



Webquest and Comics in the Formation of Human Resources in Nursing

Webquest e história em quadrinhos na formação de recursos humanos em enfermagem
Webquest y tiras cómicas en la formación de recursos humanos en enfermería

Harriet Bárbara Maruxo¹, Cláudia Prado², Denise Maria de Almeida³, Lucia Tobase³, Manoela Gomes Grossi¹, Débora Rodrigues Vaz³

¹ Master's degree student, School of Nursing, University of São Paulo, São Paulo, SP, Brasil.

² Associate Professor, School of Nursing, University of São Paulo, São Paulo, SP, Brasil.

³ PhD student in Health Sciences, School of Nursing, University of São Paulo, São Paulo, SP, Brasil.

ABSTRACT

Objective: To describe the process of constructing and implementation of Webquest as pedagogical strategy as guiding the study about the pedagogical concepts using Comic. **Method:** The first stage of the study was outlined applied research of technological production. The second stage was characterized as research exploratory, descriptive documentary for the analysis of Comic. in the teaching diploma in Nursing of EEUSP in 2013. **Results:** The proposed Webquest was implemented, resulting in 18 Comic. All Pedagogical Concepts studied were addressed; used the software indicated and the power point, the plots developed in different scenarios and most Comic contemplated mandatory items. **Conclusion:** The use of different technological resources provide learning, by mobilizing multiple potentialities, abilities and interests of students, favoring the construction of collective and collaborative learning, strengthening important and necessary features in training that will influence the human resource profile in tune with the aspirations of the labor market.

DESCRIPTORS

Educational Technology; Nursing Informatics; Information Technology; Education, Nursing; Nursing Staff.

Correspondence Addressed to:

Harriet Bárbara Maruxo
Av. Dr. Enéas de Carvalho Aguiar, 419,
Cerqueira César
CEP 05403-000 - São Paulo, SP, Brasil
harriet@uol.com.br

Received: 11/30/2014
Approved: 03/17/2015

INTRODUCTION

Until the 1990s, teaching was understood as a transmission of content, characterizing a mostly traditionalist model in which the professor was the only responsible for the transmission of knowledge⁽¹⁾.

Nowadays, the ease of access to information brought by the Internet and favored by the wide availability of digital resources culminated in the conception of a new profile of students, digital natives, who bring some peculiarities, such as the need for freedom to make choices, investigative attitude, the desire for quick answers to their questions and expectation that technology is integrated into the teaching environment⁽²⁾.

To meet this demand, the educational institutions began to include information and communication technologies (ICT) in the classroom, contributing to the consolidation of an innovative educational model that forms critical and reflective students, determined in the search for knowledge. In addition, the ICT inserted in the educational field promotes the sharing of ideas and the interaction between students and professors in building a collaborative and attractive learning⁽³⁾.

It is worth noting that the health sector seeks and requires professionals with ever-higher educational levels, critical and reflective individuals who are constantly seeking qualification and knowledge improvement⁽⁴⁾. For this purpose, it is believed that the use of ICT in human resources formation, integrated to teaching, promotes the professional autonomy to manage his/her learning process and decide how the studies will be developed⁽⁵⁾.

Aware of this panorama, the teaching degree course offered by the School of Nursing of the University of São Paulo (EEUSP) forms professionals to act in high school, in the mid-level technical professional education in nursing and in continuing education services provided by health institutions, preparing the student to work in different health spaces with the aim of promoting changes in relation to the nursing education, encouraging him/her to the use of new pedagogical methodologies that combine technology and education⁽⁶⁾.

Among the use of digital resources in the professional formation, the Webquest was selected because it is an activity based on the practice of oriented research, developed by a problem or challenge proposed to the students, requiring higher levels of thinking, critical sense, capacity for analysis, synthesis, problem solving, and creativity stimulation creativity⁽⁷⁾. The information for the resolution of this challenge/problem are available on the web and the students will analyze and reflect them to consensually find the solution⁽⁸⁾.

