

TECHNICAL COMPETENCIES TRAINING NEEDS IDENTIFICATION FOR NURSING - A PILOT RESEARCH

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Abstract: In our days, nurses required to implement technical skills as part of their job. Technical skills refer not only to those actions and to duties nurses perform specific to the profession (e.g. calculating drug dosages, medication administration, gastric tube insertion, urinary catheterization) but also, to use new technology apparatus (e.g. imagistic apparatus, scanners or screenings etc.). In this context, the paper will present a pilot research developed with 6 sample groups (4 groups of students and 2 groups of specialized nurses) for the technical training competencies identification and the most successful training methods associated with them in the case of a nursing educational program. The research method used was focus-group based on a structured interview protocol. The conclusions were made on the technical skills profiles analysis.

1.INTRODUCTION

The history of nursing education began with Florence Nightingale initiatives, approaches, and programs ("Nightingale Training School for Nurses" established at St. Thomas' Hospital, London in 1860). Nursing as a profession has been in a continuous dynamics in the last period because of the new technologies (e. g. computer sciences and biotechnology, imagistic techniques development) impact in medical services. These have conduct to holistic nursing concept development with impact upon the formal nursing education (Neuman and Fawcett, 2010). The evolution and development of the nursing practices have conduct to a large specialties variety of this healthcare profession. Nurses practice in a wide range of settings but generally, nursing is divided depending on the needs of the person being nursed. The major populations are communities or public, family or individual across the lifespan, adult-gerontology, pediatrics and neonatal, women's health/gender-related, psych/mental health. There are also specialties and areas of practice such as ambulatory care, cardiac, orthopedic, palliative care, obstetrical, oncology etc.

Today's nurses are responsible for diverse and complex duties that range from basic patient care to highly specialized treatments that were once the exclusive domain of physicians, and nursing education has kept pace with the increasingly challenging demands of the profession. Many new competencies has been included in the complex education programs in the field. However, today there are many ways to study and learn more about nursing education in public and private schools. Education of nurses and patient education are two main issues considered when nursing education is analyzed. Education of nurses (of all specialties) includes "generic" education, (1) the initial preparation for becoming a nurse, and (2) graduate programs and lifelong learning via formal continuing education and staff development roles. As a synthesis of the nursing education process, Figure 1 shows the perspective of nurse education during a professional lifetime.

New psycho-pedagogical teaching aspects are considered with significant role for all nurses, along with management and clinical practice (Allen, 2006), (Jeffries, 2005). In addition, a large variety of innovative teaching methods and tools has been developed to support the rapid knowledge transfer into the practice. Most relevant are new clinical

simulations cases and programs, online exercises and patient simulation cases (Childs and Sepples, 2006), (Guhde, 2010), (Reese, 2010), (Bricker and Pardee, 2011).

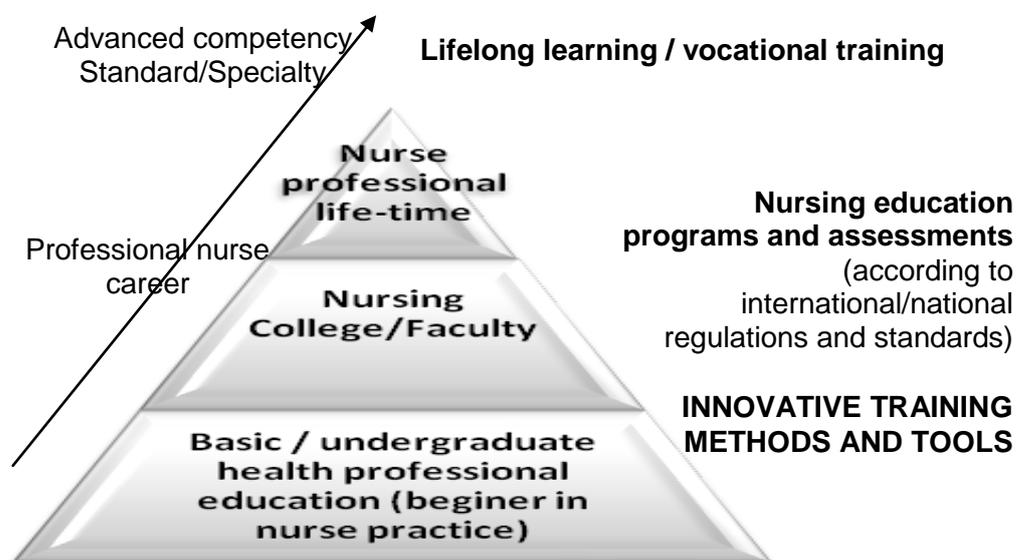


Figure 1. A General Perspective of the Nursing Education Process.

