A proof-of-concept study on students' perceptions of anatomy distance learning based on a Proust-like survey

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Abstract

The COVID-19 pandemic imposed a shift to virtual education as temporary solution applied as learning strategy. This study was designed to understand the emotional challenges and opinions regarding remote teaching of anatomy on 1st year pharmacy students. A multiple open-ended Proust-like questionnaire was designed. The majority of students (62.6%) appreciated the possibility to attend both the online classes or the recorded lessons at will, while 24.4% enjoyed the possibility to attend the lessons without traveling and in the comfort of their homes. 68% affirmed to take advantage of internet (mainly Google search, You Tube videos as additional tools. Students fear failure of WI-FI connection (59.6%) and the accidental turning on of the camera or microphone (40.4%). The students afford a full day of distance learning relaxed and confident (68.4%), while 31.6% with indolence and lack of motivation. 53% of students would be happier and more interested to face to face classes due to easier interactions with the teacher and companions, but the 42.6% declare any difference between the two teaching modalities. The take home message of this experience is that some aspects of the remote learning may be useful especially for students living far from the University and that for future anatomy education a relevant modification could be the blended mode of teaching in presence and online mode.

Keywords

anatomy education; Proust questionnaire; remote learning; COVID-19; pharmacy

1. Introduction

Severe acute respiratory syndrome coronavirus 2 (SARS- CoV-2), first emerged in China, in late 2019 (Zhu et al., 2020). The World Health Organization (WHO) declared the outbreak pandemic on March 11, 2020 (Zhu et al., 2020). The government of Italy imposed 69 days of mandatory

lockdown starting on March 9th, 2020 till the 18th of May. On June 11, 2020 the Italian government
started unlocking the country in different phases. In October 13th, the second wave of pandemic started to spread again inducing the Italian government to impose the night curfew since November 3rd. With the approval of COVID-19 campaign of vaccination on December 27th (the so-called vaccine day), all the Italian educational institutes including medical colleges started to gradually reopen but with strict safety restrictions. As the pandemic has changed the world and human lives, medical education did not make an exception. Anatomy is the foundation stone of medical education from whic clinicians develop their clinical skills (Das & Al Mushaiqri, 2021, Evans & Pawlina, 2021). Even if cadaveric dissection in Italy is extremely limited due to costs and ethical reasons, it is still considered as a critical experience of the discipline by educators and students (Cortese & Frascio, 2021; Grignon & Duparc, 2021). The COVID-19 pandemic imposed deep modifications to anatomical education practice as the overall healthcare students lost access also to other learning modalities like museum specimens, bones and microscopic laboratories due to lockdown (Byrnes et al., 2020; Iwanaga et al., 2020). Although online teaching experiences have been already attempted in the context of medical schools (Frascio et al., 2009) The pandemic COVID-19 is definitively opening a new era in anatomy education, as this subject has never before been delivered exclusively online or remotely for healthcare students as well as raised questions about what subjects really matter for students (Cortese & Frascio, 2021.). This transformation was not easy for students as well as faculty. While each anatomist is unlocking technology to deliver best lectures, virtual anatomy learning has its own problems (Armstrong- Mensah et al., 2020; Drake et al., 2009). The present study was designed to evaluate the emotional challenges and experiences dealt by 1st year pharmacy students during their distance anatomy learning. In particular, we aimed at understanding the mental and physical learning conditions of students as well as their perceptions on the value of anatomy as a subject in the context of their career and future work. To this aim, we propose a modified Proust questionnaire. The Proust questionnaire has its origin in a parlor game popularized but not devised by Marcel Proust, who believed that, by answering those questions, individuals may reveal their true nature. As the digital learning may continue in the post pandemic future, the feedback of students may help to better design anatomy courses with this learning modality.

1. The main trait of my character that suffers in the distance
2. The trait of my character that benefits from the distance
3. How do I live the “cosmic emptiness” inside the screen?
4. What do I appreciate in distance learning?
5. What do I use of current technology to improve my study?
6. What is the greatest accident that has happened to or that I fear while attending an online lesson?
7. What learning technology would I like in the future?
8. What gift of nature would I like to possess to overcome the distance?
9. What are the other students doing on the other side?
10. If there was no distance, would I be more or less interested in attending face to face classes?
11. Today there will be online anatomy class: how do I wake up?
12. In your opinion, is the study of anatomy relevant for your future work?

Table 2 – The Proust-like questionnaire for 1st year Pharmacy students Questions.

