Original Research Article

Medical Education and EdTech Integration: Medical Educators Experience and Reflections on the Anatomage Table

Abstract

This article presents the experience and reflections of medical educators following the introduction of the Anatomage table, an educational technology or EdTech to our medical school for the purpose of supporting the teaching of anatomy and related basics medical sciences to medical school. It was considered a critical need by the stakeholders including the institutional and departmental leadership to consider the teachers' experiences following initial exposure and use, as well as their insights and reflections. The approach was a mixed method, whereby the teachers responded to a 12-question structured and validated questionnaire and upon written informed consent, participated in a focus group discussion [FGD] activity. The questionnaire provided vital data on insights, experiences and reflections of the medical educators following their exposure to the EdTech while the FGD provided qualitative information on similar themes. The questionnaire data is presented as charts or figures while the FGD is thematically organized and summarized. Medical educators generally agreed that the EdTech is a quality addition to the medical school as it could improve the delivery of teaching and training to medical students. They believed that training the trainers would significantly optimize its benefit. They also posited that providing learners with quality time and access to use the Anatomage table in a self-directed would better enhance their learning experiences. The medical educators would also think that while the Anatomage table aligns with the preferences of the current generation of medical students who are largely tech savvy and EdTech inclined, the use should be structured, such as using a protocol to guide and facilitate learning, and to measure or assess performances with its use. They would also think that it is versatile enough to support medical education and training in various contexts of curricular structures. Finally, the teachers would take a position that the EdTech should complement cadaveric dissections, and not totally replace it.

Key words: Educational technology, Medical education, Educational innovation, Protocol, Anatomage, Dissection

Introduction

Background

The Anatomage table is an educational technology [EdTech] which is now being introduced to many parts of the world including Africa. Expectedly, not too many studies have been conducted about stakeholders'- teachers and students experiences about the use of this technology especially in Africa. The reasons for these are not far-fetched, as the record shows that quite few universities on the African continent currently used this technology. This explains the scarcity of data on user's experiences with the technology. The University of Global Health Equity [UGHE] in Rwanda, currently has and uses the Anatomage Table integrally alongside other innovations. The EdTech is currently used by the students both as a learning technology and a digital dissection technology. In an attempt to establish the best practices and to optimize the benefit of this technology for students, this research is a conscientious effort to study the experience of educators who were the first-time users of this technology. It is also believed that it is one of the very first studies to be conducted on this subject on the African context. It is therefore expected that it would significantly contribute to knowledge about factors that could influence adoption, use, learners experience and outcomes attributable to this technology in Africa. It is also an effort to ensure that in compliance with the modern theories of education, the use of this technology is learner-centered and evidence-based. This study therefore considered teachers' experiences and reflections about the Anatomage table.

What is the Anatomage technology?

The Anatomage table can be described as a modern educational technology [EdTech] or digital innovation that represents the human body in a virtual 3D format, with its promoted features including the 3D virtual and interactive representation and presentation of the human body [García, Dankloff, and Aguado, 2017]. The Anatomage images are digitally scanned and reconstructed real human body images, and this allegedly accounts for its accuracy and realistic impressions. Its popularity is rapidly growing, as more tech inclined medical educators adapt this EdTech and promote its use for a number of reasons including its acceptability to their students' populations and a growing culture of EdTech and innovation, globally. A sizable number of studies have considered the experiences and perceptions or acceptability of this technology of students or trainees [Custer and Michael, 2015; Bartoletti-Stella *et al.*, 2021]. Not quite many reports have considered the experiences and positions of medical educators on this technology. Since this is an EdTech with growing popularity, it is important to continually expand the frontiers of knowledge on this subject and to promote best practices with the use of the EdTech.

How is Anatomage used globally [evidence of use]?

Many studies on the Anatomage table have presented it as a teaching aid and virtual or digital dissection facility [Brown *et al.*, 2015; Alasmari, 2021]. By implication, the technology is used to present the images of the human body either as a whole or in parts with emphasis on its various features. In using it as a virtual dissection faculty, the Anatomage table is being used as an EdTech to explore the human body structural

organization or morphology in a virtual form. To this extent, a number of studies have reported that the EdTech would achieve learning objectives for students or trainees, and that a good degree of acceptability of use has been established.

