REPOSITIONING POLYTECHNIC EDUCATION IN NIGERIA

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Abstract

The national educational objectives are sound, but the structural defects in the course curriculums have made the full realization of the nations educational objectives an uphill task. The nation failed to attain its projected growth for indigenous industrialization because of operating mono national curriculums in its educational system. This is an approach that has discouraged competition for academic excellence, and the devout desire to optimize locational advantages for specialty in an area of knowledge. Added to the defects in the use of the "me-too" curriculums (common national curriculums), is the inability of the government to fund educational institutions adequately for the installation of relevant teaching and research facilities for the evolution of a true entrepreneurial vocational education scheme. The institution' of project oriented form of teaching in our Polytechnics will stimulate the intrinsic efforts of students for finer knowledge in their chosen careers.

Introduction

The various Polytechnics in the country have very sound and strong objectives that cover these areas:

(a) Social objectives;
(b) Economic objectives;
(c) Political objectives;
(d) Technological objectives;
(e) Educational objectives.

Attaining these objectives will require much physical and human resources. The detailed content of the objectives can be seen in The Federal Polytechnic, *Staff Manual* of June, 1986 or the relevant NBTE's Publications.

A thorough examination of these objectives will reveal the fact that education is a latent vehicle for developing a nation or even destroying it. Our interest as a nation is for the positive effects of education. According to Fafunwa (1971) education should be designed for vocational use. Ndinechi (2001), in agreement to this view, further added that vocational education is a veritable means of meeting the manpower needs of the society, and vocational education curriculum should be based on both philosophical and pragmatic considerations in order to meet the employment needs as well as contribute to students' income earning abilities in chosen careers. This is a very good direction, but are the Polytechnics strongly guided by marketable objectives? Have they actually scouted the economy to determine the various invest-able opportunities to prepare students for a profitable self-oriented life career? If the Polytechnics realize that programmes should be guided by the demands of the society, then they will always constantly up-date their various curricula in order to meet societies production and service needs. What is operational at present? The accredited Polytechnics teach students with course curriculum drawn more than 20 years ago! Hence the need to speak out against this defect by creating awareness for corrective measures.

Defects in Current Academic Curriculum

1. A chief constraint for meeting these needs for graduating students into self-employed career is the present centralization of curriculum design for different programme contents of all the Polytechnics. This approach allows no room for competivity amongst Polytechnics. If Polytechnics are allowed to grow in line with their immediate environment, The Federal Polytechnic, Bida would have had the structural facilities for metal technologies and arts; The Akanu Ibiam Federal Polytechnic, Unwana would have long ago matured in ceramics, cement and glass technologies; and most Polytechnics in the North would have developed marketable knowledge in Agriculture and

food sciences. For a nation to keep pace with the advancing technological devices for production that are fast taking over and redefining the workplace, it becomes imperative for training institutions to take a hard calculating look at course contents regularly for the training of the nations graduates (Cetron and Appel, 1984). The desire to attain this objective would cause tertiary institutions to specialize in an area of knowledge which would trigger the spirit of competitiveness among them in order to make a strong impact in the job market.

2. Decentralization of Budget Control. The present centralization of what the Polytechnics should teach is also carried into the house administration and management of most Polytechnics. In a situation where the Rector, Bursar and Registrar have the absolute responsibilities of preparing, managing and controlling an institution's budget to the exclusion of academic heads of department except for supplying the information for budget preparation, tends to put too *much* power in these offices. In Polytechnic Budgeting, Financial Policy- and Budget Guidelines allow Heads of departments to make budget proposals and defend such proposals with respect to identified departmental goals and demands for equipment and materials for the attainment of set objectives at budget meetings: unfortunately, responsibilities for budget planning and control are not shared below this level of policy determination (Usen, 1993). A decentralized approach that allows the heads of departments to execute the budget in accordance with the planned activities of their departments; and for the offices of the Rector, Bursar and Registrar to play supervisory and control roles would ensure that the planned activities are attained. This management style will surely enhance substantial meaningful growth development and efficient utilization of limited resources in the Polytechnics.

