

# Comparing Medical Student Interest in Gross Anatomy Learning and Teaching across Different Cultures

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## Abstract

**Objective:** Despite the universal significance of anatomy education for doctors, there are vast differences in quantity and nature of anatomy training among cultures and countries. We investigated how medical students in Nicaragua and the Netherlands perceive and value anatomy education.

**Material and Methods:** Junior and senior medical students from a Nicaraguan and a Dutch university were surveyed with questions about their perception of anatomy education, their preference for teaching methods and their perspective related to learning and teaching of anatomy. Academic year of training was crossed with each of the variables. Outcomes were compared across universities; p value was calculated.

**Results:** Response rate from Nicaragua was 74% (n=301) and from the Netherlands was 35% (n=215). All students agreed that the quantity of anatomy in their curriculum was satisfactory. Most Nicaraguans students took a neutral position regarding their appreciation of studying anatomy, while Dutch students generally had high appreciation. Most Dutch students found the quality of anatomy education satisfactory, while most Nicaraguans students thought that the anatomy education could improve. Senior students preferred dissection/prosection as anatomy teaching method, while juniors preferred surgery-observation. Few students considered becoming an anatomist as a career.

**Conclusion:** The appreciation of anatomy education was higher among Dutch than Nicaraguan students. All agreed that anatomy is important, but not an interesting career option. Students' differences in perception seem, at least partly, caused by culture and linked to affluency.

**Keywords:** Preferences for anatomy; Appreciation for anatomy; Nicaraguan medical students; Dutch medical students

## Abbreviations

GDP: Gross Domestic Product; PD: Power Distance; PY2: Program Year 2; PY6: Program Year 6; PY1: Program Year 1; PY5: Program Year 5; SD: Standard Deviation; UA: Uncertainty Avoidance; UMC-Utrecht: University Medical Center of Utrecht; UNAN-Leon: From Spanish Universidad Nacional Autonoma de Nicaragua, Leon; USG: Ultrasonogram

## Introduction

Human anatomy is one of the oldest disciplines in medicine and

has been the foundation for the development of medical knowledge and one of the basic pillars of medical training for centuries [1]. The study of gross anatomy provides not only necessary morphology knowledge, but also an opportunity for reflection on the intrinsic values of life and death and creates empathy for future patients, i.e. it teaches the value of human life [2], and it helps to understand body functions and how both structure and function are modified by disease [3].

Worldwide anatomists and students have regularly been surveyed regarding their views about anatomy education, focused in the application of their basic anatomical knowledge within the context of the clinical setting [4].

Students entering medical school generally believe that anatomy and working with human cadavers is important to become a doctor [4,5]. One study, among medical graduates from in the United Kingdom, reported that over half of them estimate using more than 70% of the anatomical knowledge they had been taught during the course of a year of medical practice [6].

Some students reportedly often find their preclinical curriculum overloaded, do not experience a culture that values anatomical knowledge and therefore suggest to reduce or even abandon anatomy from the program [7-9].

In an earlier study we identified fourteen different anatomy teaching methods, a number of which can be characterized as useful for less affluent countries [10]. Given (a) the current state of anatomy education, (b) the differences between high and low resourced countries in approaches to anatomy education, (c) the continued importance of anatomy education in medical schools in general and (d) the reliance of anatomy education on teaching assistance by more advanced medical students and junior doctors [11,12], a comparative study to investigate the interest among the current generation of medical students in anatomy education and in (assisting in) teaching anatomy is warranted.

To our knowledge, there are not international comparative studies that address perceptions and preferences of medical students from two completely different countries and cultures in relation to anatomy education.

To understand the differences in national culture and resources between both population (Nicaraguan and Dutch), we categorized cultures in dimensions [13] and Gross domestic product (GDP) to characterize the difference between the affluent country and the resource deprived country.

Of the six dimensions of the Hofstede's model [13], those that likely influence curriculum implementation in medical schools are *Power Distance* (PD), *Uncertainty Avoidance* (UA) and *Individualism/collectivism* (IC) [14].

Power distance relates to the different solutions to the basic problem of human inequality [13,15]. In schools with a strong PD professors may independently design the courses in their respective discipline [14]. Uncertainty avoidance relates to the level of stress in a society in the face of an unknown future [13,15,16]. Medical schools in countries with high levels of uncertainty avoidance should expect to have to overcome strong resistance to curriculum reform. "Fear of the unknown" may hamper curriculum innovation in countries with strong UA [14]. Individualism/collectivism relates to the integration of individuals into primary groups [13,15]. Individualist societies prefer undertaking innovations outside organizational norms and stimulate championing new ideas. Strong collectivism has been shown to correlate with a low national GDP [14].

