

## Evaluation of Digital Competencies for Students who Enter The Medical Career

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**Abstract:** Currently the use of mobile and devices end the use of information technology and communication are the basis for students to perform academic tasks. Explore students studying medicine at the first level the use of TIC. A descriptive study was conducted on students who entered the first level of the race at the Polytechnic School of Chimborazo in the academic period April to August 2016, by implementing an online questionnaire. answered a total of 101 students, 53.5 % were female , 92.1 % have a computer , 85.1 % have a smart phone, 93.1 % have Internet at home. The most used social networks are Facebook and WhatsApp, there is not enough knowledge on the use of Cloud Computing platforms. Students use Google Scholar and Google Books as sources to consult academic information

**Keyword:** eSkills , Mobile Devices , Information, Cloud Computing.

### I. Introduction

Based on the term digital natives, which considers people born in the 1980s and speak the language of computers [1], today these students have access to mobile devices from an early age, but this does not guarantee that they have proper use and exploitation of the same, digital natives generally use their smart devices for non-academic activities such as games, leisure and specially social networks. In recent years, access to computer equipment, mobile devices, levels of internet access in study centers and in homes, has allowed the students of the Ecuadorian system from the Basic General Education (EGB) and Unified General Baccalaureate [2], hereinafter BGU, contain topics related to the use and exploitation of technological tools to have adequate access to the knowledge society. The main objective of the present investigation is to apply a questionnaire to the students who enter the first semester of the medical school of the Polytechnic High School of Chimborazo to know the digital competences and make the necessary improvements to the chairs related in the race.

#### Justification

Informatics and especially ICTs have become the fundamental pillar for personal development of the individual, especially in the educational field where the use of computer equipment and the Internet are the tools and sources of information for the formation of the Professional future. The students of the BGU in the Ecuadorian educational system contemplate in their micro curriculum chairs related to the management of computer tools such as programming languages, computer science, etc. Parallel to the dictation of chairs in educational institutions students have computers, mobile devices with access to the internet, starting from here we can say that students of BGU, should have a good level of management of technological equipment.

#### 2.1 Digital Competences.

According to [3], digital competences can be defined as the ability to use information from the network to acquire the knowledge and skills that are developed through skills and abilities that are effective to achieve basic and / or professional competencies.

One of the main disadvantages of ICTs, students do not use it so much for their academic training [4], but rather for network games with classmates or leisure. The constant use of social networks and their different applications in a certain way generates in them a certain technological and communicative competence.

##### 2.1.1 Elements of digital competences

The basic activities or actions [5] that a student must carry out within the digital competences are:

- Browse, search for information on the internet in valid sources such as libraries or digital repositories.
- Process information through the use of specific computer tools.
- Know the risks of improper handling of information, especially personal in cyberspace.
- Use Web 2.0 applications
- Utilizar dispositivos y aplicaciones móviles

## **2.2 Digital Repositories**

Digital educational repositories are repositories of digital and virtual content [6], many of which are freely accessible, these repositories have now come to replace physical libraries, due to the ease of access, but this brings with it countless inconveniences like "Copy - Paste" in the accomplishment of works by the students. Enhancing this competency of information search in digital repositories, virtual libraries will help to improve the capacity for the generation of new knowledge in the student.

Among the main digital repositories for education we have Google Book, such as repositories of books, search engines such as Google Scholar to access different libraries and indexed journals, repositories of learning objects, mobile applications for education, among the most widespread.

## **2.3 Web 2.0 Applications**

Web 2.0 applications today, Web 2.0 is a variant of the traditional web, where it was a static web, while web 2.0 is a dynamic web, it allows the user to interact in real time [7], to use networks Social, online information management, tools for developing web pages based templates, advanced e-mail clients, etc.

### **2.3.1 Web 2.0 applications and products**

- Social networks
- Cloud Computing
- Blogs

## **2.4 Mobile Devices**

The mobile devices are small "computers" capable of performing the basic tasks of a traditional computer, the advantages of mobile devices are the mobility capacity, ease of connection to the internet by different means, very large collection in applications and the vast majority free.

The use of ICT through digital devices, both fixed and mobile, is fully normalized in the lives of digital natives [8], in the classroom many times the students are more aware of the smart cell phone than the same dictation of the chair.

At present the availability of mobile devices by students tends to one hundred percent, this has its advantages and disadvantages.

