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Dissecting the Employability Dilemma of Recent Anatomy Graduates in Nigeria: The Role of the National Universities Commission's Anatomy Curriculum

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Abstract

Perhaps in the recent past, no career has seen more challenges and frustrations like that of the recent anatomist in Nigeria. Students were not interested in pursuing a career in anatomy due to the very restricted career paths, a situation created by unfavorable government policies as enforced by the approved training curriculum. As players in this field of anatomy, with decades of experience, we advocate for improvement in anatomy career prospects. This position paper is backed up by the results of a recent exploratory survey on the experiences of recent anatomy graduates in the labor market. Results showed a redundant curriculum that had remained the same for 30 years. There are no professional options in health services spelt out for the anatomist in national curricula, ancient and modern, despite an obviously superior knowledge of the human body compared to any allied health discipline. Results also showed that the curriculum objectives were significantly far from graduate expectations. Our inference linked this to perharps failure of National Univescities Commission of Nigeria, to consult with students or young graduates during the review since the curriculum objectives of Core Curriculum and Minimum Academic Standards (CCMAS 2022) was in no way different from the Benchmark Minimum Academic Standards (BMAS 2007). This consultation is the gold standard in curriculum review. It is painful to state that the CCMAS was dead on arrival as far as the career paths of the anatomist are concerned. This is a call for a true curriculum review.

Keywords: Curriculum, students expectations, career paths.

INTRODUCTION

Anatomy, a fundamental discipline in the medical and health sciences, is crucial for understanding the structure and function of the human body. Anatomy is fundamental to all medical disciplines. It is essential for clinical practice and biomedical research [1]. Anatomy constitutes a crucial component of the curriculum in medical and allied health education, frequently regarded as the "language of medicine" [2]. Anatomy is too broad not to find professional expressions, but unfortunately, in Nigeria, it has remained in the back seat of other medical-related disciplines. This situation is created by decades of acquired maldevelopment due to curricula "shortsightedness" [3]. In the last eighteen years, 2007 to 2025, two curricula have been instrumental in the training of Nigerian anatomy graduates. These are the "Core Curriculum and Minimum Academic Standards (CCMAS 2022) for Nigerian Universities and the Benchmark Minimum Academic Standards (BMAS 2007) for Undergraduate Programs in Nigerian Universities [4, 5]. BMAS 2007 was reviewed and became CCMAS 2022 in the year 2022. Student admitted under BMAS would complete their training with that curriculum. Concerning the B.Sc. anatomy program, it is expected in all Nigerian universities that the last set of these students will graduate by the year 2026. Numerous anatomy graduates have substantial difficulties transitioning from academic education to professional practices, or perhaps an absence of options, presumably constrained by anatomy curriculum boundary [6]. In Nigeria, contrast to other medically related disciplines that provide direct patient service

engagement and prompt job prospects, the career path for anatomy graduates is less clear, frequently resulting in frustration and disillusionment [7]. Anatomy specialists are often restricted to academic roles that include teaching, research, and performing administrative responsibilities. All these are without professional recognition or compensation afforded to other medical professionals [7]. This was evident in the Nigerian universities' salary scale that excluded career anatomists of any professional allowance. These constraints have fostered a prevalent impression of anatomy as a discipline with restricted career progression and job mobility [8]. Furthermore, anatomical sciences have experienced substantial transformations in recent decades [9, 10]. The emergence of digital learning platforms, progress in imaging technology, and a transition towards a more cohesive curriculum resulted in decreased contact hours and a diminishing focus on conventional anatomy instruction [10, 11]. These advancements have arguably diminished the significance of anatomy and further reduced the discipline's attractiveness to students and educators [7; 12]. As a result, anatomy graduates in Nigeria frequently encounter an identity crisis, contending with enquiries regarding their function in contemporary healthcare and their future opportunities within the academic sphere [7].

