

MANAGEMENT IN HEALTH MULTIMEDIA / NURSING PRODUCTIONS

Adriana Crespo

Student of the Multiprofessional Health Master - Universidade do Estado do Rio de Janeiro -UNIRIO
Av Pasteur: 296, EEAP, Urca, Rio de Janeiro, Brasil, CEP: 22290-240
E-mail: adrianarespo@grupocoi.com.br

Prof Dr Annibal Scavarda

Production Engineering Professor Ph.D. – UNIRIO (Universidade Federal do Estado do Rio de Janeiro)
Address: Av Pasteur: 458 – CCET sala 403N, Urca, Rio de Janeiro, Brasil , CEP:22290-240
E-mail: annibal.Scavarda@unirio.br

Patricia Passos

COI Group Nursing Manager– Rio de Janeiro
Address: Av da Américas 6.205 loja E, Barra da Tijuca, Rio de Janeiro – RJ CEP 22793-080
E-mail: patriciapassos@grupocoi.com.br

Prof Dra. Maria Jaqueline Elicher

Geography Professorr Ph.D. – UFF (Universidade Federal Fluminense)
Professor I at the Tourism Course -UNIRIO
Av Pasteur: 296, EEAP, Urca, Rio de Janeiro, Brasil , CEP:22290-240
E-mail: queijomelado@hotmail.com

Prof. Dr Luiz Carlos Santiago

Nursing Professor Ph.D. – UNIRIO (Universidade do Federal do Estado do Rio de Janeiro)
Address: Av Pasteur: 296, EEAP, Urca, Rio de Janeiro, Brasil , CEP:22290-240
E-mail: luisolitrrio@gmail.com

ABSTRACT

The technological development in the Nursing area faces critics and reflexive discussions about its application in concern to the patients' needs and the humanization maintenance. Several resources offered by the information technology help the nurses in their job, developing in the professional the ability to produce and use the multimedia image resources. Identify the diversity of information technology production and multimedia by nurses in their place of work. Integrated revision of literature, with quantitative approach and descriptive manner. The data gathering contemplated databases of Health Virtual International Literature, obtaining 27 articles published in the last five years. The articles analysis presented several health issues, and the criterion for multimedia formulation were detailed e can serve as example for professionals who intend to make a multimedia piece

Keywords: *Technological management, health multimedia, Nursing orientation.*

Acknowledgment: *The authors would like to thank the help of CNPq and FAPERJ*

INTRODUCTION

The image studies in its most diverse forms, and content, movie, video and photography, have been contributing a lot for the transmission the the most variate areas of human knowledge, as a documental source or research or as tools for social, political and cultural intervention, this ease has been approaching more technical knowledge areas and the health area, specifically Nursing, which faces a diverse clientele who needs care and orientation for their health maintenance or understanding the health processes.

The multimedia usage facilitates the transmissions of important information done in the Nursing area. The encrypted language has become a current and facilitator tool in the transmission and understanding of important information about health and orientations performed by Nursing professionals, making it clearer and enabling the production of subjectivities that help to decode and make possible transmission of the object, enriching information.^[2]

Because of technological advances, the information transmission through this type of message has become an excellent resource in the education and health field, reinforcing its disciplinary value. Its usage enables to organize and transform the information into virtual data an explanatory of great help to health professionals in demonstration of practices and procedures concerning the area.^[2]With a digitalized image, the simulation can be infinite, making the message closer to real, being able to prove something, with expressive creation possibilities.^[2] An important advance in the usage of images provided by the technological development is the Information and Communication Technology (ICT), and this brought the interactive multimedia, a set of images, sounds, that boosted the information transmission, enabling wide disclose, and facilitating health education activities, all over the world..^[3,4]

Every audiovisual technology has a level of information which seeks the transmission of messages in this sense, the information as a message emission technique presents three groups: Somatic, Midiatic and Digital. Understanding the Somatics as the ones that implicate in effective presence, and the production of signs as the use of speaking, the dance, the singing or instrumental music.^[4] The ones understood as Midiatic technology, fix and reproduce the messages in order to ensure them wider range, better diffusion in time and space, like painting, traffic lights, tapestry, for example. Transmitted to the media through the communication outlets, and the reproduction of signs and labels, the stamps, for example, just like the drawing, as a protomedia, i.e., a stage before the media, and has the goal of reproducing and transporting messages. ^[4]

