

Time Frame and Syllabus Completion of Senior Secondary Mathematics in Omoku, Nigeria

Allison, Dimkpa Solomon

Demonstration Secondary School, Federal College of Education (Technical), Omoku, Nigeria

Ojedapo David Olugbade

Department of Educational Psychology, Federal College of Education (Technical), Omoku, Rivers State, Nigeria

Abstract *The study considered time allocated against syllabus completion before external examinations. The focal points were mathematics as a subject and an analysis of the 2009/2010 Academic Session. The analysis revealed that out of 364 days in a session, only 146 days, represented 40% of the entire session did schools engaged in various school activities. The remaining 218 days, representing 60% of the session was observed as different holidays, making time frame to be inadequate and insufficient for mathematics syllabus completion. Three theories: Total Quality Management (TQM), Quality Assurance (QA) and Theory Z were posited as frameworks. Recommendations such as more periods should be allocated for completion of mathematics syllabus before exposing students to external examinations and others were postulated.*

Keywords: *Time Frame, Syllabus completion, Mathematics, Time table and Examination.*

Introduction

Time is a universal phenomenon without a single, generally accepted universal definition. It is so important that everybody, both whites and blacks, literates and illiterates, rich and poor, are all affected by it. It is fair to all, as it has no fear nor favour for any individual or corporate bodies. If considered as an umpire, it is unbiased and impartial.

Ebong in Agabi (2010:99) defined "time as a continuum in which events succeed one another from the past through the present to the future". By this definition, time is defined based on series of similar, indispensable events taking place one after another both in the past, the present and even in the future. However, the British Broadcasting Corporation (BBC) English Dictionary defined time as what we measure in hours, days and years. It further defined it as the period that something happens. Here, the definition of time is based on duration or period, which are in hours, days and years.

From the foregoing, time can be defined as the duration or period similar or different events do occur, either in succession or not. It could be in hours, days, years, decades, centuries, etc.

In education, time is an indispensable asset. It is an educational resource. According to Agabi (2010:99), "time is an educational resource that is highly limited in supply and critical but often taken for granted by the providers of education. It is so important and useful that each school activity is regulated by it".

Maduagwu and Nwogu (2006:64) posited that different tasks need to be allotted time and emphasized the need for proper time management. Lunenburg and Ornstein (2008:216) gave six basic ways to structure time as withdrawal, rituals, past times, activities, games and authenticity.

In Hoy and Miskel (2008:9), Taylor and his followers discovered through time and motion studies that by systematically undergoing a given task over a period of time, that the most efficient way in lesser time can be developed. To Agabi in Agabi, Okorosaye – Orubite, Ezekiel-Hart and Egbezor (2005:105), school activities are carried out within a specific time which gives credence to the existence of such registers as academic calendar, time table, lesson period, mid-term break, time book, etc. The above simply point to the

fact that time is an indispensable tool to an individual or a corporate body. Time should be allocated to different activities of the day, week, month, year and so on. Proper time allocation to different activities gives rise to time management. The length of time allotted for or used for something is simply referred to as time frame (Oxford Advanced Learner's Dictionary, 2001). School activities like morning devotion, lesson periods, breaks, preps, dining, labour, others, are regimented by time frame (Maduagwu and Nwogu, 2006). According to Agabi (2010:99), *"all school system activities are carried out within a time frame which may be limited to minutes, hours, days, months or even years"*.

It is important to emphasize that time-frame for each activity of any day, week, year, etc should be structured in the form of time-table. According to Nnabuo in Nnabuo, Okorie, Agabi and Igwe (2005:260), time-table is a document that illustrates time, place (room), subject and periods of each school subject in a week and term. It provides orderly direction and avoid clashes as teachers attend lesson at the allocated time and place. In a nutshell, a time-table is a schedule of period and place of various school activities. Emphasize need to be made here that time-frame should match the type of activity for it, otherwise, it will result to wastage of time or incompleteness of required activity.

Insufficient time-frame for subject syllabus result to inability of the subject teacher to complete the syllabus and prepare students for external examination. It is relevant we get a working definitions of subject syllabus and scheme of work.

