WebQuest as a technological didactic resource for staff training at a hospital

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ABSTRACT

This study aimed to evaluate the use of WebQuest as a technological didactic training resource at a hospital, in regard to International Patient Safety Goals. It is a quantitative, cross-sectional study, conducted at a public teaching hospital, in Southern Brazil. Of 895 staff members, 679 (76%) connected to the Nursing Directory participated in the study, these being nurses, nursing technicians, auxiliary nurses, administrative technicians and auxiliary operational custodians that were trained in safety goals. A total of 11 items were evaluated in each applied goal, among which only physical structure, quantity of texts, time dedicated to training, colors and design, practical application and text objectivity were referred to as regular or bad by 3% of the employees. The resource was considered satisfactory as a strategy for continuing education, enabling identification of process weaknesses, with potential for improvement, in order to refine the WebQuest methodology at a hospital.

Descriptors: Patient Safety; Education, Continuing; Nursing Informatics.

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INTRODUCTION

Considering that the human resources of an institution are responsible for planning, developing and executing the entire productive process; the generated products and their quality depends on them. As such, staff training is indispensable for work to be carried out in accordance with the necessities of the organization, with both efficiency and efficacy.

With the advent of globalization and technological advances, new and innovative teaching strategies that motivate and instigate the desire to search for knowledge have become necessary. Within this perspective, the technological resource, WebQuest, appeared in 1995 as a teaching strategy proposed by North-American professors. Since then, it has been improved and used for educative purposes in teaching institutions, with the objective of educating active professionals who are critical and reflective in their participation in the search for knowledge[1].

A WebQuest can be defined as an oriented investigation, in which most or all information comes from the Internet[2]. The individual feels challenged and becomes involved in the learning process, based on the problem presented. The Internet, as learning environment, empowers the individual to transform information into knowledge. This resource covers the use of critical sense, synthesis, analysis, problem solving and creativity and, as such, content quality is essential[3-4].

The organization of a WebQuest consists of introduction (clear and objective contextualization and problematization of the theme); objectives (description of expected learning for the student); process (tasks that should be concluded to reach the objectives; with the insertion of videos, sites and other references for consultation); assessment (how student learning will be assessed); conclusion (stimulating reflection and synthesis of the covered content) and credits (presentation of the references used to construct the WebQuest)[1,3-4].

This technological resource can be classified as short, when viewing the integration of knowledge, which should be explored in one to three classes; or long, which is aimed at deepening content and refining knowledge, with duration from one week to one month[4-5].

It is widely used by teachers in the academic environment, and studies can be found in the literature that demonstrate the use of this methodology with high school students and nursing undergraduates, in the areas of geography and medicine[3-6]. The use of this methodology in the ambit of healthcare services is innovative, given the peculiarities of the hospital environment and the specifics of the methodology itself, which entails active learning, through the use of Internet resources.

The National Patient Safety Program, Decree GM/MS nº 529/2013, advocates care qualification in all the healthcare establishments in Brazil, through basic patient safety protocols, among other preventions.[7] Pursuing compliance with its requirements, mass investments were made in the training of staff in regard to said qualification.

In care practices it is difficult to take employees out of the workplace for training during a shift; besides there being low adhesion to training made available outside working hours. Thus, taking into account the necessity to train professionals in regard to the six International Patient Safety Goals, based on the new institutional protocols, a WebQuest was used as a strategy to involve employees.

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Few studies were identified in the literature in reference to the issue and most publications were aimed at academia[3-6,8]. Bearing in mind the current influence of technology in different areas, it is suggested that WebQuest be used beyond teaching institutions.

In light of the above, the objective of the present study was to evaluate the use of WebQuest as a technological didactic resource for training in regard to International Patient Safety Goals at a hospital.

METHOD

This is a quantitative, cross-sectional study, conducted at a tertiary level, public teaching hospital in Southern Brazil, with 300 beds exclusive to clients of the Singular Health System (SUS). The study population is made up of professionals composing the nursing directory of the institution, of which, 120 are nurses, 294 are nursing technicians, 276 are auxiliary nurses, 50 are administrative technicians and 155 are auxiliary operational custodians. The data come from a secondary database, belonging to the Nursing Care Quality Control Council (Assessoria de Controle de Qualidade da Assistência de Enfermagem).

Prior to beginning with the WebQuest, the staff were invited to participate in the study as volunteers, signing a Consent Form (TCLE), which included the title of the study, justification, objectives, risks and benefits; making clear the freedom of refusal and guaranteeing anonymity.

The data used in the present study were in respect to the answers on the instrument for Reaction Assessment, applied to the professionals at the end of each training session using the WebQuest, in reference to the International Patient Safety Goals: correctly identify the patient; improve communication between healthcare professionals; improve prescription safety, use and administration of medicines; hand hygiene practice in healthcare service; risk of falls and prevention of injury through pressure.