In other' to realize the points discussed above the following observations should be considered:

Ways to Correct Curriculum Implementation Defects

1. Polytechnics should be strongly guided by marketable objectives as determined by the societal needs. These objectives can be realized if academic programmes in Polytechnics are project-oriented. Each academic programme or joint programmes should determine what project should be embarked upon. For example, the Electrical Department could decide to produce an electric motor. This objective will influence the type of equipment it would procure and the students activities channeled to its realization. A project oriented form of education will have provision for the mass production of their inventions to a period when they can relocate and stand on their own. In other words, a form of *Small Business Development Unit* which is incorporated within the Polytechnic system will assist the students on the application of management and marketing strategies for the success of their ventures in the open market economy. The establishment of the Small Business Development Unit will, in addition, enable student entrepreneurs to understand both the definition and function of profit. They shall know that profits are used for two purposes: Profits given to individuals or groups to spend or save, and some profits which are retained in the firm for updating production facilities, purchasing equipment, and increasing the volume of stock to promote the firm's growth. As the function of profit is very important for a firm's survival and competivity, it is essential for student entrepreneurs to learn about its importance. According to Clow (1984) "An understanding of the roles of profits shall throw more significance on the reasons for retained Earnings Account in accounting". The present drives by the National Directorate for Employment (NDE) should be built into the training curricula of the Polytechnic students.

If academic programmes are built on realizable students' interests, students will always strive for high standards instead of causing an environment of complaint that a lecturer is wicked, because he keeps them busy with much work to do. A programme of this nature would keep students usefully busy with no time for strikes. Their thinking would change. This time, they would cause the lecturer to be busy with providing them the necessary information and guidance in their productions (Project).

2. Budgeting and Control. If the application of Financial Policy and Budget Guidelines (Usen, 3993) are relaxed for Heads of Departments (HOD) to execute budget plans in line with planned activities, the stock of learning resources wilt increase. The library will stock current' and useful publications for both academic and research needs of staff and students. .As H.O.Ds would strive to reduce the effect of inflation on their purchases, effort would be made to procure learning aids as early as possible at competitive prices. The Librarian and other HODs being aware of the strict supervision of the Rector, Bursar and the Registrar would execute their budgets as planned.

3. Motivation Through Research Activities. Members of the teaching staff should be rewarded on the basis of tangible results (Staff manual, 1986). Results should be high enough to attract recognition. For example, a Polytechnic student who produces a metal door similar to what the craftsmen along some streets can produce has made a 10% inroad on the expected technologies for students at this level of education. Flat sheet technologies for Polytechnic students should be of higher standard in design and production in order to show they ha- acquired the requisite skill for producing complex units like car bodies, filing cabinet?. padlocks, staplers, kettles, furniture accessories, torches, etc. The realization of this objective requires actualization of the points mentioned in 1 and 2 above.

4. Job Security and Promotion. The jobs of the teaching staff should be secured because they constitute the intellectual resource base of achievers. An educational environment should allow politicking in both functional and dysfunctional politics, but more of functional politics. Dysfunctional politics also has the good side of putting an academic head always on the alert and more active as he strives to neutralize the evil effect of dysfunctional politics.

   The promotions of academic staff should be based on physical achievements mostly: and not on corrupt crude or political classic projects that do not meet market requirements. The marketable products of projects should be the result of matrix structures that pull resources together for refined final products. Note that the production of a stapler will cause the chemical engineering (enamel coating), ceramic (making clay moulds) mechanical engineering (shaping), Business (feasibility of projects), and Accounts (cost analysis) departments to pool their resources. This process should underline the current values for education - that is, entrepreneurial vocational education.

5. Retraining of Academic Personnel. To sustain the zeal for entrepreneurial vocational education, the training of staff should be a continuous process. Ibigbami (2001) on his part argued that unless an academic staff of ten years ago spends ten percent of his time developing his knowledge beyond the level of his collegiate training, he cannot compete in value with the new graduates who are properly trained. This analysis furthermore assumed that the retrained staff retrained all virtues of his previous training. If on the other hand, the estimated decay arising from neglect or disuse of knowledge is also ten percent, the academic staff shall be faced with the task of growing in new knowledge at the rate of about twenty percent each year to remain of equal value to his employer and society: hence the urgent need for the retraining of academic staff for the growth of a vibrant entrepreneurial vocational education.