When starting a technological production to help the transmission of a message in the health education field, for example, the author of the creation should stick to facts and goals to be reached, because the message must be enlightening, and not be a target for more doubts. For doing so, studies and testing methods are necessary, in order to evaluate the coverage, goal and resoluteness for the production.^[4,5]

The preparation of an interactive multimedia product is not just about a simple product with technological capacity, human, but a process that has been moving forward through time, until reaching the current dimension of high technology, which became important for the whole society^[3,4]

The usage of computers as a branch of Computer Sciences has been going through an inexhaustible improvement process, resulting in an enormous scenario of utilizations and appropriations in our own lives. From the esthetic capacity of creation of musical notes, passing through fantastic discoveries of new mathematical theorems, the formulation of new companies management models, to the sophisticated surgical techniques, we have a diversity of slopes and horizons for technical use. The very working concept of the contemporary studies admits the need for a restructuring and capacity in computerized wires of its public and political agents. ^[4]

The usage of these new methods to improve the nursing service added to the considerable information heap not only assistential and management, but especially in the health education field, these are abilities that will corroborate for the use of information technology. ^[5]

The Computational Revolution contributed for the development of multiple abilities and amplification of the mental capacity. The technological advances caused changes in many areas of modern life, once every organizations use any type of technology to execute their operations and make their tasks. ^[5,6]

The use of new technologies by Nursing, in its different fields, with the technology already available, can reduce costs and enable better treatment to the patients, however in any case the technology should be taken as a substitute to the professional but, instead, used as a valuable tool to help planning the specific and general Nursing actions, according to the circumstances, contexts and singularities of every and each situation, patient, or even those which concern to teaching activities, research and management.^[4,6]

Such innovations show that Nursing must be enabled to dispose of these tools seeking to introduce a set of didactic strategies which go in this direction. Because the computer is progressively put into the world of contemporary work relations. The computers technology is each once more determinant for everyone, and it seems the alliance between the technological knowledge and the professional practices, and it will be each once more required people willing and prepared to this challenge, including the nurses. ^[5]

Multimedia is certainly a path for nurses to approach topics for health promotion, disease prevention, and also the acquisition of information and the Nursing interventions. ^[7]The Computer Assisted Instruction can improve the user's abilities to change information with the computer, preparing the future role in a technological society, where the technology applied to education must be possible from the planning to the execution of the educational system, in order to enable a systematic knowledge set. Computerizing in Nursing becomes an indispensable subsidiary, used

not only for data storing, but as a facilitator in the teaching-learning process, not only for professionals but for patients involved in the process as well. ^[6]

The possibilities technological possibilities for the nurses to work with are countless. When transmitting educational messages to their patients, time and costs can be reduced and the intervention can be more and more effective. The nurses make these possibilities real every day through the technological production. So, intending to construct an informational product for patients using the technological resources, the following question was proposed: What would be the technological productions already made by nurses in Brazil and what would be the steps to construct this technological product?

1- METHODOLOGY

Integrative literature revision, in such databases: Literature in the Health Sciences in Latin America and the Caribbean (LILACS), Medical Literature Analysis and Retrieval System Online (MEDLINE), Cochrane Library and Scientific Electronic Library Online (SciELO). The following descriptors were used: Health Multimedia, and the filter Nursing. The languages searched were Portuguese, English and Spanish. From 2008 to 2014, choosing twenty-seven articles by the end.

The articles reading brought answers to the following research questions: What are the multimedia productions developed by nurses in the past five years? What kind of research was developed for the technological creation of these Multimedias? What are the steps made by the nurses in this technology development?

In order to improve the view and the research's issues analysis the articles were exposed in a demonstrative table.