Webquest is classified as short when it takes from one to three classes to be explored by students and its goal is the integration of knowledge, and long, when it takes from a week to a month, having as goal the extension and refinement of knowledge⁽⁹⁾.

In general, it has elements such as "Introduction" (features the theme and determines the activity to be per-

formed), "Task" (describes what is expected from the students at the end of the Webquest, and which tools should be used to do it), "Process" (steps to be taken to solve the challenge and so develop the task, and also some resources are indicated, such as websites and other references for consultation), "Evaluation" (indicates how the student will be evaluated), "Conclusion" (summary of the subject researched and explored in the Webquest, and also a space to encourage students to continue reflecting on the subject), and "Credits" (displays all the references used in the construction of the Webquest, and acknowledgements)⁽⁸⁾.

The "Task" has a great importance since it brings the challenge or problem that must be solved, allowing the student to develop the reflective process and to avoid the automaticity of actions and plagiarism, i.e., taking the role of the leading figure of his/her learning.

In the case of the study under discussion, the creation of comics was proposed as a challenge to the students.

The use of comic books (CB) in the classroom is considered by the literature as a motivating pedagogical strategy, which is inserted into the academic curriculum of some educational institutions around the world⁽¹⁰⁾.

The research *Portraits of Reading in Brazil [Retratos da Leitura no Brasil, in Portuguese]*, conducted by the Instituto Pró-livro (IPL) in 2011, showed that the comic books are among the most present reading genres in the following age groups: 36% between 05 and 10 years old of 12.5 million children; 33% of 8.6 million teenagers and 27% of 10 million young people between 14 and 17 years old⁽¹¹⁾.

The elaboration of comics can contribute to the development of the capacities such as planning, analysis, interpretation, and reflection of the abilities of coherence, cohesion, objectivity, use of different languages and creativity. Also favors the relationship between concepts, ideas and thoughts, contributing to knowledge synthesis⁽¹²⁾.

In this context, in the Teaching Degree course of EEUSP, the inclusion of digital technologies as a pedagogical feature offers the opportunity for the development of a collaborative learning and the formation of critical and reflective professionals, able to act as facilitators and motivators of learning, exploring new and attractive educational tools.

The aim of this study was to describe the process of construction and implementation of the Webquest as a pedagogical strategy for the study about "Pedagogical Conceptions" using comics in the initial formation of nursing professors.

METHOD

The research was divided into two phases. The first was intended to the construction and implementation of the Webquest strategy, and the second to the examination of the comic book developed according to the challenge proposed, in the Teaching Degree Course of Nursing, at EEUSP, during the period of 2013.

This study is a part taken from the project "Evaluation of docent formation in nursing in the perspective of docents and teaching degree students" registered and appro-

ved in Brazil Platform under the opinion no. 145,091 and by the Ethics in Research Committee of the EEUSP.

The first phase is characterized as an applied research of technological production, which consists in the creation of products or processes that meet the needs of society or the job market⁽¹³⁾.

The product was a long Webquest developed in three stages: planning, development and implementation. In the first stage, started in July 2013, the theme “Pedagogical Conceptions” and the learning goals were defined, using the sociointeractionism from Vygotsky as a pedagogical reference guide.

The second stage corresponded to the content organization, task definition, selection and inclusion of images and links, conclusion and finishing of the Webquest. To simplify its construction, it was developed a Power Point® script that worked as a basis for the effective construction of the Webquest in Google Sites® hosting environment.

In the third step, the Webquest link was made available on the page of the Moodle virtual learning environment® (Modular Object-Oriented Dynamic Learning Environment) of EEUSP.

The second phase of the study, characterized as an exploratory-descriptive documental research, corresponded to the analysis of the comics developed by students in the “Task” element of the Webquest. For the preparation of the project the students had a 15-day deadline, after this they sent it to professor via e-mail.

The exploratory-descriptive research are based on the listing of information or peculiar data of the object of interest, by this promoting its more specific characterization, while the documents deal with data collected through oral, written or visual environment, whose relevant information to the study will be extracted by the researcher⁽¹³⁾.