Published evidence of learners' and teachers experiences

A good number of studies have considered learners' and trainees' experiences with the use of Anatomage table and had positive reports of learners' acceptance of this technology as well as acceptable performances following assessments or from data collected through questionnaires [Gross and Masters, 2017]. What is deductible, amongst other information, from such studies is that learners' and trainees are increasingly embracing EdTech such as the Anatomage table. That is also a positive sign that the current generation of medical students and trainees would love to be trained using EdTech and innovations. One other thing about the data and information available is that the specific ways in which this EdTech has been deployed could vary from one place to another. Being a versatile and dynamic EdTech, it is possible that a pattern of deployment would likely depend on the preferences, skills and professional judgment or disposition of the medical educators or other stakeholders in charge of the use of such facilities. It is also expected that the nature of the curriculum as well as the prevalent culture of teaching, training, and learning will also influence the manner and patterns of deployment of the EdTech.

The spectrum of options in terms of the manners and patterns of deployment is not in itself of a significant problem as major advantages of educational technologies and innovations include versatility, adaptability, and options for creative deployment. What, however, has become of concern is the need to standardize these methods and ensure that they are aligned with competencies that are expected of programs and graduates of such programs, while equally ensuring that the EdTech is used in consistent, plausible and evidence-based ways. This is why the use of protocols or standardized guides when using EdTech has been proposed. For example, the ASIC framework has been published as a foremost framework with an accompanying operational matrix for achieving the adaptation, standardization, and integration of EdTech and innovations into the delivery of medical education, while ensuring compliance with institutional, professional and regulatory standards [Owolabi, 2021; Owolabi, 2022]. On a more practical note, it would be important to note that globally, EdTech helped to sustain medical education amidst the Covid-19 induced changes between years 2020-2022 [Owolabi and Bekele, 2021a; Owolabi and Bekele, 2021b]. Much earlier, Dalgamo and Lee (2009) had advocated for continuous and conscientious research into the learning affordances of 3-D virtual environments for their potential benefits.

Other matters: challenges, limitations, existing gaps in knowledge etc.

With increasing interest in the design, development and deployment of EdTech and innovations to support medical education, it is important that continuous research efforts be invested into exploring opportunities to maximize the use of these EdTech and innovations, and to provide plausible evidence to address the existing gaps in knowledge on this subject. In line with this, it is expected that this study would contribute significantly to knowledge on the subject of the use of Anatomage table use for teaching Anatomy to medical and allied health students. It also provides insight into the possible context and methods of using this relatively new EdTech to optimize student learning experiences and outcomes. Very importantly, the results promise to provide information into the use of this technology from the continent of Africa by providing insight into the cultural and systemic factors that might influence adoption, use, and integration of teaching technology into medical education in Africa and by extension the developing world.

Material and Methods

Questionnaire:

A structured and validated questionnaire (Ross, 2005) was used to obtain information from teachers about their perception and first-time experiences with the Anatomage table. Google form was sent to all medical educators in the Basic Medical science division that teach Anatomy and related basic medical sciences in the medical school, and who had been exposed to the Anatomage table by virtue of work. They were all required to complete the informed consent form, after which they could participate in the study. All respondents completed the informed consent form.

Focus Group Discussion, FGD: A FGD session, following a methodical approach (Merton, Fiske and Kendall, 1956; Patton, 2002; Dilshad and Latif, 2013; Stewart, 2018) was conducted with teachers who had used the table for the first time and about their perception and experiences as first-time users of the Anatomage technology. The FGD had 10 questions. It was facilitated by a trained facilitator in the capacity of a research/academic fellow. Structured and validated questions were used. There were 6 participants who had volunteered to participate based on informed consent requirement satisfaction and availability for the FGD session. The session lasted 1 hour, and it was conducted using a Zoom video conferencing platform. The entire FGD was recorded, then transcribed into text by the research team, first by the facilitator, further reviewed by another research fellow, and thereafter by the study's principal investigator for accurate and proper representation of the participants' expressions. Data was analysed and participants were coded using numeric attributes. The original recording was stored in a password protected computer device and access to the data via the device was further passworded in line with the ethical requirements of anonymity of participants. The original data will be kept and eventually discarded in line with the institutional IRB ethical requirements [UGHE IRB #0085].

