

The use of new information and communication technologies for medical residents training and continuing education in Veracruzana University – Veracruzana Network of Telehealth

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Abstract

The Veracruzana University has nineteen educational programs of medical specialties and makes use of the New Information and Communication Technologies (NICT), using online platforms (Learning Management Systems or LMS) and webconference, in its formation. Thus, we align to the Strategy and Plan of Action in eHealth implemented by the Pan American Health Organization, which provides the application of information and communication technologies for learning (eLearning) as one of the substantive components and which can be used to improve the quality of education, increase access to it and create new and innovative forms of learning available to more people. In this report we present the different strategies and actions done to the strengthening of training processes of doctors enrolled in medical residency (specialties) and strengthen processes of continuing education aimed at health personnel integrated into the workplace.

Keywords: Distance Education; Knowledge Management, Medical Residents, Information and Communication Technologies.

Resumen

El uso de las nuevas tecnologías de la información y comunicación para la formación de residentes médicos y educación continua en la Universidad Veracruzana – La Red Veracruzana de Telesalud

La Universidad Veracruzana tiene diecinueve programas educativos de especialidades médicas y hace uso de las Nuevas Tecnologías de la Información y Comunicación (NTIC), utilizando plataformas en línea (learning management systems, o LMS) y videoconferencia vía Web, en su formación. De esta forma, nos alineamos a la Estrategia y Plan de Acción en eSalud implementada por la Organización Panamericana de la Salud, la cual contempla la aplicación de las tecnologías de la información y la comunicación al aprendizaje (eLearning) como uno de los componentes sustantivos y que puede utilizarse para mejorar la calidad de la educación, aumentar el acceso a la misma y crear formas nuevas e innovadoras de enseñanza al alcance de un mayor número de personas. En este informe damos a conocer las diferentes estrategias y acciones realizadas para el fortalecimiento de los procesos formativos de los médicos que cursan residencias médicas (especialidades) y fortalecer procesos de educación continua dirigidos a personal de salud integrado al campo laboral.

Palabras-clave: Educación a distancia, Gestión de Conocimiento, Residentes Médicos, Tecnologías de la Información y Comunicación.

Resumo

O uso de novas tecnologias de informação e comunicação para treinamento e educação continuada de médicos residentes na Universidade Veracruzana – A Rede Veracruzana de Telesaúde

A Universidade Veracruzana possui dezenove programas educacionais de especialidades médicas e utiliza as novas tecnologias da informação e comunicação (NTIC) por meio de plataformas online (Learning Management Systems – LMS) e videoconferência via Web, em sua formação. Assim, está vinculada à Estratégia e Plano de Ação em e-Saúde implementada pela Organização Pan-Americana da Saúde, que considera a aplicação das tecnologias da informação e comunicação na aprendizagem (eLearning) um dos seus componentes essenciais, o qual pode ser usado para melhorar a qualidade da educação, aumentar o acesso e criar novas e inovadoras formas de ensino ao alcance de um maior número de pessoas. Neste informe, são apresentadas as diferentes estratégias e ações desenvolvidas para fortalecer os processos de formação de médicos inscritos em residências médicas (especialidades) e os de educação continuada voltados para o pessoal de saúde integrado ao mercado de trabalho.

Palavras-chave: Educação a distância; Gestão do Conhecimento, Médicos Residentes; Tecnologias de Informação e Comunicação.

Being consistent with eHealth strategies and particularly with teleeducation, established by the World Health Organization and the Pan American Health Organization, the General Directorate of Postgraduate Studies Unit of Veracruzana University, through the Coordination of Medical Specialities, generates a network of teleeducation consisting of hospitals and university campus of Veracruz State whereby coordinators, professors and residents of medical specialties interact and manage knowledge through clinical sessions and online courses, using the Eminus System of Education Distributed V3.0 (Figure 1) which is a platform that generates virtual classes with access to interactive contents managed by the professor, supported by a videoconferencing system. Through these tools based on NICT, professors and postgraduate medical students have the applications that allow to be online in real time or deferred and develop the teaching process – learning in a virtual environment in a flexible manner.



Figure 1 - Access to the Distributed Education System V3.0 Eminus.

