

EVALUATION OF STUDENTS WHO USED A WEBSITE DIRECTED TO TEACHING HISTOLOGY AND EMBRYOLOGY: THE LEARNING PROCESS MAY BE BETTER THROUGH SOCIAL NETWORKS

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Abstract

The use of Internet is wide by undergraduates wherein its impact in teaching and learning is reported in several studies. Institudodelta.com.br is a website that provides information about health and morphology plotted in virtual learning environment. This study aimed evaluate the access to Internet, websites about Histology and Embryology and Institudodelta.com.br website by undergraduates and its impact on approval rating. Thereunto undergraduate of courses from Federal University of Piauí (UFPI), enrolled in discipline of Histology and Embryology was interviewed about their access to Internet, websites about this discipline and Institudodelta.com.br website. The software Bioestat version 5.0 was used to statistical analysis with calculation of value of t student to comparison of access frequency to Internet and to websites about Histology and Embryology and Fisher's exact test to evaluate the approval rating in Histology and Embryology course and the access frequency to the Institudodelta.com.br website and also access frequency in Internet. As results there were seventy seven interviewed. 72.8% affirmed access Internet seven times per week and 97.4% access Institudodelta.com.br website. The access to Internet was higher when compared with access to websites about Histology and Embryology ($t_{value} = 15.6058$, $p < 0.0001$). There's no statistical difference in approval rating among students who access Institudodelta.com.br website and that who do not access it ($p = 1.000$). There's no found out association between access frequency to Internet and approval rating ($p = 1.000$). In conclusion, the access frequency to Internet was elevated wherein the access to Institudodelta.com.br website was not important to undergraduate's approval.

Keywords: Education, Morphology, Internet.

1 INTRODUCTION

The Internet is a source of information that can be used by undergraduates to complete their learning, whereupon the opportunity to use these advances in education available in Internet should be a priority, in particular in biomedical education [1].

The Internet provides extensive content in health and science wherein young adults search for health information, but, little is known about its use among college students [2,3]. It is an important task of modern medical education to provide scientific research quality to undergraduates and the use of learning based in web has been a new and attractive approach for both teachers and students in practical lessons [4].

Thus, it is perceived that medical information available in the web can be easily obtained by undergraduates and the digital education material have more acceptance among students than traditional lecture or textbook as demonstrated by Evans [5]. The teaching of histology and embryology and availability and advanced of computers created possibilities for improving information for morphology helping the education gap between the teaching and the learning with the students [1]. Institudodelta.com.br is a website directed to teaching of health sciences that contains material about morphology, odontology, biomedicine and medicine plotted in virtual learning environment (VLE) created with purpose of help the undergraduates and community available scientific information about health [6].

Among undergraduates is observed increased in access to social networks wherein Facebook have more frequency of use [7]. This point could be used to expand the teaching of morphology within higher education but a few number of studies focuses in the potential of social networks in teaching.

Thereby, the aim of this study was evaluated the learning of undergraduate students who use Institutododelta.com.br website and the impact of this access in approval rate in discipline of Histology and Embryology. In addition, we evaluated the access to Internet and its influence in teaching and learning process and the access to social networks.

2 METHODOLOGY

2.1 Selection of participants

Undergraduates of Biomedicine and Physiotherapy courses from Federal University of Piauí (UFPI), enrolled in discipline of Histology and Embryology participated in this research, were excluded the study the undergraduates who preferred don't answer the questions. The research lasted one semester obeyed all current resolutions and it was approved by the Ethical Committee in Research of Federal University of Piauí (CAAE: 07666212.2.0000.5214).

2.2 Questionnaire applied

A structured questionnaire composed by questions about access to Internet (access frequency, form of access, time access to website) and sites containing subjects on Histology and Embryology. There were also questions related to the Institutododelta.com.br website and its teaching resources in morphology and health (access frequency, time access to website and resources used). The undergraduates also answered questions about their access to social networks (frequency of access and what type of social network they used).

