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INDEX

Volume 87 / Suppl. 4-2016

November 2016

Health Professions

Special Issue (2-2016)

ORIGINAL ARTICLE: E-LEARNING IN HEALTHCARE

- 5 *Federico Monaco, Leopoldo Sarli, Massimo Guasconi, Emanuela Alferi*
Online access and motivation of tutors of health professions higher education

ORIGINAL ARTICLE: NEW PERSPECTIVES ON NURSING PRACTICE

- 13 *Giovanna Artioli, Chiara Foà, Chiara Taffurelli*
An integrated narrative nursing model: towards a new healthcare paradigm
- 23 *Laura Bertani, Maria Carone, Luca Caricati, Serena Demaria, Silvia Fantuzzi, Alessandro Guarasci, Luca Pirazzoli*
Using the Theory of Planned Behavior to explore hospital-based nurses' intention to use peripherally inserted central catheter (PICC): a survey study

ORIGINAL ARTICLE: NON-PHARMACOLOGICAL THERAPY

- 30 *Ivan Rubbi, Daniela Magnani, Giada Naldoni, Rosaria Di Lorenzo, Valeria Cremonini, Patrizia Capucci, Giovanna Artioli, Paola Ferri*
Efficacy of video-music therapy on quality of life improvement in a group of Patients with Alzheimer's disease: a pre-post study

ORIGINAL ARTICLE: PROFESSIONAL EDUCATION

- 38 *Diletta Calamassi, Tiziana Nannelli, Andrea Guazzini, Laura Rasero, Stefano Bambi*
High Fidelity Simulation Experience in Emergency settings: doctors and nurses satisfaction levels

ORIGINAL ARTICLE: HEALTHCARE MANAGEMENT

- 51 *Roberto Lusardi*
Making visible the invisible and vice versa. Bodies and organisational arrangements in the intensive care unit
- 60 *Giulia Mascagni*
Collaboration and emotions to the test: the experience of FIlE volunteers in hospices

ORIGINAL ARTICLE: COMMUNICATION SKILLS IN ICU

- 71 *Chiara Foà, Lisa Cavalli, Alessia Maltoni, Nicoletta Tosello, Chiara Sangilles, Iliara Maron, Martina Borghini, Giovanna Artioli*
Communications and relationships between patient and nurse in Intensive Care Unit: knowledge, knowledge of the work, knowledge of the emotional state

Online access and motivation of tutors of health professions higher education

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Abstract. The case study of PUNTOZERO as an open web lab for activities, research and support to 5 Master's courses for the health professions is described. A virtual learning environment integrated in a much wider network including social networks and open resources was experimented on for five Master's Courses for the health professions at the University of Parma. A social learning approach might be applied by the engagement of motivated and skilled tutors. This is not only needed for the improvement and integration of the digital and collaborative dimension in higher education, but it aims to introduce issues and biases of emerging e-health and online networking dimensions for future healthcare professionals. Elements of e-readiness to train tutors and improve their digital skills and e-moderation approaches are evident. This emerged during an online and asynchronous interview with two tutors out of the four that were involved, by the use of a wiki where interviewer and informants could both read and add contents and comments.

Key words: e-health, e-readiness, collaboration, open source, tutor, e-moderation

I feel good with these new «interactive clothes»
tutor 2

Introduction

The World Wide Web is a seamless network of networks able to connect people, share data, trade goods and deliver services. Daily and professional life itself turns out to be in some cases shaped by social networking, virtual relationships, data and file access, sharing and creation. The field of healthcare and therefore of health professions has already been dealing with technology for a while (1) and might benefit from the integration of the web in delivering care, increasing broadcasting of information about prevention and developing of health information literacy strategies (2), and, last but not least, change the way communication is managed among professionals and practitioners, but also among caregivers and service providers.

In a fast changing world, trainers and teachers should therefore be on the front-line as those able not only to convey the valuable knowledge to students, but also to supply innovation, meta-cognitive skills and the information needed to inspire students to participate, share ideas and support change as a value during the learning breakthroughs. Trainers and tutors might be involved in adopting and leading web collaboration and innovation in courses about health care.

The World Health Organization itself is aware of emergent paradigms adopting online infrastructures that include education & training, prevention, cure and care under the umbrella concept of e-health; the WHO website provides a whole section on this topic: <http://www.who.int/topics/ehealth/en/>.