As Hofstede did not apply his model to Nicaragua, but in three

other countries in Central America (Costa Rica, Guatemala and El Salvador), which are culturally similar.

Our investigation compares the attitude of students towards anatomy in two large universities of the Netherlands and Nicaragua. We were interested to understand the differences and similarities in preferences for anatomy education between Nicaraguan and Dutch medical students, against the background of their cultural and economic differences. We included junior and senior medical students from both universities and aimed at understanding the motivation for anatomy education across medical school years.

## Material and Methods

### Setting

The study was conducted in Nicaragua and the Netherlands. The cultural dimensions of the Nicaraguan and the Dutch populations are totally opposite in Hofstede's indexes (we used the median values of Costa Rica, Guatemala and El Salvador for Nicaragua): The Netherlands has been calculated to have scores of 38 for PD, 53 for UA and 80 for IC, while their average values in Central America are 65 for PD, 94 for UA and 13 for IC [14].

There also are differences in resources. According to the World Bank, the GPD in The Netherlands averaged 348.1 billion US dollars between 1960 and 2017, and was 826.2 billion in 2017, representing 1.33% of the world economy [17]. Nicaragua's GDP was worth 13.81 billion US dollars in 2017 (averaging 4.02 USD billion between 1960 and 2017), representing 0.02 percent of the world economy [18].

The Faculty of Medical Sciences of National Autonomous University of Leon, Nicaragua (UNAN - Leon), is a state-funded public University, founded in 1812. The University Medical Center (UMC-Utrecht), affiliated with Utrecht University in the Netherlands, was founded in 1636. Both schools have a modern, objective-based curricular model organized in cyclical modules or blocks [19].

Anatomy education in UNAN-Leon is delivered to the students throughout the undergraduate training, through 12 mandatory modules during second, third and fifth year of Medicine. Medical students receive 102 hours of anatomy teaching (46 hours of lectures and 56 hours of practical classes, including demonstration with prosected specimens and plastic models). There are no elective modules of anatomy in the curriculum. If the department has enough cadavers, elective courses of dissection are offered; and if the students request a radiological anatomy course, the anatomy department offers it.

At UMC-Utrecht, anatomy is taught in years 1 – 5, through 21 mandatory modules with 145 hours of anatomy teaching (40 hours of lectures, 8 hours of seminars, 13.5 hours of small group teaching, 70.5 hours of practical sessions and 13 hours of meet the expert sessions). In year 2 students can choose two elective courses of 5 weeks each. In years 4-5 students must choose two elective courses of 4 – 6 weeks' duration, and 30% take an anatomy course, choosing a region to dissect and study (thorax, abdomen, pelvis, extremities, head and neck or central nervous system).

### Population

We collected the opinions of junior and senior medical students in both medical schools to evaluate the development of interest in anatomy teaching over time.

In UNAN-Leon 404 medical students were eligible to be included; 245 students from the second year and 159 students from the sixth year, and in UMC Utrecht, 842 medical students, 307 from the first year and 535 from the fifth year of Medicine.

### Sampling

For four months, second- and sixth-year medical students at UNAN-

Leon, and first and fifth year medical students at UMC-Utrecht, were asked to fill in a questionnaire about anatomy education (Appendix 1). We selected different academic year, considering the first and last year of Medicine. In UNAN-Leon, first year in common to all careers, therefore second year students were selected as junior.

At UMC-Utrecht, students filled out the questionnaire through the online tool Survey Monkey®. Students received an email with the instructions and the link to the questionnaire. At UNAN-Leon, students filled out a paper version of the same questionnaire for which junior students were approached at the beginning of a practical class of anatomy. Senior students were approached with the help of student representatives, to fill out the questionnaire during their free time.

### Questionnaire

A questionnaire was applied which contained biographical items about gender and age, and Lickert scale items about students' perceptions. The items related to perceptions were: appreciation for anatomy as a topic in the medical curriculum, the importance of anatomy for becoming a doctor, the quantity and quality of anatomy education in their curriculum, interest in becoming an anatomy teaching assistant and/or a professional anatomist, most interesting aspect of anatomy and perceived effectiveness of different teaching methods. The different teaching methods correspond to a list that was used in a previous study about approaches to anatomy teaching [10]: lecture, dissection, prosection, physical examination, body painting, demonstration plastic model, active clay/plasticine modeling, radiology images, USG devices, surgery teaching, self-directed e-learning, e-learning with online and peer support, yoga/pilates.

To evaluate the questionnaire for any improvement or adjustment, we first conducted a pilot study for validation of the survey, with 6 students (3 juniors and 3 seniors) in UNAN-Leon and 3 junior students in UMC-Utrecht.

### Analysis

The academic years were compared with each of the variables studied. Subsequently, these results were compared among the universities participating in the study. Means and p t-tests were calculated.