Nnabuo in Nnabuo, et al (2005) opined that any document which shows how each subject should be taught and the details through which it should be treated is a subject syllabus. Aiyepoku (2006:142) outlined the basic content of a teaching syllabus as:

- (a) Topics to be taught at various levels in the school,
- (b) Specific behavioural objectives which should indicate knowledge to be acquired after the teaching of any given topic,
- (c) The content of all the topics selected for inclusion in the syllabus and
- (d) Materials and suggested activities for teaching listed topics.

He advised that where a national examination syllabus is available, the school teaching syllabus should be based on it. He defined scheme of work as a breakdown of the syllabus for work planned to be covered weekly. Nnabuo in Nnabuo, et al (2005:261) describes scheme of work as breaking down into topics of a subject to be covered on a weekly basis of each school term.

Students should be encouraged to get good subject textbooks, which among other things, should adequately cover the syllabus.

Research Methodology

This study employed a combination of the analytical study of the 2009/2010 Academic Session as a resource document and other materials used were textbooks, articles and reports. These materials were selected in a fashion that looks like randomized sampling procedure and were assessed in terms of validity and value. Scott's four overlapping validity criteria which are authenticity, credibility, representativeness and meaning served as a frame work (Agabi, 2010:96).

Theoretical Framework

Time allocated for teaching and learning of mathematics in Secondary Schools in Omoku Town, Rivers State is inadequate and insufficient. This is traceable to the short time available to school activities. Regular public holidays, strikes which leads to closure of schools and other forms of holidays reduces the period of time for complete school activities. In effect, there is reduction in available time for teaching and learning and other

school functions.

Teachers are not able to complete their subject syllabus and adequately prepare students for external examinations. Subsequently, the result of such incomplete syllabus is mass failure in schools external examination, loss of self-confidence by students leading to all forms of examination malpractices, occult practices, militancy, joining of gangs, armed robbery, prostitution and other forms of social vices. In the light of the above, efforts need to be made by all stakeholders in the education discipline: teachers, students, administrators (principals), parents, host communities, government and examination bodies to alleviate this ugly trend in our schools. The frameworks for this research study is based on three theories, which are Total Quality Management (TQM), Quality Assurance (QA) and Theory Z.

Total Quality Management (TQM) by W. Edwards Deming in 1982 stipulates *inter alia* that:

- (i) Excellent performance of students in external examinations should be the primary focus of the school,
- (ii) The school must be dedicated to continual improvement, personally and collectively.
- (iii) School management must create the enabling environment for excellent performance of students.

Lunenburg and Ornstein (2008:52); Okorie and Uche in Nnabuo, Okorie, Agabi and Igwe (2005:45-56) and Emenalo in Babalola and Ayeni (2009:751-753) all agree to the above.

It is obvious that allocation of more periods for the teaching and learning of mathematics or recruitment of more mathematics teachers for the short available periods will help in adequately preparing students for external examinations. Aiyepoku (2006:146) advocated a generous allocation of teaching periods per week for mathematics.

Quality Assurance (QA) by the chief proponent of fault free product, Crosby, ensures that proactive and precautionary measures are taken before and during production to ensure that no wastage and no defect is recorded. (Okorie and Uche in Nnabuo, et al, 2005:57 and Awe in Babalola and Ayeni, 2009:72).

Applying this to our discussion, it is the administrator's duty to make sure that the quality and quantity of teachers are adequate for the time frame for the teaching and learning of mathematics. The teachers on their part should make the best use of the allocated time. Aiyepoku (2006:147) emphasized that proper preparation before each lesson, effective use of teaching aids, giving of regular exercises during lesson, assisting each student during lessons to correct errors encountered while solving problems are measures teachers should adopt in teaching and learning of mathematics.

Theory Z by William G. Ouchi around 1981 emphasizes concern for people and participative and consultative decision-making. Hoy and Miskel (2008:179-181), Lunenburg and Ornstein (2008:77-79) and Peretomode (2008:33-38) all agree that the basic premise of theory Z is "that involved workers are the key to increased performance in an organization".

From the above theories, we can deduce that student's poor performance in external examinations are attributable to a lot of variables which inadequate preparation and incomplete syllabus before embarking on such examinations is one of them. A collective effort of all stakeholders is needed to alleviate the situation.