2.3 Statistical analysis

The statistical analysis consisted by calculation of value of *t* student to comparison of access frequency to Internet and to websites about Histology and Embryology and Fisher's exact test to evaluate the approval rating in Histology and Embryology course and the access frequency to the Institutododelta.com.br website and also access frequency in Internet, using the statistical software Bioestat, version 5.0 (Belem, PA, Brazil) and values of $p < 0.05$ considered statistically significant.

3 RESULTS

A total number of seventy six undergraduates were interviewed – 27 men and 50 female. 72.8% access Internet seven times per week. Table 1 shows the distribution of the access frequency to Internet.

Table 1. Access frequency to Internet.

Do not access	1-2 x*	3-4 x	5-6 x	7 x
2.5 %	6.5%	7.8%	10.4%	72.8%

*times per week

93.5% of interviewed undergraduates have own computer and 74 undergraduates said have some kind of social network. Among many cited social networks, Facebook had the highest percentage of access by interviewed with value of 96.1%. This value was similar when compared with total number of undergraduates who access websites about Histology and Embryology (69 undergraduates). 97.4% of undergraduates affirmed access Institutododelta.com.br website using its resources about health. According to Fig. 1 is observed the access frequency to Institutododelta.com.br website.

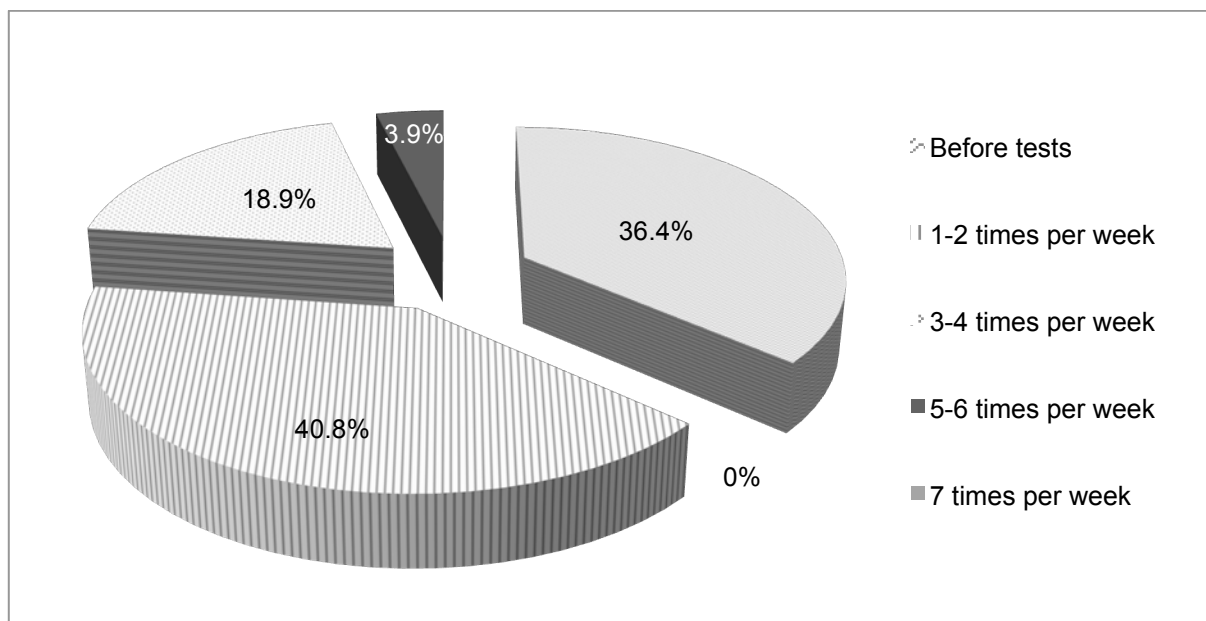


Fig 1. Value of percentage of access frequency to Institutododelta.com.br website.