Data collection occurred from July 2015 to August 2016. Each professional completed the instrument composed of 11 questions, with responses on a five-point Likert scale (excellent, good, regular, bad, terrible), aimed at evaluating method and content quality, namely: content, quantity of texts, clarity and objectivity of the texts, colors and design of the presentation, ease of use, learning acquired, possibility for application in practice, support received from tutor, period of time dedicated, location where the training took place, general satisfaction with the experience; besides a box for descriptive evaluation, with the possibility for suggestions.

The data were tabulated on electronic spreadsheets using Excel 2010, and simple frequencies and percentages were calculated for each answer.

The study was approved by the Research Ethics Committee of the State University of Londrina under protocol nº 258/2011.

RESULTS

During the data collection period, the human resources framework was composed of 294 nursing technicians, 276 auxiliary nurses, 120 nurses, 155 auxiliary operational custodians and 50 administrative technicians, totaling 895 professionals, constituting the nursing directory.

Table 1 presents the frequency and percentage of staff trained through the WebQuest, per goal and professional category.

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Table 1: Quantitative of professionals trained in regard to International Patient Safety Goals implanted in the institution. Londrina, PR, Brazil, 2015/2016.

Professional Category	Goal											
	1		2		3		4		5		6	
	n	%	n	%	n	%	n	%	n	%	n	%
Nursing Technician	248	84	226	77	209	71	218	74	253	86	271	92
Auxiliary Nurse	223	81	205	74	171	62	181	66	176	64	199	72
Nurse	89	74	98	82	96	80	84	70	83	69	100	83
Operational Auxiliary	54	35	70	45	27	17	16	10	21	14	11	7
Administrative Technician	39	78	38	76	37	74	26	52	15	30	0	0
Total	679	76	656	73	585	65	560	63	561	63	581	65

Staff that were unable to carry out the WebQuest during the established period, whether they were on vacation or on leave, had a second opportunity to participate, totaling 138 employees.

Table 2 demonstrates the results observed regarding the evaluation carried out in reference to the time dedicated to training and where it was conducted.

Table 2: Distribution of the staff evaluation in relation to the WebQuest in reference to the six International Patient Safety Goals applied regarding structure. Londrina, PR, Brazil, 2015/2016.

Evaluation Item	Excellent		Good		Regular		Bad		Terrible		Total	
	n	%	n	%	n	%	n	%	n	%	N	%
Time dedicated	1461	54	1113	41	108	04	18	01	05	00	2705	100
Training location	1423	53	1081	40	146	05	38	01	18	01	2706	100

Of the 11 items evaluated for each of the six goals applied using the WebQuest, more than 90% were considered excellent or good. Regarding items related to presentation of the content covered, as shown in Table 3, the following were highlighted as excellent: colors and design of the presentation (60%) and training content (71%); as regular: clarity and objectivity of the texts (3%); and as bad: quantity of texts (1%), as demonstrated in Table 3.

Table 3: Distribution of staff evaluation in relation to the WebQuest in reference to the six International Patient Safety Goals applied regarding process. Londrina, PR, Brazil, 2015/2016.

Evaluation Item	Excellent		Good		Regular		Bad		Terrible		Total	
	n	%	n	%	n	%	n	%	n	%	N	%
Content	1888	71	757	28	16	01	01	00	00	00	2662	100
Clarity and Objectivity	1718	64	901	33	78	03	05	00	00	00	2702	100
Quantity of texts	1462	54	1160	42	89	03	15	01	02	00	2728	100
Colors and design	1616	60	986	37	91	03	09	00	01	00	2703	100
Ease of use	1696	63	935	35	62	02	07	00	01	00	2701	100

As presented in Table 4, of the items related to satisfaction of the employee in relation to training, support received from the tutor (79%) and general satisfaction with the experience (65%) were classified as excellent. Practical application was considered regular by 69 collaborators (3%).

A total of 482 comments from the descriptive box available for suggestions were analyzed, these being stratified into structure, process and result.

In relation to structure, 7% (35) of the comments involved the location and time dedicated to training, of which 66% (25) were critical about training being conducted in the sector, due to inappropriate location with

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interruptions and noise. However, 17% (06) referred to training being at the time of work and in the workplace as being positive.

Table 4: Distribution of staff evaluations in relation to the WebQuest in reference to the six International Patient Safety Goals applied regarding result. Londrina, PR, Brazil, 2015/2016.

Evaluation Item	Excellent		Good		Regular		Bad		Terrible		Total	
	n	%	n	%	n	%	n	%	n	%	N	%
Learning	1772	66	897	33	30	01	03	00	03	00	2705	100
Practical application	1741	65	875	32	69	03	09	00	00	00	2694	100
Support from tutor	2125	79	545	20	17	01	06	00	02	00	2695	100
Satisfaction with the experience	1754	65	912	34	39	01	03	00	02	00	2710	100

In reference to process, 18% (86) were suggestions directly linked to changes in professional practices, 35% (167) were linked to methodology, such as confusing questions, long, tiring texts, the necessity for adjustments in font size and slides, and the suggestion of making the material available on the computer system of the institution for a determined period.

