

20

Science Education and Contemporary Issues in Nigeria

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Abstract

This paper examined and highlighted the current issues in science education sector, the junior and senior secondary levels being the target. The paper observed that most of the issues occur in different forms such as mismanagement of the available resources, examination malpractice, decayed infrastructures, poor attitude to work, non-decayed infrastructures, poor attitude to work, non-incentives to science teachers, etc. the author is of the opinion that, since no educational system can rise above positive steps to reposition them (science teachers) for higher productivity. The paper recommended continuous training and retraining of science teachers.

Currently, Science Education in Nigeria is not perceived as a system. It is being viewed as a set of separate and distinct activities. The non-handling of this area as a system coupled with the fragmented approach accorded it result in a compartmentalized, un-integrated and low yield outcome.

Uko (2007), our educational sector is in crisis. This crisis manifest in various forms such as decayed/dilapidated infrastructure, inadequate financing, poor management of educational resources, poor capacity building for science teachers, poor planning, examination malpractice, production of half-baked graduates, low social status of (science teachers), bad attitude to work. All these, have attendant consequence of students' poor performance in the science particularly at the Senior Secondary level, (BAKIE, 2000; Adeyanju, 2004 and Dike and Ndokwo, 2007).

Investment in science education at the secondary school level seems not to have brought about the expected results. The quality of education at this level,

determines the standard and quality of education at the tertiary levels. That will in turn help to turn out quality labour force for national development. So, there is need to look at the various contemporary issues as they affect science education in Nigeria especially at the secondary school level.

According to Hornby (2000), contemporary issues mean happening or existing in the same period of time. However, in this paper, contemporary issues refer to those things that are happening in the science education sector that work against its original objectives/goals as enshrined in the Federal Government of Nigeria National Policy on Education (2004).

The happenings in science education sector in our secondary schools are robbing our children of quality chance of having quality science education and invariably marrying the economy of the nation.

Amplification of Issues, and the way Forward Teachers' Training and Retraining Issues
In the past, teacher education followed progressively defined levels of sophisticated. The first (basic) level was characterized with the production, by teacher training colleges of Grades 3, 2 and 1 teachers. The next (higher) level found the existence of Advanced Teachers College (Now Colleges of Education), which trained people to obtain National Certificate in Education (NCE). The third (highest) level saw the establishment of the University Faculties of Education, with the saddle to produce graduate teachers. Each of these levels admitted candidates strictly on the possession of requisite entry qualifications.

Over time, partisan politics impinged on teacher training policies, to user in enduring era of compromise in admission requirements. Consequently, a large proportion of what we have today as trained teachers are professionally incompetent. This unfortunate scenario was aptly observed by Okeke (1996) thus: the teacher training institutions in Nigeria have tended to produce teachers that are inadequate in terms of knowledge of subject matter content and pedagogic skills.

To redress this ugly trend, the following suggestions are advanced:

1. Concerted effort should be made by authorities in our higher institutions of learning to establish and sustain non-compromised high admission standard (Dike and Ndokwo, 2007).
2. The right caliber of teachers should be recruited. The situation in which the teaching profession has become a dumping ground for people who cannot find employment elsewhere should be discountenanced because this caliber of

employees would tend to be counter-productive since they would neither have the basic professional training nor the associated job satisfaction.

3. Training and retraining of science teachers should be given greater emphasis and impetus. Such training should take cognizance of the improvisation of simple (yet essential) equipments, effective teaching strategies, etc. effective curriculum delivery is productivity in action. The productive capacity of a nation depends on the number of its quality teachers.

Social Prejudice, Materials Inducement and Attitude to Work Issues

Gone are the days when teachers gained respect, feel honoured, preserve their dignity and have the voice of authority. The teaching profession today is the least respected occupation in the society. This relegation, according to Dike and Ndokqo (2004) is essentially due to teachers salaries being too meager to support their (teacher's) personal basic needs, let alone enable them to dole out huge sums of money at launching of appeal fund ceremonies.

The relegation of the teaching profession underlies much of the bad attitude towards work of many teachers. The morale of teachers has been battered, and would remain same with attendant consequence of dwindled productivity, in so far as there is social prejudice against them, occasioned by noticeable disparities between their conditions of service and those of others.