The present study evaluated the perceptions and expectations of recent anatomy graduates about their professional career pathways to establish the level of correspondence between their training curriculum and professional aspirations. Additionally, it explored whether or not there are loopholes in the National Universities Commission (NUC) review format.

METHODS

This cross-sectional survey of graduate career expectations and curriculum alignment utilized the Google Forms platform for distribution and retrieval. The study was a mixed-method graduate expectations mapping. Recent graduates, five years and younger, from Nigerian universities were targeted. The survey consists of eight (8) structured response questions and two open-ended questions, specifically designed to provide invaluable insights into the minds of the young professional. The questions (Table 1) are represented here.

Table 1: Questionnaire Content

S/no	Questions
1	Are you a recent graduate (less than 5 years) (Yes / No).
2	Are you okay with this degree (Yes / No).
3	Rate your level of satisfaction on a scale of 1 being lowest and 5 being highest
4	Rate how you feel society accepts or reckons with your degree. On a scale of 5, 1 is the lowest and 5 is the highest.
5	Does this degree give you joy (Yes / No/ Maybe)?
6	Does this degree give you sadness? (Yes /No / Maybe).
7	Apart from MBBS, which degree would you have preferred (Nursing /MLS /Pharmacy /Physiology /I like Anatomy).
8	Would you advise a younger sibling to study anatomy (Yes / No / Maybe)?
9	Mention any 2 career paths in anatomy that you know
10	Which of these career paths is presently open for you?

A critical component of this study involved an explorative analysis of the curriculum philosophy and objectives (Table 2) of the BMAS 2007 [5] and the CCMAS 2022 [4] for the BSc anatomy program in Nigeria. These objectives were juxtaposed with the respondents' expectations, thereby facilitating an exploratory assessment of the curriculum's effectiveness in meeting the career aspirations of its graduates. This was, in turn, juxtaposed to the ongoing discourse on the need for development and improvement of the NUC anatomy curriculum.

Data was collected from the Google form survey in CSV (comma-separated values) format. The perceptions and career expectations of the students were presented and summarized in frequency tables and charts. The statistical difference between proportions (curriculum and non-curriculum pathways) was determined using Pearson's chi-square using IBM SPSS version 20. Differences were considered significant when the p-value was less than 0.05 ($P < 0.05$).

RESULT

Table 2: The Philosophy and Objectives of Current and Previous BSc Anatomy Curricula in Nigeria

Philosophy/ Objectives	CCMAS 2022	BMAS 2007
Philosophy	The philosophy of the programme is borne out of the need to provide knowledgeable and efficient personnel who should possess the right type of knowledge and skills in human anatomy necessary for the training of health personnel in the various fields of health sciences, research, complement ancillary laboratory medical services and develop entrepreneurial expertise in related disciplines.	The general philosophy of the programme is to produce graduates of high academic standing with adequate practical exposure who can function adequately in the medical education process, complement ancillary laboratory medical services to the greater society and develop entrepreneurial expertise in related disciplines.
Objectives	1. teach Human Anatomy courses to B.Sc. Human Anatomy, Medical, Dental, Nutrition, Nursing, Physiotherapy, Pharmacy, Medical Laboratory Sciences students and those of other related disciplines; 2. acquire competence in the use of basic laboratory equipment; 3. to be able to use manual dexterity in palpating the surface anatomy of the normal living subject, the position, extent and functional integrity of organs and systems; 4. identify the position of normal anatomic structures in radiographs, contrast studies, air studies, angiograms and osteology materials; and 5. Promote anatomy as a subject through research that will lead to the acquisition of higher qualifications (M.Sc. and Ph.D.)	(a) Teach Anatomy to Medical, Dental, Nursing, Physiotherapy, Pharmacy, Medical Laboratory Sciences students and those of other related disciplines. (b) Acquire competence in the use of basic laboratory equipment. (c) Promote anatomy as a subject through research that will lead to the acquisition of higher qualifications such as M. Sc. and Ph. D. degrees