### Ethical Issues

Participation in the study was voluntarily. Anonymity, purpose and handling of data of the survey were explained to students. In UNAN-Leon, the approval from the authorities of the Faculty of Medical Sciences was obtained. In UMC Utrecht, approval from Netherlands Association for Medical Education Ethical Review Board was obtained.

### Results

#### Population

A total of 516 senior and junior medical students, from two different Universities (Nicaraguan and Dutch) participated; from UNAN-Leon, 214 (87%) second year (program year 2, PY2) and 87 (55%) PY6 students, from UMC-Utrecht, 76 (25%) PY1 and 139 (26%) PY5 students. In both universities, anatomy teaching assistant students were excluded.

In 3 of the 4 groups, most participants were female: 76% of PGY1 and 74% of PY5 in UMC-Utrecht; 70% PY6 in UNAN-Leon. Only in UNAN-Leon, most PY2 participants were male (57%). The age distribution was similar, in UMCU-Utrecht (87% PY5 students 20-24 and 77% PGY1 students below 20) and UNAN-Leon (94% of senior students 20 – 24 and 71% of PGY2 students below 20).

#### Questionnaire results

Most junior students from both universities did acknowledge that

anatomy is of utmost importance, 69.1% for UNAN-Leon and 90.7% for UMC-Utrecht ( $p = 0.004$  and  $p = 0.000$  respectively). Most of both UMC-Utrecht groups classified anatomy as a positive topic in the medical curriculum (“more than most other topics”), 66.4% for junior students and 80.2% for senior;  $p = 0.000$ . At UNAN-Leon, the scores were lower for both groups 19.5% for junior and 29.9% for senior ( $p = 0.007$ ) (Figure 1).

Overall, most respondents in all four groups (in UNAN-Leon 81.8% for juniors and 54% for seniors; in UMC-Utrecht 59.2% for junior and 55.7% for senior students) agreed that their medical curriculum

provides an adequate amount of anatomy teaching ( $p = 0.000$ ), but still a substantial percentage of senior students in both universities qualified the amount of anatomy teaching as too little, 40.2% in UNAN-Leon and 43.2% in UMC-Utrecht. In UMC-Utrecht, while the majority of both junior and senior students considered the educational quality satisfactory (68.4% for junior students and 56.1% for senior students), there is still clearly space for some improvement. In UNAN-Leon however, less than 8% (for junior students) and 5% (senior students) considered the quality satisfactory (Figure 2).

When we asked if they ever considered becoming an anatomy

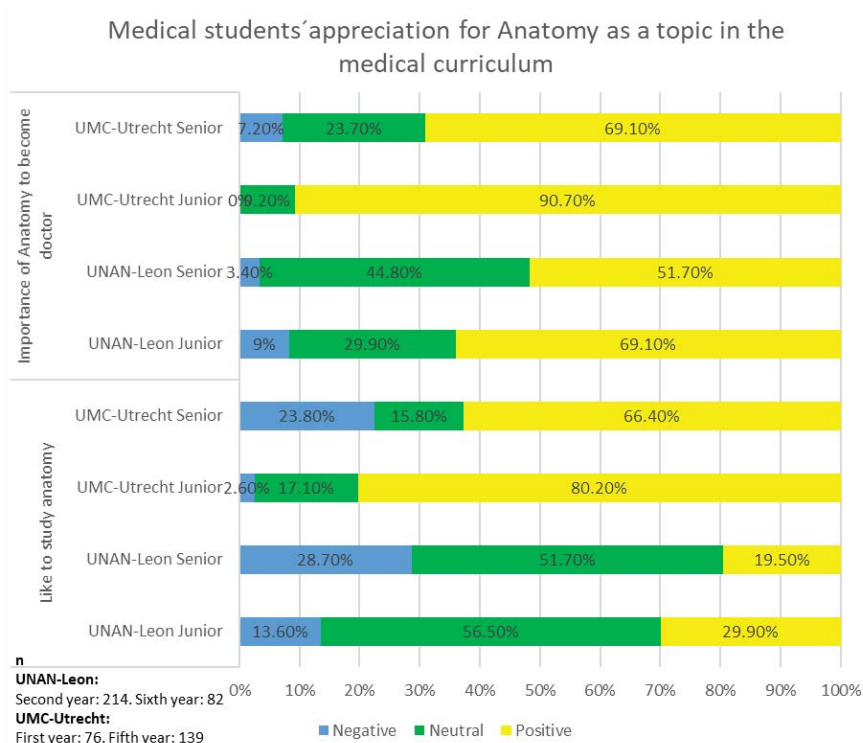


Figure 1: Frequency of Medical Students' Appreciation for Anatomy as a Topic in the Medical Curriculum.