In the last years, lifelong learning programs in the field have opened new education opportunities for all nurse specialties by encouraging: continuing education, inter-professional education, simulations of processes/relationships, work place learning, team based continuing education, establishment of point of care education. Also, conferences, seminars, webinars is a large pool of debate and present new nursing practices. Important e-learning platforms are available in the field (Andrew et. al., 2009), (Begg, et. al. 2005; 2007), (Boulos, 2006), (Carter et. al., 2006), (Crook and Light, 2002).

Considering these preliminary and synthetic perspectives of the nurse education there can be conclude that the system`s continuous improvement strategy can be implemented by a better understanding of the demand and expectation of the medical practices (the real healthcare systems needs) (Feng and Chang, 2006). These have to be harmonized with the competencies and skills development in the existing clinical nursing curriculum programs (taking into consideration qualitative aspects of the qualification and certification processes).

In this context, the present article will debate the research results of a study developed to identify the training needs (particular of new technical competencies) for better design the education methods and tools.

1. RESEARCH SCENARIO (METHODS, AND TOOLS)

This study was conducted in survey design with main objective of *the technical competencies training needs identification* in the case of nurse education program/curricula developed by a private post-graduate medical school (located in the West Region of Romania). In addition, during the research development there have to be *better understand the demands and expectations in the clinical nursing curriculum* (expressed and collected with the support of two groups of specialists involved in the research). Other objective of the study was to identify *the most successful (efficient and effective) training methods*, considering the learning capacity of the students. The study has been developed from May to October 2011.

Table 1. Research hypothesis and the structures interview protocol

Research hypothesis:	Interview items:
H1. The technical competencies training needs identification are much more required	A. Computer skills, the ability and level of preparation of nursing professionals in learning and using computerized information; B. Competencies for continuous education and e-learning; C. Technical skills, the ability and level of preparation of nursing in learning and using new technology (eco-graphs, computer tomography etc.) in terms of maintenance; D. Competencies and knowledge in the filed of health and safety in nurse work (behavior component of the professional development)
H2. Demands and expectations in the clinical nursing curriculum – extra curriculum competencies development	a. % of medical competencies in relation with behavior sciences (including communication and public relation), management, economics (basic accounting) and computer sciences part in the curriculum; b. % of theoretical preparation vs. % of practice and learning results exploitation of nursing professionals
H3. Identification of the most successful (efficient and effective) training methods	Express the order of preference for: 1. Practical demonstrations (learning by doing) 2. Theoretical concepts presentations using classical technology (blackboard) 3. Theoretical concepts presentations using modern technologies (video-projector, video player etc.) 4. Simulations (movies); 5. e-learning systems and multimedia materials; 6. Others (please specify)

Table 2. The structure of the sample groups

No.	Group Type	Description
1	Students	11 persons (4 male; 7 female)
2	Students	11 persons (2 male; 9 female)
3	Students	11 persons (3 male; 8 female)
4	Students	11 persons (3 male; 8 female)
5	Specialists	6 persons (nurses and medical staff)
6	Specialists	8 persons (nurses and medical staff)

Table 1 shows the research hypothesis and the structured interview protocol design. Table 2 shows the structure of the groups involved in the study. 6 sample groups (4 groups of students from the second year of study in the specialist of General Nursing studies and 2 groups of specialized nurses and medical staff). For attending the research objective, the focus group method has been used. Focus group interview (discussions) is a qualitative research technique that has been applied to small groups of students and specialists (Table 2) process in nurse education. The authors of the present article were the moderators that lead each group of participants through a set of questions, corresponding to the designed structured interview (Table 1). It is well known that the success of a focus group is heavily dependent on the skill of the moderator. In the case of the presented research, the moderators have generated interest in the topics, and they involve all the participants (students and specialists) and keep the discussion on track (allow for unexpected observations, affirmations that have been record). During the six focus group sessions there have been obtained: reactions to concepts, proposals of new competencies and education methods; there have been gathered insights, opinions, attitudes, and preferences from all the participants.

