QUALITY ASSURANCE AND ACCOUNTABILITY IN THE TEACHING-LEARNING ENVIRONMENT: THE IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

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Abstract

This study examined the impact of information and communication technology on quality assurance and accountability in teaching and learning. It discussed and concluded that failure to ensure accountability of some sort was first and foremost ground for breeding all vices in the schools system. The study was structured in such a way that the meaning and main conceptions of teaching and learning were first explored, which paved the way for a detailed discussion on how to create a conducive ICT driven teaching and learning environment. The goals of ICT in teaching was highlighted. The study concluded by positing that all attempts to improve teaching and learning would remain in futility provided the first basic requirements needed in the teaching and learning environment have not been provided via ICT.

Experience has shown that accountability either from the market or through some kinds of assessment or process review is very important for assuring quality. Without accountability even those with the less intentions will begin to cut corners sooner or later as other priorities come to impinge on their commitment. The accountability for educational quality must reach all the way to all stakeholders. Quality management principles imply that quality assurance has to be an integral part of the teaching and learning process and that quality cannot be "inspected in" at the end. An important requirement for an effective quality assurance and improvement is the effective facilitation of the process of continuous quality improvement rather than bureaucratic accountability. It is against this background that this study examines quality assurance and accountability in the teaching-learning environment.

Impact of ICT on Teaching and Learning

Learning for the twenty first century requires new skills, new tools, and new knowledge. Students, today, across all levels must be taught and they must learn different ways to work with Information and Communication Technology (ICT) and people. Students will surely function in ever-changing and richly diverse work groups that often cut across ethic and other divisive boundaries (Evan, 2000). One of the greatest challenges faced by schools is ensuring that each student is equipped to flourish within a wide array of learning and work communities.

These challenges include:

1. Quantity and quality challenge of the (right) teaching force
2. Quantity and quality challenge of the right MODERN, and effective instructional materials.
3. The challenge of students learning achievement
4. The challenge of enrolment and successful completion.

This is what the world of ICT today demands which we must find the appropriate technology to support and facilitate. Schools must also foster flexibility, for the twenty first century will demand that its citizens are able to deal with continuous and significant changes

scientifically using the best pedagogical science and practice. Precisely, because of this outgoing change, students in Nigeria must learn to learn. They must develop skills and habits of learning that will serve them for a life time. This journey begins in the classroom

In the description of this journey, I want to largely reflect on my experience as a teacher, as a learner, and as an examiner and on my observation on other teachers, other learners and other examiners. We seem to get a different viewpoint of the educational process whether we start from teaching, learning or assessment. In broad categories:

i.   Teaching emphasizes what teachers do
ii. Learning emphasizes what students do
iii. Assessment emphasizes what students can show they know.

The very word teaching carries overtones of what we are expected to do. Teaching leads us to think about what makes a good teacher and it is easy to concentrate on what the teacher does. There is an emphasis therefore, on the person and the personality. We look for clarity of exposing and the amount of preparation and the work that the teacher does. If we measure teaching in this way we could be deluding ourselves as to the effect. The true measure of a good teacher is how well and how deeply the students learn. Teaching is therefore, measured by learning not on grounds covered. Teachers used to be learners of the subject and of the effectiveness of their teaching (Deming, 1986).

We still remember that age-long slogan "tell me, I forget. Show me, I remember, Involve me, I understand". The slogan laid great emphasis on students doing "in order to learn with understanding. An essential part of the doing was to get stuck and have to work through the problems in order to develop a deeper level of understanding.

To achieve this:
1. High quality curriculum content utilizing best of breed pedagogy.
2. Engaging characters and interactivities which enhance student retention of information.
3. Teacher friendly solutions designed to complement the role of the teacher.
4. Real demonstrable impact on student attainment
5. Provides greater transparency for educators and administrators
6. Promotes accountability in the area of curriculum delivery and assessment.
7. Cost effective and scalable solution.
8. Demonstrates achievement of ICT policy goal.

Specifically, it will provide professional development product for teachers that will:
a. Improve teaching skills
b. Motivate both teachers and learners
c. Enhance the quality of delivery of education and improve student attainment and learning-wide are required which ICT provides.

Teaching and learning processes can therefore be described in terms of five major processes.

Process one: Curriculum design. This is concerned with the processes of curricula design, review and improvement. The design to reform curriculum gave rise to different ways of organizing subject matter for effective instruction. Curriculum organization or curriculum design refer to the pattern of learning opportunities or a way of presenting opportunities in order to emphasize a chosen set of educational goals (Onwuka, 1990). ICT with its richest interactive curriculum available today helps students of all learning styles succeed including those with special needs

Process two: Pedagogical design. This is concerned with the processes by which methods of teaching and learning are decided and improved upon. Contents are scientifically developed using best pedagogical science and practice based on most advanced educational theories.