2- RESULTS/DISCUSSION

The studies' analysis found in the integrative revision (Table 1.) demonstrated the need of a criterious detailing for a multimedia construction, protocols and well funded methodologies applied and tested, focusing the clientele, highlighting how important it is the mobilization of a specialist team to the answers preparation, and also Communication and Marketing professionals, who will conclude and these products' elaboration photo typing. ^[7,8] The criterious work to make these products reinforces the multimedia use in order to transmit health informations, as a path to improve the Nursing practice. ^[9,10,11] However, this communication modality must assure continuity of a receptor group. This visual information tool usage must be measured when it comes to its real benefits to health. The non-visual texts reading involves other senses, even being mainly visual, to attract the various signs integration (through similarity, causality and contiguity in order to create an idea association desired by the spoker. ^[31]

The studies identified in this review showed a theme diversity, prevailing the topics related to the Nursing teaching, media constructed to form the Nursing professional (Table 2.). Maybe because it is a pedagogical practice, widely used in the Academy, and more recently among the patients and family people, becoming one more facilitator tool for the Nurses performance in their area. ^[9]

This theme diversity (Table 2.) demonstrated the many contents that can be used and explored by the nurses in their daily practice. However, the need which emerged for the media elaboration wasn't elucidated in the studies. To make the final product a clarification source that enchants the spoker, we believe it's necessary to run inventories and questionnaires focused on specific clientele before the message elaboration. ^[9,12,13,14,15] It's necessary, before the media construction, to make criterious studies that bring the most important patient's' questions, being necessary the validation of one or more specialist nurses for the development of this work contents, pointing the importance to be a prepared nurse by each one's formation, favorable to the use of new Communication and Information Technology, and it's a must the usage of these technologies. ^[9,16] For doing so, the nurse will be able to use the tool not only to facilitate the one's communication to the clientele, but for their own learning. ^[17,18]

When it comes to applying the media products to the assistance to specific groups of patients, the media productions identified (table 2.) made by nurses are directed to very sick patients, mostly when there's a group o patients with common doubts. Thereby, the tool helped to elaborate the orientation guide, reducing possible computing mistakes and professional practice interpretations, and improving the time for clarifying common doubts to these patients. ^[9,19,20]

The research evidenced that the necessary detailing abundance must take into consideration important aspects such as a proper language to transmit the message, like the orientations to an adolescent about the prevention on

HIV. The young population is more approachable by visual language. Some videos used in different cultures were readapted for a wide use in several languages, passing through different social and cultural classes. [21,22,23,24]

The Multimedia usage can present a language that is universal and without borders, with a range in many languages, transcultural. [12,25,26,27] This domain of the virtual language by the nurse is already an element of social work relations, which must be widely publicized and being an important tool to the work force. [28,29,30,31]. However there is a concern about the usage of interactive tools such as blogs, because its lack of continuity and information maintenance, and ignorance about the source of information. [7]

The multimedias presented are so many, and countless are the practical applying possibilities, like the easy access applications. These tools should not be used in the absence of a specialized professional, and these do not substitute the former and leader professional, but should help the transmission of messages as closer as possible to reality.

3- CONCLUSION

The multimedia products constructed by nurses in the past five years were innovator, embracing, and easy to access: softwares, blogs, Wiki, Webquest, videos, CD-ROOM, e-book, showing several tools that can help to improve not only the nursing professional treatment but the administrative resources usage and professional development as well. Nevertheless, in order to develop and create these tools it's necessary to include subjects that develop this ability in the graduation program, like a subject which covers communication and information technology in health.

In order to create a multimedia the nurses use several kinds of researches, explanatory, experimental, intervention. Reinforcing the need for criterious studies, which follow all the protocols and have well funded goals and with strong evidence in their results, favoring a better treatment of the topic demand when it comes to the elaboration of the message to be transmitted. Responsabilizing the professionals for production because it's a powerful visual communication tool, easily comprehended and elaborated by the receptor.