### **2.4.1 Advantage**

- Management of educational software
- Access to digital books
- Handling of mobile learning objects
- Access to educational websites

### **2.4.2 Disadvantages**

- Inadequate use
- Educational applications are in the process of development
- Teacher's ability to adapt these elements to the teaching-learning process.

## **III. Applied Methodology**

A questionnaire was designed using the Forms Tool of the Google Drive Platform, as the basis for the questions were questionnaires, "Digital Basic Competences 2.0 of university students" COBADI [9], "Digital competences self-diagnostic test" [10] and the Program of Studies of Subject (PEA) of the chair of Computing in the School of Medicine. The PEA of the computer science course that is taught at the fourth level of the medical career consists of five units, which address topics such as basic concepts of computing, web 2.0 tools, collaborative work based on cloud computing, processors Text and spreadsheets. The main objective of the course is to provide the student with the necessary skills for the correct use of ICT in their current academic performance and future professional performance.

The questionnaire was published on the website of the POLYTECHNIC HIGH SCHOOL OF CHIMBORAZO, students answered the survey at the beginning of the induction course, in the academic period April - August 2016, obtaining a total of 101 valid answers.

The present study is of descriptive type [11] that seeks to describe the digital competences of the group of students entering the Medicine Career, for the tabulation of data was used the tool Calculation Worksheet of Google Drive.

The variables that were considered for the elaboration of the questionnaire were sociodemographic data such as sex, age, informative data among others. With respect to the other variables were made taking into account the questionnaires base above mentioned.

**IV. Results And Discussion**

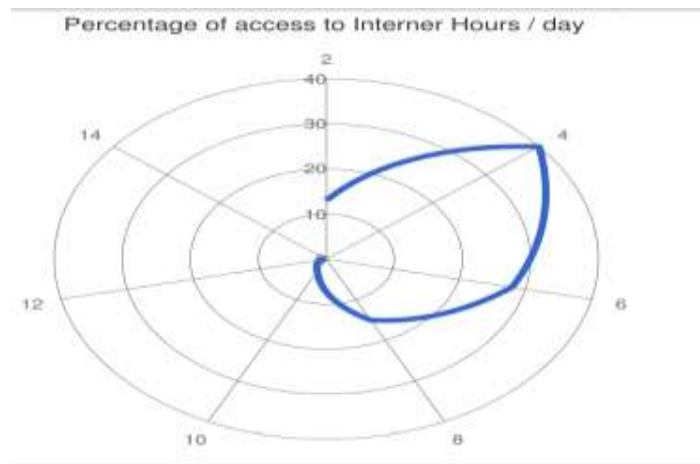
A total of 101 valid answers were obtained, of which 53.5% corresponded to the female sex and the remaining 46.5% to the male sex, generally in careers related to the health sciences, the female gender predominated [12]. The following three items that are analyzed, corresponds to the availability of computer equipment, smartphones and internet access from their homes, the following table groups the answers by frequency and percentage of respondents who answered affirmatively.

**Table 1.** Availability of computer equipment and internet connection.

QUESTION	YES	NO
Do you have a computer or laptop?	92,1	7,9
Do you have a smartphone?	85,1	14,9
Do you have an Internet connection in your home?	93,1	6,9

Source: Researchers

In Table 1, 92.1% have a personal computer and 93.1% have an Internet connection from their home, finally 85.1% have a smart phone, the study group tends in its entirety Access to computers and Internet access. The Internet connection habits of the people surveyed reveal that 40% enter the network around four (4) hours / day and 28% two (2) hours / day, 1% say that it connects to the internet around Of twelve (12) hours / day, the highest percentage of Internet use is 4 hours a day, an average of use at the University of Málaga [13], where approximately 30% of respondents use the internet for about 4 hours Weekly. The following figure details the percentage of Internet access per hours / day.



**Graphic 1:** Percentage of Internet access hours / day

To the set of questions related to the time of dedication to carry out the most common activities on the Internet, it is sought to know the activities that most perform the respondents. Table 2 summarizes the percentages by activity and dedication, only the option "a lot" is evaluated.