Process three: Implementation quality. This is concerned with how well teachers perform their teaching duties. Curriculum implementation is the stage where the teacher and learner are actively engaged in learning activities/ experiences aimed at achieving the set objectives. The teacher adopts a conceived appropriate teaching method and teaching materials intended to guide students' understanding of the topic. The student on his own part is actively engaged in the process of learning. This active interaction between the teacher and the student in the classroom is expected to produce a desired positive change in behaviour of the student which is described as learning. Thus, proper implementation of the planned curriculum results in learning.

Process four: Outcomes assessment. This is concerned with how the institution monitors students' outcomes and how such outcomes are used to improve teaching and learning. Outcomes assessment focuses on evaluation. A full evaluation result in a story, supported by perhaps, statistics and profiles. It tells what happened. It consists of determining the extent to which a programme has achieved its objectives (Ogah, Eze, Mbah and Emesini, 2009).

Process five: Resource provision. This is concerned with the availability of qualitative human, technical and financial resources needed in the education system. Scarcity of resource provision such as qualified and experienced teachers, instructional materials/aids, equipment and fund hamper the attainment of quality assurance in teaching.

These five processes embedded in teaching and learning, constitute the what, how and why of the education system. The processes are in some ways emphasizing that what students need to know is directly related to the information explosion which is evident in every field of study. The goal posts have now been shifted from teaching facts to helping students to learn how to find relevant information, how to assess it and how to organize disparate information into a cohesive whole. This particular insight has triggered a virtual explosion of innovation in teaching and learning strategies. It is becoming increasingly urgent to find ways of evaluating these innovations and strategies. However, evaluation of teaching strategies is problematic because it hinges first and foremost on the conduciveness of the learning environment, (Lechner, 2001). We therefore need to create a conducive learning environment.

Teaching/Learning Environment

There are many ways we can make our surroundings a learning environment" we can develop a family library or allow each child to develop a personal library in the home with his computer set. We can design our homes in such a way that it can promote learning or we can have designated learning centres throughout the house with ICT facilities. In the school, we can have cabinets' bookshelves and ICT centres and other pieces of furniture that encourage learning. We can make the school a place that enhances learning and creative play and which provides opportunities for educating and entertaining students. If we are sensitive to our students and the ways in which they learn, we can create a learning environment that is best suited for them. The catch word in learning environment is "rich". School surroundings must be rich in

opportunities for learning (Bond & Felettti, 1997).

As we develop learning environment, we have to take into account the children's learning styles, each person has a dominant or rather preferred way of receiving information. Determining students learning preference is very important. Part of the reason is that traditional approaches and materials favour the more serious ones. This means that students with different learning preferences find it more difficult to learn in traditional school situations and with traditional teaching methods. A real learning is said to create some amount of disorganization (Manogue, 1999). To properly manage learning with least amount of stress we need, according to Bogd and Fales (1983), to have the following:

i. A way to bring order to the physical surroundings
ii. A way to manage time
iii. A system of record keeping and
iv. An approved schedule.

We are today living in a world where everyone is expected to know a little bit about everything. The education system unfortunately, is structured in such a way that people are produced who have been exposed to a lot of information but leave school knowing very little of it. In creating the right type of learning environment therefore, we must be wary of the conditions that effect learning. Modern education seems to send every student through a programme of study that is targeted towards a "generic child'', It expects every student to be able to follow the same course of study in the same sequence without considering innate aptitudes and individual differences that are crucial to students abilities to learn. Schooling does not seem to take into account differing personality types or temperaments. Teachers and even parents who understand learning differences can be more sympathetic with the frustrations their students/children face in school.

The two major learning differences among students have to do with learning styles and learning readiness (Albanese & Mitchell, 1993).

Learning styles: Each person has a dominant or a preferred way of receiving information. Students have different ways in which they process input, different innate aptitudes and different temperaments. These differences in learning styles can profoundly affect their ability to learn. A visual learner learns best through visual images, pictures, diagrammes and by watching. An auditory learner does better with lectures, songs, stories and other oral materials. Kinesthetic learner favours interacting with what they learn by doing and touching. Social or group-interactive learners learn best through group participation conversations and discussions.

Accountability in Education

According to Garba (2006), there are three main types of accountability system in the field of education:

1. Compliance with regulations
2. Adherence to professional norms, and
3. Results driven

School accountability systems operate according to a set of principles and use a wide variety of implementation strategies. In education, all activities are mostly within their accountability systems.

The first system of accountability compliance with regulations demands compliance with statutes and regulations as provided for in Government policies and other legislations in education. Anchored in an industrial model of education, compliance systems view the school as the embodiment of constant processes and allow for variation in results, generally attributed to the varying characteristics of students. Simply stated, educators were accountable for adherence to rules and accountable to the bureaucracy.