It's worth pointing that the multimedia has a core or enunciation, which consists of an information and a visual support, and this is the one which makes the message visible. The visual communication support is made by structure, texture, color, form, module, which are transcribed into encrypted messages. [31]

The non-visual reading is one of the senses production mechanisms integrated to other knowledge domains, acting towards an individual general culture. I represents the bond between communication and knowledge, which is, between what is seen, retained, expressed and what can be visualized, ensuring better understanding of the message. [31]

According to the integrative revision, important steps in a multimedia elaboration process can be pointed;

- ✓ Identification of a specific group with common health orientation needs.
- ✓ Questioning about the main doubts.
- ✓ Gathering the doubts.
- ✓ Answer elaboration based on evidences.
- ✓ Guide elaboration.
- ✓ Language adapting, if necessary.
- ✓ Forwarding to Marketing professional for phototyping
- ✓ Testing and approving of the product.
- ✓ Patent register

This study will be useful to those professionals who intend to construct a media, and will help the visualization of projects and recent topics, diminishing duplicated information.

REFERENCES

- MORAN, J.M. *¿Ensino e Aprendizagem Inovadores com Tecnologias Audiovisuais e Telemáticas¿*, IN: MORAN, J. M. et all. *Novas Tecnologias e Mediação Pedagógica*. Campinas: Papirus. 2000.
- ÉVORA, Y. D. M. *O Paradigma da Informática em Enfermagem*. Tese de Livre-Docência apresentada à Escola de Enfermagem de Ribeirão Preto da Universidade de São Paulo, 1998.
- BARRA, DCC. NASCIMENTO, ERP do; MARTINS, J de J; ALBUQUERQUE, GL; ERDMAN, AL; *Evolução histórica e impacto da tecnologia na área de saúde e da enfermagem*, Revista Eletrônica de Enfermagem, v. 08, n. 03, p. 422 - 430, 2006 Disponível em http://www.fen.ufg.br/revista/revista8_3/v8n3a13.htm