Exploratory analysis of philosophies

A look at the above (Table 2) suggested a close similarity between the two curricula philosophies. It showed teaching as the main direction. The development of entrepreneurial expertise in related disciplines and complementary ancillary laboratory medical services are fill-up and void because CCMAS-2022 could not define those services, despite 15 years in between. Indicating no development or complacency in the supposed reviews that birthed CCMAS 2022. Or it was "involuntarily" assumed that the anatomy graduate is perhaps to provide non-skilled support roles in the so-called "ancillary laboratory service" (Table 2). For instance, "bring the test tubes and micropipette for me" or ". disinfect the exposed part of the centrifuge and set the incubator at 45°C".

Exploratory analysis of objectives

Objective number "2" of the CCMAS 2022 and BMAS 2007 provided inadequate preparation for graduate-level competencies. "Acquiring competence in the use of basic laboratory equipment", although fundamental, is insufficient to prepare students for the complexities and nuances of graduate-level roles. Though the curricula addressed the development of skills, critical thinking, and problem-solving competencies essential for graduate-level positions. It does not specify where such skills are to be utilized. Medical laboratory services are roles specified for medical laboratory students by the curriculum (CCMAS 2023, Allied Health Sciences) [13]. An anatomy graduate, even after self-development, cannot legally provide medical laboratory services or any health-related services due to curriculum limitations. These services are all shared amongst 11 programs listed in the CCMAS 2023 Allied Health Sciences.

Objectives 3 and 4: Provided limited translational value. While palpation serves as a valuable pedagogical tool for anatomy education, its practical application within the context of this curriculum is limited. The inability to integrate palpation skills with subsequent medical interventions or practices due to the curriculum's constraints undermines the translational value of this objective. So also, is "identify the position of normal anatomic structures in radiographs, contrast studies, air studies, angiograms and osteology materials". Are the anatomy graduates supposed to provide ancillary support to the radiographer or prosthetist and orthotist? Despite being more knowledgeable of the structures of the human body.

Objectives 1 and 5 CCMAS and objectives 1 and 3 BMAS are arguably the same. Asking graduates to "go back to school" for more training is not a primary curriculum objective. This suggests a lack of well-laid-out career paths.

Table 3: Anatomy Graduate perception, of the BSc Anatomy program and career expectations

Variable	Frequency (n = 168)	Percentage
Are you ok with the degree?		
Yes	96	57.1
No	72	42.9
Rate your level of satisfaction		
1	12	7.1
2	24	14.3
3	86	51.2
4	38	22.6
5	8	4.8
Rate how you feel society accepts		
1	38	22.6
2	56	33.3
3	54	32.1
4	14	8.3
5	6	3.6
Does the degree give you joy?		
Maybe	66	39.3
No	44	26.2
Yes	58	34.5
Does the degree give you sadness?		
Maybe	48	28.6
No	96	57.1
Yes	24	14.3
Apart from MBBS, which degree would you have preferred?		
Anatomy	30	17.9
MLS	40	23.8
Nursing	64	38.1
Pharmacy	32	19.0
Physiology	2	1.2
Would you advise a younger sibling to study anatomy		
Maybe	38	22.6
No	108	64.3
Yes	22	13.1

Table 4: Frequency table showing career expectations among students

Student Career Expectations	Frequency	Percent
Anatomical pathology	12	7.1
Anthropology	3	1.8
Biomedical science	5	3
Clinical Anatomy	2	1.2
Embalming	4	2.4
Embryology	11	6.5
Exercise physiology	2	1.2
Forensics	31	18.5
Histopathology	4	2.4
Immunology	2	1.2
Lecturing	17	10.1
Medical laboratory science	1	0.6
Neuroscience	10	6
Orthopedics	3	1.8
Physiotherapy	11	6.5
Prosthetics	4	2.4
Public Health	5	3

Radiology/Radiography	28	16.7
Reproductive health	1	0.6
Researching	7	4.2
Sports Anatomy	5	3
Total	168	100