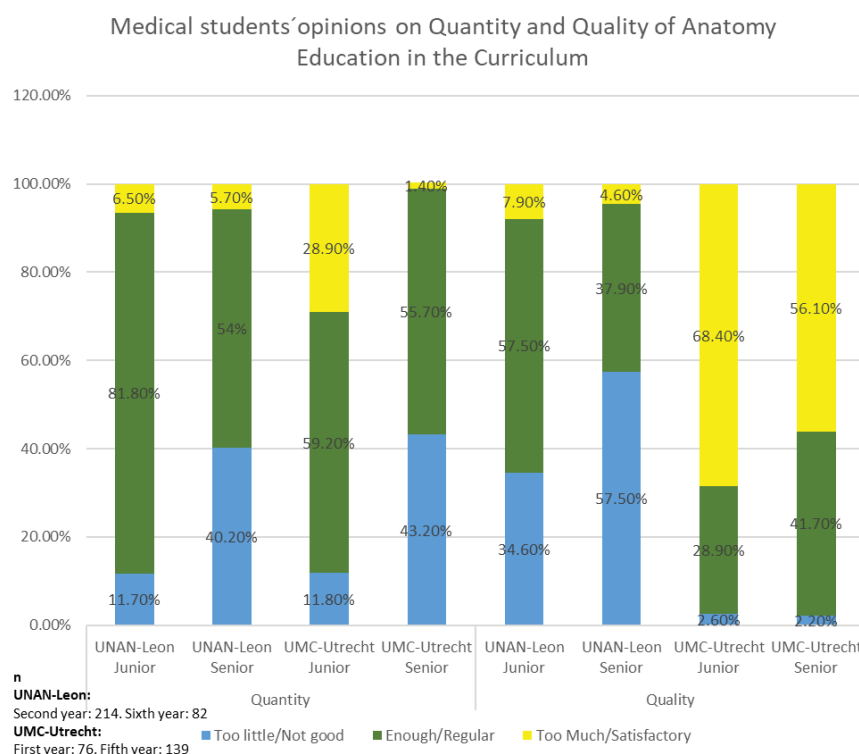
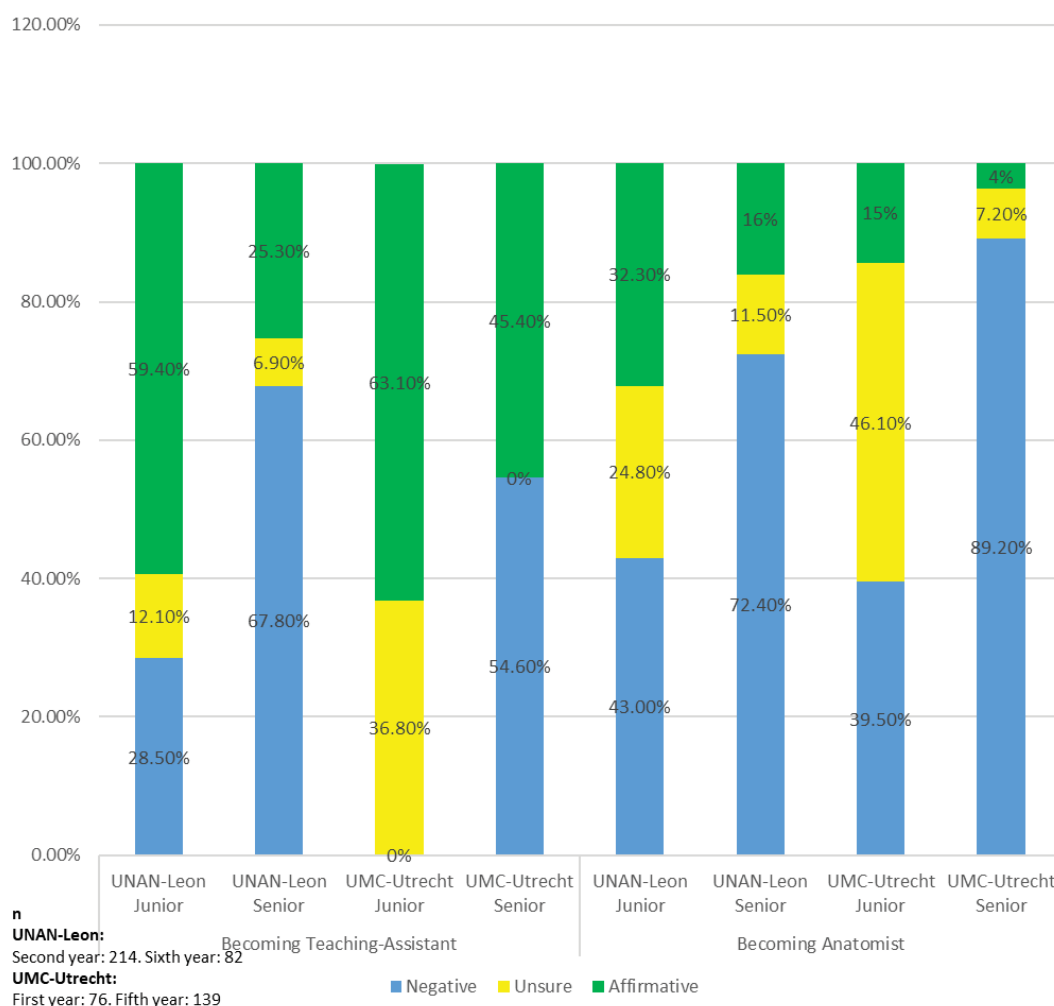