Analysis of Results: Quantitative data was analysed and presented using descriptive or inferential statistics suitably. Quantitative data and attributes are presented as percentages. The qualitative data from FGD sessions was analysed in a systematic and thematic manner to highlight information obtained from the participants.

Results

Questionnaire Data

Demographics and Background Information

Respondents were academics, staff, and medical educators in good standing as, in terms of terminal degrees, 41.7% had PhD, 25% had master's degrees in relevant fields, 16.7% had medical degree (MD/MBBS) and 16.7% had bachelor's degree. In terms of age distribution, most respondents (50%) were between 40-49 years age bracket. Others were between 30-39 (25%) and (20-29) 25%. In terms of gender, 66.7% were males while 33.3% were females. As at the time of this study 20%, 20% and 60% of participants would rate their mastery of the Anatomage table as high, average, and low respectively. Respondents generally rated their satisfaction with the use of the Anatomage table either high or high [80%]

Table 1: Use of Anatomage Table: Respondents generally agreed that the EdTech is critical to teaching and training in alignment with EdTech and innovation advancements in medical education. They had not used the table previously as trainees, but they currently do as educators. They were also mostly enthusiastic about using it in the future as educators.

	Yes	No	Not Sure
1. I have seen the Anatomage Table before?	75	25	0
2. I have used the Anatomage Table before as a learner	25%	75%	0
3. I have used the Anatomage Table before as an educator	16.7	75	8.3
4. I have read about the use of the Anatomage Table	58.3	25	16.7
5. I am enthusiastic about using the Anatomage Table in the future as an educator	91.7	8.3	0
6. I have watched at least 1 video about the use of the Anatomage Table	58.3	33.3	8.3
7. My current institution has the Anatomage Table	100	0	0
8. If yes to question 9, does the use of the Anatomage Table in your Department help to achieve learning objectives?	70	30	0
9. Have you received any formal training on the use of the Anatomage Table for teaching Anatomy?	33.3	66.7	0
10. I am enthusiastic to learn about using the Anatomage Table in the future as an educator	83.3	16.7	0
11. I support ideas about introducing innovative tools and technologies including Anatomage into Anatomy teaching	100	0	0

Table 2: Perceptions- Most responses would accept the Anatomage as an EdTech that can support the teaching of Anatomy, or medical education. Most participants would accept it as a teaching and a complementary EdTech. They believed that it offers greatest benefit for learning in the cognitive domain. However, the consensus would be that it cannot sufficiently replace cadaveric dissections.

		1	2	3	4	5
	1. Anatomage Table is useful for teaching Anatomy to Medical and Allied Health Students	0	0	0	25	75
	2. Anatomage Table is an innovative digital Anatomy Teaching aids	0	0	0	25	75
	3. Anatomage Table can present accurate information about the human body Anatomy	0	0	16.7	16.7	66.7
	4. Practicality: Anatomage Table is pragmatic/practical for use as a teaching aid in the class	0	0	0	50	50
	5. Anatomage Table can fully be substitutive for cadaveric dissection in the Anatomy Laboratory	25	33.3	33.3	8.3	0
	6. Anatomage Table can fully substitute for Anatomy Museum specimens: pots, platinates etc.	16.7	16.7	58.3	8.3	0
	7. Anatomage Table can substitute for Anatomy solid models and posters	8.3	0	25	33.3	33.3
	Overall Importance to Teaching					
	8. Anatomage Table innovation can contribute significantly to the advancement of medical education	0	0	8.3	8.3	83.3
	9. Anatomage Table can be used to teach gross Anatomy	0	8.3	8.3	25	58.3
	10. Anatomage Table can be used to teach Histology	0	16.7	8.3	25	50
	11. Anatomage Table can be used to teach Embryology	8.3	16.7	16.7	16.7	41.7
	12. Anatomage Table can be used to teach medical genetics	8.3	41.7	8.3	25	16.7
	13. Anatomage Table can be used to teach medical trainees in clinical settings e.g. surgery and radiology	8.3	0	8.3	33.3	50
	Effectiveness of Anatomage as a teaching and learning tool					
	14. Cognitive: Anatomage can help to achieve the cognitive [mental skills or knowledge] domain of learning	0	8.3	8.3	50	33.3
	15. Affective: Anatomage can help to achieve the affective [growth in emotional areas or attitude] domain of learning	0	16.7	33.3	41.7	8.3
	16. Psychomotor: Anatomage can help to achieve the psychomotor [physical skills] domain of learning	8.3	16.7	50	16.7	8.3