These career paths are all related to anatomy, and many of them can be pursued with a degree in human anatomy if it is so indicated in the curriculum. This article would examine the distinct issues faced by anatomy graduates, such as restricted career prospects, insufficient professional acknowledgement, and the changing dynamics of anatomy education. It seeks to provide measures that could enhance the profession's standing, boost career opportunities, and attract prospective students to this essential sector. As we tackle these challenges, we may strive for a more sustainable and fulfilling future for anatomy graduates, guaranteeing that this vital discipline persists and bolsters the wider medical community.

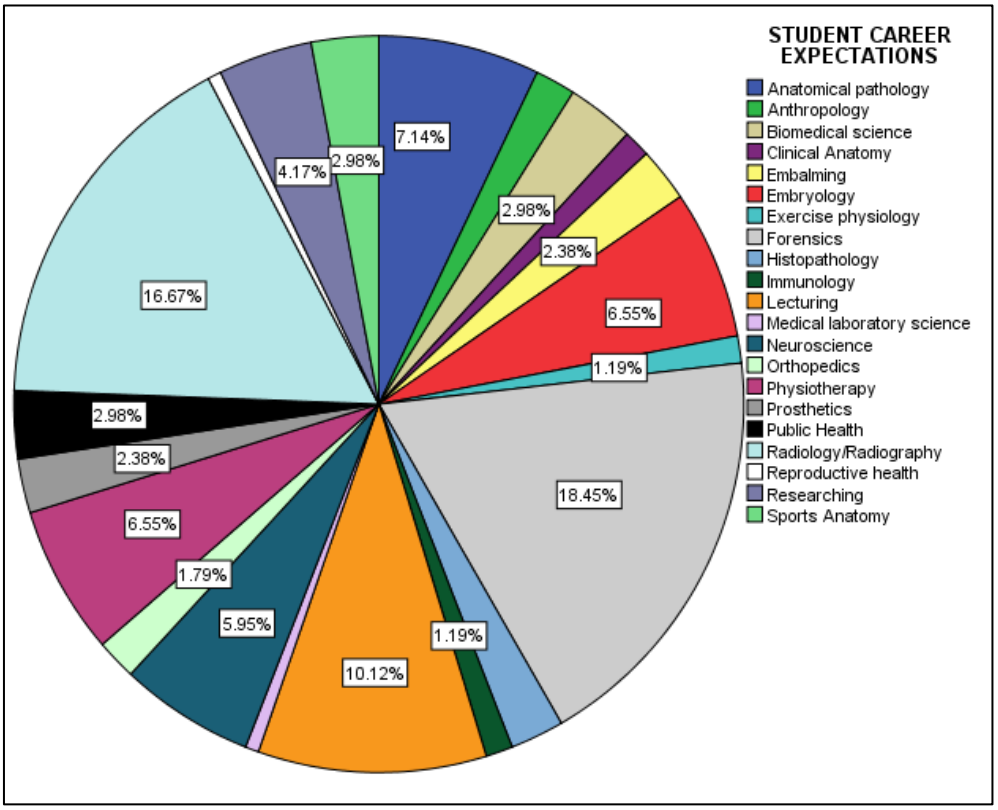

Figure 1: Pie chart showing student career expectations in percentage

Table 5: Difference between two proportions

Student career expectations	Frequency	Percentage	Pearson Chi-square	p-value
Curriculum Pathway	45	26.8	36.214	0.000
Non-curriculum pathway	123	73.2		
TOTAL	168	100.0		

Chi-square (X^2) = 36.214; P=0.001. P: statistical difference as determined using Chi-square test. P<0.05 means there is a significant difference (or relationship) between variables.