In the field of learning and training the adoption and design of web services seems a viable solution given the ubiquity and collaboration of learning needs and the use of ICTs (Information and Communication Technologies) in professional environments for

information retrieval, communication and networking. Innovation is a crucial aspect in learning designing and delivering by digital means (3).

Learning online can be useful for the lifelong learning needs and in order to develop new and emergent skills for practitioners, professionals and administrative personnel. In the healthcare context the adoption of e-learning sets has already been considered as being as effective as traditional methods (4); but in the last few years there has also been a dramatic “social turn” of the learning web for higher education that cannot be neglected (5), even for healthcare (6). Thanks to the development of much more intuitive, creative and accessible web resources and infrastructures there is a better understanding and consideration of e-learning (7). So-called “situated learning” (8) is facilitated and enacted given certain peculiar “situated” conditions, such as inspired pioneers, favourable contexts (and funds) for innovation, collaborative user settings and open and innovative organizational cultures. Such an approach should also be useful in reframing future healthcare professional management and leadership (9, 10) around stronger forms of collaboration (11).

The design was meant to turn an average e-learning infrastructure into a very social and open environment where students can communicate, share and support each other. Advanced e-learners can even use technology to monitor their training and ultimately become responsible managers of their own personal and career development (12).

There are different dimensions to be researched about tackling online methods and solutions for higher education of health professions. First of all the readiness of such solutions as concrete ground for designing Master’s courses, the motivation of users in accessing and adopting online activities and resources and, last but not least, the tactics and methods of online teaching and moderating. Given the experimental and innovative approach in designing communication and collaborative needs, only some early and intuitive aspects with newbies tutors have been recorded and described.

This study has three goals:

- a) to describe the online experience of two health profession Master’s course tutors as part of their activities;

- b) to point to the wide range of opportunities and threats associated with ITCs and possible new ways of learning, tutoring and practising;

- c) to inspire and share experimental tools and methods with other and future learning experiences in the field of health professions and other contexts.

Some examples, problems and solutions are presented, in order to help education and healthcare stakeholders anticipate developments with effective choices that will nurture the positive impacts of collaborative Internet in healthcare profession higher education.

The case study considered is an infrastructure known as PUNTOZERO (<http://puntozero.github.io/>), networking some MOODLE course environments, social networks and github pages, intended as an open project designed for five health profession Master’s courses of the University of Parma. The programmes of the Master’s courses in health professions include collaborative tasks among groups of students addressed to reading, researching and developing their own project works that will be evaluated.

In the first part the importance and process of integration of the web in healthcare practice and education is described, highlighting the role of the tutor adopting an online environment where communication, sharing and archiving activities take place. In the second part, a more specific evaluation of the expectations, uses and experience of access and adoption by two tutors is described and analysed.

Methods

During the design of the PUNTOZERO project two social dimensions were considered. The first dimension concerns a methodological approach including the advantages of learning within groups, by peers, tutors or instructors. An articulated and experimental approach was mainly followed that considers the methodological aspects of social learning (13-15) and e-learning for health professionals (7). The second dimension considers how future health professionals could be trained to acquire skills in the emerging paradigms of collaboration and open collaboration (16), platform/network models of care (17), and even in

possible sustainable developments (18); for instance, future health professionals might be trained in a professional use of the web as in a (virtual) community of practice about health issues (19), not forgetting possible remote forms of communications and collaboration with patients and caregivers. A more professional use of ITCs (1) such as the web should be an added skill in order to supply faster and more dynamic care services (20, 21), while the educational dimensions of the evidence-based medicine paradigm should be rethought to meet the needs of individual patients (22) in more performative and responsive ways.

In order to pursue such an ambitious programme, a structured agenda with specific actors, including experts and online moderators, was needed. The next step consisted in the involvement of a skilled community manager and course tutors as online moderators integrated in the designing of the online social environments for students. From the beginning it was clear for all that a positive and social sense of belonging or reduced feelings of isolation might enhance the quality of learning (23). It might even become possible to design a proper “learning ecosystem” for a whole community of healthcare profession students and tutors that may include several courses at once (24). Unveiling such missing links in tacit knowledge (25) might improve the quality of teaching, tutoring and monitoring, contributing to the feasibility of e-learning (26) and collaborative processes. In a community, students can gather meaning from discourses about their experiences (27) and they can exchange points of view and reflections in a problem-based learning frame (28). This might be facilitated and made possible by trained and skilled tutors, namely e-moderators (29).