Figure 2: Frequency of Medical Students' Opinions on Quantity and Quality of Anatomy Education in the Curriculum.

### Medical Students' Opinion about Becoming an Anatomy Teaching-Assistant and an Anatomist



**Figure 3:** Frequency of Medical Students' Opinions about becoming an Anatomy Teaching-Assistant and an Anatomist.

**Table 1:** Frequency of Medical Students' Opinions about the Most Interesting Aspect of Anatomy Education.

University	Academic year	N	Education	Research	Other aspect
UNAN-Leon	Second	214	61.7%	31.3%	7%
	Sixth	87	58.6%	25.3%	16.1%
UMC-Utrecht	First	76	61.8%	22.4%	15.8%
	Fifth	139	71.2%	23%	5.8%

teaching-assistant student, the answers were very similar in both universities. Senior students had not considered becoming an anatomy teaching-assistant (67.8% for UNAN-Leon and 54.6% for UMC-Utrecht), while junior students considered becoming it (59.4% for UNAN-Leon and 63.1% for UMC-Utrecht) ( $p = 0.000$  for both universities). The universities showed some differences in the interest of students to become a teaching assistant versus opting for a full career in anatomy. While in UNAN-Leon a minority did consider anatomy as career (32.3% for junior and 16% for senior students), in UMC Utrecht, very few students ever considered anatomy for a career (15% for junior and 4% for senior students) ( $p = 0.000$  for both universities) (Figure 3).

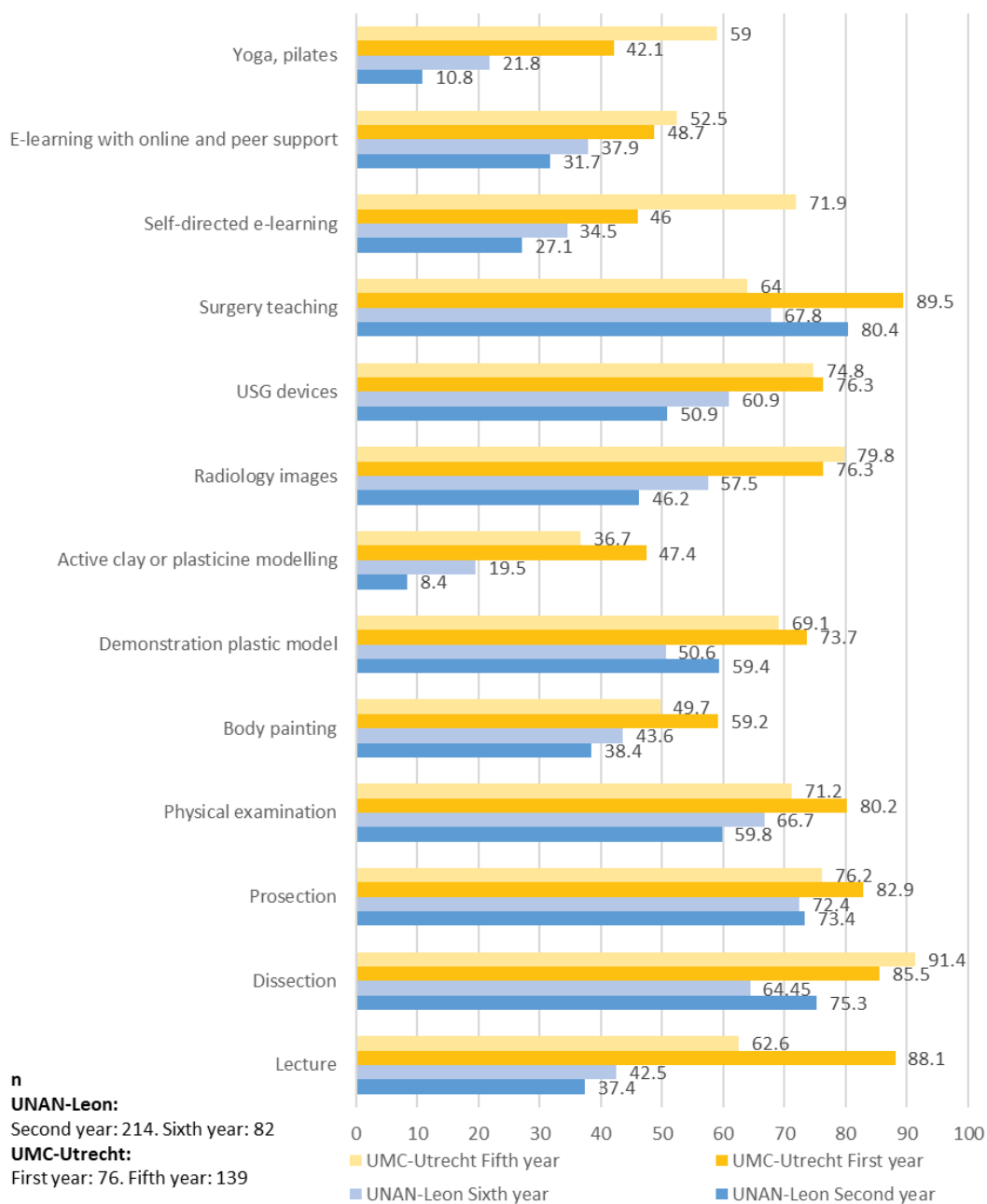
Most students in both universities acknowledge that anatomy is more of interest for educational purposes than as a scientific domain of research, in UNAN-Leon 61.7% for juniors and 58.6% for seniors; in UMC-Utrecht 61.8% for juniors and 71.2% for seniors ( $p = 0.046$  and  $p = 0.001$  respectively) (Table 1).