The analysis of the comic books consisted in checking the software used for its creation in the adopted pedagogical conception, in sceneries where the plot develops and in the presence of the following elements: historical recuperation, goal, role of the professor and the student in the conception, and linked authors. The data were taken through cross tabulation in Microsoft Office Excel®, and the results quantitatively shown.

Nineteen comic books were analyzed, being one excluded from the study for not allowing the identification of the pedagogical conception that was dwelt. It is worth noting that the assessment of this activity aimed to the critical reflection and the discussion of the strategy use, without grade assignment.

RESULTS

CONSTRUCTION OF THE WEBQUEST

The Pedagogical Conceptions Webquest has as fixed and mandatory elements “Introduction”, “Task”, “Process”, “Evaluation”, “Conclusion”, “Credits”, and as complementary elements “Media Library” and the “Initial Screen”, which is highlighted in Figure 1.

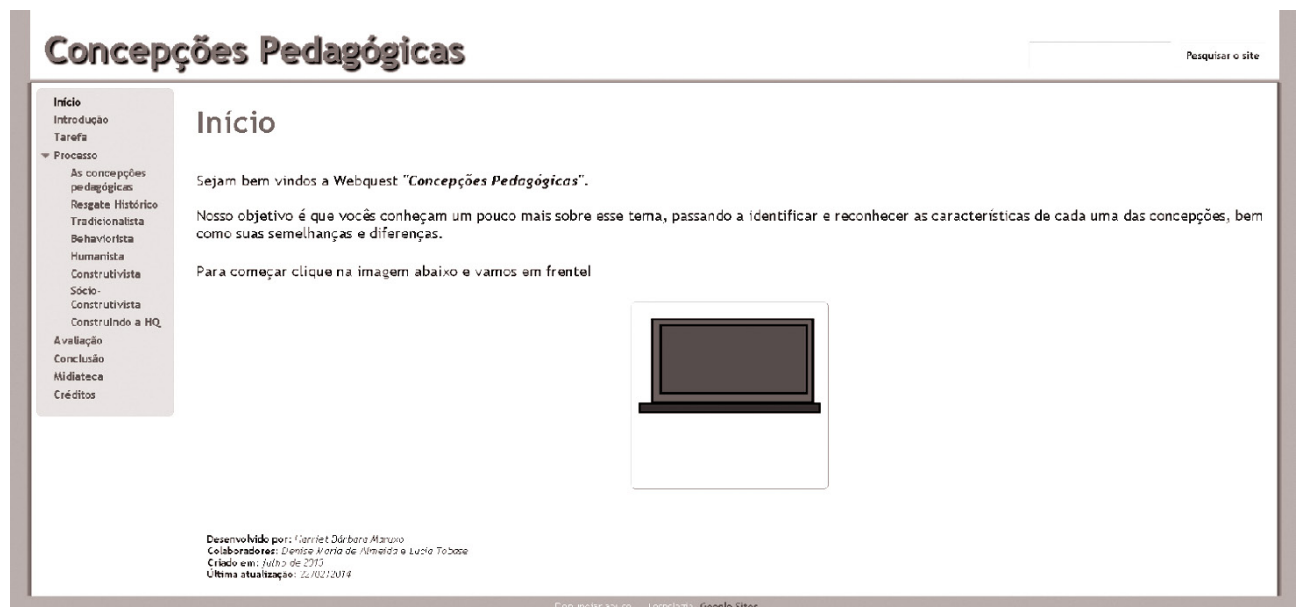


Figure 1 - Webquest Start Screen “Pedagogical Conceptions”.

This Webquest is available at <https://sites.google.com/site/concepcoespedagogicas/>.

Each of the elements of this Webquest contains its own characteristics, as described below:

Home: welcome screen and presentation of the goals of the class.

Introduction: In this element, Nina, the virtual tutor of the teaching degree course, motivates the students through the theme’s contextualization and problematization.