The updating curriculum for medical residencies at Veracruzana University in 2012 contemplated the use of NICT to enable the Virtual Campus (Figure 2), which is a space that allows making available for the academic and student body the resources of distance education, opening up the possibility of self-management of the knowledge without constraints of time and space.

As a first step in implementing the use of these tools it was realized the training for using the Eminus Plataforma V3.0 and Blackboard Collaborate to 96 professors located in five regions that operates Veracruzana University (Coatzacoalcos, Orizaba, Poza Rica, Xalapa and Veracruz) and 16 Heads of Teaching from hospitals that host medical residents. (Figure 3)

Through these tools the following courses and seminars were made available to students and professors: Patient-Centred Clinical Method, Research Methodology, Selected

Topics in Medicine, Systems and Health Services, Seminar of Integration in Medical Care and Seminar of Certification. For the professors it was offered the Educational Quality Course in Academic Programs of Medical Specialities.



Figure 2 - The Virtual campus.



Figure 3 - Training for the use of Eminus Platform V3.0 and Blackboard Collaborate for teachers and heads of teaching.

In the Virtual Campus, the student has the possibility to make use of various tools for self-management of knowledge, in which one of them is the Virtual Academic Forum, through which research projects are disseminated in the area of health. This was enabled from the year 2013 having in this date more than 500 papers presented and available for consultation. (Figure 4) The virtual campus also provides students the access to virtual platform Eminus V3.0, virtual library, email and link to other sites of interest to their training.

From the second semester of 2012, the Coordination of Medical Specialities strengthened even further educational processes with the creation of the Veracruzana Network of Tele-Education in Health (RVTES), for which he was advised by the National Center of Technological Excellence in Health (CENETEC), who trained the staff of Information Technology and Heads of teaching from hospitals, medical head-

quarters residences of Veracruz State. The main objective of RVTES is to enhance the processes of dissemination of the knowledge in public health and medicine through weekly videoconferences that give priority to the submission of papers for masters degree in Public Health and Medical Residence. Its activities are integrated into the catalog of services and educational materials to teleeducation to national level and they are shared with various hospitals, universities from the country and abroad. (Figure 5)

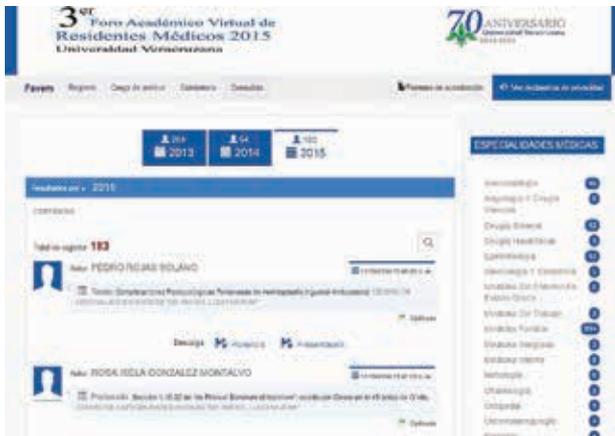


Figure 4 - Virtual Academic Forum of Medical Residents.

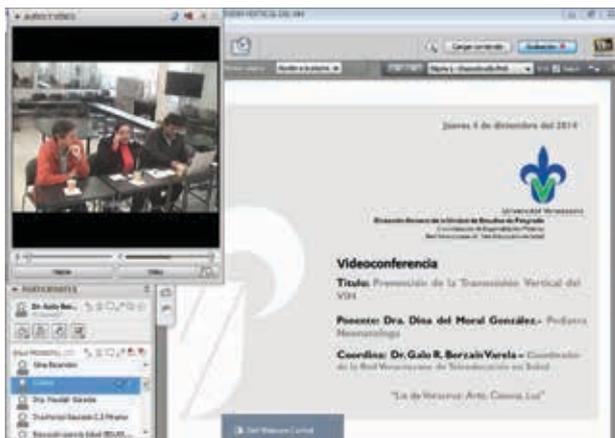


Figure 5 - Videoconference through Veracruzana Network of Teleeducation in Health.