Qualitative and quantitative information were collected in the list of outcomes and deliverables: (1) notes and transcripts (sessions minutes) of each sessions; (2) video

record of the sessions and (3) the final conclusions/findings report that will be briefly presented in section three. Each focus group session has a duration of 60 minutes; the first 10 minutes are for the group "warm-up" in which there were explained the research context and objectives; then 40 minutes were dedicated to the interview and discussions in accordance with the structure proposed in Table 1; last 10 minutes were dedicated to the conclusions. In this study, there have used the focus group method because of its benefits and advantages: getting easy feedback from people involved in a long process (like the educational one); it produce insights and questions from the interaction among different users or stakeholders (students, young nurses, medical staff etc. in our case); it is relatively inexpensive (our sample groups were all located in the same building for the education process and this fact allow the quickly arrange of the discussions sections).

2. THE TECHNICAL COMPETENCIES TRAINING NEEDS IDENTIFICATION. RESEARCH RESULTS

Figure 2 and 3 shows the research results by considering the two categories of the sample group: the students and the specialists.

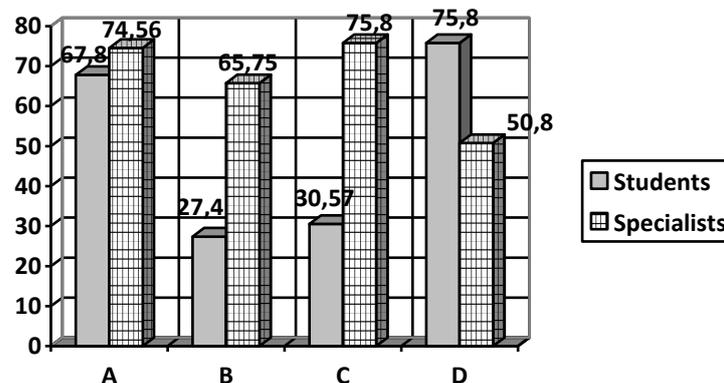


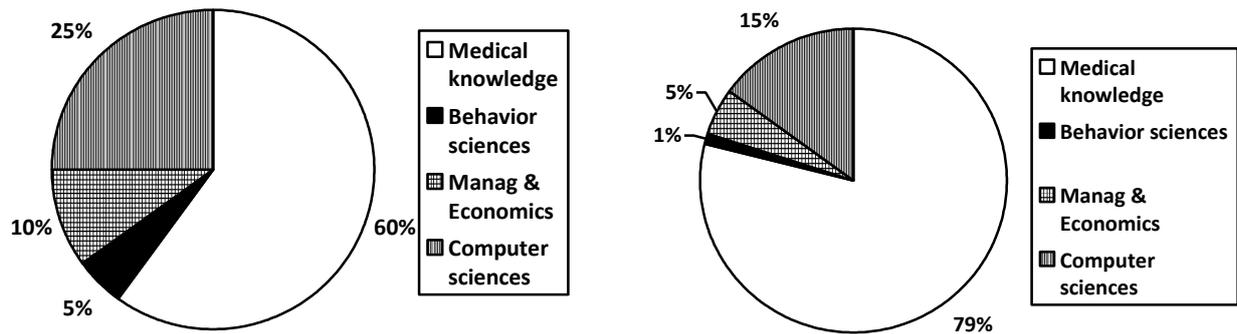
Figure 3. The technical competencies training needs identification - research results.

Both sample groups have confirmed the first hypothesis. Student and specialists has similar training needs regarding the computer skills development. Students do not feel yet the training needs for continuous education and e-learning (situation B) and for using new technology (eco-graphs, computer tomography etc.) in terms of maintenance (situation B). Related the competencies and knowledge in the field of health and safety in nurse work, students are more attached to them because they express their fear for professional risks exposure.

Table 3. Degree of acceptance in the nursing education process of the following methods and tools

No.*	Students	Specialists
1	45%	50%
2	5%	10%
3	20%	20%
4	25%	10%
5	5%	10%
	100%	100%

*) notations similar with those used in Table 1, H3



a. Students opinions

b. Specialists opinions

Figure 4. Demands and expectations in the clinical nursing curriculum.