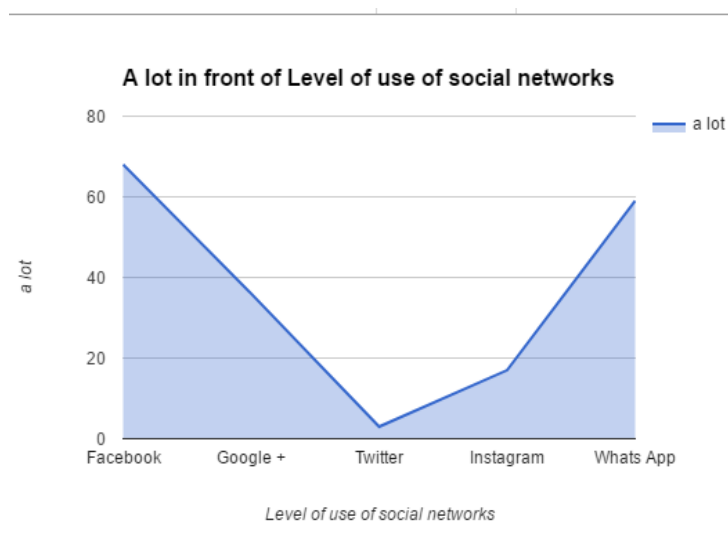
**Table 2.** Activities carried out on the internet in relation to the alternative "a lot"

Activity	Percentage
Watch TV Shows	5
Listen to radio shows	5
Learn about topic that interest you on a personal level	68
Learn about topic that interest you at a professional level	60
Distribute the photos and / or videos that I create	14
Download or listen to music	64

Download or view movies	30
Download or play online with video games	10
Find new friends through the use of social networks	11
Chat with friends / to (Chat, videoconference, email, etc)	56
Download programs or applications from the Internet	29

Source: Researchers

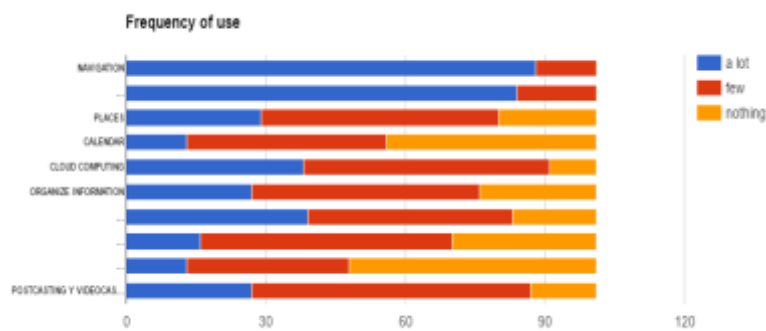
60% of the respondents dedicate "a lot" time to the search of information at the professional level while 60% reviews information of a professional nature, the use of social networks has a 56%. In the use of social networks, the most accepted is Facebook, followed by Google +, WhatsApp the least used is the social network Twitter.



Graphic 2: Level of use of social networks

Providing computer equipment and Internet Access does not always guarantee that students use these resources in an adequate manner, especially in the academic field, for this reason the respondents were consulted on the use of computer tools for processing information. It is observed that a high number of respondents use different browsers like Firefox, Internet Explorer, while very few respondents use Cloud Computing platforms to process information online such as spreadsheets and documents.

There is little knowledge of the use of tools for the development of interactive presentations such as Prezi, Slideshare. While for the use of information respondents claim to use search engines such as Google Books and Google Scholar, with a level of domain "a lot", from this wondering about the use of the Zotero add-on for online bibliographic management, 51% do not know the existence of the complement, 38.6% "few" handle the complement. In the following graphic we can observe the level of uses of the tools and computer applications in the scope of search and processing of the information.



Graphic 3: Frequency of use

Regarding the management of Cloud Computing platforms, respondents do not know the advantages of using these platforms for information management, 53% qualify as "a lot" the management of these platforms, this is a weakness in our environment, there are currently studies where they suggest adding the Cloud Computing content as a subject within the study program. [14] The use of social networks in academic activities was explored, finding that 86% "nothing" and "few" use social networks to solve academic problems, there are now a number of educational social networks that offer spaces for learning in different Knowledge areas such as English language learning in virtual communities.

## V. Conclusions

- The availability of technologies is not a limitation for students entering the career, the main problem is to explore the use of ICT in educational processes.
- The lack of mastery of educational computer applications is a limitation for a correct use of computer elements such as mobile devices, computer applications, cloud computing platforms to carry out educational activities.
- Students spend a lot of time using social media for leisure and entertainment.
- Currently the use of ICT is considered as the cross-cutting axis to develop the educational process regardless of the career they pursue. The books are digital, the most updated libraries are online.
- There are new mobile applications every day in education. The number of people accessing the Internet is exponential on the university campus.

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