EXPLORATIVE DISCUSSION

The Challenges Encountered by Anatomy Graduates

Anatomy graduates face various challenges that substantially affect their career progression and job fulfilment. A key difficulty is the absence of clearly delineated professional paths within the field. In contrast to medical and nursing graduates, who typically have a defined clinical trajectory with various specialties available, anatomy graduates encounter difficulties in securing positions that effectively leverage their expertise. The difficulty is exacerbated by a scarcity of employment opportunities beyond academia, predominantly concentrated in teaching or research within anatomy department [7, 14]. Studies also indicated that numerous anatomy graduates encounter career uncertainty and unhappiness stemming from restricted professional opportunities [7, 14]. It was also reported that a large proportion of anatomy graduates

perceived themselves as inadequately prepared for the limited employment options accessible post-graduation [7, 15]. Our present study not only corroborated these but also suggested that the curriculum had clearly defined career paths in the Nigerian experience (Table 1). Another notable obstacle for anatomy graduates is the cultural devaluation of their expertise within the wider medical community (Table 2). Despite the relevance of anatomical knowledge in medical education and clinical practice, anatomy educators and specialists often face a sense of professional invisibility [15] A recent study indicated that numerous anatomy faculty members saw a lack of appreciation from both medical students and colleagues in other medical disciplines, which may account for shortage of anatomy instructors seen in developed countries [16, 17]. This perception was previously reported, indicating that the absence of acknowledgement for anatomy specialists leads to reduced morale and job satisfaction [16, 18]. This may be partly why anatomy students encounter heightened hurdles because of the disdain exhibited by peers in clinical disciplines like medicine and nursing. Unfortunately, this perception is evident after graduation (Table 2). Unfortunately, clinical professionals frequently perceive anatomy as a "support" subject rather than an independent specialty [19, 20], hence further marginalizing anatomy graduates.

The Implications of These Challenges

The consequences of the difficulties faced by anatomy graduates transcend personal job fulfilment, impacting the wider domains of medical education, research, and healthcare overall. The principal repercussions are brain drain, diminished morale, and an expanding knowledge gap, all of which threaten the vitality and advancement of anatomical sciences. A significant effect is brain drain; wherein skilled anatomy graduates opt to abandon the area in pursuit of more lucrative career prospects. When graduates recognize constrained growth opportunities, insufficient acknowledgement, and diminished job security, they may pursue careers in adjacent sectors such as clinical medicine, biotechnology, or pharmaceutical research, consequently depriving the field of anatomy of proficient professionals who could otherwise provide significant expertise. Regrettably, they can only do this by taking a second undergraduate program. This is not only a waste of scarce financial resources but also a massive loss of an invaluable period of chasing an elusive career in anatomy. Of course, it is undeniable that many graduates would eventually settle with careers outside anatomical sciences for diverse reasons, including superior compensation or personal preference. Alongside brain drain, these problems result in diminished morale and despair among individuals who persist in the sector. Graduates encountering insufficient acknowledgement frequently express feelings of frustration, which can adversely affect their job performance and personal well-being. Disenchanted anatomy graduates may demonstrate diminished motivation, resulting in lower involvement in teaching, research, and other professional endeavors. Report indicated that persistent dissatisfaction among anatomy professionals correlated with elevated incidences of mental health disorders and burnout relative to other medical disciplines, adversely affecting productivity and job satisfaction [21].

A serious consequence of these, is an expanding knowledge gap in anatomy, which ultimately impedes progress in medical education and research. The departure or disengagement of seasoned anatomy specialists diminishes the aggregate expertise necessary for training future healthcare practitioners. Anatomy constitutes the cornerstone of medical knowledge, and a deficiency of proficient instructors may result in knowledge gaps that adversely affect clinical practice. It has been emphasized that a possible "knowledge gap crisis" in anatomy education may lead to a deficiency of qualified instructors that could jeopardize the quality of anatomical training for medical and allied health students, consequently impacting patient care and clinical outcomes [21]. The situation is worsened by the growing dependence on adjunct professors or less experienced instructors to replace anatomy experts, thus diminishing the overall quality of education for medical students [16, 17]. The Nigerian anatomy curriculum expects graduates to acquire additional qualifications (Table 2) to teach anatomy. Even the best of the first-degree anatomy graduates would not fit in on graduation (except perhaps as graduate assistants) because of cognate experience, hence the dependence on adjunct professors or less experienced instructors.