Analytical Study of the 2010 Academic Session

Span of 2009/2010 Academic Session:

Began 13 th Sept., 2009	}	Total of 52 weeks = (52x7) days
Ended 11 th Sept., 2010 =		364 days (Note: 1 week = 7 days)
Saturdays and Sundays =		52 x 2 days = 104 days
Remaining days	→	364 days – 104 days = 260 days.

Issues of 1st Term, 2009/2010 Academic Session

Span: 13th Sept., 2009 to 9th Jan., 2010

-	Mid-term break (30 th Oct., 2009 to 2 nd Nov., 2009)	-	2 days
-	Public holidays:		
❖	El-die Fitri holiday (21 st & 22 nd Sept., 2009)	-	2 days
❖	Independence Day (1 st Oct., 2009)	- -	1 day
❖	Salah Days (26 th & 27 th Nov., 2009)	- -	2 days
-	1 st term, holidays (19 th Dec., 2009 to 9 th Jan, 2010) (3 weeks)	-	21 days
	Total for 1 st Term	- -	28 days

Issues of 2nd Term, 2009/2010 Academic Session

Span: 10th – Jan, 2010 to 24th April, 2010

-	Mid-term break (19 th Feb., 2010 to 22 nd Feb., 2010)-	2days
-	Public holiday:	
-	Moslem Idi-Malud (26 th Feb., 2010)	- - 1 day
-	2 nd term holidays (3 rd April, 2010 to 24 th April, 2010) (3 weeks)	- 21 days
	Total 2 nd term	- - 24 days

Issues of 3rd Term, 2009/2010 Academic Session

Span: 25th April, 2010 to 11th Sept., 2010.

-	Mid-term break (6 th June, 2010 to 9 th June, 2010)-	2days
-	Public holidays:	
❖	Workers' Day (3 rd May, 2010)	- - 2 days
❖	Death/Burial of President Yar'Adua (6 th May, 2010)	1 day
❖	Children's Day (27 th May, 2010)	- - 1 day
❖	Democracy Day (29 th May, 2010)	- - 1 day
-	3 rd term holiday (24 th July, 2010 to 11 th Sept., 2010) (8 weeks)	- 56 days
	Total for 3 rd term	- - 62 days

Grand total of holidays = total for 1st term + total for 2nd term + total for 3rd term = 28 days + 24 days + 62 days = 114 days.

Days secondary schools were opened for classes in the 2009/2010 academic session = (260 - 114) days = 146 days

Days secondary schools were on holidays for 2009/2010 academic session = (364 - 146) days = 218 days

% of days secondary schools opened for 2009/2010 academic session

$$= \frac{146\text{days} \times 100\%}{364\text{days}} = 40\%$$

% of days secondary schools were on holidays in 2009/2010

$$\text{academic session} = \frac{218\text{days} \times 100\%}{364\text{days}} = 60\%$$

From the above analysis, secondary schools spent 60% for holidays while only 40% of the entire 2009/2010 academic session was used for school activities.

Note: Some schools have less than 40% in 2009/2010 session for school activities due to other internal holidays not captured in this analysis. Also, other academic session(s) may have less than 40% for school activities. A typical example is the current 2010/2011 academic session.

WAEC Syllabus for Mathematics in the 2009/2010 Academic Session

The West African Examinations Council (WAEC) has seven main topics broken down to thirty-seven sub-topics for prospective candidates of the West African Senior School Certificate Examination (WASSCE) General Mathematics/Mathematics (Core) Syllabus for the 2009/2010 Academic Session (WAEC, 2009:343-355).

Secondary Schools in Omoku Town and Time Frame for Teaching and Learning of Mathematics in the 2009/2010 Academic Session.

There are about eight recognized secondary schools in Omoku Town, Rivers State. Five of them are private while only three are public secondary schools. An analysis of the time allocated for teaching and learning from their respective time-tables range from two (2) periods of forty minutes each weekly to just one period of forty minutes weekly.

Also, the number of mathematics teachers were two at most and only one in some schools.

Comparison of Time Frame and Syllabus Completion of these Secondary Schools in Lieu of Teaching and Learning of Mathematics.

As earlier posited, the number of mathematics teachers in both private and public secondary schools in Omoku town, Rivers State is grossly inadequate. The implication of this is over utilization of manpower which will result to low production. On the other hand, the time frame for the teaching and learning of mathematics is insufficient. Aiyepoku (2006:146) advocated nothing less than five periods of forty minutes weekly for SS One and Two and a little less than that for SS Three if the students are to be thoroughly prepared for external examinations.

