Bauru School of Dentistry Tele-Health League: an educational strategy applied to research, teaching and extension among applications in tele-health

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ABSTRACT

Tele-health is more than an innovative alternative; it is an excellent tool that enables access to health and education in health, making it possible to minimize distances, optimize time and reduce costs. Based on these advantages, some Brazilian Universities have used these actions in strategies of education, research and extension, aiming at the application of Tele-health in Brazil. In that way, the Bauru School of Dentistry - University of São Paulo (FOB-USP) has applied the use of information and communication technologies in health by means of a "Tele-Health League" (TL), in order to diagnose, prevent and treat diseases, in addition to educate the population and health services. Objective: The present study aims to introduce the characteristics of the Tele-Health League of FOB-USP, as well as the development of its projects. Material and Methods: The Tele-Health League consisted as a Diffusion Course approved by the Provost of Culture and Academic Extension of the University of São Paulo. It is composed as a large group enclosing professoriate coordinator, academician principal, contributing professors and league members, those, diversified between undergraduates students, graduated, health employees, technology and information areas. The participant members are evaluated by the presence frequency (minimum of 85%), and by the performance of tests and paperwork about the theoretical content provided. Results: In four years of activities, the TLFOB-USP obtained a high satisfaction index (90%), an increased number of vacancies due to the interest to become a member, more commitment of the professors of the University and the accomplishment of association with other Brazilian leagues. It is emphasized that the approval percentage of the course results in approval from approximately half of its members. Also, it is important to identify and repair the causes related to the quitting of some members. Conclusions: The results showed that the TLFOB-USP members, adjoining to the professor's participants, develop projects in Tele-helth, in Tele-aid and Tele-education areas, thus resulting in the involvement of the University and the community.

Key words: Distance education. Telemedicine. Interdisciplinary communication.

INTRODUCTION

Based on the distribution and education heterogeneity of the professionals of the health area on the different regions of the country, the broad extension of the Brazilian territory, the irregular distribution of doctors and specialists, as well as the diversity of the quality and availability of health services in the country, recent studies[5,14-16,20,27-28] have focused on the urgent need to develop in Brazil proposals that enable the utilization of Telemedicine in several areas of health.

Telemedicine, in its broad concept Tele-health[1,21-23,25], enables continued education, which enables educating health professionals, despite location and distance, to contribute to a better interdisciplinary and overall expansion of knowledge[29].

However, as more than an innovative alternative, Tele-health is configured as an excellent tool capable to allow the access to health in deprived populations, enhance life conditions of the Brazilian population[2,13,19], minimize the distances and offer assistance services and permanent education to empower the principles of the Brazilian National Health System (Sistema Único de Saúde – SUS): universality, equality, justice, integrality, decentralization and social participation[10].

The concepts and techniques of Distance Education and Tele-education, conceptualized as one of the sides of Tele-health applied to research, education and extension are rapidly developing in all areas of knowledge, mainly in the area of health[4,11-12,24,29]. It represents a deeply cultural and work practice change that must bring improvement for all health professionals.

Currently, the undertaking in educational programs on Tele-health, its technologies assistance and the modern options of graphic designs, have changed considerably the interaction of schools and its students, researches and community[3,6,8,17] (Figure 1), which makes it possible to obtain higher levels of communication[8,13,17,24]. As result of this information, the distance stopped being a highly critical factor to the assistance of health professionals and the application of education, mainly in isolated areas[2]. Thus, it is possible to exchange knowledge between professionals and improve the assistance to the patients and their community[6-7].

According to the increasing demand of the applications of information technologies and communication in the health service it is a tendency that, in the near future, it will be necessary for professionals to have broad knowledge of these technologies. Thus, Tele-health promotes to the students the experience shared with multiple Universities, Schools and communities as an essential and advanced part of their process apprenticeship[9]. The moment of education of the student in graduation and post graduation is crucial.

In this perspective, some Brazilian Universities such as the University of São Paulo, the Federal University of São Paulo, the State University of Campinas, and the Federal University of Rio Grande do Sul and the Federal University of Pernambuco, have taken action to disseminate Tele-Health in Brazil[9,26].