6. The present control by the NBTE of the curriculum should be relaxed to allow for institutional competition and differences. As it stands today, Polytechnic educators train students for a career that duly equip them with durable skills, knowledge and attitudes to cope with the inevitable changes that occur relative to their roles with the world of work, and these students are also enabled to possess the skills and knowledge to select and pursue a career that reflect personal interests and abilities and at the same time have the experience needed to pursue any new career should situations arise which dictate career changes in future in diverse locations. The current central control of curriculum contents, that in effect kept' the

Polytechnics' curriculum static for about 20 years, tends to negate the prior objectives of entrepreneurial vocational education. Career education offered in tertiary institutions require periodic updating of technical employment-related information that will enable graduates to have the knowledge and skill to evaluate opportunities and make informed decisions which will facilitate their survival amidst continued technological and societal changes (Stout, 1984). These employees can then adapt to fluctuations in job expectations and pressures because they can outlive the crises which occurs in the workplace. With this experience, it is therefore very wrong for all the'Polytechnics who have various cultural and mineral deposits differences to be teaching identical subjects. Though in very few cases, some institutions make minimal changes as a form of protest, but such useful endeavours are rejected during re-accreditation inspections. As a matter of fact, NBTE's strict involvement in curriculum development should be limited to 30% of any particular programmes. They should only supervise the basic learning - general education: English, Literature, government, Mathematics, Sociology, Psychology, Economics, Basic Accounting, etc. In other words, their control should be limited to first year subjects. The professional areas should be left to professions, industry and host departments to decide on.

7. Falling Standard of Education. The study programmes in the Polytechnics should not only be challenging, but must also help students to improve their quality of functional knowledge so that the graduates of Polytechnics can have the requisite skills and motivation to become productive members of the society (Johnson, 1983). It is sad to observe that most programmes are non-coherent and over simplified. For instance; in the past, Secretarial Studies Department taught Office Practice and Secretarial Duties in two semesters. . At present the courses are taught" in one semester at appropriate times, but no appropriate textbooks are used.. A deplorable aspect about the course is the absence of adequately equipped laboratories to stimulate secretarial roles and ethics. A thorough examination of the Office Practice and Secretarial Duties Course contents would reveal overlapping topics that could be restricted to one of the subjects and a better use made of the time saved. Textbook teaching affords a better exposure instead of the present trend of selling summaries (lecture notes) or mediocre textbooks to students. The present approach to teaching from *Handouts,* and mediocre textbooks produce graduates with poor preparation. It also encourages the graduation of students who would have been dropouts in a particular programme but who would have been more successful in other areas of production (Ogunba, 2005). Another example of the secretarial programme is the requirement of a student to typewrite from 50 w.p.m. (National diploma speed requirement) to 60 w.p.m. which is Higher National speed requirement; and is to write shorthand from 100 w.p.m (ND) to 120 w.p.m. (HND) in as much as two years for the Higher Diploma Certificate. These students are only required to increase their speeds in typewriting with only 10 words by the ND standard and shorthand 20 words; but for the poor training and unrealistic grading procedures at the ND level where false pass grades are awarded to cover up poor teaching, most HND graduates cannot even attain properly the ND standards as the necessary skills were not truthfully developed and evaluated at the ND level, and the deficiencies at ND levels were moved into the HND. Shorthand and Typewriting need skilled aptitudes for success, and the graduating speeds can be easily realized within a year or less if students were adequately trained and evaluated at the ND level. The elongation of the training time encourages corrupt practices designed to enable very poor students to pass at the expense of good standard of education. The sad effect of these acts is to send inefficient personnel to supervise office activities. It is relevant at this point to mention the joint report by the World Bank and NISER (2001) on the falling standards of education in Nigeria. Their report stated that the average Nigerian graduate of a University or Polytechnic was not worthy of the qualification which his certificate purports to affirm because the graduates lacked skills, and good command of English language. They concluded that these graduates were very poorly trained and largely unemployable. The nation is really suffering because of this syndrome of "let my people go"

