

Business Mathematics and the Secretarial Education Programme:

A Relevance Hypothesis

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ABSTRACT

The purpose of this paper is to examine the relevance hypothesis of Business Mathematics and Secretarial Education programme in Colleges of Educations, Polytechnics and Universities. To achieve the objectives of this paper, relevant secondary data was collected from books, magazines and journals. The knowledge of Business Mathematics is important to the secretary to perform relevant functions in organisations. Hence, the paper observed that Business Mathematics provides the necessary logical analysis, hence very relevant in the secretarial profession. The paper therefore, concludes that the knowledge of Business Mathematics is important for secretarial administration students. This is because secretaries perform routine duties with great speed, and helps in enhancing the efficiency of jobs. Secretaries has been adjudged to be versatile memory bank of the organisation, information reservoir to merits this names actually means to have the knowledge of all courses that will help them to discharge their duties in the most professional manner, knowledge in Business Mathematics cannot be ruled out as one of the major courses students in the secretarial education programme must understand and use to assist organizations needs.

Keywords: Business Mathematics, Secretary, Education, Hypothesis.

INTRODUCTION

Quantitative methods are research techniques that are inevitably used to table quantitative data i.e. information dealing with numbers and anything that is measurable. Statistics, tables and graphs are the tools used to represent the results of these methods. They must therefore be distinctly distinguished from qualitative methods. In most physical and biological sciences, the use of either quantitative or qualitative methods is uncontroversial and each is used when appropriate. In the social sciences, particularly in sociology, social anthropology and psychology, the use of one or other type of method has become a matter of controversy and even ideology, with particular schools of thought within each discipline favouring one type of technique and rejecting the other. Advocates of the quantitative methods are of the view that only by using such methods can the social sciences become truly scientific, while advocates of qualitative methods argue that quantitative methods tend to obscure the reality of the social phenomena under study because they underestimate or neglect the non-measurable factors, which may be of utmost importance. The modern tendency (and in reality the majority tendency throughout the history of social science) is to use eclectic approaches. Quantitative methods might be used with a global qualitative frame. Qualitative methods might be used to understand the meaning of the numbers produced by quantitative methods. Using quantitative methods, it is possible to give a precise and testable expression to qualitative ideas. This combination of quantitative and qualitative data gathering is often referred to as mixed-methods research.

However, there have been complaints from secretarial Administration Students about the study of Business Mathematics. Students of Secretarial Administration lack interest in the study of the course and other calculation related courses like statistics. Probably their lack of interest is responsible for poor performance in Business Mathematics. In addition, students believe that the duty of a Secretary is mainly to type and write shorthand and that Business Mathematics is not related and relevant to their course of study. These have led many students to make all sorts of comments about the course, as some have referred to it as “waste of time”, “irrelevant” and “very difficult”. However, it is necessary that a secretary should have a good knowledge of Business Mathematics so that he or she can perform some of the secretarial functions which entails and include calculation and accounting satisfactorily. Such duties are reconciliation of bank statement of accounts, maintenance of postage book, balancing of cash book, keeping of the company’s petty cash book, preparation of credit and debit notes, preparation of commissions, wages and salaries etc. All these duties that are performed by the secretary can only be done satisfactorily if the secretary has a good knowledge of Business Mathematics.

Mathematics is an essential subject and knowledge of it enhances a person's reasoning, problem-solving skills and in general, ability to think logically. Hence it enables an easy grasp of most subjects, whether science and technology, medicine, the economy or business and finance. Mathematical tools and techniques such as the

Theory of Chaos are used for mapping and forecasting market trends. Statistics and probability, which are very important branches of mathematics, are used in everyday business and economics. Mathematics also forms an indispensable part of accounting and many accountancy companies prefer graduates with dual degrees with mathematics, rather than just an accountancy qualification. Financial mathematics and business mathematics are considered two important branches of mathematics in today's world and these are examples of the direct application of mathematics to business and economics. Examples of applied mathematics such as probability theory and management science, queuing theory, time-series analysis, linear programming all are vital for business. Therefore considering the important role the secretary plays in nation building, it is necessary to expose them to the study of Business Mathematics course. Hence, to establish the relevance of business mathematics courses in the secretarial education programme, this paper examines the following: (1) what is mathematics? (2) What is business Mathematics? (3) Who is a Secretary? (4) Business Mathematics knowledge as a skill required by secretary? (5) What are the routine duties of a secretary?