Execution and Assessment

To effectively tackle the issues encountered by anatomy graduates, any proposed solutions must be followed by a comprehensive evaluation and monitoring approach. This guarantees that interventions achieve their objectives, enhance job satisfaction, and offer feasible career trajectories for graduates. Administering surveys, focus groups, and longitudinal studies to assess the experiences and requirements of anatomy graduates is crucial for developing focused solutions and enhancing them progressively. One of the fundamental requirements in curriculum review is students and graduates' consultation or involvement. This would provide insights into the distinct challenges encountered by this professional cohort, allowing institutions (in the case of Nigeria, NUC) to develop programs that address their changing requirements [22, 23]. This position of allowing stallholder participation in curriculum review and development is the gold standard. Unfortunately, there is no evidence to suggest their involvement in any curriculum review exercise, especially in the CCMAS evolution in Nigeria.

To establish the level of correspondence between the training curriculum defined career paths and professional aspirations of fresh graduate, we collapsed the career paths mentioned by respondents into two

broad groups: NUC defined pathways and non NUC defined pathways (that is pathways mentioned by students, that we judged feasible with curriculum review to reflect present realities). Chi-square analysis revealed a very significant difference between these two proportions (Table 5). This highly significant ($p < 0.001$) disparity between the career pathways defined by the present Nigerian anatomy curriculum and the aspirations of the trainee may imply that the primary stakeholders were not involved in the curriculum review.

Globally, in curriculum review, there is a crucial phase in the process where feedback enables graduates to articulate their concerns, requirements, and professional ambitions. Academic institutions can collect qualitative and quantitative data on graduates' career paths, employment satisfaction, and professional problems by implementing frequent surveys and organized interviews [24; 25]. Moreover, theoretically, the implementations of pilot programs and experimental models in certain institutions might function as a testing ground for innovative tactics designed to enhance career prospects for anatomy graduates. Establishing multidisciplinary employment placements for anatomy graduates to collaborate with clinical and research experts may mitigate departmental isolation and enhance cooperation. Unfortunately, again in the Nigerian situation, the law of the NUC forbids any university to change the “national objectives” of developing such a program. According to the CCMAS, every university is empowered to add to the course content but not to course objectives, CCMAS 2022 [4].

Furthermore, evaluation must encompass the appraisal of curricular modifications that signify the dynamic evolution of anatomical sciences. However, there is a great deal of difference between enjoying learning and employment after graduation. Consequently, all those 30% additions to CCMAS cannot contravene NUC-defined career paths for the anatomist (Table 2). The efficacy of these curriculum revisions would only be felt if programs' objectives were sound scientific projections and not subjective listening or rephrasing. For instance, why would the NUC curriculum give a microtomy to a medical laboratory scientist with less knowledge of basic or clinical anatomy? Is microtomy not a scientific still? Who is more apt to be empowered to render such service? Or it was " let us not go there, it would cause troubles. Unfortunately, this “avoidance of troubles” is the slave master that has taken our rights. Histologic skills are within the sphere of competence expected of an anatomy graduate in Nigeria. They are well-trained to render microtomy services in the histopathology lab. But that service is not prescribed in the "book" for anatomy graduates but for medical laboratory students. Is prosection or dissection a clinical skill? So, why is there no room for the anatomy graduate in the morbid anatomy laboratory? Or is it the clinician (pathologist) alone who can dissect a corpse? Certainly not. There are areas where he alone can venture, for example, cause of death. But there are many areas where he can collaborate with anatomists, such as prosection, evisceration, dissection and reconstruction. But again, such term work excluded the anatomist.

