

Usability Study of RSNA Radiology Reporting Template Library

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Abstract

This study provides insights that could help to improve the Radiological Society of North America (RSNA) Reporting Template Digital Library, based on a usability evaluation. The results show that most users have been satisfied with the website. The general comments for the library are positive, although the participants suggested quite a few areas to improve. About 40% are returning visitors which means people often come back to the website.

Keywords:

Radiology Information Systems; Libraries, Digital; Program Evaluation.

Introduction

The Radiological Society of North America (RSNA) Radiology Reporting Template Library is a freely accessible digital library that incorporates metadata, standardized medical terminologies and health care industry standards to promote knowledge sharing of structured radiology reports [1]. Since the library was launched in December, 2009, it has received more than 4.2 million page views with its fast-growing collections of 252 reporting templates. The purpose of this study is to provide insights to improve the reporting template library website based on a usability evaluation, including an online survey, focus groups, web analytics, and transaction log analysis.

Methods

To get first-hand feedback from users, an ongoing online survey was posted on the library website. The web-based Qualtrics survey software was used to create the ongoing survey at https://milwaukee.qualtrics.com/jfe/form/SV_eR6Yawd3HxiT_NFH. Two focus groups were formed to further gather users' feedback on the template library. One group consisted of three medical informaticians, while the other group included three radiologists. A protocol was designed for the focus group interviews. The focus group sessions were conducted while the results were summarized and interpreted in a report. A Google Analytics account was set up to track the usage of the website, as well as monitor the number of visitors and their geographical location. The scripts that enable Google Analytics to collect data were added to the website to track users' interactions with the website for a specific time. Approximately one year's data from the web analytics and transaction logs were analyzed using the Web Log Explorer to further identify demographic profile of visitors, determine user behavior as related to the library website, find out what search terms were frequently used to find templates, and determine what templates are most popular.

Results

A total of 163 respondents participated in the online survey from February 2016 to April 2017; 135 completed all the questionnaires. The respondents were from Asia (35.58%), North America (31.90%), Europe (16.56%), and Africa (9.82%). Most of the respondents were male (63%). The survey results suggested that most users had been satisfied with the reporting template library website. About 80% of survey respondents rated the overall level of satisfaction for the library website as excellent/good, while more than 70% respondents rated each of the following specific features as excellent/good: Navigability 76%, Timeliness 75%, Ease of search 71%, Availability of information 70%, Organization 80%, Visual appeal 76%, and Uniqueness 76%.

The focus group interview results showed that the general feedback for the library was favorable, although the participants suggested quite a few areas for improvement. The participants thought that the goal of digital library was remarkable, while the quantity of templates was adequate. The medical informatician group had a higher overall level of satisfaction with the website, while the radiologist group seemed much pickier with the content of the templates. Both groups thought the online library tours were not simple enough to show how to use the template library and suggested that a video tutorial should be used. The results of web analytics showed that most visitors to the library website resided in the United States. In terms of visitor profiles, a larger proportion were new visitors (61.4%) vs. returning visitors (38.6%) and 12,246 of 113,618 users (10.8%) were active users. As of April 6, 2017, the library website received 4,277,407 page views. The top five specialties that got most page views were Musculoskeletal Radiology, Ultrasound, Computed Tomography, Chest Radiology, and Diagnostic Radiology. There were total 684 search terms that occurred from transaction log analysis between 01/17/2016 to 04/07/2017.

Conclusion

This usability study provided insight into the evaluation of the reporting template library website, both methodologically and practically. It is the first study to perform a usability assessment for the radiology reporting template library. Our methodology could serve as an example for measurement development of other services in radiology reporting.

Reference

- [1] Radiology Reporting Template Library, Radiological Society of North America, available at <http://www.radreport.org>

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