LITERATURE REVIEW

What is Mathematics?

According to Gittleman (2005) in his book, "History of Mathematics", mathematics was developed in response to the needs of early societies. With growing number of people living, working and even fighting together came the need to solve practical problems of their civilization-Problems such as calculating the quantity of materials needed to build a storehouse or the amount of food needed to provide their army. Hence the need for human beings to keep records, know the exact need of its people and plan for the future led to the development of a branch of science called mathematics. Hence mathematics is defined as the science dealing with quantity, form, measurement, and arrangement and in particular with the methods for discovering by concepts and symbols, the properties and interrelationships of quantities and magnitudes. Therefore, we can deduce from the definition that mathematics is relevant to all human activities as it relates to our daily dealings, especially when buying and selling.

What is Business Mathematics?

Business mathematics is mathematics used by commercial enterprises to record and manage business operations. Commercial organisations use mathematics in accounting, inventory management, marketing, sales forecasting and financial analysis. Mathematics typically used in commerce includes elementary arithmetic, elementary algebra, statistics and probability. Business management can be made more effective by the use of more advanced mathematics such as calculus, matrix algebra and linear programming. Another meaning of business mathematics, sometimes called commercial math or consumer math, is a group of practical subjects used in commerce and everyday life.

Mathematics is an integral aspect of our daily life. Many executive jobs such as those of business consultants, computer consultants, airline pilots, company directors and a host of others find that they require a solid understanding of basic mathematics and in some cases require detailed knowledge of mathematics. It also plays an important role in business, like business mathematics by commercial enterprises to record and manage business operations. Mathematics typically used in commerce includes, elementary arithmetic such as fractions, decimals and percentages, elementary algebra, statistics and probability. Business management can be made more effective in some cases by the use of more advanced mathematics such as calculus, matrix algebra and linear programming. Commercial organisations use mathematics in accounting, inventory management, marketing, sales forecasting and financial analysis.

Stafford (2009) defined Business Mathematics as a subject concerned with improving the quality of decision making in industry and commerce and it is not surprising that a high degree of mathematical ability has come to be accepted as a necessary part of a manager's equipment at every level of responsibilities. Nault (2003) listed the topics in Business Mathematics to include salaries and commission, gross and net earnings, gross and net profit, depreciation, investments, basic accounting ideas and budgets. The study of Business Mathematics is very much relevant to the secretarial programme, in that as secretaries they are expected sometimes to perform personnel functions or work as assistant or managers and sometimes undertake accounting tasks.

The practical applications typically include checking accounts, price discounts, markups and markdowns, payroll calculations, simple and compound interest, consumer and business credit and mortgages. For example, while computational formulas are covered in most study-material on interest and mortgages, the use of prepared tables based on those formulas is also presented and emphasised. Mathematics can provide a powerful support for business decisions. Mathematics provides many important tools for economics and other business fields.

Who is a Secretary?

Literature on the history of the secretarial profession shows that nobody knows when secretaries originated, but that the Romans were first to employ men as scribes who took down dictation. Men dominated secretarial jobs until the late 1880s. However, in the 1930s, women started to dominate the profession. In Nigeria, there were few secretaries in the early 1900's because there were no government established training institutions. Organizations employed typists and stenographers as secretaries. These "secretaries" trained in road-side secretarial institutes. These institutes did not have qualified instructors and adequate machines. Therefore, those who employed them were skeptical about their administrative competence, thus limiting their activities to routine or chore office jobs. In the late 1900's, the state and federal governments started recognizing the need to employ efficient secretaries and established Federal Training Centres in Lagos and Kaduna. The state governments later established Staff Development Centres. Admission requirements into these centres were low. Later, polytechnics were established by both state and federal governments in order to have better trained secretaries. At present, we have a few universities with a Secretarial Administration department where secretaries are trained. The polytechnics are still regarded as the best place to train secretaries. Secretaries command high respect and they easily get jobs. They are versatile because all organizations need them. In the early days of producing secretaries in Nigeria, people regarded those who went to commercial secondary modern or commercial secondary schools as dullards. The public regarded those who went to secondary grammar schools as highly intelligent - those who would become doctors, lawyers, engineers, etc. Things have interestingly reversed as commercial or business courses are becoming more versatile than the science courses. We now find doctors and other professionals who write accounting examinations.