- WILKIE,DJ, et al; Reproductive health choices for young adults with sickle cell disease or trait: randomized controlled trial immediate posttest effects *Nurs Res*, 62(5): 352-61, 2013 Sep-Oct.
- PRADO, C et al, Teleamamentação no Programa Nacional de Telessaúde no Brasil: a experiência da Telenfermagem, *Rev Esc Enf USP* ; 47(4): 990-996, 08/2013
- HAUSENBLAS, HÁ, et al; Development and Evaluation of a Multimedia CD-ROM for Exercise During Pregnancy and Postpartum, 70(2): 215-9, 2008 Feb
- VALLI,GP, COGO,ALP, Blogs escolares sobre sexualidade: Estudo exploratório documental, *Rev Gauch Enf*,34(3): 31-37, set. 2013.
- LOPES, A.C.C.; FERREIRA, A.A.; FERNANDES, J.A.L.; MORITA, A.B.P.S.; POVEDA,V.B.; SOUZA, A.J.S.Construção e avaliação de software educacionaisobre cateterismo urinário de demora. *Rev Esc Enferm USP* 2011; 45(1):215-22
- GOMES,AVde O, SANTIAGO, Multimedia interativa em enfermagem,uma tecnologia para o ensino aprendizagem em semiologia,*Rev Gauch Enf*,Porto Alegre(RS), 29(1) 76-82, 2008-mar
- ANDREKO,L,OTLER,A,CHALUPKA,S,ANDERKO,C,FAHEY,C;Web-BasedEnvironmental Health Education: Fish Facts, *J Contin Educ Nurs*; 44(3): 121-7, 2013 Mar.
- CORNELIUS,JB,DMOCHOWSKI,J,LIGHTHFOOL,M,MOORE,M, Text-messaging-enhanced HIV intervention for African American adolescents: a feasibility study,*J Assoc Nurses AIDS Care*; 24(3): 256-67, 2013 May-Jun..
- PONPAIPAN M; SRISUPHAN W; JITAPUNKUL S; PANUTHAI S; TONMUKAYAKUL O; WHILE A.Multimedia computer-assisted instruction for carers on exercise for older people: development and testing,*J Adv Nurs*; 67(2): 308-16, 2011 Feb.
- LO SF; WANG YT; WU LY; HSU, MY; CHANG, SC; HAYTER, M. Multimedia education programme for patients with a stoma: effectiveness evaluation, *J Adv Nurs*; 67(1): 68-76, 2011 Jan.
- JERANT A; SOHLER N; FISCELLA K; FRANKS B; FRANKS P. Tailored Interactive Multimedia Computer Programs to Reduce Health Disparities: Opportunities and Challenges, *Patient Educ Couns*; 85(2): 323-30, 2011 Nov.
- KAVEEVIVITTHAI C; CHUENGKRIANKRAI, B; LUERHA Y; THANOORUK R; PANIJPAN B; RUENWONGSA P. Enhancing nursing students' skills in vital signs assessment by using multimedia computer-assisted learning with integrated content of anatomy and physiology. *Nurse Educ Today*; 29(1): 65-72, 2009 Jan.
- ESCOBAR,CSL; SHEGOG, R; MOSCOSO,-AMR; MAARKHAM C; TORTLERO, LG; PESKIN M; TORTOLERO S. Cultural tailoring and feasibility assessment of a sexual health middle school curriculum: a pilot test in Puerto Rico.*J Sch Health*; 81(8): 477-84, 2011 Aug
- SHNERSON C; WINDLE R; COX, K. Innovating information-delivery for potential clinical trials participants. What do patients want from multi-media resources?*Patient Educ Couns*; 90(1): 111-7, 2013 Já
- GOEL MS; GRACIA G; BAKER DW.Development and pilot testing of a culturally sensitive multimedia program to improve breast cancer screening in Latina women.*Patient Educ Couns*; 84(1): 128-31, 2011 Jul.
- JIBAIA,WML;et alPatient Entertainment education for breast cancer surgery decisions: a randomized trial among patients with low health literacy.*Educ Couns*; 84(1): 41-8, 2011 Jul
- MAKOUL G; CAMERON KA; BAKER DW; FRANCIS L; SCHOLTENS D; Wolf MS. A multimedia patient education program on colorectal cancer screening increases knowledge and willingness to consider screening among Hispanic/Latino patients.*Patient Educ Couns*; 76(2): 220-6, 2009 Aug.
- HTUN KS; KANG HS; KIM WO; PARK S; LEE J; SOK S. [Development of a multimedia learning DM diet education program using standardized patients and analysis of its effects on clinical competency and learning satisfaction for nursing students].*J Korean Acad Nurs*; 39(2): 249-58, 2009 Apr.
- KANDULA,NR;et al *Patient Educ Couns*;The relationship between health literacy and knowledge improvement after a multimedia type 2 diabetes education program. 75(3): 321-7, 2009 Jun.
- KELLEY FJ; KLOPF MI. Second language learning in a family nurse practitioner and nurse midwifery diversity education project.*J Am Acad Nurse Pract*; 20(10): 479-85, 2008 Oct
- SANTOS,SR,Informática em enfermagem: desenvolvmeto de softwere livre com aplicação assistencial e gerencial,*Rev Esc Enferm USP*,44(2)295-301,2010
- BAKEN,S,STONE,PW,LARSON,EL A Nursing Informatics Research Agenda for 2008–18: ContextualInfluences and Key Components, *Nurs Outlook*. 2008 ; 56(5): 206–214.e3. doi:10.1016/j.outlook.2008.06.007.
- KOPPEL,RD, WETTERNECK,T, TELLES,JLKARSH,BT,Workarounds to Barcode Medication Administration Systems:Their Occurrences, Causes, and Threats to Patient Safety, *Journal of the American Medical Informatics Association* ,15(4): 2008
- GONÇALVES, GR, PERES, HHC, RODRIGUES,RDC, TRONCHIN,DMR, PEREIRA,IM, Proposta educacional virtual sobre atendimento da ressuscitação cardiopulmonar no recém-nascido, *Rev Esc Enferm USP*, 2010; 44(2):413-20 disponível em www.ee.usp.br/reecusp em 18/06/2014

