



PATENT AND POLYTECHNIC EDUCATION IN NIGERIA

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ABSTRACT

In terms of patent research, Nigerian technical and polytechnic education has been limited. As a result, polytechnic education has not had the anticipated impact in the country with its innovations resulting from financed research, which could be due to a lack of sufficient patent teaching on how to proceed. In light of this unfortunate situation, the purpose of this paper is to explain what a patent is and the relationship between patents and academia. Academic scholars are under pressure to publish articles since they have not properly identified the value of their research papers to society, rather than only for literary knowledge. It also focuses on and provides insight into why research articles are not patents, the significance of polytechnic education in the development of patents, and the importance of encouraging polytechnics to produce patents, which cannot be overstated.

KEYWORDS: Patent, Polytechnic, Education, Innovation, Invention.

INTRODUCTION

The need on academia to expand its research activity beyond basic research and immediately contribute to actual economic development is shifting. Basic research is critical for future innovation, and funding in this field should be maintained. Nevertheless, social expectations of universities and polytechnics have expanded beyond research, teaching, and public service. University and polytechnic Missions are broadening to encompass economic growth, with translation of university and polytechnic research playing an important role.

R&D has been a stepping stone for major innovations that have resulted in exponential economic expansion. Polytechnic Education and systems are not being left behind in this era of progress in all areas of life. Polytechnic education, often known as “Technical education,” plays a part in research that leads to patenting. Unfortunately, the polytechnic setting is completely unaware that the main purpose of research is to alleviate society problems through patenting. Polytechnic education is supposed to prepare intermediaries to fill in the gaps, thus they should be active in patenting fresh ideas as well.

The increasing drop in the number of patents while growing the number of publications in the polytechnic sector has grown disconcerting, prompting many to

wonder; Is the main purpose of research to be published or to demonstrate knowledge in various fields? In terms of the country's development and its educational institutions, including polytechnics, patenting will be a valuable tool in revitalizing our institutional research centers and promoting our educational services in solving real-world social problems. However, most polytechnic research conducted by students and lecturers could result in patents that can be developed into useful goods and contribute to economic growth. It is worthy to note that a recent report in 2019 by Abasiokong reviewed that National Office for Technology Acquisition and Promotion, NOTAP received a total of 68 inventions for patent from research agencies and Nigerians between the period of 2016 and first half of 2017. Regardless of public opinion on patenting in the country, polytechnics should be at the forefront of patent production. However, Patenting and polytechnic education will be the focus of this paper.

Patent: An Overview

Patent, according to Adesina (n.d.), is the legal protection given to technological activity included in inventions in order to prevent their illegal use or exploitation. The patentee registers an invention with a patent office and provides specific information on the innovation to be patented, making it available for public scrutiny. In exchange, the invention receives legal protection, preventing unlicensed industrial use of the

patent. "The legal protection grants a patent holder a monopoly on its commercial exploitation for a period of time, often about 20 years," according to WIPO (1997) in Adesina's report.

Intellectual Property (IP), a fundamental part of a knowledge economy built around scientific and technological services (S&T) research and development (R&D), carried out by laboratories. Patents are the main elements of intellectual property (IP). The patent proprietor may license the interested parties to utilize the invention/patent when they have realized its potential. Further study into new sectors not covered by the patent could also encourage the knowledge in the documents to develop new ideas. These indicate that patents not only protect R&D investments that generate protected inventions, but also boost technological progress. Consequently, the information contained in the patent document is an important motivator for global research and innovation activities (Adesina, n.d).

Patents have a lengthy history, albeit some of the early patents were simply granted for the purpose of granting a legal monopoly in a certain item rather than to protect an invention from imitation. Brunelleschi's patent for a barge built to transport marble up the Arno, awarded in Florence in 1421, the Venetian patent law of 1474, and several patent monopolies given by the English crown during the 15th and 17th centuries are all early examples of technology-related patents (Bronwyn, 2007). The modern patent, which demands a functional model or written description of an invention, was developed in the 18th century, first in the United Kingdom (1718) and subsequently in the United States (1790), with France following closely afterwards (in both the latter two cases one of the consequences of a revolution). Patents were introduced in several additional Continental European countries, as well as Japan, during the nineteenth century. During the twentieth century, patent systems were virtually universally used (Bronwyn, 2007).