The secretarial function, though a supportive function, requires a large amount of initiative, tact and resourcefulness to succeed. Ugiagbe (2002) defined a secretary as an assistant to an executive, possessing mastery of office skills and ability to assume responsibility without direct supervision, who displays initiative, exercises judgement, and makes decisions within the scope of his/ her authority. Boladele (2002) expressed that a secretary is a warm, endlessly helpful and understanding individual whose sole aim is to alleviate, solve, prevent or soften problem workload and upsets for his/her executive. He/she is the means by which the executive initiates, handles and complete a project. According to Onifade (2009), a secretary is an assistant to a manager. Apart from the traditional responsibilities, such as typing, taking dictation and transcribing, managing records, receiving, storing and retrieving information or operating the computer, attending meetings, answering telephone calls, he now carries out research, prepares the manager's itinerary, makes travel bookings and hotel reservations, supervises the junior workers, and makes some decisions using his initiatives. He should be able to answer some questions on behalf of the boss. For example, a client who wants the price of a product should not wait to see the boss. A secretary who is familiar with the company's policies, price list and handbooks should relieve the boss of such burden by providing accurate information. He should be able to coordinate the administrative activities and organize the office for efficient performance. He should be able to use the internet and train new staff on the computer. The secretary is a member of a team in the workplace and therefore should always be cooperative and supportive. He should be able to write and present reports and disseminate information using websites and e-mail. He now shares with the manager the responsibilities that were hitherto reserved for the manager. Igbinidoin (2010) identifies the secretary's responsibilities to include; taking dictation and transcribing it into correspondence which is at once dispatched to its business destination. He highlights of some forms of these correspondence to include: letters, memos, circulars, orders, quotations, acceptances, contractual terms, and conditions, invitations, etc. Each of these items he claimed will invoke a response from the addressees, who will perhaps order materials, proceed to manufacture, insure cargoes, book hotels or engage in some other expensive activity which forms part of the intricate network of business life. Therefore the secretary must be regarded with some respect with reference to these onerous functions that impinge on the success of the organization.

According to Orukwu (2008), every work can be broken into routine, even the day's work is punctuated by tasks which occur regularly each day, certainly some tasks occur at the same time in the same way each day, but routine makes for anticipation of tasks and allows the secretary to carry them out with that efficient, unflustered look which is so often used to describe the perfect secretary. She further stressed that the secretary can arrange her duty to fit her boss's routine because a secretary's prime function is to be of assistant to her chief. Functions include: preparing for the day's work and arranging the office, mail handling, filing, typing, tasking dictation, transcription, handling telephone calls, conferring with executive and keeping of petty cash book. The duties of the secretary are quite many, varied and exciting; secretaries in various organizations have similar duties generally, but, in some establishment, specialist duties may be discharged in addition to common ones. Because of the varied nature of the secretary's duties, we may not be able to enumerate all in this work. But cognizance should be taken that whether one becomes a secretary to a medical practitioner, a director general, or a

confidential secretary to the managing director of a firm, there are certain essential duties with which the secretary should be familiar.

Edun and Ajetumnobi (2006) enumerate these duties as take dictation and transcribe on the type writing, dispatch letters, read and sort mail, open new files, file documents so that they can be found readily, answer the telephone and make outgoing calls, take messages, make appointments for the boss and keep records of them, act as memory aid to the boss, compose letters and help to prepare reports, meet with people who come into the office, order supplies for the office, type material from longhand, or shorthand notes, make hotel reservations and other travel arrangements, keep financial records and handle impress accounts, prepare agenda and notice of meetings and send copies to members including co-opted members, type minutes of meetings, type materials to be published, do personal banking and local purchases and keep personal records for the boss, keep press cuttings, files and scrap book about employees interests, act as a go between for her boss.

Business Mathematic skills and Secretary

Business is all about selling a product or service to make money. All transactions within a business have to be recorded in the company accounts and quite often involve large sums of money. So, for example, you need to be able to estimate the effect of changing numbers in the accounts when trying to work out your expected performance for the next year. Also, businesses rely heavily on using percentages; in particular, anyone who works as a sales person has to be quick at mental math, approximation and in working out percentages. The more percentage discount you give a customer when you sell them a product, the less profit your company will make (and quite often the less you will be paid!), so it really does pay to know your math. If you work as a sales assistant, in many stores you need to be efficient enough to calculate the cost of goods and charge the customers as required without using the calculator. Businesses like to know that you can cope if the machines break down and also, they believe that you can give better customer service if you can respond to customers who know their mathematics.