The massive diffusion of smart devices connected to the web was considered a key element in developing different levels of communication by different means as they might be integrated in such a challenge to fill in the missing links. Students were asked to use their smart devices during the meeting to introduce the PUNTOZERO project. Social sharing in social networks, a common practice by mobile devices, was indeed a first step taken in designing an infrastructure to promote and understand how participants might interact among themselves and with tutors. The in-

frastructure was given a transversal identity holding at once 5 Virtual Learning Environments (VLEs).

The methodological challenge of PUNTOZERO lies in experimenting on a web lab open to anybody willing to contribute to it; an example of open access and open source for future medical care collaborating with patients (30). The web lab has been designed in order to inspire and support students and to share information and resources, to create projects, and to use and develop web resources and applications in a co-operative way. From the pedagogical aspect, students were informed about the openness of the infrastructure. In order to share resources they were invited to join a private diigo group (<https://groups.diigo.com/group/puntozero>) and publish socially tagged links, topics and bookmarks with peers. About 72 people joined the group. The tutors were required to train in the use of the VLE, adopting and shaping their own activities and resources, but for some of them biases emerged, mainly at an initial phase of “access and motivation” (29).

A main aspect to be evaluated in adopting education technologies and online methods is to understand the differences, boundaries and integration between classroom and online tutorship; guidelines and former experiences of e-moderation might be helpful to tutors.

Simple tools to monitor collective decisions, workflows and evaluation are available, or may simply be designed and developed when not available. The involvement of actors, in terms of support and skills, such as librarians (31), experts, and the adoption of e-moderation methodologies (29) could make the difference.

In the case of e-moderation methodologies it was possible to test the efficacy to support tutors and students by early meetings called web labs in accessing the VLE and PUNTOZERO network and in inspiring users to adopt digital devices for learning and sharing notes, resources and bookmarks. Students received via e-mail the link of the slides 48 hours before the meeting. During the meetings they were introduced to the project (32), with “hands on” experience in the use of forums and folders of the VLE, and they could experiment with elementary forms of online collaboration.

While sketching a possible and useful infrastructure for group activities in a virtual environment, the notion of community of practice (8, 33) proved useful mainly for three reasons: first of all because of the strong connection between the idea of the learning community with that of a team in a work set; second, the practice became the threshold to a full understanding of the advantages of gathering information, theories and data, as shared experience in a given context of inter-subjectivity and academic accountability; third, because of the social approach in a learning set.

Developing a community of practice online can support the development of critical thinking within a group of health professionals (34) and provide a range of ways for nurses to engage with peers and students, for instance by creating an e-portfolio by mobile devices (37).

The design of a virtual learning environment should possibly include in details all the different parts and phases, the methodology and the activities.

The design of a VLE should possibly include in detail all the different parts and phases, the methodology and the activities.

The design could start by framing the community of practice concept in a virtual environment. The VLE used by the University of Parma is MOODLE. MOODLE is open-source and features classes, activities and resources that can be added by blocks. It was not that easy to turn concepts into operational and doable individual and collective permitted online actions, shared resources and representation of the groups.

The online experience with the tutors was a keystone of the research on innovation and digital integration for future courses, resources and communication needs.

Because of certain responsibilities, each tutor, or the team collaborating in designing a class, should be able to use and understand the usability of a customized learning environment online and take further online training (38).

In the early meetings students and tutors were required to become involved in adopting a VLE for communication, archiving lessons and documents, as well as for distant forms of collaboration. Students and tutors could participate in a “hands on” class of 4 hours called WEB LAB that took place in a com-

puter classroom, where everybody was invited to use his own device and Campus WIFI to connect to the VLE. From the beginning “early adopters” (39) were confident with the environment; some of these “geek” students were given editing permissions in LESSONS folders and moderating permissions in social network groups. The idea was to involve students, promoting collaboration with tutors and students, sharing responsibilities and duties towards the group of learners. The tutors themselves were “newbies” and, although having full editing and management permissions in each of their VLE course, were not familiar with e-learning and the CMC (Computer Mediated Communication) modules featured in MOODLE courses. Therefore, using FORUM and ARCHIVE instead of sending e-mails to the mailing lists of students came to be a new experience for both of them.

To research how tutors represented to themselves the online environment and how their tutoring activity would further benefit by the online environment support, a questionnaire was created. Two tutors were involved because of their interest and presence online during the first three months of activities. One tutor in charge of two Master’s courses and another one active in Piacenza (60 kms from Parma) started their work activities with the courses and kept themselves busy using the online environment as a support to their work.