- BARRA, DCC,SASSO,GTMD, MARTINS ,CR, BARBOSA,SFF, Avaliação da tecnologia Wiki: ferramenta para acesso à informação sobre ventilação mecânica em Terapia Intensiva, Rev Bras Enferm, Brasília 2012 mai-jun; 65(3): 466-73, disponível em: <http://www.scielo.br/pdf/reben/v65n3/v65n3a11.pdf>, 30/06/2014
- PEREIRA,MCAP, MELO,MRAC, SILVA,ASB,ÉVORA,YDM, Evaluation of a *Webquest* on the Theme "Management of Material Resources in Nursing" by Undergraduate Students Rev. Latino-Am. Enfermagem vol.18 no.6 Ribeirão Preto Nov./Dec. 2010, disponível em: <http://dx.doi.org/10.1590/S0104-11692010000600010>
- FALLEIROS, DP. O Mundo Gráfico da Informática: editoração eletrônica, artes digitais. São Paulo: Futura; 2003, disponível em <http://abpmc.org.br/site/cfoco/cfocov1.pdf>, 17/062014

Table 1- Multimedia Production in Nursing in the Past 5 Years.

Title	Kind of study	Technological Production	Criteria for Multimedia Elaboration
Nursing contributions to the development of the Brazilian Telehealth Support Program	Sistematic Revision	Didatic multimedia for the health professionals to use in the Telehealth Program	Multiprofessional specialized team and communication professionals.
Web-Based Environmental Health Education: Fish Facts	Explanatory descriptive with 121 participants	Enlightening video about the fish consumption	Media specialists, interviews and real cases
Development and Evaluation of a Multimedia CD-ROM for Exercise During Pregnancy and Postpartum	Experimental	Exercises CD-ROM for pregnant and puerperals.	Made after a questionnaire applied by professionals.
Text-Messaging-Enhanced HIV Intervention for African American Adolescents: A Feasibility Study	Longitudinal prospective study with 40 adolescents	Virtual Multimedia for HIV prevention	Made by specialists in adolescents doubts
Multimedia education programme for patients with a stoma: effectiveness evaluation	Randomized experimental, with 102 patients. 46 in the educational multimedia program and 56 in the conventional program	interactive multimedia with stoma patients doubts	The multimedia applying increased the patients implication with care
Tailored Interactive Multimedia Computer Programs to Reduce Health Disparities: Opportunities and Challenges	Integrated Revision on researchs about the approach to poor populations.	Virtual Multimedia orientations to reduce the disparity on health orientations.	Multimedia with health orientations in an accessible language.
Enhancing nursing students' skills in vital signs assessment by using multimedia computer-assisted learning with integrated content of anatomy and physiology	Integrated Revision for Multimedia construction.	Virtual Multimedia for vital signs checking.	Made by specialist teachers.
Innovating information-delivery for potential clinical trials participants. What do patients want from multimedia resources	Quantitative and qualitative / 72 cancer patients.	Virtual Multimedia about clinical tests.	Made with patients doubts.
Cultural Tailoring and Feasibility Assessment of a Sexual Health Middle School Curriculum: A Pilot Test in Puerto Rico	Experimental, with high school students from Porto Rico, proposed for curriculum integration	Virtual Multimedia about sexuality in adolescence. Proposal of a	Cultural adaptation of and already used tool to teach social minority youngest in the US.