Table 2. The technical skills profiles analysis (Table 1)

Research hypothesis	Students	Specialists	Total
H1A	0.60	0.75	1.35
H1B	0.27	0.66	0.93
H1C	0.30	0.76	1.06
H1D	0.76	0.51	1.27
H2a	0.60	0.80	1.40
H2b	0.40	0.20	0.60
H3.1	0.45	0.50	0.95
H3.2	0.05	0.10	0.15
H3.3	0.20	0.20	0.40
H3.4	0.25	0.10	0.35
H3.5	0.05	0.10	0.15

Regarding the second hypothesis, students expressed their demands and expectations in the clinical nursing curriculum of some extra curriculum competencies development as those from the fields of: behavior sciences (5%), management and economics (10%) and computer sciences (25%). Specialists were much more categorical with the dominant of the medical sciences training need satisfaction (for the future specialists) and less tolerance with extra curriculum competencies development.

The third hypothesis has been confirmed and both sample categories has identified interesting ways to promote the most successful (efficient and effective) training methods (Table 3). There have been observe a high degree of acceptance of students for simulations and video demonstrations (25%); they do not believe that e-learning facilities can contribute to their professional development (5%), but they believe in upgrade thei knowledge using this way of learning.

3. CONCLUSIONS

The research results have allowed the technical skills profiles analysis that balances the two sample categories opinions (Table 4). As was expected, during the focus group sections, participants usually bring up issues and concerns outside the prepared question path. For that reason, future researches will be developed with the graduates for nursing schools (surveys in 2012 and 2013), from public and private institutions because there have to be evaluate whether the learning outcomes outlined in the medical licensure act. Therefore, we plan to use the Freiburg Questionnaire to Assess Competencies in Medicine (*Freiburger Fragebogen zur Erfassung von Kompetenzen in der Medizin*) as a screening tool for some existing nursing education programs/curriculum. This questionnaire includes 45 items that are assigned to nine domains: medical expertise, communication, teamwork, health and prevention, management, professionalism, learning, scholarship, and personal competencies. Future research objectives are related to identify: (1) significant differences in means between selected groups of students; (2) weaknesses in the nursing medical education curriculum.

References:

1. Allen M. (2006). *Mapping the Literature of Nursing Education*, *Journal of Medical Library Association*, 92(2 suppl.), pp. E122-E127.
2. Andrew N. et. al. (2009). *Developing Professional Identity in Nursing Academics: the Role of Communities of Practice*. *Nurse Education Today*, 29(6), pp. 607-611.
3. Begg M., et. al. (2005). *Game informed learning: Applying computer game processes to higher education*. *Innovate*, 1: 6.
4. Begg M., et. al. (2007). *Transforming professional healthcare narratives into structured game-informed-learning activities*. *Innovate*, 3: 6.
5. Boulos M. N. et. al. (2006). *Wikis, blogs and podcasts: a new generation of web-based tools for virtual collaborative clinical practice and education*. *BMC Medical Education*, 6: 41, pp. 1-8.
6. Bricker D. J., Pardee C. J. (2011). *Nurse Experts Jump-Start Clinical Simulation in Rehabilitation Nursing: Supporting New Graduate Transition to Competence*. *Nursing Education Perspectives*, 32:1, pp. 34-36.
7. Carter L. et. al. (2006). *Critical Thinking in the Online Nursing Education Setting: Raising the Bar*. *Canadian Journal of University Continuing Education*, 32: 1, pp. 27-46.
8. Childs J. C., Sepples S. (2006). *Clinical Teaching by Simulation Lessons Learned from a Complex Patient Care Scenario*. *Nursing Education Perspectives*, 27:3, pp. 154-158.
9. Crook C., Light P. (2002). *Virtual Society and the Cultural Practice of Study*. In: Woolgar S (Ed.) *Virtual Society? Technology, Cyberbole, Reality*. Oxford: Oxford University Press.
10. Feng R. C., Chang P. (2006). *Demands and Expectation for the e-Learning Model in Clinical Nursing Education*, *Stud Health Technol Inform, PubMed* 2006, pp. 122-810.
11. Guhde J. (2010). *Using Online Exercises and Patient Simulation to Improve Students' Clinical Decision-Making*. *Nursing Education Perspectives*, 31:6, pp. 387-389.
12. Jeffries P. R. (2005). *A Frame Work for Designing, Implementing, and Evaluating Simulations Used as Teaching Strategies in Nursing*. *Nursing Education Perspectives*, Vol. 26, No. 2, pp. 96-103.
13. Neuman B., Fawcett J. (2010). *The Neuman Systems Model (fifth edition)*, Lavoisier Librarie.
14. Reese C. E., Jeffries P. R, Engum S. A. (2010). *Learning Together: Using Simulations to Develop Nursing and Medical Student Collaboration*. *Nursing Education Perspectives*, 31:1, pp. 33-37.