Strategic interaction with healthcare organizations, research institutions, and biotechnology firms can provide anatomy graduates with a variety of job opportunities. But it must be prescribed in the curriculum. Implementing internship and fellowship programs that position anatomy graduates in clinical, industrial, or research roles beyond academics might expand their professional prospects and create new employment options. However, these must be captured in the objectives of the program, otherwise, straightforward employability in these sectors may be an illusion.

Anatomy students were regularly denied SIWES opportunities in state and federal health facilities, with the reason that it is not prescribed as their career pathway. They were informed that it was not their duty to do tissue processing for histological sections in medical or clinical laboratories. What about an autopsy? Is it solely a clinical duty? Autopsy is a systematic observation and exploration; it involves systematic examination of the body’s tissues and organs, using various scientific techniques, such as histological and molecular biological analysis. There is a place for the anatomy graduate in autopsy. The curriculum should empower her to be there. The pathologist would do the interpretation; he is the head of the team.

These relationships are possible. We only need to see them. A critical question is whether the NUC curriculum for the anatomy degree affords these laudable suggestions. There is a need for medical services reform. But it is near impossible to gather all concerned at a round table, not impossible.

NUC anatomy curriculum

To date, from 1990 to 2025, three curricula have trained anatomy graduates. It is the curriculum that defines the normal career paths. The instances where pharmacy graduates end up working as bankers are not the primary goal in the curriculum. We have examined the curriculum in an exploratory manner, the philosophy and objectives, and what the law empowered the anatomists to do. An objective assessment can be excellently summed up: "Challenges Faced by Anatomy Graduates and Potential Solutions: A Curriculum Problem" or Career paths limitations of the of the Anatomy Graduates: A Curriculum issue.

It is rather disappointing to say that the profession has not developed significantly. The philosophy and objectives for the creation of the BSc anatomy degree by the National Universities Commission of Nigeria have not changed significantly. In the mid-1990s, the primary aim was to provide

manpower that would be "brain-drain resistant" because medical professionals were leaving the country en masse for greener pastures. And it worked; the anatomy graduate provided anatomy education to medical schools mainly. The philosophy and objectives were arguably myopic (MAS 1988) [5]. Unfortunately, the curriculum that trained perhaps the most disgruntled anatomist (pardon my language), BMAS-2007, survived till 2022, when CCMAS-2022 was introduced, however, BMAS-2007 would still graduate anatomists till 2026. But rather shockingly, the philosophy and objectives were clones from MAS-1988. There is nothing substantial for the anatomy graduate; he or she must train to acquire a master's and PhD degrees to provide anatomy education. Knowledge of laboratory equipment and "auxiliary" laboratory service, added to the CCMAS (Table 1), is not only ill-defined but also derogatory.

Our recent survey conducted amongst graduate students showed that over 70 percent of respondents saw no clear career paths with an anatomy degree, with the good proportion being indifferent. Although most of them never chose anatomy as a course of study (Table 2, Figure 1). Truth be told, they are victims of a static curriculum. They are not equipped to be professionally versatile by the curriculum.

Consequently, we opined that a curriculum issue can only be solved by another curriculum. This is a call for a consultum of active anatomists to design a professional curriculum. This is not a call to honor our heroes; the labor of our heroes shall not be forgotten. The call is for visionary anatomists, whether active or retired. We must develop this career for the future generations, not the NUC. Hence, our anatomical society must be ready with that curriculum for presentation to NUC. Consequently, we also want to advocate that a group of anatomists should be constituted for anatomy curriculum review within our societies. We need a strong curriculum for this new generation of anatomy graduates. What stops an anatomy graduate from being engaged in the histopathology laboratory to prepare histological slides? His knowledge of anatomy and microtomy is superior to that of a medical laboratory scientist, without prejudice. What about working in health facilities or institutional labs as a scientist capable of hematology and cytology services? Ho! The NUC curriculum gave that responsibility to medical laboratory scientist graduates. This is a misnomer, the anatomist is more equipped for microtomy, hematology and cytology services in any facility. Of course, microbiology and chemical analysis in human tissue samples can be done by whoever is so equipped. BSc anatomy is older than BSc MLS or Nursing. So, what went wrong? The anatomist failed to move out of their comfort zones. How many of us would want our son to study anatomy? So disappointing. Clearly, now our point is understood. Right and freedom are fought for; they are not given in honor of hard work. The answer is like a two-edged sword: the anatomy council and a robot's curriculum.