Three dimensions were researched in order to understand the e-readiness (40) in terms of needs and biases of the tutors: a) access and motivation; b) symmetry between online and classroom activities; c) reflection on the “learning by practice” experience.

All questions and answers were written in a wiki environment where the interviewer and the informants could read and edit contents any time they wished. This was chosen in order to follow the open and collaborative paradigm adopted for the activities and the research.

For each dimension of the questionnaire three open questions were answered by both tutors (T1 and T2) and a short comment was added by the community manager (CM):

Access and motivation:

1) Speak about your access experience in the course.

T1 *At first I was a little bit sceptical but with a great desire to learn, to understand and to do. The most difficult step was to point out to the students that the platform would be the only meaningful means of communication during the entire Master's period.*

T2 *As often happens with new experiences, I was slightly hesitant at the beginning. Now that I have acquired some experience with the system, I'm beginning to understand its potential and appreciate its implementation. I am certainly not taking full advantage of the online system yet, as it is not straightforward to convince students to use it. However, I believe that with some patience we will come to the full use of the various parts of the system.*

CM: find motivation and persuade students to adopt the VLE

2) What was your motivation like to access and use the online environment in order to run your tutoring activities?

T1 *During the first period my motivation was quite good. This hesitant attitude allowed me to move slowly and learn gradually. Now my motivation has increased but I want to reach an excellent motivation level.*

T2 *At the start, my motivation was low, as it is my first experience as a tutor and I had to learn how to carry out a new job – and having to learn how to use the online system at the same time was not a particularly exciting perspective. Now that I've been using it for several months, my motivation has risen significantly. The implementation of the online environment is fairly intuitive and very handy for the supervision of some features of the job.*

CM: increase motivation and willingness to improve.

3) What kind of support and information was given to you by the community manager?

T1 *The Community Manager is attentive and very quick on the answers. At the start of the Master's, maybe the explanation of the platform to the students needs at least eight hours, (instead of the four allotted) to improve their understanding of some passages.*

T2 *The community manager explained the functioning of all the parts of the system both to students and to us tutors. Later on, he explained to me several specific things about online tutoring. He is always totally willing to provide help and clarifications.*

CM: bigger groups need more training. Feedback given in support of the community manager

Symmetry between online and classroom activities:

4) According to your IT knowledge and skills, what activities would you embed in the online environment and why?

T1 *From my point of view the Diary should be used more (read every day what students write) and the work project should be supported by an online group interaction.*

T2 *The system is functional also for passing on general information to students. One of the didactic activities that could be implemented in the online system is the preparation of project-work: the wiki allows us to work remotely and it's very handy both for students and tutors.*

CM Both tutors interpret the question in terms of improvement in the use of the activities and resources already present in the VLE design.

5) How has your work changed since your adoption of the online environment?

T1 *Since this is my first tutor experience I cannot make specific comparisons; however, I feel good with these new "interactive clothes".*

T2 *As I have never had any previous tutoring experience, I cannot say how the availability of an online system has changed my job.*

CM Both tutors are beginners and cannot compare the use of ITCs or not in their job activities.

6) According to your experience is there a symmetry between online and class work and why?

T1 *It is necessary to keep the double channel and consequently classroom instruction and interactive lessons (also recorded video). It might be a good compromise.*

T2 *Personally, I don't find much symmetry between online and class work, mainly because of the lack of actual interpersonal engagement in the former case. Even when availing of videoconference facilities, the relationships are always filtered by a device. Computer monitors and keyboards make this filter all the more evident. While working exclusively in class would be inconceivable, anachronistic and counterproductive, some class work is still required, although the possibility to work online is extraordinarily beneficial. Thus, in my opinion the two parts of the job must coexist – but I don't find any particular similarities between them.*

CM both tutors are in favour of the integration of online and class activities. They don't express an opinion about a possible symmetry between online and class tutoring.

Reflection on this "learning by practice" experience:

7) How did you feel in experiencing an e-learning environment?

T1 It is a new environment communication where the key word is co-construction. It seems to be a part of an evolving learning system.

T2 It was interesting and stimulating. The more I used it, the more I appreciated its potential.

CM Both tutors express positive feedback and confirm their interest.

8) What do you think are the tutoring biases and problems in using such a web solution?