The Bauru School of Dentistry of the University of São Paulo (FOB-USP) pursued enabling the information technologies and the communication that allows the diagnose, the prevention and the treatment of diseases, beyond the education of the population and the health services by means of the "Tele-Health League of the FOB-USP" (TLFOB-USP) that is recognized as an Academic Extension Course,

Figure 1- Study Object, CD-ROM Virtual Man Voice Assessment and Virtual Man Hearing Assessment

properly approved by the Provost of Culture and Academic Extension of the University of São Paulo, as a Diffusion course.

OBJECTIVES

The present study aims to introduce the characteristics of the Tele-health League of FOB-USP, as well as the development of its projects.

MATERIAL AND METHODS

The TLFOB-USP was founded in 2007 as an initiative of the Tutorial Education Program (PET) in Speech-Language Pathology and Audiology; it was the main proposal of the program. The TLFOB-USP formed the program in an interdisciplinary manner based on the Tele-aid and Tele-education actions, to make it capable to be applied, mainly, in Speech-Language Pathology and Audiology and Dentistry.

Nowadays, it is composed of 100 components, titled "League Members," which are being constituted by an academic student board of graduate and post-
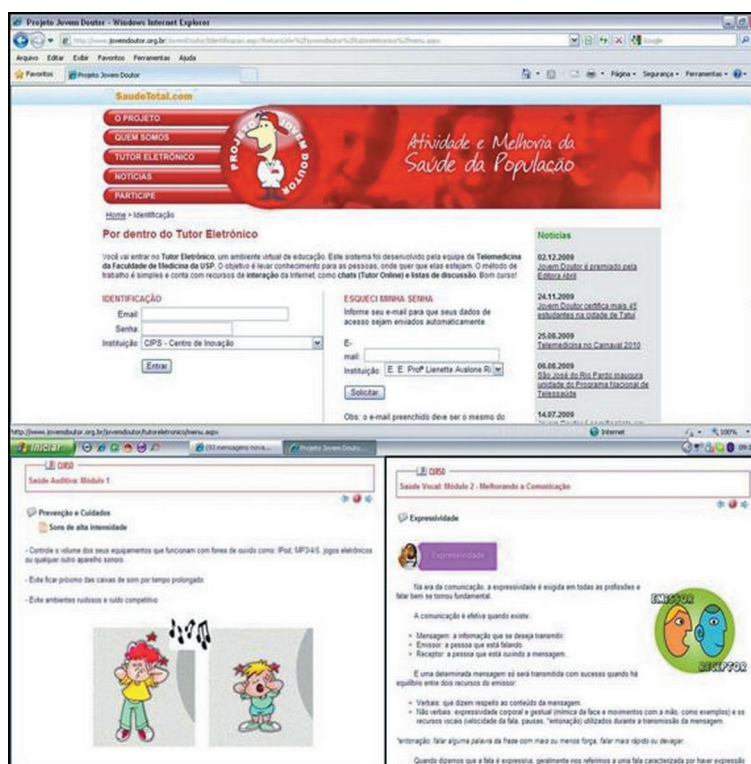

Figure 2- Virtual learning environment (Cybertutor) used in the Young Doctor Project

Figure 3- Production chain in health, knowledge and value hierarchy of the university to the community

graduate students on the positions of chairman, head treasurer and head secretary; a professor board of a professor coordinator and one substitute; a professor advisory of 20 professors; assistance committee subdivided into a publicizing committee, human resources committee and scientific and projects committee of 24 graduation academics, as well as scholars of the Tutorial Education Program (PET) of the Speech-Language Pathology and Audiology and Dentistry courses.

Therefore, the TLFOB-USP spans the graduate and post-graduate courses, professors and employees of the Bauru School of Dentistry – FOB-USP, the post-graduation courses and the internship of the Hospital for Rehabilitation of Craniofacial Anomalies (HRAC). The selection of the participants is achieved every year at the first semester by the means of the application of a test after the presentation of an introductory course.