Table 3: Acceptance- These is absolute acceptance of the Anatomage an EdTech, particularly as a means of promoting EdTech or tech integration into medical science and its potential to stimulate learning. Its versatility and reduced health risks as well as student's avoidance of contact with cadavers were other supportive factors.

Factors that might Support Acceptance	Yes	No	Not Sure
1. The need to integrate modern technology into teaching	100	0	0
2. The potential of Anatomage Table to enhance learning	100	0	0
3. The potential of Anatomage Table to stimulate interest in learning	100	0	0
4. The potential of Anatomage Table to present 3-D lifelike images in digital form	83.3	8.3	8.3
5. Anatomage Table would reduce the use of human cadavers that might pose health risks such as infections	75	8.3	16.7
6. Students would find Anatomage more user-friendly than embalmed cadavers	83.3	0	16.7
7. Anatomage use might be more cost-effective in the long run considering the cost of processing and preserving cadavers	66.7	8.3	25
8. There are not serious ethical issues associated with Anatomage use compared to cadavers	91.7	0	8.3
9. Anatomage Table's technological flexibility in comparison to the stereotype cadaveric dissection	83.3	0	16.7
10. A means of embracing the global culture of technology-in-medical sciences	100	0	0

Table 4: Contexts of use- Most respondents would accept the use of the Anatomage in a complementary manner; most are not open to its usage as an alternative to cadaver dissection.

	Yes	No	Not Sure
1. As a suitable alternative to cadaveric dissection	33.3	50	16.7
2. As a complementary tool to cadaveric dissection	100	0	0
3. As a classroom teaching aid	100	0	0
4. As a student self-help learning device	91.7	8.3	0
5. As device for teaching Anatomy content for any related field of medical science. E.g. medicine, pathology, physiotherapy	100	0	

Open Ended Questions- Qualitative Section

The top factors that might hinder or discourage the acceptance of the Anatomage table, according to respondents included the cost of acquisition and the added training requirements for both educators and students/trainees. Factors that might promote acceptance include its flexibility and versatility as an EdTech, and its potential use for digital or virtual cadaveric dissections when cadavers are not available or when cadaver dissections are not possible, hence a serving a suitable alternative. Reduced health risks since biological fluids and chemicals exposures are not involved were also seen as factors that may promote acceptance. The bottom-line consensus opinion is that the Anatomage table is a complementary EdTech and innovation for teaching Anatomy and related basic medical sciences.

According to respondents, the top factors that hinder or might hinder Acceptance of the Anatomage table in their institution might include:

1. Cost being perceived to be high and prohibitive
2. Need o further train the educators on the technical use of the EdTech.
3. Alignment with traditional practices such as cadaver dissection.

According to respondents, the top factors that promote or might promote Anatomage use in their institution include:

- Its usefulness as a suitable learning tool in lieu f cadaver
- Reduced potential health risks
- Flexibilities and versatility that comes with EdTech use
- Leadership buy-in

Respondents' consensus opinion on the use of the Anatomage Table Technology and Digital Teaching Tools in the Training of Medical and Allied Health Students:

- Suitable EdTech to completement anatomy teaching and cadaver dissection

FGD Summary

This focus group discussion was organised to receive feedback and overview of the Anatomage Table from the Basic Science Faculty. During Semester 2 of the MBBS/MGHD Program, students took the Introductory to Basic Medical Science course (MED101) and used the Anatomage Table to study anatomical structures, and to perform virtual dissections.