A will that spells out curricular objectives plays an important role in shaping the career paths of students [26]; this is especially critical in developing countries where professional dichotomy and prejudice are rampant [27, 28]. However, COs are key in several ways.

1. Skill Development

Curricular objectives are designed in such a way that they equip the students with certain skills and knowledge which are required in their respective fields. For example, a curriculum designed for computer science will include objectives about programming, algorithms, and software development to help students make a career in technology. An important question is if the Nigerian anatomy curriculum, apart from education, equips students with employable skills and knowledge that are in demand in the job market.

2. Industry Relevance

The course's objectives are relevantly aligned with the industry standard and demand. It also means that students are to study what is currently relevant and in demand within the framework of the job market. This helps the graduates be immediately productive and competitive. It is tempting to question whether the objectives of the Nigerian anatomy curriculum align with contemporary industry expectations and requirements.

3. Specialization

COs sometimes reflect specialized courses within a broad field in which students are allowed to develop a focused interest. In this way, the specialization in genetics, ecology, or molecular biology offered in a biology program steers students into specific fields such as research, environmental sciences, or biotechnology. How does the Nigerian anatomy curriculum address this, or what is the career trajectory enabled by the curriculum that will enable the students to develop focused interests and career pathways? The onus is on us, our Anatomical societies. We saw MLS and nursing, semi-skilled occupations 20 years ago, develop into full-fleshed professional degree programs with specializations. In the words of Prof. Denise Agbonaghon, "It was not achieved on a platter of gold" [29].

4. Professional Competencies

Goals, in many cases, involve professional competencies in critical thinking, problem-solving, communication, and teamwork. These are highly valued in a wide variety of career paths and are core components of professional success. Where are the anatomy graduates supposed to utilize his or her professional competencies such as critical thinking, problem-solving, and communication? As emphasized in the CCMAS of the Nigerian anatomy curriculum, graduates are to be sufficiently versatile and professionally competent to perform any graduate-level responsibilities. It is well known that an anatomy graduate or pharmacy graduate can both work as a cashier in a financial institution.

Though arguable, this is not the primary aim of a program curriculum.

5. Certification and Accreditation

Most programs are designed with specific professional certifications and accreditations in mind. A nursing program, for example, will have objectives cognizant of the requirements of nursing licensure to give graduates the right to practice professionally. Are the Nigerian anatomical societies thinking along the path of professional development? We saw the medical laboratory technologists became the medical laboratory scientists; from a certificate equivalent to HND to a full flesh professional degree [29], because of vision and foresight.

6. Career Guidance

Other career guidance components of curricular objectives are internships, workshops, and seminars by industry professionals. This experience will give the students insight into their probable career path and help them to decide on their future with much more awareness. However, the curriculum must cast such career path possibilities in stone. Are the opportunities for internships, workshops, and seminars with professionals in the industry included in the Nigerian anatomy curriculum to guide career paths?

Well-defined curricular objectives give a route to education and career development by providing a guide to students in terms of knowledge and competency at the end of study. They ensure the education received by students is appropriate for their intended careers.

CONCLUSION

Addressing the career paths issue encountered by anatomy graduates needs a holistic strategy including feedback systems, pilot initiatives, curriculum revisions, and collaborations. A systematic tackling of these obstacles and executing focused solutions are expedient. We must be proactive on these matters. To clinicians amongst us, they need not fear, the patients belong to them.

Conflict of Interest: None

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