The second system of accountability adherence to professional norms is based upon adherence to professional norms. In the United States, for example, the curriculum and evaluation standards for school mathematics are set by National Council of Teachers of Mathematics; the standard for educational and psychological testing are set by American Educational Research Association; and the programme evaluation standards are set by Joint Committee on Standards for Educational Evaluation. All these exemplify the professional norm approach to accountability. In Nigeria, there are professional bodies such as Registered Teachers Councils (RTC), Council for the Registration of Engineers in Nigeria (COREN) Medical and Dental Council of Nigeria (MDCN) and so on, that monitors standards and create evaluation criteria for their respective professions. Within this system educators are accountable for adherence to standards and accountable to their peers.

The third system of accountability results driven is based upon results. Results are usually defined in terms of student learning. This system emerged as a result of political involvement in education. The Education for All (EFA) in Nigeria and the No Child Left Behind in United States are examples of results based systems. In these systems educators are accountable for student learning and accountable to the general public.

Educators often find themselves responding to all the three system attempting to balance the requirements of each. Professional norms compliment both compliance and results systems. On the other hand compliance and results systems often conflict. Part of this conflict stems from the fact that the emergence of results systems has been fostered by dissatisfaction with historic results, that is those achieved under compliance systems, At present accountability systems in education focuses less on compliance and more on results.

Accountability system that is based on results should at the same time be attentive to professional norms and regulatory compliance requirements. The components of the system should include:

1. The system should define the responsibility of the educators to students
2. The system must be built upon sound bases such as objectives, criteria for assessment, guidelines for instructions, resources and rewards and/or sanctions.
3. The technical aspects of the system must meet high standards.
4. The system also provides the vehicle for positive change.

Results-based accountability system practices seem to be posing some nagging questions which include:

1. What do we expect students to learn and be able to do?
2. How satisfied are we as teachers and educators that students have mastered the established contents?
3. How are we prepared as teachers to be effective in our classrooms with all our students?
4. How and to what degree is the public informed about school results and the contributors to those results?
5. How does society respond to the information they receive about the performance of students and generally of schools?

Education systems across the world seem to be emphasizing on literacy, mathematical reasoning, scientific input and historical and social understanding to support civic participation. Within developing nations, literacy is the most often defined learning expectation. Within developed nations, the emphasis is on increasing mathematical and scientific competence. In general curricula mirror the economic focus of nations.

Results-based accountability systems utilize public reporting to a greater degree than do the compliance or professional norms systems. In the latter two systems information about students' performance is held within the profession. Results based system relies upon wide-spread communication of results to parents and the general public.

Many results-based systems generate school report cards or school profile for distribution to general audiences. These reports include summaries of the performance of students as well as information about resource programmes and behaviour. Providing this information to the public requires that teachers and educational administrators become comfortable discussing strengths and weaknesses and facilitating positive change. This new communication role for educators can be intimidating as educators struggle both to understand underperformance and to inspire confidence that they can lead the change process needed to improve performance.

Most results-based accountability system performance is publicly acknowledged and rewards are provided to those schools or individuals exhibiting high performance or showing improvement in performance. Schools that do not seem to be performing are encouraged with technical assistance.

The Goals of ICT in Teaching

The actual destination of ICT in science is to:

1. Address physical, life and earth sciences
2. Include vital laboratory simulations which can be used as an alternative to physical laboratory experiments.
3. Through these simulations activities, students more effectively discover and understand scientific concepts, including those too difficult or dangerous to investigate in the classroom.

4. Use comprehension and computation skills to explore and learn science concepts.
5. Offers a research-based mix of direct and enquiry-based instruction.
6. Creates a rich interactive media experience, engaging and motivating today's students.
7. Makes science relevant in the lives students through lessons that involve real-world application and examples.

Conclusion

Research conducted on today's young people shows that children retain 20% of what they hear; 40% of what they see and hear and 75% of what they see and do. Evidently, learning of "doing" has become the key,(Bond, 2004).

The future is already showing signs of becoming totally computer and technology dependent, in almost all aspect of human endeavour including education. Key reasons why computer has become crucial to imparting education is that it uses several media, video, audio, graphics, animation, text and images to offer the student a near live (immersive) experience.

Given the urgency to improve the teaching-learning process, the traditional approaches CAN NO LONGER be the only alternative in the 21st century.

Recommendations

From the foregoing, the researcher made the following recommendations:

1. It is the opinion of the researcher that for quality assurance and accountability in teaching-learning environment to be attained Information and Communication Technology (ICT) should be the right of every child from their primary school level.
2. Our surroundings should be a learning environment by allowing each child to develop a personal library in the home with ICT facilities.

3. The school should have ICT centres and other pieces of furniture that encourage learning through creative play and entertainment.

4. The child's learning styles should be taken into account. Each person has a dominant or a preferred way of receiving and processing information that can profoundly affect his/her ability to learn.

5. Infact, computer-aided learning has proved to be an excellent tool in teaching students because it allows them to make mistakes and learn from their mistakes without causing any harm or shame to the students. Therefore, computer-assisted instruction, i.e., programmes written by programmers to stimulate learning process and provide teaching sources, should be provided to aid students learn faster and at their own rate.

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