- Participants

Two participants (4&5) were involved as "active participants" teaching in MED101 module. The other participants (1,2,3,6) were involved as "active observers" either as faculty members who support the teaching basic medical science subjects in the MED101 and/or teachers during the MED101 live dissection. All participants were required to speak from their own experiences.

- Exposure and Training

All participants attended one workshop led by the course director (Participant 5) where the basics and functionality of the device was demonstrated. As the course director, participant 5 attended an International Workshop on the Anatomage Table and learnt about the different pedagogies and processes of its use from European users. Overall, it was agreed that more training was necessary for the all faculty members. The two "active participants" had to resort to self-teaching before or after class sessions, learning through online videos from the Anatomage Table Group or practicing on the table.

- Teaching with the Anatomage Table

Active teachers and observers in MED101 all agreed that Anatomage Teaching was fascinating and very useful for the students. It's flexibility, ease of use and visual clarity allowed students to observe all the anatomical structures that they had been discussing in class. However, the participants also agreed that Anatomage teaching shouldn't completely eliminate live cadaveric dissection, but rather complement it. In fact, one participant mentioned that as students were already prepped in anatomical structures and visualizations through the Table, they were much more prepared once they got to cadaveric dissection.

- Most useful aspect of Anatomage Table

In anatomical teaching, the participants noted that the Anatomage Table was most useful for the diversity of its use. Compared to cadaveric dissection, the Anatomage table can be approached in various ways. Students can view prosections, view different pathological cases, view the body though the radiological approach, XRay or CT scan. The Table also allows for the integrated approach of medical education, as in addition to viewing the detailed anatomical structures, students can see the simultaneous physiological systems and pathological situations.

- Problems experienced while Teaching with the Anatomage Table
  a. Technical: As any other technological gadget, there has to be the infrastructure to support it. Earlier in MED101, when the housing facility experienced any power cuts, all work made on the Table would be erased and the class would

have to restart. In addition, the Table can be very sensitive. Users have to be cautious as one touch of a button can erase all the work done prior.

b. Personnel: As it is an expensive gadget and only one for the entire class, there had to be some discussion on if all students and faculty would be trained and use the table at their disposal. UGHE chose to regulate access in order to protect and maintain the Table. The issue present is that this cost-related access restriction means the students might not get to be comfortable and use the Table.
c. Relativism in Protocol: Across the world, the Table is used differently according to the teachers' preferred approach. However, in order to ensure uniformity in knowledge acquired, there has to be a standard protocol of procedure.

- Biggest Concerns with the Anatomage Table

a. Cost: As the gadget is expensive and sensitive, participants were concerned about the sustainability of adopting the Table in medical schools, especially in low-resourced areas of the world.
b. Lack of human interaction: Some participants also shared concerns over the fact that the Table could "remove humanity" from anatomical dissections and interactions with the human body if the Table is their primary or only form of bodily dissections.

- Comparison to cadaveric dissection

Majority of the participants agreed that the Anatomage Table should be a complementary teaching aid to cadaveric dissection, rather than a replacement of it. As many noted, cadaveric dissection is the "gold standard" of dissection as it is the live, real body that medical students will interact with for their medical career. Additionally, through cadaveric dissection, it is not only anatomy that is being taught, but also the small techniques of surgery such as holding a scalpel or making incisions etc. Few participants rated the Table as a potential replacement for cadaveric dissection. They mentioned the fact that for 1st and 2nd year students, as the necessary basic knowledge of anatomical structures can be obtained from the Table, then there shouldn't be a need for live dissection.

- Improvements to Anatomage Table Use

a. Increasing Student Access Time: If UGHE continues to use this complementarity approach to the Table, then students should have more time to access the Table and be comfortable with it. This means that more Tables would need to be purchased to give all students adequate access to it.

b. Increased Staff and Student Training: All students and staff need to be trained further in the Anatomage Table in order to optimize active learning. The Table should not be a "monument" that is only admired, but a worthwhile tool that is used for the benefit of medical students' education.