2. Materials and Methods

To date, the survey has been closed and the redemption of the survey is of 38 (35 female, 15 male) first year Pharmacy students out of 50 (from University of Genova) that participated in the present study (76%). Though 150 students were admitted to Pharmacy faculty at the end of September 2020, only 50 students actively attended the online anatomy

course. Among them, only the students who were willing to participate in the study were included. Each student was explained the objectives of the study during the virtual classes of human anatomy. A multiple-choice open-ended Proust questionnaire was designed and delivered to them through the institutional Microsoft Teams platform (Table 1). The survey has been administered at half cycle of the anatomy course and is now closed. Then we are reporting the results of the questionnaire. There was complete anonymity of trainees. Data were collected and analyzed using Microsoft office 2007 excel Mac version 16.29.1. The students belong to age group from 19–22 years (mean age 20,75 years; 32 female and 6 male corresponding to 84% and 15%, respectively).

3. Results and discussion

Currently all the students are dependent on digital learning, 84.5% agreed that during online teaching they mainly suffered from the lack of interactions and socialization with teachers and colleagues, while 16.5% declared that they missed sport activities. However, remote learning also offered some emotional advantages from shyness (27%), anxiety (19%) and gave the possibility to dedicate more time to family affection (15%). When the computer screen was assimilated to the “cosmic emptiness” and asked how they were dealing with it, 36% don’t know or did not understand the question, 12.5% replied that had difficulties to cope with it, the 32.9% tried to concentrate on the lesson, 18.6% tried to “camouflage with it”, whatever it means. About what students appreciated of distance learning, majority of them (62,6%) greatly appreciated the possibility to attend both the online live classes and the recorded lessons at will, 24.4% enjoyed the possibility to attend the lessons without traveling and in the comfort of their homes. A minority (13%) appreciated the easier organization of their time. When asked on what type of technology are using to improve their study, 68% replied to take advantage of internet (mainly Google search, You Tube videos). Only one student cited the use of books and another one other teacher lessons on the same subject found online. About technology, one of the major fear/accidents that students perceive is the interruption of WI-FI connection during the online class or during exams (59.6%), followed by the accidental turning on of the camera or microphone (40,4%), % feared the shut-down of Microsoft Teams application, and only one student

feared a personal invitation to actively participate to an online discussion. When asked about what kind of technology they wish for the future, the majority replied a faster and more stable internet connection (38.1%), a more friendly technology with virtual assistants, as Google Siri and Amazon Alexa adapted for student's questions (12.9%), 10% are satisfied with the current developments, 11% would wish the possibility to attend University using only online courses, and, surprisingly, 29.7 % don't know what to respond. Regarding the "nature gifts" they would possess to overcome the distance problem, 35.6% responded to improve their ability to concentrate for long time on the computer, 22.5% imagine the teleportation technology, 19.6% don't know, 11% wish the complete vaccination of the worldwide population in order to avoid any distance. When asked about what they think are doing the other students while attending the online class, most of them (41.3%) think they are coping with the situation in the same way of themselves (e.g., taking notes and keeping concentrated), 19% have concerns about mental concentration and 23% don't know but are curious about knowing the other student's mood. A slightly more than half of students (53%) would be happier and more interested to face to face anatomy classes due to easier interactions with the teacher and companions but the 42.6% declare that they do not feel any difference between the two teaching modalities. When asked about how they wake up in the morning waiting for a full day of distance learning, 68.4% replied relaxed and confident, while 31.6% perceive indolence and increasing lack of motivation. Lastly, 100% of students think that the study of anatomy will be fundamental for the comprehension of mechanisms of action of drugs and therefore for their future profession.

4. Conclusions

The redemption of the survey has been 76% (38 out of 50 1st year students) that consistently attended the anatomy online course. As the class was composed by 70% females and 30% males, we observed a major participation of female students (84,2%) with respect to the male counterpart (15%). From the results we obtained, it seems possible to conclude that distance learning is progressively accepted by the overall students. Major strengths of the online teaching modality are the possibility to listen to recorded lessons at will for all of them but especially for working students, and to avoid travelling and related costs in term of money and time for students that live far from the University.

As points of weakness, we report the lack of interaction and emotional sharing with educators and companions that may lead to social isolation and have a negative psychological impact on young people that are normally demanding about socialization.
Based on their opinions and our teaching experience, we believe that some of the positive strengths of distant learning may be used as innovative tools to be taken into account when we will return to face-to-face routine classes. For example, the use of both online streaming during a face-to-face class and recorded lessons as didactic material that could be exploited by students not able to attend the whole course. We also believe that this survey may be administered to other categories of students, not only the ones belonging to healthcare professions.
In conclusion, even if obliged by the COVID-19 pandemic, we found out that the tremendous technology advances have been fundamental to overcome the educational restrictions imposed by governments. If the pandemic would have occurred in the 80s, before the advent of internet, probably education worldwide would have been much more affected than today.

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