Task: the challenge proposed to the students, in pairs, was the creation of a comic book about one of the pedagogical conceptions studied, using a digital resource containing as mandatory elements the historical recuperation, the goal, the student’s and teacher’s role and the authors linked to the adopted conception. To manufacture the comic book a 15-day deadline was provided.

Process: this element was composed of eight subsections containing the access links to the materials necessary for the challenge resolution. These subsections were named as: pedagogical conceptions; historical recuperation of conceptions; traditionalist, constructivist, behaviorist, humanist and social constructivism conceptions; and elaborating the comic book (which had websites and tutorials for the elaboration of it).

Evaluation: presentation of the evaluation criteria of the comic books.

Conclusion: summary of the theme and a message from the virtual tutor to the students encouraging them to develop new studies and deepening in the theme.

Media Library: links to learning support materials (texts and videos).

Credits: references used in the elaboration of the Webquest.

IMPLEMENTATION OF THE WEBQUEST

The implementation of the Webquest strategy occurred in presential class in the discipline “ENO 0436 – Methodology of the Teaching in Nursing II”, in 2013, at the computer lab of the EEUSP.

The class had three hours dedicated to the exposure of the goals, link to access the “Pedagogical Conceptions” Webquest through Moodle® platform and clarification of possible doubts.

In this step, the students, in pairs, explored all the components of the Webquest, accessing the links and available materials to decide which pedagogical conception they would work with. Some pairs were able to elaborate the script of the comic book, while others chose to explore the Webquest to decide which conception to adopt.

ANALYSIS OF THE COMICS

Eighteen (100%) COMIC BOOKS were analyzed, of which 16 (89%) were structured on the websites indicated in the Webquest, while 02 (11%) were developed in Powerpoint®.

Regarding the studied pedagogical conceptions, the Traditionalist was addressed in 06 (33%) comic books, followed by the Constructivist Conception in 05 (28%) and Socioconstructivist in 05 (28%) as well, while Behaviorism and Humanism appeared in (5.5%) comic books.

The comic books evolved in different sceneries, as shown in Table 1.

Table 1 - Sceneries used for the development of the comic books - São Paulo, SP, Brazil, 2014.

Scenery	Number of COMIC BOOK
Classroom: The professor, as the central figure, adopted and exposed the pedagogical conception to the students.	10 (55.5%)
Dialogue between friends: discussion regarding the strategy experienced as students in the classroom, or about which conception they should adopt in their daily lives as professors.	05 (28%)
Working environment: discussion of the relationship between boss and employee while using a specific conception.	01 (5.5%)
Internship Field: the professor explains a technical procedure to the students based on the adopted pedagogical conception.	01 (5.5%)
School for mutants from the X-Men, with superheroes who were testing among them the learning acquired in classroom.	01 (5.5%)
Total	18 (100%)

When it comes to the inclusion of the mandatory elements in the plot, as previous guidance for the elaboration of the comic book, it was verified that the items “goal”, “the professor’s role”, “the student’s role” and “authors linked to the conception” appeared in 17 (94.5%) comic books, while the “historical recuperation” was present in 15 (83.5%).

DISCUSSION

The choice for the use of the Webquest in this study came from its potential that promotes the self-learning through a reflective process, in which the student should have to analyze and transform the information obtained on the Web, looking for the solution of the problem proposed⁽¹⁴⁾. This strategy, which allows the inclusion of digital technological resources, has been used both in initial formation and professional development.

In a study that questioned the opinion of students after the implementation of the Webquest strategy in an undergraduate course in Accounting Sciences, it became clear that more than half of the group considered that the learning happened in a more relaxed way and that there was progress regarding the use of the Internet as a research tool⁽⁸⁾.

The choice of the “Pedagogical Conceptions” theme came from its complexity and importance in professional and pe-

dagogical context. In this perspective, it was believed that the inclusion of a technological resource such as the Webquest in this thematic would permit the student’s reflection on the subject, as well as the knowledge of the teaching strategy.

A study with students of a pedagogy course who used the Webquest strategy identified that they found difficulties in the selection of websites that could or could not be used for the realization of researches⁽⁸⁾.