The TLFOB-USP has specific goals: 1) to develop and publish scientific studies in Tele-health conducted by the coordinators; 2) to organize monthly meetings in which lectures, seminars, panel discussions and workshops are given by professors and/or by professionals or the League members; 3) to accomplish the distance activities settled by the tutoring of the professors involved; 4) to conduct the actions of Tele-aid implemented at the Campus of Bauru of the University of São Paulo; 5) to facilitate the implementation of distance education in the units assisted by FOB-USP, and 6) to support the projects developed by its Tele-health group in an interdisciplinary approach.

RESULTS AND DISCUSSION

Presence and distance activities were performed following a programmatic content proposed yearly. Specific themes included basic and advanced informatics applied to health; innovations related to communication; interactive Tele-education; Tele-aid and second formative opinion; advanced seminars; Tele-health to support Health Politics and Education in Brazil, completing a 120-hour workload. The participants are constantly evaluated in all activities proposed by an evaluation of their performance considering the criteria: assiduousness; relationship with the professors, colleagues and patients; punctuality; personal presentation and commitment. Moreover, the participants are evaluated by tests about the theoretical content given and by the presentation of written papers developed in workshops. At the end of the process, the approved members of the Extension Course of TLFOB-USP receive a certificate of approval and conclusion given by the Provost of Culture and Academic Extension of the University of São Paulo.

The acquisition of knowledge may be performed in different ways, such as presence and by distance. Moreover, distance education is becoming more recognized by its countless benefits such as rapid information access, speedy updating, supervised apprenticeship, flexibility with the research, and availability of tools, as well as the advances in technology communication and information[18]; it is expected that the members of the TLOB-USP will have complete formation and access to presence and distance activities at the end of the course, with innovative experiences from the development of projects in Tele-health, since such activities have increased considerably and the perspective that it enables a globalization of the health knowledge[15].

In this way, the member participants of the League have developed, jointly to its professors, activities that comprised research, teaching and extension projects in Tele-health. For example, projects have included "Babies Portal", "The Virtual Man - Hearing Assessment", "The Virtual Man - Personal Sound Amplifier", "The Young Doctor Project", "Distance Capacitating Courses", "CD and DVD development – orientations to health patients and professionals", and "Capacitation of Health Community Agents and Participation in the Tele-health Program of the São Paulo Division" (Figure 2).

Thus, the projects developed by TLFOB-USP, mainly in Speech-Language Pathology and Audiology, are real examples of the application in Tele-education and Tele-aid.

The development and achievement of the projects and programs in Tele-education accomplished by the TLFOB-USP introduces the principal characteristic of "Hierarchy of the knowledge" (Figure 3). This proposal characterizes the formation of a productive health chain, in which every individual is important in achieving a global project. The goal is to prevent diseases and facilitate social reintegration of people that possess disease[6]. The focus is mainly those diseases that result in communication disorders, such as hearing impairment, malformation, trauma, and others.

In this perspective of Distance Education and Interactive Tele-education, the members of the League, professor coordinators, and the community created a collaborative network of apprenticeship in health.

In conclusion, it is important to highlight that in four years of activities of the TLFOB-USP has achieved good results in an increasing and satisfactory manner; the interest to improve enlarged the number of positions from 72 to 100. It is also emphasized that a higher involvement of the professors of the FOB-USP occurs as well as the association with other institutions by means of the Telemedicine and Tele-health Leagues all over

the country.

Overall, it is verified that the occurrence of a high satisfaction index of the activities offered by TLFOB-USP over these years is an average of 90%. Nevertheless, the percentage of members approved at the end of the course has resulted in approximately 50% of the total of the participants; a minimum presence frequency of 85% sum to achieve distance activities is necessary.

CONCLUSION

The purposes of the TLFOB-USP are being reached in a gradual and satisfactory manner, which makes it important identify and repair the causes relative to the quitting of some participant members. Still, the importance of the involvement of the University in the development of projects that bring the students closer to the community once more was verified, which emphasizes their role in expanding the knowledge and improvement of the population's quality of life.

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