Regarding result, 42% (202) emitted comments, 5% (10) being critiques involving questions regarding practical application of the content. The remaining 95% (192) of the comments were positive in relation to quality of the content covered, methodology used, importance of maintaining the training for reflection on its practice and professional refreshment.

DISCUSSION

Of the 11 items evaluated by the study participants, most were considered excellent or good, characterizing the experience with the WebQuest as a positive training strategy for a large proportion of the employees. However, despite the facility acquired with staff training without being taken out of the work environment, the study demonstrated weaknesses that should be assessed so as to improve the experience with this new model of continuing education.

Nowadays, all areas are influenced by technology, however the healthcare area in particular requires professionals looking to constantly refine their knowledge, favoring their autonomy and minimizing the risk of error. Information technology is a tool that optimizes the care process, its management, teaching and research[9], and influences the quality of care provided. As such, the WebQuest model is a resource that may be used for in-service education in hospitals, as the present study demonstrates.

Faced with this scenario, concern with patient safety during hospitalization has become more and more frequent in hospitals[10-11]. Therefore, it is necessary to have a qualified team that is duly oriented regarding the most frequent risks to which patients may be exposed in an attempt to reduce such risks, as they may lead to irreparable damage to life, possibly resulting in death[12].

Patient safety aims to reduce the risk of unnecessary harm related to healthcare; namely circumstances that may result in avoidable complications to the client, resulting from the healthcare provided. These can be classified into incidents without harm, or with harm; when physical, social or psychological damage is caused to the individual, also known as an adverse event[13].

Such events lead to damage to society, the patient and family members, with increased morbimortality, depending on the seriousness, resulting in prolonged stays in hospital, medication expenses, daily costs of hospitalization or of intensive care[12].

Taking into consideration the client's right to receive adequate nursing care, minimizing the chances of harm; as well as professional improvement, involvement in the global movement for patient safety and taking joint responsibility in relation to the provision of safe, and therefore, quality care, is indispensable[14-15].

Thus, the studied institution chose to use WebQuest as a technological resource, as a strategy for training staff from the Nursing Directory in regard to the six International Patient Safety Goals.

Given the particularities of specific goals, such as surgery safety and the prevention of pressure injuries, some of the WebQuests involving extensive content of greater complexity received negative evaluations on some aspects.

The workplace training of the employees during their shift generated some concerns in relation to interruption of care of the clients. However, there were positive evaluations in relation to training in this environment, due to the difficulty in being absent from the sector or appearing at another time to carry out the training. Taking the collaborator out of the work environment is a challenge, due to the numerous intense activities performed in the sector, the scarce human resources, absenteeism and professional readjustments.

Carrying out the training in the workplace reduced the time used travelling to the training location, and the collaborator felt secure being in a familiar environment. It reduced levels of anxiety, facilitating the learning process[16].

Nevertheless, it is necessary to evaluate the influence of training conducted outside the work environment, which gives the worker the opportunity to familiarize themselves with a different workplace, different employees, see different contexts and incorporate the acquired knowledge into their day-to-day routine[14]. However, to do so, the nurse needs to perceive the training as a learning necessity of the employee and be motivated to participate.

Considering the importance of training all staff members in regard to the International Patient Safety Goals, with the intention of enabling participation of staff that were absent during the training period for foreseen or unforeseen absenteeism, the institution being studied offered the opportunity to carry out the WebQuest at another time (second chance).

CONCLUSION

The evaluation carried out by the training participants enabled a broad vision of the benefits achieved, such as qualification of a large part of the professionals in relation to the proposed content. It demonstrated their satisfaction regarding the use of this technological resource at the hospital as a strategy for continuing education in healthcare and enabled identification of weaknesses susceptible to improvement, so that on-shift training at a given work place can become an effective methodology.

It was identified that training in the workplace during working hours facilitates staff participation, although it is necessary for employee to have adequate conditions for this kind of activity. Preparation of a comfortable

environment, free from noise and dedicated specifically to training is required, along with other strategies to enhance the training and motivate the employee.

The present study found that the use of WebQuest is still concentrated in teaching institutions and is seldom used in education strategies in healthcare. Considering the current influence of technology in different areas, WebQuest is suggested for use beyond teaching institutions.

Specifically in the area of healthcare, the quality of care provided to the client depends directly on the training of the team involved, this being the responsibility of the institution. As such, the present study demonstrates the possibility of increasing the use of the WebQuest strategy for training in healthcare institutions, as a strategic resource for in-service education.

Success in the execution of the referred strategy at the institution being studied, results from it being a teaching institution, which may be a facilitator for the incorporation of new technology, human resources and available materials. Therefore, it is suggested that similar studies are conducted at institutions with different realities to those of the present study, in order to evaluate the viability of the use of this technological didactic resource at institutions not of a teaching nature.

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