8. Appointment of Heads of Tertiary Institutions. The appointment of Rectors to Polytechnics should not be politicized on tribal or state affiliation." Though it is the feeling of most Nigerians to be more Comfortable if their tribesman is the supreme leader of any corporation. In order to develop the spirit of accepting any leadership and feel safe under any administration, the appointment of Rectors should be in the pattern recently adopted by the National Electoral Commission. If Rectors are appointed to head institutions outside their state of origin or away from where they have strong indigenous tribal ties, there is the likelihood that they will always try to account for their tenure in office. They would be more objective and less nepotic in their actions. The INEC lesson is a strong a and viable experience. It can also be tried in Polytechnic administration for good results.

Flexible Admission Requirements. Finally, the educational plan for Polytechnics should be career oriented and the students' interests should be paramount in admission requirements. Adequate flexibility should be put into the admission policy to enable students to readjust to a new career education of their interest for which they have the intellectual capacity and the patience to endure the extra time this new field will cost them. The present condition that tends to restrict students' choice of programmes to only subjects they passed at the WASC or GCE should be reconsidered. Admission requirements should be flexible to allow for correction of initial mistakes. A student who read only art subjects and later decides to read engineering courses should be .tolerated. On the other hand, a secretarial or engineering students who wants to study accountancy should also be tolerated. Admission into different programmes should allow for inter-departmental switches. The basic admission requirements should be the passing at Credit levels of any 4 or 5 subjects. All deficiencies in the students basic subjects for what he planned to study should be remedied through a well-planned remedial programme. At this juncture, it is good to acknowledge the academic programme of the Federal Polytechnic, Bida which prepares art students in a two-year remedial programme to study e engineering courses.

Plan For Standard Text Books

The absence of standard text books which Etuk (2005) agreed is actually affecting the quality of Polytechnic education adversely. According to him inadequate text books have inhibited the development of vocational education and information technology. The problem is not only the scarcity of good books in the market, but also the prohibitive high cost at which the available text books were sold. The effect of the high cost of text books can be minimized if the Polytechnics can adopt a realistic text book loan scheme. The scheme should be a supplementary programme to the general books kept in the library. The scheme will require each institution to purchase the total number of very essential text books required for core courses for a complete class of students' enrolment for the core subjects. The students will then rent the books on semester contracts. The amount of rent fixed for each book should be carefully worked out to enable the books to be replaced in *four or five* years. This scheme will require an initial financial investment, but the investment can be recouped. The supervision of the distribution of the books should be academic departments through subjects lecturers. Any recognizable damage to the text books should be borne by the erring students.

Necessities for Career Oriented Academic Programmes

To make an academic programme career oriented, the students' interests should be a guiding factor, and this will help in determining what form of equipment should be installed for a more effective learning. However, in order to promote entrepreneurial skills in students projects, some equipment and basic facilities must be provided (Stout, 1984). Each Polytechnic should have functional *Foundry* for production of models, moulds or duplication of already existing marketable products. William (1985), vice president Grumman international Inc., Bethpage, New York; when he invited, Nigeria called for the adaptation of salvage technology which will melt down all the broken-down vehicles and engine parts scraps into raw materials to be used in the production of tools, utensils and spare parts. According to him, the absence of foundries as basic technology in every tertiary institution in Nigeria was seriously

militating against engineering production and creativity. Furthermore, it is necessary for laboratories and workshop equipment to be in line with planned projects and with provision for growth and development. The present objective of the Students Industrial Work Experience Scheme (SIWES) should enable students to *con/inn* the result of their projects in their respective tertiary institutions and find out ways of making improvements on them. It should stop being the present practice of going on SIWES to observe what is happening in a company or factory with least participation in the production processes. At the end of SIWES, the students come back to school to report their observations.

