions to teachers according to how well students pass his/her subject in external examinations. The teachers' score will be dependent on the percentage of the students that passed and the percentage that failed the subject for the period under review. The services of experts in educational measurement and evaluation will be engaged in establishing benchmarks in converting students' performance to teachers' appraisal scores. In that order, the teachers overall score will take account of all the ratings in each segment of the assessment. This minimizes bias and generates data that are close to reality. Quality will be assured too as teachers will be more committed realizing that growth on the job is earned and not merely given.

Summary and conclusion

The study looked at appraisal as a veritable instrument for monitoring, maintaining and enhancing quality in STM education. The faith in appraisal is borne out of the fact that there are standards that guide professional practice and these provided the baseline for ascertaining performance of individual teacher. The study is motivated by the public outcry indicating lack of thrust in the practice and products of educational system. This happens even as survey has shown that there are high ranking STM teachers in the field. The researcher is imbued to look into the teacher appraisal system of the school. It has been ascertained that commitment and hard work can be improved through appraisals since growth on the job is directly linked to appraisals. The existing appraisal procedures were critiqued highlighting merits and demerits. Innovative methods which will ensure that quality is maintained and enhanced in STM education were prescribed and explained

References

- Acholonu, V.N & Ofor E.I.D. (2012) Evaluation of Learners' performance through Agricultural projects: A sure way of quality assurance *Proceedings Of The 26th Congress of the Nigerian Academy of Education, NAE(10-22)*.
- Adedeji, S.O. (2010). Quality Assurance Management in Nigeria higher education *West African Journal of Education* vol. xxx ISSN: 0043-2997 38-53.
- Afe, J.O. (2003). Teacher Effectiveness: Imperative for implementing Universal Basic Education (UBE) in *Nigeria Journal of Nigerian Academy of Education (JONAED)* 8-9.

- Akpan, B.B. (Ed) (1999). Perspectives on education and teaching: from the eyes of Uduogie Ivowi. *Inspection and supervision of Science and Mathematics in the 6-3-3-4 system of education*. Paper 50. (438-442).
- Akpan, B.B. (ED). (1999). Perspectives on education and teaching: from the eyes of Uduogie Ivowi. *Nigerian secondary education in the next century: questions of equity, functionality and sustainability*. Paper 37. (303-313).
- Anugwo, M. (2012). Evaluation of teachers professional development: a teaching resource for STEM education in the UBE programme *Science Teachers Association of Nigeria (STAN)* on meeting the challenges of UBE through STM education. 53rd Annual conference. ISSBN: 978-978-49207-7-3 378-385.
- Iwuchukwu, C.B. (2012). Quality Assurance Mechanics in Nigeria tertiary education sub-sector: a critique in Quality Assurance Mechanism in Nigeria education *proceedings of the 26th Congress of Nigerian Academy of Education*, (230-240).
- Johnson, O. A. (2012): Appraisal of Lesson delivery quality of student teachers in Lagos state secondary schools *proceedings of the 26th congress of Nigerian Academy of Education, NAE* (331-340).
- Nwana, O.C. (2008). University Academics in Nigeria Memours of an insider Owerri. Peacewise
- Obomanu, B.J & Adaramola, M.O (2011). Factors related to under achievement in STM education in secondary schools in Rivers state of Nigeria. *World Journal of Curriculum and teaching* (1) 1. <http://www.sciedu.ca/jct> (05/09/13).
- Offor, E.I.D (2007) Test of Creativity for sustainable National Development. *Nigerian Journal of Educational Research and Evaluation (NAERE)* 7 (1). (57-67).
- Okegbile, A.S. Opara, S.A.E (2008). The applicability of peer rating technique in higher institutions *Nigeria journal of Education Research and Evaluation* (NAERE 1-7
- Sofowora, O.A & Bimbo, A (2012) Improving STM education in Nigeria: A case study of Obafemi Awolowo University Ile-Ife *World Journal of Curriculum and teaching* (2) 6. Retrived from <http://www.sciedu.ca/jct> 05/09/13.