The secretary needs some basic mathematics knowledge as a skill in the performance of her duties. The first point is balancing of all business transactions. The secretary needs some basic knowledge of Business Mathematics for the balancing of all business transactions made in the firm. This can be done satisfactorily if the secretary has the required skill. Freeman (2007) argues that a secretary can always do a better job when she understands what she is doing than when she doesn't. He further asked a rhetorical question "Does this mean that the secretary to a chemist should know Chemistry?". In response, he said, she is his closest working associate. It would certainly help for her to know some. If a secretary is typing mathematical or chemical equations all day, as many secretaries do, she is usually working with what is for meaningless gibberish, he concluded by saying that it is a terrible way for someone to earn a living, but that, it is not difficult to explain what mathematical equation is to one who has the level of intelligence required to be good secretary. Anyone who has the ability to type and take shorthand and organize complex reports and handles people and telephone in a office is quite capable of understanding for example, that a chemical equation is merely a shorthand way of telling how certain materials combine to form other materials.

Since a secretary is regarded as a secret keeper, or one entrusted with secret, it is important that certain jobs that need secrecy should be done by the secretary. These jobs may be calculating or typing the financial statement of the organisation which its knowledge to the workers in the organisation may lead to crisis. And for this reason, it will be harmful to the smooth-running of the workers. The good secretary can only perform this task satisfactorily if she posses the knowledge of Business Mathematics. At least a good secretary should be able to handle simple mathematical equations, balance business transactions, if not all confidential business transactions made in the office.

Harrison (2005) while writing on the topic "Personal Qualities and Training", said the Confidential Grade IV needs basic secretarial training and "Evidence that she has studied some other subjects e.g. Business Calculations, Accounts or Commerce. This is to enable the secretary to cope with the improved nature of the office where the secretary is expected to know all and do all kinds of job. After all she has been referred to as a versatile worker and memory aid. While lending her weight in support of the relevance of Business Mathematics, Robb (2003) in a book, Teaching Secretarial Duties, said, the same can be said of Numeracy, it is an essential element in a secretarial course. Gone are the days when it was considered acceptable and even fashionable to profess an inability to handle figures. Employers now expect their secretaries to feel competent with figures and be able to understand balance sheet and financial statement.

The numeracy input should also be catered for in simple way by having students prepare banking documents, checking for accuracy, maintain petty cash records and set up simple systems for the recording of receipts and payments. She went further when she professes that students should be able to work comfortably in percentages

to convert foreign currency and calculate wages and salaries, including income tax. It is also realistic to expect students to be able to perform these operations with the aid of calculating machines. Hence, in the final analysis, she concluded that not only the knowledge of good English is desirable to the secretarial courses like typing and shorthand, but also the knowledge of numeracy, which is to be referred to as Business Mathematics.

CONCLUSION AND RECOMMENDATIONS

The knowledge of Business Mathematics is important for secretarial administration students. This is because secretaries perform routine duties with great speed, and helps in enhancing the efficiency of jobs. Secretaries has been adjudged to be versatile memory bank of the organisation, information reservoir to merits this names actually means to have the knowledge of all courses that will help them to discharge their duties in the most professional manner, knowledge in Business Mathematics cannot be ruled out as one of the courses students must understand and use to assist organisatia needs and their boss work. therefore, the study of Business Mathematics is relevant in the secretarial programme. The boss should be made to trust or rely on their secretaries to deliver. The secretary is allowed to use his initiative in performing routine duties without much supervision or interruption. Since it has been shown form our discussions in this paper that the acquisition of skill or knowledge in Business Mathematics is not a waste of time but a necessary skill that would help in enhancing job performance and ensure competency on the part of the secretary, hence the following recommendations are provided:

1. Secretaries should be exposed to calculation related courses that will enhance job performance of the secretary. This will also give the executive confidence that they can handle such tasks that has to do with calculation effectively without supervision.
2. Like other management students that need ordinary level credit in Mathematics to enroll for their programme. The secretarial students should be given the same treatment. This will also place the secretary in an advantageous position for further studies and handle complex numerical tasks. They can now enroll for Masters in Business Administration or Masters in Public Administration programmes.

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