Discussion

Use of the Anatomage is Acceptable to Educators

It is very important to first highlight of the fact that medical educators, following their initial exposure to the Anatomage table, actually found the EdTech acceptable, and, by extension, agreed that EdTech could significantly support medical education. This is in alignment with a global trend with respect to the integration of EdTech and innovations into higher education and the need to optimise the benefits of EdTech and innovations. While it is often well known that the current generation of learners in the tertiary institutions are technology-inclined or tech savvy, it has also become quite important to see how acceptable EdTech and innovations would be to medical educators who are no doubt key stakeholders in deciding whether EdTech and innovations would be used or the extents to which EdTech and innovations would be integrated into the curriculum, and consequently pedagogies and assessments. It has been reported that the Anatomage table is acceptable to leaners as an EdTech [Alasmari, 2021; Bin Abdulrahman *et al.,* 2021; Bartoletti-Stella *et al.,* 2021], but this study provides an uncommon opportunity to explore its acceptability to educators as well.

Cost of procurement and Need for Users Extra Training Cost as Challenges and Vital Considerations

The cost implications of procuring, installing, managing, and maintaining the Anatomage table has been clearly highlighted as a major challenge or concern that should be given adequate consideration. This is rightly so, especially when emphasis is laid on what might be required of an institution to acquire a quality EdTech either as a standalone EdTech or a collection of EdTech in a facility. The cost of acquisition might be seemingly prohibitive for the average medical school, particularly, in a developing country. In addition to this is the necessitated cost of training the users who might be qualified medical educators, but not necessarily skilful enough to use a specific EdTech effectively. There might also be a necessitated cost of engaging more medical education specialists and technical staff such as the biomedical engineer to manage the technical aspects of the EdTech set up. On the surface, such necessary costs might be prohibitive. However, what constitutes the cost of quality education in the 21st century would also point to the fact the cost of procuring technology is a vital part of the cost. It might be said that the cost of providing medical education in the context of what would meet the need of the society in the 21st century might necessarily include the cost of technology, noting that the 21st century is increasingly becoming a tech-driven world. EdTech and innovations and digital resources are becoming increasingly important and critical to quality medical education and training [Fallavollita, 2017; Zargaran *et al.,* 2020; Dawidziuk *et al.,* 2021; Owolabi and Bekele, 2021].

Looking at a face value of what it may cost to procure and install the Anatomage table might not give the appropriate cost versus benefit information that is reflective of certain fundamentals, and long-term implications. For example, educational technologies allow for flexibilities with regard to the pedagogies and methods of delivery of medical education and training. For example, at the peak of the covid-19 pandemic induced constraints between years 2020-2021, traditional anatomical practices such as cadaver dissection and microscopy were not very feasible, but EdTech and innovations as well as digital resources enabled medical schools across the globe to continue medical education with minimal disruption. A number of publications had reported positive experiences and successes with the use of EdTech, innovations and digital resources [Narnaware, 2017; ; Owolabi and Bekele, 2021]. This is one of several instances whereby the benefits of EdTech go beyond their specific use to supplement or complement specific traditional practices. It is also important to emphasize the fact that the Anatomage table as an EdTech can be used for several years with minimum maintenance cost. Certain traditional methods such as cadaver dissection require regular acquisition of cadavers and routine costs

such as the cost of procurement of embalming chemicals, maintenance of dissection facilities and management of remains. While the last argument is not an attempt to undermine the place of dissection in anatomy, it is one instance that can help to put in perspective the actual cost of educational technology versus what alternatives such as specific traditional practices might cost. For instance, a recent economical analysis of the cost of delivering medical education in the United Kingdom had shown that EdTech and digital resources offer the benefit of the least cost, while cadaveric dissection has one of the highest costs. [Millan, Yunda, and Valencia, 2017; Chumbley, Devaraj, and Mattick, 2021].

