Elearning: a comparative study about knowledge acquisition by nurses

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INTROTUCTION

Organizations have developed several educational strategies to qualify their employees. They have been using eLearning as a tool to disseminate information [1].

São Luiz Hospital and Maternity has been investing in the intellectual capital through the adoption of eLearning in their personnel training process.

The Program, named “Quality Tools”, was implemented on March 1st, 2005, consisting of three steps:

- Introduction and further explanation on the program and definition of the concepts of quality;
- Structure and principles of Quality Enhancing Program and exercises;
- Quality tools: process model, activity flowchart, check-list, brainstorming and exercises.

The objective of this study was to compare the knowledge acquired by each group of nurses – those using eLearning and those receiving face-to-face training.

MATERIAL AND METHODS

The quantitative research methodology followed the experimental method leading to comparison of face-to-face with online training given to the night shift nurses. The control group was formed by nurses attending face-to-face training, while the experimental group comprised the eLearning program trainees.

The population in this study amounted to 60 nurses. Eleven nurses were excluded for different reasons, and the 49 remaining, out of their own free will agreed to participate in the research. The trainees were distributed in each group at random, with restriction and matched treatment populations.

The data collection tools of this study consisted of two questionnaires: one for characterizing the population and the other, called the Pre/Post Test, provided by the eLearning methodology team, consisting of professionals from different areas guided by a pedagogy master. The latter test was applied to the experimental and to the control groups, both before and after the training program, in order to evaluate the trainees´ input.

RESULTS AND DISCUSSIONS

The study population consisted of 49 nurses:

- 46 (94%) were female
- 40 (82%) had been working there for more than three years.
- 23 (47%) were 30 to 39 years
- 18 (37%) were 40 to 49 years
- 41 (84%) had over six years time since graduation
- 44 (90%) had post-graduate degree
- 47 (96%) had some notions for informatics
- 28 (57%) had taken e-learning courses
- 41 (84%) had participated in the first phase of the online course offered by São Luiz Hospital and Maternity.

It can be verified that the group is young and post-graduated, two aspects favoring an early contact with computer science [2].

RESULTS AND DISCUSSIONS

The data have been analyzed with descriptive measures (mean, median, standard deviation, maximum value and minimum value).

The average grades in the different groups and moments of assessment have been compared, and a new model of analysis of variance (ANOVA) has been used, with two factors: assessment moment (pre-course and post-course) and group (face-to-face or Internet): redundant measures were considered in the assessment moment factor.

The data obtained in this research show that, both the face-to-face and the online groups gave a larger number of right answers in the post-course than in the pre-course test.

Table 1 shows the descriptive measures of the grades awarded to the face-to-face and the eLearning groups, at the moment of assessment.

RESULTS AND DISCUSSIONS

Table 1 – Total number of right answers by the face-to-face group population (N=25) and eLearning group population (N=24) in the pre-course and post-course tests - São Paulo, 2006.

Assessement	Face-to-face		E-learning	
	Pre	Post	Pre	Pos
Mean	16.4	17.8	17.8	19.4
Median	19.0	19.0	19.0	20.0
Standard Deviation	4.5	3.2	3.1	1.7
Min.	6.0	11.0	9.0	16.0
Max.	23.0	22.0	21	22

RESULTS AND DISCUSSIONS

The data show that the average grades obtained by both groups are almost equivalent, values being a little higher in the group trained online. This shows that online training is as effective a learning tool as face-to-face training.

The statistical analysis has not shown significant differences between the mean grades of the face-to-face and the online groups. Also there was evidence of an increase in the mean grade after the individuals had undergone training, which means a significant effect of the assessment moment. It has been thus concluded that the mean grade of individuals was significantly higher in the post-course test than in the pre-course test.

RESULTS AND DISCUSSIONS

The comparative results of the two modes of training show that both face-to-face and online learning were efficacious, as the mean grade of trainees was higher in both cases, which indicates acquisition of the contents presented.

Online courses provide an opportunity for instructors or teachers to give better lessons, enabling them to use a series of, not only technical but also pedagogical training tools, instead of the old one-to-many pattern of presentation [(3)].

Elearning is a strategy adopted by organizations in order to train and qualify professionals and add value to the intellectual assets of the company through knowledge management.

CONCLUSION

The study verifies that the mean number of right answers increased after the training for both groups:

- In the face-to-face group it increased from 16.4 to 17.8
- In the eLearning group it increased from 17.7 to 19.4

These results show acquisition of knowledge by both groups of nurses in an equivalent proportion, thus confirming the efficacy of both methods employed. The research data show that knowledge is acquired, no matter what strategy was used in training – whether it is face-to-face or online.

CONCLUSION

Elearning is an efficacious and efficient method, as it adds several advantages regarding flexibility as well as time and cost saving, which cannot be attained by face-to-face training because of the limitations of the latter.

Elearning, therefore, provides a more customized study, which can be adapted to each trainee's rhythm, overcoming geographical barriers with time flexibility, as the student can choose when and where to undergo his/her training.

In nursing, eLearning provides time optimization and flexibility in training, and it highlights the importance of adopting new teaching tools to suit each individual's learning dynamics; it is a fast and efficient model of professional qualification and training.

CONCLUSION

The implementation of computer science technology in the health sector will equip nurses with an additional instrument to improve the quality of the assistance they render and the knowledge they impart. It will give them the opportunity of being reintegrated in their true functions and enhance their performance in the technical and human care of their patients.

It can be concluded that eLearning permits to change educational behavior and paradigms, and introduces a new learning culture, incorporating technological advances in the formation of nurses.

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