We explored student opinions about the effectiveness of 13 distinct educational methods for anatomy. Junior students' opinions were similar in both universities and rated the surgery teaching method as the most effective (in UNAN-Leon, 80.4%, in UMC-Utrecht, 89.5%). While senior students' opinion differed, in UMC-Utrecht dissection received the highest appreciation for its effectiveness (91.4%) while in UNAN-Leon prosection was rated highest (72.4%). The method with the lowest rating for effectiveness in the four groups of students was "active clay or plasticine modelling", in UNAN-Leon 19.5% for seniors and 8.4% for juniors, in UMC-Utrecht 36.7% for senior students. In general, all methods obtained higher appreciation from UMC-Utrecht students. In UMC Utrecht we noticed a shift in preference between first and fifth year from lecture to self-directed learning (Figure 4).

### Discussion

We compared perceptions and preferences of medical students from a Nicaraguan university (UNAN-Leon) and a Dutch university (UMC-

### Percentage of frequency: Effectiveness of anatomy education's methods



**Figure 4:** Effectiveness of anatomy education's methods according to junior and senior medical students of UNAN-Leon and UMC-Utrecht.

Utrecht) regarding anatomy. Most students agreed about the importance of anatomy for becoming a doctor. Students considered the quantity of anatomy in their own curriculum to be enough. However, we found that most Nicaraguan medical students were neutral about their preferences for studying anatomy while Dutch students appreciated well the subject. The Dutch students considered its quality satisfactory, while most Nicaraguan students thought that anatomy education can (2<sup>nd</sup> year) or must be (6<sup>th</sup> year) improved. Many considered serving as an anatomy teaching assistant, but few considered becoming an anatomist. Among the preferred educational methods in anatomy, dissection, prosection and surgery teaching were considered the most effective.

Based on our findings, we can speculate why Dutch students appear to like anatomy better than Nicaraguan medical students and have a more positive perception about the quality of anatomy teaching. One explanation may be that Dutch students spend more hours on anatomy

enabling them to gain a better understanding or that they experience more and diverse teaching forms which could make the subject more attractive or both. More exposure could generate more interest.

Nicaraguan medical students' contact with anatomy is through lectures and practical classes only. Teacher oriented methods and the lack of diversity in teaching approaches could be felt as boring. Moreover, the limited possibilities in a low resourced country to maintain the quality of the teaching materials may influence this perception. More variation in teaching methods could generate more interest because course planning and curriculum structure has a significant association with students' satisfaction, more than time of teaching [20].

In all groups most students regard the quantity of anatomy in their curriculum as sufficient, but the significance of anatomical education for one's medical career increases over time, at least among the



Dutch students. UMC-Utrecht's students appear to acknowledge the importance of enough anatomy teaching only by the end of their studies rather than in the beginning, as the percentage, considering anatomy to be too much drops from 29% to 1.4%. Overall satisfaction varies across the continuum of medical education [21]. Stressing the relevance for one's career could generate interest.