To restore and ensure increased productivity in science education, the average annual income for teachers, as well as adequate provision for advancement, promotion and benefits enjoyed by others in other occupations, must be assured. The payment of good wages and salaries is fundamental to the productivity efforts of those employed (Umofia, 2005).

Issue of Capacity Building

As a result of increasing knowledge of how learning occurs, new teaching approaches, through workshops and seminars, are constantly emerging, of which the classroom teacher must be made aware. Unfortunately, most science teachers do not have opportunities to attend workshops and seminars, Ekpo (2006) observed that many teachers who would have been interested in contributing to the development of education are not given adequate supports through in-service training programmes. She believed that no meaningful progress can be made and sustained if the key operators of the system are not sufficiently groomed and refreshed with current knowledge and trend.

To rise to this challenge, to revamp productive efforts, the following suggestions are offered:

1. Training workshops and seminars should be constantly organized. No teacher should remain for two years without attending a workshop or seminar. Attendance at such workshops/seminars should be made a condition for promotion to the next level (Ekpo, 2006).
2. Welfare of teachers should receive a boost in terms of housing all teachers.
3. Annual presidential Merit Award for teachers should commence – to recognize and boost hard-work, dedication and diligence among teachers.

Issues of Non –Human Resource Inadequacy, Poor Financing and Mismanagement

The translation of curriculum objectives into concrete activities require the use of inquiry-based educational resources, viz, infrastructures (such as laboratories and libraries), learning materials (such as thermometers, microscopes and ammeters), items of equipment (example, computer and television sets). The availability of these resources facilities productivity.

Science curriculum delivery in Nigeria today suffer from prevalence of dilapidates, ill-equipped laboratories and libraries and sometimes unavailability of the former. According to Nwoye (2002), Federal and State Government turn deaf ears to financing and supplying of essential scientific materials or facilities needed in higher institutions and secondary schools for effective teaching and learning. The problem is further exacerbated by the fact that whatever resources are available are often not properly utilized due to poor planning which ignore educational goals, types of schools and number of classrooms required if the quality of education is to be maintained.

The way out of this mess is to:

1. Reactive and functionally equip our science laboratories.
2. Ensure good planning that takes into cognizance the number of classrooms required for quality education, among other things. If productive resources are put to their best uses, the level of output will be high, but if resources are inefficiently allocated, production will be low.

Examination Malpractice

The most disheartening problem plaguing science education is the issue of schools to Universities, examination malpractice has taken a frightening dimension. The second-class upper division graduate of today perhaps is not match for the third class graduate of yesterday the nine alpha achievers of today is probably beneath the statement of Result (SR) owner of yesterday. The consequence today, is that mediocre are in charge in various aspects of our public and private institutions.

In Nigeria, today, we have so many failed banks, oil industries, cases of deaths resulting from surgical operations and even from minor illness in hospitals/ clinics. An inefficient mediocratic labour force is the reason for these calamities.

To handle this challenge, to restore productivity, Ekpo (2006) suggested that:

1. Examination Ethics Committee should be set up by the Ministry of Education to Monitor, assess, and stop or reduce examination malpractice.
2. Overcrowding in examination halls should be avoided to minimize cheating/collaboration inside the halls.
3. Laws enacted against examination malpractice should be enforced and culprits made to face the music.
4. Schools involved in any examination malpractice should be de-recognized.
5. There should be more emphasis on student's continuous assessment, which should be carried out objectively and systematically. The existing practice of performance assessment using already prepared workbook should be discontinued to allow teachers make necessary inputs based in their training, initiative and experience.
6. Results of mock examination should be released before public examination is taken.

Conclusion

The average output per teacher in science education enterprises is abysmally low. The attendant consequence is the persistent poor performance of students in the sciences particularly at the senior Secondary school level. This scenario is detrimental to our young (national) economy the sorry state of affairs is predicated upon the poor motivational level of the teaching profession; it is amplified by variables such as the poor state of infrastructural facilities in our learning institutions, particularly at the senior secondary school level.

Seriously/urgent steps towards recreating the enterprise must be taken, to restore productivity, in order to salvage our young economy. The key step is to reposition the (science) teacher as a man of respect, dignity and honour. This key step is apparently unpopular; but until it is, efforts to contain and reverse the crisis situation in the (science) education sector are unlikely to achieve sustained success.

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