Rosenshine and Furst in Lunenburg and Ornstein (2008:454-455) identified student opportunity to learn, that is, the teacher's coverage of the material or content in class on which students are later tested as one of five teacher processes that show the strongest correlation to positive outcomes. To Alutu and Ochuba in Okafor, Ekpo, Igwe, Eya and Okoye (2008:54), *"inadequate teaching and preparation of students before examination is one of the reasons students involve in examination malpractices"*.

This is true as no student wants to fail. Ukoh and Ajanaku in Oyatoye, Olafimihan, Adeoye, Sabi, Alao, Fashiku and Abdusalam (2010) also support this view.

To lend support to the issue at stake, Aiyepoku (2006:148) opined that adequate coverage of the examination syllabus is one of the recognized requirement for students writing public examinations in mathematics subject. Nnabuo in Nnabuo, et al (2005:261) emphasized that effort should be made by school executives to ensure compliance by teachers and a revisional feedback built in to allow adequate preparation of students for examination.

Emenalo in Babalola and Ayeni (2009:757) posited that attention has to be focused, among other things, on what goes on in the classroom between the staff and students in terms of the content of course coverage, quality of teaching and actual contact hours utilized. This is true as poor inputs will definitely yield faulty output.

Agabi in Agabi, et al (2005:105) identified poor academic results arising from inability to complete school syllabus as a wastage which occurs when the importance of time is ignored in the execution of school activities.

Implications of Insufficient Time Frame and Inconclusive Subject Syllabus

Since insufficient time frame cannot enable teachers to complete mathematics syllabus and prepare students for external examination eternal examinations, the following implications are possible:

(1) Mass Failure in Public or External Examinations

2009/2010 WAEC result has it that only 24.94% of the total candidates obtained credits in English Language, Mathematics and at least, three (3) other subjects; 2009/2010 NECO result reveals that only 22.99% of candidates in Rivers State obtained five credit passes including Mathematics and English Language.

(2) Incessant Examination Malpractices in Public or External Examinations.

It is no more a news to hear of examination malpractices in external examinations, rather, what may be news is that a public or external examination was carried out without any examination malpractices.

(3) Dislike for the Subject and Development of Phobia;

People generally consider mathematics to be difficult. Insufficient preparation of students for external examination will result to dislike for the subject and justify the strong, unreasonable fear and hatred some already have for it.

(4) Loss of Aims of Teaching the Subject:

Aiyepetu (2006:141) identified the following aims/objectives of teaching mathematics, *inter alia*:

- (a) To develop computational skill,
- (b) To develop precise, logical and abstract thinking,
- (c) To stimulate and encourage creativity,
- (d) To acquire the ability to teach mathematics.

These aims and objectives may be completely lost as a result of this.

(5) Creation of Lacuna

One of the disadvantage or implication of this is that it will create a gap between what the student knows and what he/she is supposed to know.

(6) Deepening of the falling standard in education:

If the issue at stake is not addressed, it will deepen further the issue of the falling standard in Nigerian educational system.

Conclusion

It was revealed from the study that the time frame for syllabus completion of senior secondary mathematics is

insufficient. This makes it impossible to complete subject syllabus and hence, students' preparation for external examinations are inadequately. The result of this is failure in school external examinations.

Recommendations

In other to curb persistent student failure in external examinations like WAEC and NECO, the following recommendations are necessary:

- (1) Government should recruit qualitative and quantitative mathematics teachers and deploy them to schools where mathematics teachers are in short supply. In addition, there is need to reduce incessant and unnecessary public holidays.
- (2) Principals should allocate more periods for mathematics classes and supervise accordingly.
- (3) Teachers should prepare well before lesson, use teaching aids, avoid story telling and distractions while aiming at achieving set goals. They should also attend seminars, conferences, from time to time for improvement.
- (4) Students should pay attention in class, ask questions and do further/additional studies at home.
- (5) Parents should provide relevant textbooks, materials and conducive atmosphere for during and after school studies for their children.
- (6) Examining bodies like WAEC and NECO should use these teachers for marking of answer scripts, expose them on topics for more concentration are needed and possibly set questions on topics covered.

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