In this perspective, it is believed that the “Pedagogical Conceptions” Webquest served as a guiding axis to the future professionals, preparing them for the selection of materials and reliable sources from the Internet.

The “Pedagogical Conceptions” Webquest was constructed in about 20 days by nurses with basic knowledge in informatics, from reports of experience and tutorials available online, considering the steps of planning and development.

The construction of the Webquest is considered as something simple, if we think from the technological point of view, not being required great technical knowledge in informatics, since nowadays many sites and environments offer program-mations for online elaboration and implementation⁽⁷⁾.

The construction of the Webquest began with the preparation of the storyboard in Powerpoint® and subsequent development in Google® Sites virtual environment. In the

“Pedagogical Conceptions” Webquest, different digital resources were used, such as television shows, videos, figures and music, avoiding very long texts, and considering the profile of students, digital natives.

The layout of the Webquest involves the knowledge of the technological tools, the resources available and the creativity of the professor who should have to know and previously select all the links that would be available in the Webquest, ensuring the veracity and reliability of the sources. It is also recommended the inclusion of texts, images and other resources that motivate the student to continue in the Webquest and solve the challenge⁽¹⁵⁾.

The choice for implementing the strategy in presential class is based on the literature, which emphasizes that the professor is the mediator of this new experience, having the role of guiding the searches and solving doubts, in addition to checking difficulties that may be worked and discussed⁽⁷⁾. The elaboration of the comic books in pairs was based on sociointeracionism and collaborative learning assumptions, in which the knowledge is constructed in the interactions student/content, student/pairs and student/professor⁽⁷⁾.

Among all the elements that compose the Webquest, the “Task” is considered the most important and complex because it defines which activity must be developed and how the information will be worked to achieve a final product. The type of the requested activity in this element is the key point to determine the potentiality or fragility of the Webquest, aiming to ensure the reflective process of the student and the reconstruction of meanings. This activity must be attractive, motivating and challenging, to stimulate students in the search of the solution for the problem proposed^(7-8,15).

It should be noted that, in the Elaboration of the Webquest, challenges that limit creativity, such as questionnaires, summaries, among others, discourage students to continue in the search for knowledge, therefore losing the essence of the Webquest⁽¹⁵⁾.

Considering the attraction and motivation characteristics, we decided to choose in the “Task” element the elaboration of a comic book. The literature emphasizes that the use of comics as a didactic resource allows the student to acquire knowledge regarding concepts, lifestyles and informations, simplifying the understanding of complex issues while conciliating text, image and dialogue – a facilitator element of the learning that will help in the apprehension of contents⁽¹⁶⁾.

In the elaboration of the comic book, 16 (89%) students used sites and tutorials available, indicating that the better organized is the step by step in the “Process” element, the greater are the chances of the student complete the resolution of the challenge⁽¹⁵⁾.

The choice of the pedagogical conception for the development of the comic books by the students was free,

so that all the conceptions worked on the Webquest were contemplated in the comics plot.

Concerning the prevalent scenery in the comic books, the classroom appeared in 10 (55.5%) of them, which may be based in the fact that the students tend to imitate learned models that provide support to the reconstruction of knowledge⁽¹⁷⁾.

In the analysis of the comic books it was noticed that students followed the script provided and dwelt with the most requested items, regardless the pedagogical conception and/or chosen scenery, evidencing that the detailing of the challenge in the “task” element helps the organization of the student, affecting the problem resolution⁽¹⁵⁾.

CONCLUSION

The realization of this study allowed the construction and implementation of the Webquest strategy on the initial formation of nursing professors. The future professionals must be prepared to the use of digital technologies in the educational process since his/her formation to start adopting them spontaneously and not by an imposition of the system, favoring the teaching-learning process focused on the development of the student autonomy.

The preparation of comic book contributed to the synthesis and expression of knowledge built, dynamically and playful, through active learning, allowing the performance of students as protagonists in their learning process, something that reflects on the role of the professor as mediator in the construction of knowledge.