The Way Forward

As a matter of explorative design, the National Diploma and first Semester of the HND of a polytechnic academic programme should be planned for learning most of the theories and basic knowledge that would be fundamental for project-oriented studies at the Higher National Diploma Programme. This plan would require the fussing of National and Higher National Diploma programmes into 4 to 5 semesters out of the present 10 semester study plan (including the 2 semesters for Industrial Attachment at the end of an ND programme). The remaining 5 to 6 semesters would now be left for additional learnings in the form of research oriented studies for functional knowledge. The independent studies should be made by HND students to source information for the completion of their assigned projects. The products of this project ca n be completed in segmented processes. For instance, a group of students may be required to build a carburetor, gear box or a whole transmission system. As this project will be completed over a long time, the supervising lecturer(s) or department(s), through a well constituted matrix organization, will determine the specific objectives for each group at each point in time. The result of any group's effort should be adequate for them to live on their results after graduation. For example, the fabricating and assembling of a simple electric motor is fundamental to many products like fans, motorized toys, fountains, radiators, grass mowers, air conditioners, alternators, switches, electronic motors, and electric motor for millers, grinders, vacuum cleaners, etc. What most institutions do at present is to assemble the technologies of other countries instead of going into the task of finding out the fundamental technologies, build and refine them for marketability. The desire to acquire the fundamental fabricating skills for making basic components should be an inroad for entrepreneurship development in the country. The investment on education is really high, but the results are much more worthy than the expenses incurred. Nigeria's educational needs should be geared towards attaining the benefits of entrepreneurial vocational education for HND grandaunts through skill training programmes.

Conclusion

The nations educational objectives should promote academic and research *competition* among the Polytechnics in the country through the use of project-oriented form of teaching. In this approach, the basic theories and general knowledge about any course of study would be covered in 4 to 5 semesters in a new combined ND and HND programmes mounted in the Polytechnics. The later half of each programme's training period, which would have been the exclusive schedule for the HND (1^{st} and 2^{nd} year) level of training, would be specially utilized for project actualization and entrepreneurship skill development.

References

Cetron, f& and Appel M. (1984). *Jobs of the Future Where They Will Be and How to Get Them.* New York: McGraw-Hill Book Co.

Ciow, John H. (3984). Economic Facts of Life Needed by Entrepreneurs. *Business Education Forum.* 38 (6). Pp. 9-13.

Etuk, Effiong J. (2005). Business Education in the Era of Information Technology: Issues, Problems and Prospects. *Business Education Journal.* V (1). P. 6

Fafunwa, A. B. (1967). New Perspectives in African Education. London: Macmillan Publishing Co.

Fafunwa, A. B. (1971). A History of Nigerian Higher Education. Lagos: Macmillan Publishing Co.

Fafunwa, A. B. (1974). History of Education in Nigeria. London: George Allen and Unwin.

Ibigbami, D. B. O. (2001). Designing National Training and Retraining Programme in Business Education. Business Education Journal. Ill (4). P. 1

Johnson, Wilson S. (1983). Challenge and Opportunities for Small Business in the Eighties. Business Education Forum. 30 (1). P.4. '

National Board for Technical Education (1989). Secretarial Studies Curriculum and course Specifications Kaduna, Nigeria: Atman Ltd. P.O. Box 1000.

Ndinechi, Gabriel Ifeanyi (2001). The Purpose and Function of Business Education Curriculum Business Education Journal. Ill (4). P.I.

Ogunba, Oyinade (2005). JAMB has Outlived its Usefulness Saturday Tribune^ October 2005. No. 601. Pp. 23.

Staff Manual for Federal Polytechnics. Published by The Federal Polytechnic, Bida in June 1986.

Stout, Vickie Johnson. (January 1984), Coping with Change Through Career Education. Business Education Forum. 38 (4) P.21.

Ukeje, B.Q. (1986), Education for Social Reconstruction. London: Macmillan Publishing Co.

Usen, A. S. (1993). Budgets and Budgets Control. A Paper Presented at Top Management Seminar at Akanu Ibiam Federal Polytechnic, Unwana.

William, Oswald. (1985). Importing Technology: A Rational Approach. Management Forum Series 3. A Lecture Given at Nigerian Institute of International Affairs, Victoria Island, Lagos on February 6, 1985. Lagos, Shangisha: Centre for Management Development.

World Bank and NISER (2001). A Joint Report on Nigeria Falling Standard of Education. The Guardian April 1, 2001.