Interestingly, while the appreciation of anatomy education is higher in Utrecht, and many students have considered becoming an anatomy assistant at some point during their medical studies, very few students consider anatomy as a career.

This is in contrast with the UNAN-Leon students, as one in every five (for junior) or six (for senior) students indicate to seriously consider a career in anatomy. Possibly, in a country with a unemployment rate of 6.2% [22] and a drop in GDP to 4.8% [23] in the third quarter of 2018, and where private medical practice is not much in demand, working in a university as a professor in anatomy or any other discipline becomes an important option for professional life. Despite a lower appreciation of anatomy, the interest in becoming an anatomist can be higher, likely explained by the economical context.

Our findings about the perceived importance of and interest in anatomy concord with the literature [1,3-7,24-27]. When considering how interesting anatomy is, it is important to differentiate between anatomy as a topic of study and anatomy as career option. With respect to anatomy as a topic of study UMC-Utrecht's students' opinions were positive while UNAN-Leon's students' opinion were neutral. This difference could be due to the different implementation of the subject.

Anatomy as a career option means working in an academic or research field, without patient contact. As contact with patients is highly motivating for medical students, anatomy may be interesting primarily if it supports that purpose not as a topic of research or education per se. Most students did not consider anatomy as career, probably because their first motivation and purpose are being in contact with patients.

Becoming an anatomy teaching assistant was an option to consider for senior students, although in the end most of them decided not to pursue this. This may be due to the fact that after exploring all medical disciplines and experiencing the clinical phase of medical training where a strong emphasis on disease processes, treatment and management is placed.

In addition, some students perceive that anatomy is most important in emergency rooms and in surgical and radiological specialties, but not in field like internal medicine and pediatrics where physiology and pharmacology are considered most important [28]. Another factor could be the lack of job opportunities and adequate research facilities, which limits the uptake of anatomy as a career option [2], especially in a country with more than 80 per cent of informal employment and lack of decent jobs and economic opportunities for young people [29].

As for the effectiveness of methods of anatomy education the fact that junior students preferred watching surgery may be explained by its novel and exciting aspects for someone who has never seen an operation. It may come close to the prospect of a future professional perspective. One might question who is better equipped for anatomy teaching, an anatomist or a surgeon? A surgeon may benefit from an extensive clinical experience while teaching applied anatomy and may focus more on thorax and abdomen. An anatomist teaches with a more integral focus: the body as a complete entity including all anatomical regions, namely head and neck, the back and the limbs. Moreover, anatomists as teachers may pay attention to generalizable concepts of body construction which enhances understanding anatomy.

We believe that complementary morphological teaching by anatomists and clinicians is beneficial as it combines teaching the fundamentals of the human body morphology by all round anatomists with teaching applied anatomy as needed in surgery and other clinical

disciplines. The finding of senior students' preference for anatomy methods as prosection and dissection, may be attributed to the fact that they have practiced those methods quite enough in medical school and acknowledge the benefit of it. Conversely, junior students of both universities had not had contact or/and experience in dissection courses at the moment of the survey.

The outcomes in the preferences and opinions of the study population on anatomy education may be valued against the cultural and resources differences described in the introduction section. The Dutch's economic and cultural characteristic might explain their opinion about the effectiveness of different anatomy education methods and the quality of anatomy education, simply because all are realistically feasible if schools would find them effective, also they have more experiences with a variety of methods. Nicaraguan people (as Hispanic culture) are more traditional people [30], preferring to retain aspects that they already know or do, for example, the classic anatomy education methods such as dissection, prosection, surgery teaching and lectures are considered most effective while novel but unknown methods such as yoga, pilates and body painting, are considered least effective; but this cannot be disentangled from differences in economic circumstances Hofstede's dimensions may all be relevant [13].

While both medical schools have a similar integrated curriculum, we found differences in student's perceptions, specially about effectiveness of non-conventional teaching methods, probably reflecting a resistance to change among Nicaraguan medical students. That could indicate that the main constraints are not economic, but psychological, making it more likely that differences in teaching and curriculum are more influential than educational resources.

### Limitation of the Study

The low response rate in one of the participating universities (UMC-Utrecht) does not allow us to generalize our outcomes of stating that medical students have the same perceptions about anatomy education. Therefore, further investigations are needed in order to confirm the conclusions of the study possibly enriched with qualitative explanations to support some of the more speculative inferences we made.

This is a preliminary study that only addresses the perceptions of a group of university students, we believe that our findings would be supported if our study were replicated with students from other faculties from both universities, even from both countries.