		common language among youngest.	
Entertainment education for breast cancer surgery decisions: A randomized trial among patients with low health literacy	Experimental, randomized.	Virtual Multimedia to guide women in initial breast cancer stage about cirurgical options.	Made through women testing. Made by specialists.
Development and pilot testing of a culturally sensitive multimedia program to improve breast cancer screening in Latina women	Experimental applied to 91 women.	Virtual Multimedia about screening and breast cancer early detection.	The video usage represented an increase on the knowledge about the subject.
A multimedia patient education program on colorectal cancer screening increases knowledge and willingness to consider screening among Hispanic/Latino patients	Randomizado, prospective, evaluated the use of media to orientations on colorectal cancer early detection. Semi-structured interviews with two groups.	Virtual Multimedia with informations on colorectal cancer early detection.	The group oriented by the video showed a significant increase on the knowledge about colorectal cancer early detection.
Development of a Multimedia Learning DM Diet Education Program using Standardized Patients and Analysis of Its Effects on Clinical Competency and Learning satisfaction for Nursing Students	Experimental, randomized, control group with 56 Nursing students and 52 in the experimental group.	Virtual Multimedia with information on Diabetes.	After a test, the experimentqal group students had more right answers about mellitus diabetes orientations.
The relationship between health literacy and knowledge improvement after a multimedia type 2 diabetes education program	Experimental prospective	Multimedia with orientations about diabetes to low education level.	After the video exhibition, the patients showed an increase on the knowledge about the disease.
The Effectiveness of a Multimedia Intervention on Parents' Knowledge and Use of Vehicle Safety Systems for Children	Intervention with 418 families participation.	Multimedia with orientations about security devices for children security in vehicles.	After the intervention there was an increase on the informations about children security in vehicles and accidents prevention.
Second language learning in a family nurse practitioner and nurse midwifery diversity education project	Experimental for Nursing professionals.	Multimedia to favor another language study, for a better communication with several patients.	The tool was used several times by students in order to break the language barrier.
Reproductive health choices for young adults with sickle cell disease or trait: randomized controlled trial immediate posttest effects	Controled randomized, applied to 234 patients with sickle cell disease.	Intervention through information in e-bookabout sickle cell disease and its hereditary transmission.	A intervention showed effectiveness to behavior change on the reproduction health of the participants.
Multimedia app in mobile plataform for central venous pressure mensuration learning	Research applied developing a technological production.	Multimedia app in mobile plataform for central venous pressure mensuration	App used in cell phones developed to help Nursing students in the central venous pressure mensuration.

Feasibility of Internet Training for Care Staff of Residents with Dementia: The CARES® Program	Alzheimer specialist professionals construct course.	Educational remote program with orientations about the care to demence patients.	The results suggest that theses programs represent low cost methods to train workers in their work field.
Virtual Educational Propose on newborn cardiopulmonary resuscitation treatment.	Research applied with a technological production goal.	Virtual bear-video, with orientations about the newborn cardiopulmonary resuscitation.	Educational propose for Nursing students.
Virtual Space of a Research Group: the tutor look.	Experience report of the GEPETE members.	GEPETE virtual space, Moodleplataforma.	The virtual space favored the group members interaction.
Evaluation of a <i>Webquest</i> on the Theme "Management of Material Resources in Nursing" by Undergraduate Students	Qualitative research, descriptive exploratory.	WebQuest	The computing resource is favorable to Nursing teaching.
Wiki Technology Evaluation:tool for access to information on mechanical ventilation in ICU.	Quantitative research, descriptive exploratory.	Wiki	The use of Wiki tool was effective to ICU mechanical ventilation learning.
Computing in Nursing: Free Software Development with assistencial and Management application.	Sistematic Study for na information system elaboration.	Software	The work developed encouraged the nurses to apply the care systematization.
Workarounds to Barcode Medication Administration Systems: Their Occurrences, Causes, and Threats to Patient Safet	Randomized prospective.	Software	O study shows the software efficiency, but points the need of improvements for the implementation.
A Nursing Informatics Research Agenda for 2008–18: Contextual Influences and Key Components	Sistematic Revision.	Software	Software that helps nurses in their researchs.
School blogs about sexuality: documental and exploratory study.	Exploratory quantitative, with 11 blogs studied.	Blogs	Investigate, without considering pre-established hyphothesis, a reality whose knowledge is not systematized yet.

Table 2 – Emerging Topics in the Nursing Practice for Multimedia Elaboration

Emerging Topics	N	%
Breastfeeding and puerperium and pregnancy attention	2	8
Cancer	4	16
Health mantainance and accidents prevention	3	11
Adolescents sexuality and HIV prevention	3	11
Teaching and Learnning in Nursing	11	34
Diabetes	2	8
Clarifying about Sickle-cell disease	1	4
Orientation for clarifying on clinical research	1	4
TOTAL	27	100%