Over time, experience has shown that technological advancement would stall in an environment where anyone were free to replicate any good concept and where there were no significant benefits to being the first to propose a new idea. Only when one is confident that his or her concept will be recognized as the person's alone for a defined amount of years, according to Arai (1999), can one completely devote oneself or herself to the creative process. This had long been recognized, and history has demonstrated that a system that ensures such recognition fosters the emergence of new ideas one after another. As a result, Gao, a licensed patent attorney, believes that fresh ideas are more likely to be disclosed in journal publications when researchers do not possess patents (Adesina, n.d).

Patents and Academia

It's no secret that academia and patents are inextricably linked. This is because many inventions necessitate some

scientific understanding in order to be unique and creative. Academics' only objective is to use what we've learned in high school and college to fixing societal problems. However, it is an unproven truth that some Africans, particularly those from the Western side of the continent, regard higher education as a badge of honor without actually contributing to society, thus bridging the gap between academics and real life. Surprisingly, patenting promotes technical progress (innovations). One can wonder how patents contribute to a country's technical growth. This could be due to the fact that the concept of technology has yet to be grasped.

Globalization and technology are both outcomes of patents obtained via our educational institutions, but the latter is the finest. According to Peter Thiel and Blakes Masters (2014), technology is just "a new or better way of doing things." Technological growth is made possible by our scholars' inventive research, as the modern society faces numerous issues that must be addressed. Globalization facilitates national progress and so encourages more patenting research as a result of technological advancements resulting from in-depth studies and substantial labor over time. Furthermore, academic institutions, particularly polytechnics in Nigeria, should be in the forefront of developing patents due to their design and structure.

Why the published research is not patentable

As desirable as patenting discoveries is, the findings of polytechnic scientific and technological S&T research are frequently published in peer-reviewed journals. Researchers undertake this with the goal of making study findings widely available to the general audience. This is consistent with polytechnics' long-standing tradition of seeking knowledge without regard for its application. Academics are under pressure to publish their work to promote their expertise in their chosen field and to obtain further funding for their research. However, the pressure to undertake cutting edge research and quickly publish that research can jeopardize the prospects of obtaining protection for the invention(s) that result from that research – which is unfortunate when it later transpires that those inventions are potentially very commercially valuable (Zammit, 2018).

Therefore, the quest for more academic heights leading to more and more publications without necessarily transforming them into useful tool for driving technological change has made patenting of no effect in Nigeria. There is no longer the possibility of patent protection for any invention as the invention is considered "published". Once published, the invention is not "novel. Additionally, the DG of NOTAP revealed that Nigeria has 77 polytechnics established yet researches carried out in these institutions has not been translated into useful products. He encouraged researchers to patent their research results before publication as published works are already in the public domain and could be exploited by another researcher

without acknowledgement. This informs us that the age of publish or perish has come to an end giving way for high impact innovations, products and services.

The Role of Technical Education In Patenting

Education has been generally acknowledged as the key that unlocks the gate to the social, economic, political and technological development of any society. However, much depends on its quality and contents (Obasi, n.d). Technical Education has been defined as the "...instruction in a skill or procedure, usually of a mechanical type, and at a level between that of the professional scientist or engineer and that of a skilled craftsman (Ofori-Bruku, 2005)". However, polytechnics are established to contribute to national development through research and development. TETFund, a government established body concerned with funding of academic researches for development has equally been actively involved in funding researchers from polytechnics to encourage their research enterprises. The skills and training acquired from the polytechnic education curriculum can help set the basis for inventions and innovations as the process is a creative one for lasting impact in the community at large. Since polytechnic education is industrially based with some theoretical backgrounds, researches by the polytechnic schools should be geared towards technological growth in findings better ways of doing new things.

There is no doubt that Nigerian polytechnic schools have been actively involved in scientific research and have produced remarkable findings, and that students in these polytechnic schools have also been undertaking research in the form of Projects at the end of their academic stay. The initial enthusiasm and devotion to research inside the polytechnic schools is nevertheless laudable. The polytechnic education and patents have also a slight disparity. This difference between them may be ascribed to research since it can serve as a basis for excellent and inventive patents. This is to canalize energy through patent research rather than literary assessment and ends on paper. Nigeria is blessed with a wealth of resources and multi-technical research has led to potentially beneficial inventions and innovations that have lain asleep on papers, while those results are possible commercialisation, globalisation, patents.

The Need to Encourage the Polytechnic Education for Patenting

Conscious and efficient development and utilization of research and development (R&D) results were the major distinguishing factors between the developed and the developing countries while the developed countries engage in the "industrial/Demand-driven" research to solve human problems, developing countries engage in academic researches which are often published for the purposes of promotion without patenting. An expanding literature clearly shows that patents and scientific publications are mutually complementary. That virtuous relationship can certainly lead to delays and selectivity in

communicating and sharing outcomes, but it appears to be dependent not on systems constraints but on management competency (Zeebroeck *et al.*, 2008).