It is also important to emphasize that even traditional practices when done appropriately are not as cheap as they might be perceived. For example, a gross anatomy lab has anatomists and technical staff that would be involved in the maintenance of the lab and other facilities. It also requires equipment that will be used not only to dissect but to hold and maintain the cadavers in suitable conditions. Therefore, maintaining a gross anatomy dissection facility also takes significant resources and resourcefulness. Another cost might be what it takes to put in place an effective body donor program. Therefore, when EdTech cost is considered side-by-side with traditional practices, EdTech and innovations might not be overly relatively costly as they might be perceived.

Still on the cost implications of EdTech, it is important to put things into the right perspective by appreciating the actual cost-benefits analysis. One very important thing that should be clear to medical educators and stakeholders is that the cost of EdTech and innovations should be considered as part of the integral cost of delivering cutting-edge medical education in the 21st century since technology and innovation are becoming indispensable to almost every walk of life. In fact, the budget of medical education institutions should ideally accommodate the procurement of facilities such as learning management system, digital resources, specific EdTech and innovations to support the delivery of training amongst others. Therefore, the cost of procuring, installing, and maintaining at EdTech and digital innovations should be seen as part of the cost enshrining in a tech culture into medical schools and training institutions or facilities. It would suffice to say that supporting medical training with EdTech and innovations has benefits that go beyond what is often superficially measurable [Guze, 2015; Qian Z-W and Huang, 2017; Wartman and Combs, 2018].

Anatomage should be used as a Complementary EdTech and Innovation, not a Replacement for Actual Cadaveric dissections

Educators reflected on the need to preserve cadaveric dissection as a traditional anatomical practice and a gold standard. This view should be respect as informed opinions form individuals who educate medical students, hence being primary stakeholders as well individuals with established EdTech exposure. It could be taken that they spoke form the position of a lived experience, hence having informed opinions. It is important to clearly represent the position of medical educators and stakeholders with specific emphasis on the Anatomage table and how it could be used, with specific emphasis on not using it to replace the traditional practice of cadaver dissection. What is therefore clear is that these medical educators believed that the EdTech should be complementary to the traditional practices of dissection, prosection, or anatomical demonstration. This is in line with what is obtainable in several places in terms of the acceptance and use of EdTech and innovations. This is also true of publication of students' position in another institution [Bin Abdulrahman *et al.,* 2021].

There is a need to appreciate integration and EdTech versatility. For example, Anatomage table is much more than a digital dissection facility. With specific regard to the Anatomage table, one thing that needs to be pointed out to users including anatomists and medical educators is the

fact that the use of the Anatomage table goes beyond digital or virtual dissection. A significant component of other basic medical sciences such as pathology and radiology can be integrated with the aid of the Anatomage table facility. With enhanced competence, skills, and a capacity to integrate various basic medical sciences components and technical skills plus creativity, discipline experts can collaborate to create from existing resources on the facility or import curated resources from external success and integrate them on the Anatomage table facility to enhance their teaching and training sessions. What could be primarily deduced from this reality, therefore, is that there is a need for continuous capacity building with the use of this Anatomage table, and further orientation about its versatility. This might also be true of other similar educational technologies and innovations. There is also a need for continuous learning and exposure to the rapidly evolving topic of EdTech and digital innovations and their uses to support medical education. This is a means to exploit their use for the optima benefit of students, learners, and trainees. By extension, it is important therefore to emphasize the fact that it is not uncommon for medical educators to limit the use of specific EdTech to what is limited to their routine practice or to their level exposure and technical skills; however, in line with the best interest of the trainees at heart, a way to optimize the benefits of specific EdTech is to adequately train the users [Owolabi and Bekele, 2021].

- **ASIC Considerations**

On a final note, but a very important one, it is important to consider specific factors that can help to integrate this EdTech into a medical education program properly. It is on this note that the ASIC framework has been developed, as well as its operational matrix. The framework has four tenets that are considered vital for optimal integration of any EdTech into medical education. These four key considerations constitute the ASIC tenets which include adaptation, standardization, integration, and compliance with specific regulatory standards. It is therefore important to note that giving adequate consideration to the framework would ensure proper integration of an EdTech and innovations, such as the Anatomage table into a medical education program. This will help to optimize EdTech use for the benefit of students and trainees [Owolabi, 2021; Owolabi, 2022].

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