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## *Innovation and Technological Interaction at the School of Nursing- USP*

**Heloisa Helena Ciqueto Peres<sup>1</sup>, Maria Madalena Januário Leite<sup>2</sup>**

*With the aim to make Education, Research and Extension feasible in harmony with scientific and technological development, the Escola de Enfermagem at Universidade de São Paulo (EEUSP) became concerned with developing the virtual learning laboratory, since it is an educational environment for practical teaching and for the development of group and individual teaching, besides being a center for the production of nursing knowledge and support in creating pedagogical material.*

*Hence, EEUSP created a virtual learning lab located on the third floor of the EEUSP library, with an area of 365 m<sup>2</sup>, and saved no effort to equip it with modern technology resources. To do this, initially, the Pro-Rector of the Undergraduate Program provided the support with the Program for Valuing Undergraduate Studies, research support institutions and support from the Telemedicine class at Faculdade de Medicina da USP (FMUSP).*

*Therefore, in 2004, EEUSP held its first videoconference, promoted by the Information Technology in Health and Nursing Work Processes class, in the Nursing Graduate Program (NGP), and, currently, the faculty often use videoconferences for teaching, research, extension, and also for permitting national and international professors to participate in the presentations of master theses and doctoral dissertations.*

*In undergraduate teaching, the first experience was in Nursing Administration, a class that, since 2005 and through videoconferences, has promoted the interaction between students, faculty, and nurses from different internship areas. This class also provided students with the experience of practicing the second opinion in nursing strategy with nurses from the University Hospital at USP, with the theme: Decision Making Process, using videoconference and chats.*

*In terms of research, the Grupo de Estudos e Pesquisas de Tecnologia da Informação nos Processos de Trabalho em Enfermagem (GEPETE) [Group for the Study and Research in Information Technology in Nursing Work Processes], with the CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico - Council for Scientific and Technological Development), promoted the first meeting of the Sociedade Brasileira de Informática em Saúde (SBIS) Brazilian Society for Informatics in Health, by means of videoconference, using videostreaming (the transmission of audio and video by Internet in real time or on demand).*

*Factors such as this experience, the consolidation of the partnership with the Telemedicine class at FMUSP, the interaction between the Telemedicine team and the Informatics team at EEUSP, the implementation of the Programa Nacional de Reorientação da Formação de Profissional em Saúde (Pró-Saúde) dos Ministérios da Saúde e Educação (National Program for Reorientation of Professional Education in Health of the Ministries of Health and Education), the technology training for faculty and collaborators at EEUSP, were essential factors to establish a virtual learning environment, thus becoming the Centro de Estudos em Telenfermagem – EEUSP (CETENF/EEUSP) (Tele-nursing Study Center).*

*Opened in May 2007, it is an academic and interdisciplinary Center and covers teaching institutions and local, national, and international health organizations. It has the aim to provide the use of telecommunication and computer technologies in research, education, management, and nursing care.*

*The CETENF/EEUSP has the following objectives: to develop research in the areas of Telenursing and Telehealth; socialize products and investigation processes, fostering the internship with study and research centers in the areas of Tele-nursing and Tele-health; to develop distant education technologies; to support permanent education; to train faculty in using Tele-nursing; to promote the formation of a nursing facilitators/educators network, and to establish partnerships between national and international teaching and health institutions.*

*The CETENF/EEUSP has two virtual learning laboratories that permit students to use videoconferences to discuss clinical cases with professionals and professors that are distant physically. The EEUSP Tele-outpatient clinic is located within these multidisciplinary learning environments, and is equipped with four health computers that integrate the Telenursing Project – second formative opinion – in nursing and management and health sustainability, in the partnership with the Telemedicine class at FMUSP, which has the purpose to debate, hold lectures, case studies, as well as to teach techniques and specific procedures, with the Basic Health Units in the State of São Paulo.*

*The laboratories also offer learning materials to understand procedures and the human body, which include the Virtual Man, a set of dynamic images created using 3D graphic computer technology ([www.projetohomemvirtual.org.br](http://www.projetohomemvirtual.org.br)), as well as Internet-based virtual learning environments, which optimize learning and increase the interactivity with peers, professors and nurses.*

*There is also a Future Classroom that permits students and professors to move and share the educational material at real time during classes. To do this, wireless and videostreaming (transmission of audio and videos by the Internet on demand and at real time) technology are used along with videoconferences. In another environment there is a study and research station that permits to have webconferences and use Internet Protocol-based telephone (IP Voice or VoIP) using XML technology (eXtensible Markup Language). The strengths of these equipments will be analyzed regarding how information and data banks are shared*

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with the aim to optimize nursing work. One of the main possible applications is to use the phone to provide fast access to the stock of medications and patient records (which registers the prescriptions and times of medication, as well as the evolution of patient's health condition). The phone also makes it possible to hold audioconferences at zero cost using the Internet.

The Portal da Estação de Trabalho do Núcleo de Estudos e Pesquisa sobre Recursos Humanos da EEUSP (NEPRH/EE/USP) (The Work Station Portal of the EEUSP Center for Study and Research on Human Resources) with the Rede de Observatório de RH em Saúde (Health HR Observation Network) is also part of the CETENF-EEUSP. It integrates the Pan-American Health Organization (OPAS) work stations, which comprise the virtual library and the team of researchers and their respective work. The classes and lectures are accessible through videostreaming, chats and forums.

The CETENF/EEUSP projects have resulted in theses and dissertations in this field, besides other undergoing studies that receive support from FAPESP (Fundação de Amparo à Pesquisa do Estado de São Paulo), CNPq and OPAS.

The participation in the the Ministry of Health project: Projeto de Telemática e Telemedicina em Apoio à Atenção Primária –Telematics and Telemedicine to Support Primary Care, should be highlighted, in which proposals for interactive teleducation and formative second opinion specialized in primary care nursing were developed together with the Núcleo de Telessaúde de São Paulo (São Paulo Telehealth Center). The main purpose of those proposals is to improve Primary Care in the Single Health System, by enhancing the capacity of the nursing team that uses the Family Health Strategy, using technology to promote continuous education among the professionals.

In this sense, and as coordinators of the CETENF/EEUSP, we hope this Center contributes to implement an online corporative education of the nursing team from an emancipating perspective; to build collective knowledge in Telehealth, Telenursing and Nursing Informatics; to develop new distant learning methodologies, which will create new knowledge and evaluation criteria; and, most of all, to educate nursing students (undergraduates and graduates) with the necessary competence to work in a continuously changing world, preparing nurses for the technological challenges posed by health care, in management and in determining ethical and scientific frameworks, prioritizing the human interaction that takes place, especially, in nursing work.