In Nigeria, there have been claims of inventions produced by scientific and technological research in universities, polytechnics and institutes of research. Unfortunately, the country's patent registration was not proportionate. The dismal level of Nigerian researchers' application for a patent thus makes it dubious if it can sufficiently be used as an indicator for evaluating research and development activities in Nigeria to use the patent application and/or registration (Adesina, n.d). Nigerian (polytechnic) researchers have not been active in patenting of inventions. Albeit low, researchers in pharmaceutical studies were most active in patenting their inventions, followed by those in FSTD, and least in MMSD as reported by a study from National Centre for Technology Management. The above analysis indicated that the researchers did not know much about the process of patenting, which was a reflection of poor patent education in Nigeria.

UNESCO (1994) confirmed Nigerian researchers' lack of understanding of Patent System activities, stating that government and project personnel in Nigeria knew nothing about the commercial worth of patents or how to extract information from patent filings. However, the need to publicize research papers was a major problem that could prohibit researchers from patenting their inventions. Patents are inclined in the polytechnic promotional system, as polytechnics give papers greater precedence than patents. 'Publish or perish' is the maxim! Researchers therefore prefer to publish papers. The researchers may also be burdened by the documentation required for a patent - details of the work and the preparation of complex patent applications.

Patenting, on the other hand, cannot be overstated in terms of national development. Continuously publishing papers without commercializing them would result in a loss of interest in research and development. Patents would incentivize and inspire researchers to devote the time and effort necessary to achieve a breakthrough. As a result, patents in polytechnic education are required in order to remain relevant in today's technological environment. Researchers, on the other hand, must be driven to depart from this tradition. Structure and institutional modifications in polytechnics, as well as changes in government legislation, are common sources of such motives.

Concluding Remarks

The dismal in academic patenting among the polytechnic schools has been essentially driven by lack of motivation for technological revolutions, and allowed and stimulated by pressures to publish a paper for academic promotion. However, a sharp increase in academic patenting in polytechnics would raise concerns that it might modify the effects of the patent system on research and be

reshaping the common perception of the traditionally free flows of knowledge. Nevertheless as earlier said, an expanding literature suggests that patents and scientific publications complement each other. But this relationship would induce some delays and selectivity in the disclosure and sharing of results. Polytechnics should not be left behind to produce a patent but must be at the forefront to demonstrate its position in this changing technological age.

REFERENCES

1. Abasiekong, O. (2019). Nigerian Universities should be at the forefront of producing patents. Retrieved from <https://www.proshareng.com/news/Education%20Knowledge/Nigerian-Universities-Should-be-at-the-Forefront-of-Producing-Patents---Prof-Ibidapo-Obe/43628>
2. Adesina, A.O. (n.d). Nigeria's Research System and the Culture of Patenting. National Centre for Technology Management, Obafemi Awolowo University, P.M.B. 012, IleIfe, Nigeria.
3. Arai, H. (1999) Intellectual Property Policies for the Twenty-First Century: The Japanese Experience in Wealth Creation, Available at <http://www.wipo.int>.
4. Bronwyn, H.H. Patents. Contribution to The New Palgrave: A Dictionary of Economics, second edition, 2007.
5. Obasi, O.O. (n.d). Polytechnic Education In Nigeria: Problems And Prospects. Department of social sciences, Federal Polytechnic Nekede.
6. Ofori-Bruku, K. (2005). "The Role of Technical Vocational Education in Africa's Economic Development: Are the Polytechnics Still Relevant?" In: ***The Role of Technical Education...*** (Proceedings of... CAPA Seminar...).
7. UNESCO (United Nations Educational, Scientific and Cultural Organisation) (1994) United Nations Systems Support Science and Technology in Africa, Geneva.
8. WIPO (World Intellectual Property Organisation). The importance of technological information contained in patent documents for use in research and development activities; WIPO Information Services for Developing Countries. Paper presented at the National Seminar on Commercialisation of Inventions and Research and Development Results, Abuja, November, 1997; 25- 27.
9. Zammit, M. Patenting inventions emerging from academia - 5 common mistakes. *Lexology*. Australia, 2018.
10. Zeebroeck, V.N., Pottelsberghe de la Potterie, B.V. and Guellec, D. Patents and Academic Research: A State of the Art. *Journal of Intellectual Capital*, 2008; **9**(2): 246-263.