In other hand, the distribution of access time to website also was evaluated, as showed in Table 2.

Table 2. Access time to Institutododelta.com.br website.

< 1 minute	1-5 minutes	5-10 minutes	10-30 minutes	>30 minutes
0%	5.2%	11.7%	42.9%	37.7%

The access frequency to Internet was higher compared to access to websites about Histology and Embryology ($t_{value} = 15.6058$, $p < 0.0001$), although the undergraduates who accessed the Institutododelta.com.br website did not show greater approval rate than those who did not access ($p = 1.000$). The access frequency in Internet and approval rate in the discipline was not statistically different ($p = 1.000$).

4 DISCUSSION

Our study indicated high access to web by undergraduates, as stated by the percentage of 72.8%. This data shows how Internet has had importance in education through use of its technologies to provide a range of solutions that improve knowledge may be used by medical educators in face of current social, scientific and pedagogical challenges [8].

The access to Internet provides materials to students who need for their work when they didn't obtain information by different ways [9] and the Internet can be accessed by anybody in world and then that contents can cross national and cultural borders [10] facilitating the learning process and access to medical information. The meta-analysis carried out by Cook et al. [11] evaluated the effect of Internet in learning of health professions and found out the Internet-based learning is associated with positive effects, attesting its impact on the teaching of medical area.

The Internet is extensively used by undergraduate students interviewed, finding that corroborates the Onko's [12] study in universities of Nigerian. Differently from the aforementioned study, our data showed the students access the web through own computers, thus being able carry out further research on the subjects of their interest.

As compared with the access frequency to websites about Histology and Embryology, the value of access frequency to Internet was elevated ($t_{value} = 15.6058$, $p < 0.0001$). It demonstrates the low undergraduates' interest in use medical education information available on web and confirms the

many students use the Internet for their own purposes and just will engage with it when they perceive advantages doing so [13]. Institutododelta.com.br is a website containing different information and communication technologies (ICTs) that help the undergraduates, providing educational material available in VLE [6].

Although there was not statistically difference in approval rate in the discipline of Histology and Embryology among undergraduates who access Institutododelta.com.br website and those who didn't access, the websites and social media tools can be used in medical education having a positive impact on learners outcomes [14,15]. The use of VLE works to complement the teaching with the ICTs as tools designed to assist the process of learning [6] wherein the resources provided by sites as Institutododelta.com.br complement the teaching.

The undergraduate's learning who use the cited website can be connected directly to the access time to website in which the undergraduates have access to several resources such as simulated on line, virtual classes and virtual atlas of histology.

The use of VLE and ICTs allow advanced in teaching by reaches largest share of university class [16]. Although there is a preference by undergraduates for virtual learning histology [17] our data showed high percentage of undergraduates who access the Institutododelta.com.br website just once or twice per week (40.8%).

Other factor evaluated was the use of social networks that showed high. There are a large number of communities dedicated to education in these sites [18] being increasingly used as a tool of choice for communications and collaborations in business and higher education. This may be an alternative to make contents available about disciplines from courses in health area since the social media and web tools are already causing impact on superior education [13].

Facebook was the social network most used by the undergraduates with elevated percentage among them. The Biomedicine and Physiotherapy courses from UFPI offer the discipline of Histology and Embryology during the first year of graduation, it can explain this value. The use of Facebook or others social networks declines when students are approaching the final semesters of graduation, as shown by Thompson et al. [7].

The use of social networks can be dedicated to education because understand why and how the studies use this sites is crucial for the academic community, so that most information about health or morphology becomes easily accessible to students.

5 CONCLUSION

This research evidenced elevated access to Internet by undergraduates, but using the website in a complementary way to the study Histology and Embryology. Our data showed that access to Institutododelta.com.br website not shown to be important for the approval of the students during the semester in the discipline of Histology and Embryology. Furthermore, our study showed that the use of social networks can be a way to provide educational content complementing learning, thus could be more accessed by the students.

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