T1 The main problematic issue regarding the students concerns the platform description during the first phases. Tutor attitude is fundamental, because the students should feel ready for this new experience.

T2 I find there are two main issues. First, it is difficult to convince students to use the system and we should think about new strategies to get them involved. Second, I believe one of the challenges is to reflect upon when the system can be used effectively and when, on the other hand, it would be better to meet personally to discuss.

CM: Use of strategies to involve students (41). The role of the tutor in reflecting on what the VLE should be used for and how.

9) What have you learnt from this experience?

T1 It enables us to introduce the "new" in teaching, learning together without getting bored. For example, sometimes the slides will be loaded on the platform by the students themselves. It is so beautiful.

T2 I reckon I learnt to become more open to new things, while I am still learning how to approach online tutoring as a whole.

CM: Innovation in terms of collective learning and online tutoring and a last open question:

How would you improve the online infrastructure?

T1 The system is complete. Would it be possible to have a suitable structure for mobile phones? For example

an app or something similar that allows me to write from my mobile phone too.

T2 It seems to me that the system is complete and effective. Perhaps the news could be more highlighted (e.g. it could appear directly on the homepage instead of being structured as a forum). Another useful thing to implement would be a calendar in which tutors could keep the course timetable up to date. Finally, the system could perhaps benefit from the implementation of software enabling bibliographical management for the wiki environment designed for the project work.

CM: Both tutors share the idea that the design fills the needs for their work. Greater mobile usability and some improvements in forms of communication and in references are needed.

Results

The adoption of the VLE generated a good deal of positive feedback from both tutors. Access and motivation are definitely a critical phase for both students and tutors. After a while they became more confident with such digital means of communication and collaboration. Both tutors seem in favour of being trained to acquire the skills needed for them to lead future phases of adoption of a VLE for a group of students. Anyway, many uncertainties and doubts still emerge as to what the roles of tutors online and communication should be, especially at the initial phase.

It is important to note that students do not log in without motivation or a goal, and moderators therefore have a leading role online (29). What is still unclear to tutors is the extent to which their role as moderators in an online community could be more active and facilitated; meaningful experiences to be shared and a consequent growth of knowledge and know-how are therefore still lacking.

About the readiness of tutors: only half of them adopted the VLE and showed enthusiasm in using it; more research is thus needed to understand the degree of readiness to adopt e-learning strategies, activities and outcomes in the given context. What should be stressed is the need to train tutors to support students by "continuous assessment and mentorship" (15).

If e-learning methodologies and activities are to be developed for the courses of higher education for

the health professions, it is a long and winding path, given the need to rethink the roles, schedules and management of the Master's course in the coming years.

Discussion

Various aspects emerged during the steps involving the design, adoption and early evaluation. The design of a VLE conceived as part of a wider infrastructure found many and varied salient points. Some fundamental aspects were missing, such as digital skills, or an average level of English language knowledge on the part of tutors and participants. To overcome access problems and facilitate participants to join the VLE, a video was created and published on youtube given the novelty for most of them of adopting MOODLE as users. A critical issue emerged about what social and online aspects should be included in a higher education curriculum for health professions. To analyse some early elements on how to implement e-learning in health care professional education (42) the e-readiness of tutors was considered strategical. In the context of PUNTOZERO, it should anyway be further researched, to supply an effective learning experience towards a network model of care (43) and a broader adoption of e-learning for professionals in the social sector (40).

Although communication and some forms of collaboration were possible, what is still lacking is an integrated design of the courses with the online dimensions of teaching and tutoring, as, last but not least, the practical side of learning. It is still necessary to test approaches and theories, and to practise locally to see how and to what extent education programmes for the health professions might benefit from digital ubiquitousness and networking to face global needs (44); further online dimensions could be designed and tested about the forms of interdisciplinary collaboration with other professions (16) and for undergraduate activities (45).

Limitation

The teachers and other research tutors could not be actively included from the beginning and in the early stage of the experimental approach to support stu-

dents and involve tutors. In fact, of the five tutors involved in the Master's programs only two adopted the VLE for their needs and even they were reluctant to explore and utilise the PUNTOZERO with its wider infrastructure than that of their own VLEs.

The description of the access and motivation experience by the two informants might be a useful primer for the evaluation about introducing an online infrastructure to the delivery and support of Master's courses for the health professions. The main result lies in developing a digital and innovative dimension of the courses given some key components identified: social context, content delivery, technology access, learning style, collaboration capacity, organisational learning environment and personal motivation.

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