The diversification in the use of different technological resources provides the learning from the mobilization of the multiple potentialities, capabilities and interests of the students. It favors the construction of the collective learning collaboratively, strengthening important and necessary characteristics in the professional formation that will influence the human resources profile, in harmony with the aspirations of the job market.

Considering that after finishing the Teaching Degree course the licensed nurse will also be able to act in the area of continuing education, education in service, permanent education or corporate education of different health institutions –during the formation technology will facilitate the use of digital resources in the qualification of the human resources.

We recommend the creation of a multiprofessional team that includes specialists in technologies of information to potentialize the inclusion of digital technologies in the education in nursing.

As a limitation of this study, there was a lack of projects related to the theme, difficulting the review of the literature and the comparison of the results with those of other research, especially in the area of nursing.

RESUMO

Objetivo: Descrever o processo de construção e implementação da *Webquest* como estratégia pedagógica orientadora do estudo sobre as concepções pedagógicas, utilizando História em Quadrinhos (HQ). **Método:** A primeira fase do estudo foi delineada como pesquisa aplicada de produção tecnológica. A segunda caracterizou-se como pesquisa exploratório-descritiva documental para análise das

HQ no Curso de Licenciatura da EEUSP, em 2013. **Resultados:** A *Webquest* proposta foi implementada, resultando em 18 HQ. Todas as concepções pedagógicas estudadas foram abordadas; foram utilizados os softwares indicados e o Power Point®, os enredos desenvolveram-se em diferentes cenários e a maioria das HQ contemplou os itens obrigatórios. **Conclusão:** A utilização de diferentes recursos tecnológicos proporcionou o aprendizado, pela mobilização de múltiplas potencialidades, capacidades e interesses dos educandos, favorecendo a construção do aprendizado coletivo e colaborativo e fortalecendo características importantes e necessárias na formação profissional que influenciarão no perfil dos recursos humanos, em sintonia com as aspirações do mercado de trabalho.

DESCRITORES

Tecnologia Educacional; Informática em Enfermagem; Tecnologia da Informação; Educação em Enfermagem; Recursos Humanos de Enfermagem.

RESUMEN

Objetivo: Describir el proceso de construcción e implementación de *Webquest* como estrategia pedagógica orientadora de estudio de los conceptos pedagógicos que utilizan tiras cómicas. **Método:** La primera etapa del estudio fue delineada como una investigación aplicada de producción tecnológica. La segunda se caracteriza por ser la investigación documental descriptiva exploratoria para el análisis de las tiras cómicas en la licenciatura en Enfermería en EEUSP en 2013. **Resultados:** La *Webquest* propuesta fue implementada, resultando en 18 tiras cómicas. Todos los conceptos pedagógicos estudiados fueron abordados; utilizados los softwares indicados y el Power Point®, las tramas se desarrollaron en distintos escenarios y la mayoría de las tiras cómicas contemplaron los elementos obligatorios. **Conclusión:** El uso de distintos recursos tecnológicos proporcionaron el aprendizaje, mediante la movilización de múltiples potencialidades, capacidades e intereses de los estudiantes, favoreciendo la construcción de aprendizaje colectivo y de colaborativo, el fortalecimiento de las funciones importantes y necesarias en la formación profesional que influirán en el perfil de los recursos humanos en sintonía con las aspiraciones del mercado de trabajo.

DESCRIPTORES

Tecnología Educacional; Informática Aplicada a la Enfermería; Tecnología de la Información; Educación en Enfermería; Personal de Enfermería.