### Conclusion and Recommendation

Our study supports the impression that in countries with more resources, students have a more favorable attitude toward anatomy education exists than less affluent countries, independent of the adequacy or amount of anatomy education and their interest in becoming an anatomist. This conclusion deserves support with additional studies, in different countries and with additional research approaches.

### Contributor List

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### Compliance with Ethical Standards

The authors make the following statements:

- **Funding:** NA
- **Ethical approval:** Participation in the study was voluntarily. Anonymity, purpose and handling of data of the survey were explained to students. In UNAN-Leon, the approval from the authorities of the Faculty of Medical Sciences was obtained. In UMC Utrecht, approval from Netherlands Association for Medical Education Ethical Review Board was obtained.

- **Informed consent:** Oral informed consent was obtained from all individual participants included in the study.

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## Supplementary materials

### Questionnaire

Dear student,

This survey inquires about your views on anatomy education. How important do you think anatomy education is for the training of doctors? How much do you like it? Have you ever thought about teaching it yourself? And what do you think of different approaches to anatomy education?

These questions are being asked in a short survey for junior and senior medical students at the University of León in Nicaragua and the University of Utrecht in the Netherlands. The answers will help to develop anatomy education in well-resourced and less well-resourced medical schools.

The answers to this questionnaire will be processed anonymously. For reasons of ethical approval, we like to ask your permission to use your answers in a research reported that is intended for be published in a scientific journal. We will retain the data for a period of 5 years, as prescribed by ethical rules for scientific research.

1. I give permission to use my answers anonymously in a research report
  - a. Yes
  - b. No
2. Only if you are interested to receive a preliminary report of the outcomes, please enter your email address. If you wish to remain completely anonymous, please create a new email address, e.g. using Google's Gmail or other service. We hope to send you the outcomes before the end of 2016

Email address:

3. What is your age?
  - a. < 20
  - b. 20-24
  - c. >24
4. What is your gender?
  - a. Female
  - b. Male
5. Please state your personal appreciation for anatomy as a topic in the medical curriculum
  - a. I like studying anatomy least of all topics in the curriculum
  - b. I like studying anatomy less than most other topics
  - c. I like studying anatomy just as much as most other topics
  - d. I like studying anatomy more than most other topics
  - e. I like studying anatomy most of all topics in the curriculum
6. Please state your view on the importance of the extensive study of anatomy the become a doctor
  - a. Not important at all
  - b. Not very important
  - c. Just as important as most other topics
  - d. Rather important
  - e. Of utmost importance
7. Please state your opinion about the *quantity* of anatomy education in your curriculum
  - a. Our curriculum provides too little education in anatomy
  - b. Our curriculum provides enough but not too much anatomy education
  - c. Our curriculum provides too much anatomy education
8. Please state your opinion about the *quality* of anatomy education in your own curriculum
  - a. The quality of anatomy education in our curriculum must be improved
  - b. The quality of anatomy education in our curriculum can be improved
  - c. The quality of anatomy education in our curriculum is satisfactory
9. How do you think about becoming an anatomy teaching-assistant?



- a. I would never consider this / I have never considered this
- b. I have considered it but decided not to choose it / I have considered this but chose not to
- c. I am completely unsure about this / I have been or still am an anatomy teaching-assistant
- d. I am seriously considering it but have not made up my mind [n/a]
- e. I would definitely like to become an anatomy teaching assistant [n/a]
10. How would you think about becoming an anatomist for a career?
- a. I would never consider this
- b. I have considered it but decided not to choose it
- c. I am completely unsure about this
- d. I am seriously considering it but have not made up my mind
- e. I would definitely like to become an anatomist
- 10 If you find anatomy interesting, what aspect would be most interesting? (check one, more than one, or none)
- a. Education in anatomy
- b. Research in anatomy
- c. Other aspects
- 11 Please indicate which methods of anatomy education you find most effective

	Among least effective methods	Not very effective	Not more or less effective than other methods	Pretty effective	Among most effective methods
Lectures in anatomy	1	2	3	4	5
Dissection of corpses by students	1	2	3	4	5
Prosection of corpses by teachers	1	2	3	4	5
Anatomy by physical examination	1	2	3	4	5
Live body painting	1	2	3	4	5
Demonstration through plastic models	1	2	3	4	5
Active clay or plasticine modelling	1	2	3	4	5
Anatomy through radiology images	1	2	3	4	5
Anatomy with bedside ultrasound devices	1	2	3	4	5
Anatomy through surgery teaching	1	2	3	4	5
Self-directed e-learning	1	2	3	4	5
E-learning with online and peer support	1	2	3	4	5
Anatomy by yoga, pilates or similar	1	2	3	4	5

**Space for additional remarks or clarification about your views on anatomy and its methods. You may write in English or in your own language**

*Thanks for your collaboration*