The virtual forum authorized in 2013 recorded the participation of 282 medical residents in which the freshmen submitted their protocols, the ones from the second or third year submitted the progress of their research and the residents from last degree their thesis. In the second edition of the Forum during 2014, there was a participation of 389 research papers. In the Forum of 2015 (third edition) has so far 163 research papers reviewed and accepted from 461 participants. (Table 1).

Table 1 - Number of researches registered by specialties in the Virtual Forum

Medical Speciality	Number of researches registered		
	2013	2014	2015
Anesthesiology	45	62	14
Angiology and Vascular Surgery	0	1	0
General Surgery	20	33	11
Epidemiology	6	14	1
Gynecology and Obstetrics	27	21	17
Emergency Medicine	7	8	4
Occupational Medicine	16	6	2
Family Medicine	84	159	98
Integrated Medicine	3	5	3
Internal Medicine	19	30	5
Ophthalmology	4	4	2
Orthopedics	12	2	1
Otolaryngology	1	3	2
Pediatrics	26	26	2
Radiology and Image	12	6	0
Urology	0	5	1
Total	282	389	163

From 2012 to 2015, it was opened a total of 279 virtual classrooms in Eminus, being offered through these virtual classrooms the courses of Bioethics, Evidence Based Medicine, Patient-Centered Clinical Method, Research Methodology, Seminar of Integration in Health Care, Seminar of Certification and Systems and Health Services and Selected Topics of Medical Specialities as well. (Table 2).

Table 2 - Residents registered by licensed course in virtual class Eminus from 2012 to 2015

Subject Name	Number of residents registered
Bioethics	246
Medicine Based on Evidence	58
Clinical Patient-Centered Method	167
Methodology of Investigation	503
Seminar of Integration in Health Care	998
Seminar of Certification	45
Systems and Health Services	298

The RVTES has made from 2012 six semiannual cycles of videoconferencing sessions in topics of interest to the community of medical specialties and public health, with the participation of State Health Services, Medical Schools

and Universities in Mexico, the United States and Uruguay. In 2013 through it, it was realized the Course of Medical Practice Based on Evidence, addressed to Heads of Teaching from Health Services Hospitals from Veracruz that include medical residencies.

The sessions are transmitted from the facilities of the Public Health Institute of our university and where we count with an equipped room for videoconferencing (Screen for videoconferencing, Videoconferencing Codec, Video projector, Handheld microphone, Speakers and Network node). We have recently implemented a room at the headquarters of the Coordination of Medical Specialities with a Web solution.

As an example of the managerial work done with other institutions, it is worth mentioning the bond we had in October 2014 with the University of Florida due to the alert of Ebola and the one that the theme “Ebola was addressed: What we know and what are we doing about it” thereby, the basis for further collaboration. (Figure 6) Currently, the residents of Internal Medicine from Veracruzana University are having interaction with residents from the University of Florida through presentations of clinical cases through videoconferences.

In conclusion, we can ensure that the use of NICT in the training of medical specialists at Veracruzana University, it is accepted more and more with confidence, as they are an option that increases access to education. Generating the Virtual Campus and Veracruzana Network of Teleeducation in Health projects, has strengthened the processes of knowledge management while increasing the credibility of educational models supported by NICT, as in teachers as in students, besides becoming a means for the linking with other programs of medical residency training in their own country and abroad.

In turn, it opens possibilities for research in terms of the impact that the use of these technological tools can have in the training and continuing education of medical specialists.

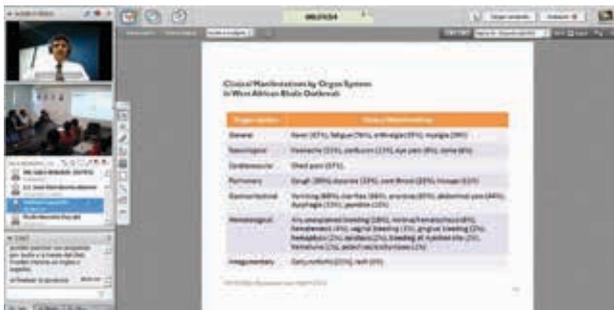


Figure 6 - Videoconference theme “Ebola: What we know and what are we doing about it” with the University of Florida.