REFERENCES

1. Barroso M, Coutinho C. The influence of WebQuest learning in teaching of sexually transmitted diseases in adult education and training. *Int J Sci Technol Educ Res.* 2011;2(3):39-48.
2. Prensky M. Digital natives digital immigrants. On the Horizon MCB University Press [Internet]. 2001 [cited 2014 Set 15];9(5):1-6. Available from: <http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf>
3. Costa PB, Prado C, Oliveira LFT, Peres HHCP, Massarollo MCKB, Fernandes MFP, et al. Digital fluency and the use of virtual environments: the characterization of nursing students. *Rev Esc Enferm USP [Internet].* 2011 [cited 2014 Oct 20]; 45(n.spe):1589-94. Available from: http://www.scielo.br/pdf/reeusp/v45nspe/en_v45nspe08.pdf
4. Montanha D, Peduzzi M. Permanent education in nursing: survey to identify the necessities and the expected results based on the workers conception. *Rev Esc Enferm USP [Internet].* 2010 [cited 2014 Oct 20];44(3):597-604. Available from: http://www.scielo.br/pdf/reeusp/v44n3/en_07.pdf
5. Costa JB, Peres HHC, Rogenski NMB, Baptista CMC. Proposta educacional on-line sobre úlcera por pressão para alunos e profissionais de enfermagem. *Acta Paul Enferm.* 2009;22(5):607-11.
6. Fernandes MFP. Projeto Político-Pedagógico Licenciatura em Enfermagem [Internet]. São Paulo: EEUSP; 2011 [citado 2014 out. 20]. Disponível em: <http://www.ee.usp.br/ensino/graduacao.asp>
7. Pereira MCA, Melo MRAC, Silva ASB, Évora YDM. Evaluation of a *Webquest* on the theme of material resources in nursing by undergraduate students. *Rev Latino Am Enfermagem.* 2010;18(6):1107-14.
8. Bottentuit Junior JB, Coutinho CP. Webquest no ensino superior: uma estratégia educativa para explorar as páginas e os recursos da WEB. *Revista Paidéi@ [Internet].* 2011 [citado 2014 maio 14];2(4). Disponível em: <http://revistapaideia.unimesvirtual.com.br/index.php?journal=paideia&page=article&op=view&path%5B%5D=164>
9. Unal Z, Bodur Y, Unal A. A standardized rubric for evaluating Webquest design: reliability analysis of ZUNAL Webquest design rubric. *J Inf Technol Educ Res.* 2012; 11:169-83.
10. Rebolho MCT, Casarotto RA, João SMA. Estratégias para ensino de hábitos posturais em crianças: história em quadrinhos versus experiência prática. *Fisioter Pesq.* 2009;16(1):46-51.
11. Instituto Pró-Livro. Retratos da Leitura no Brasil [Internet] 2011 [citado 2014 out. 31] Disponível em: http://anl.org.br/web/pdf/retratos_da_leitura_no_brasil.pdf
12. Dutra ES. Histórias em quadrinhos: recursos e linguagens dinamizadores do processo ensino e aprendizagem. In: XVI Encontro Nacional de Didática e Práticas de Ensino; 2012 jul. 23-26; São Paulo, Brasil [Internet]. Campinas: ENDIPE; 2012 [citado 2014 out. 31]. Disponível em: http://www.infoteca.inf.br/endipe/smarty/templates/arquivos_template/upload_arquivos/acervo/docs/3190p.pdf
13. Apolinario F. Metodologia da ciência: filosofia e prática da pesquisa. São Paulo: Pioneira Thomson Learning; 2006.
14. Garcia MF, Rabelo DF, Silva D, Amaral SF. Novas competências docentes frente às tecnologias digitais interativas. *Rev Teoria Prat Educ.* 2011;14(1):79-87.
15. Bottentuit Junior JB. Análise de WebQuests em língua portuguesa disponíveis on-line: aspectos relativos a qualidade dos componentes e da usabilidade. *R Bras Est Pedag.* 2009;90(224):102-21.

16. Alcântara CS. "Ler ou não Ler, eis a Questão": o uso das histórias em quadrinhos na educação brasileira. In: Anais XXV Simpósio Nacional de História – História e Ética; 2009 jul. 12-17; Fortaleza, Brasil [Internet]. Fortaleza: ANPUH; 2009 [citado 2014 out. 31]. Disponível em: <http://anpuh.org/anais/wp-content/uploads/mp/pdf/ANPUH.S25.0749.pdf>
17. Rego TC. Vygotsky: uma perspectiva histórico-cultural da educação. 22ª ed. Petrópolis: Vozes; 2011.