To Ask or Not to Ask, That is The Question: Investigating Methods and Motivations for Online Q&A

Vanessa Kitzie, Erik Choi, Chirag Shah
School of Communication & Information (SC&I), Rutgers, The State University of New Jersey
4 Huntington St, New Brunswick, NJ 08901
vkitzie@gmail.com, erikchoi@gmail.com, chirags@rutgers.edu

ABSTRACT

The popularity of studies conducted on online Q&A services has grown over the past few years. Here, online Q&A services are defined as facilitating an asker-answerer(s) relationship via the Internet, either asynchronously or synchronously. Online Q&A services have traditionally been divided into two separate services - social Q&A (SQA) and Virtual Reference (VR) and studied separately, with lack of integrating mixed methods (e.g. SQA tends to be analyzed quantitatively versus VR, which tends to be analyzed qualitatively) in regard to approach and comparing SQA and VR services to determine whether gaps in one may be used to improve the other. This poster attempts to ameliorate this shortcoming by investigating both of them together using an online survey of 120 users, with a specific focus on the motivations for use of both services to determine (1) who uses online Q&A services and (2) the relationship between use of these services and general web searching behavior.

Keywords

Online Q&A; Virtual referencing; Social Q&A; Information seeking behaviors; User motivations

INTRODUCTION

The developments of the Internet and World Wide Web have enabled individualized access to information, once only available by visiting a library. Due to this, more people have relied on web searches in lieu of library use, a phenomenon marked by an observed decline in academic library visits and concordant increase of web use [4]. Although traditional assumptions of the library have therefore been supplanted, VR services have adapted to the changing landscape by offering patrons the opportunity to utilize web resources while still retaining the informed search strategies and quality assessments offered by reference librarians. In addition, the notion of having the ability to enter a question in natural language, as opposed to keywords, has led to the incorporation and growth of SQA

sites. The majority of these sites foster a community in which anyone can ask and/or answer a question, indicating that the asker must rely on the wisdom of the crowd, which may be unreliable [15].

Many studies have looked at VR and SQA, however most view them as separate entities. A recent current study [2] attempted to rectify this view by using mixed methods analysis to explore similarities and differences of the two services to determine how one could help the other. Findings indicated that college students more likely visit SQA for finding factual knowledge rather than seeking opinions and they are less aware of VR. Additional findings illustrate that college students tend to visit SQA through a search engine (e.g., Google).

The present poster reports findings from an online survey, which investigated both SQA and VR together, to expand on previous findings and determine whether they are generalizable to a larger sampled population by examining the methods and motivations behind the use of online Q&A services among undergraduate students. Such an approach yields implications for the improvement of online Q&A services. Determining where people go to access information, what kind of information they are looking for, and why they chose to utilize a specific service, provides a comprehensive assessment that can be used to leverage the perceived strengths of these services, while mitigating weaknesses.

BACKGROUND

Research on SQA can be divided into two distinct areas of study - user-based and content-based [13]. The former examines the factors that comprise the interaction within Q&A communities. [11] suggests that while these communities may differ in scope and means of operation, they all operate under the pretense that interaction within an SQA model is multi-dimensional and collaborative, hinging on assessment, motivation, identity formation and communicative norms unique to this platform. [2] performed a content analysis using Yahoo! Answers, dividing askers into seekers and sloths, and concluding that the more active seekers receive more responses than sloth counterparts. [6] studied answerer motivations within Health Q&A sites, finding that altruism was the leading factor in answerer participation.

Content-based studies attempt to characterize the components of the actual questions and answers asked on the site. [14] identified several textual criteria that comprise a good answer, while those in the IR community use machine extraction methods of textual and non-textual features to predict answer quality.[1] One of the overarching conclusions from these studies was that relevance, answer length, presence of outside sources, and time it took to deliver an answer all constitute significant factors in predicting a best answer.

Studies on VR focus on service quality, and there has been a large effort made to establish best practices for virtual reference interactions focusing on both the behavior of experts guided by RUSA (Reference and User Services Association) guidelines [10], and the behavior of users during face-to-face reference exchange [5]. Some of these practices include exercising politeness, displaying a "human" side by typing in slang or using emoticons, and by asking follow-up question analogous to those asked during the reference interview [9].

As in studies of online Q&A, studies of VRS also focus on finding determinants of answer quality. Often the key unit of analysis for studies of expert and user behavior is chat transcripts. Such content-based studies focus on types of questions asked, with a key finding that users prefer chat mediums for simple questions that can be answered quickly [7] and evaluate reference exchanges along efficiency and effectiveness measures, such as being provided with the correct answer [1] as well as satisfaction measures such as politeness and rapport [8].

Although literature examining both SQA and VR exists, many areas remain unexplored. For example, most studies focus on a specific subset of a specific online Q&A community, rather than looking at a broader scope of members ranging in involvement level. In addition, such studies fail to look at use of online Q&A services as compared to web searching, which could yield a "big picture" glimpse of whether or not web use affects use of online Q&A services, as well as offer a glimpse into the motivations and methods of users to access and use these services.

STUDY

Data Collection

A survey was developed to measure different facets of online Q&A exposure and use, as well as general information-seeking behaviors via the web. Seven online Q&A services identified in the survey were Yahoo! Answers, Facebook Questions, Quora, AnswerBag, Ask a Librarian, Internet Public Library and ChaCha. Most of the questions measured degree of use and exposure using a five-point scale, although some radio buttons and

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[1] One example of this is the TREC conferences, held annually [http://trec.nist.gov/].

checkboxes were also utilized. A free-text option was also given where respondents could elaborate on their thoughts of and experience with online Q&A services.

After being pilot tested, the study was revised and distributed among several undergraduate students, primarily studying in the School of Communication & Information, at Rutgers University. A total of 120 students replied to the study. Since the survey was administered electronically, respondents were required to fill out each portion of the survey before they could submit, which obviated the concern of missing data. Likert scale items were recoded as ordinal variables from lowest to highest and then a correlation matrix was run between these items to determine if significant relationships existed between variables and, if so, to what degree.

Results

The sampled population (N=120) was mostly female (n=88, 73%) and undergraduate (n=105, 83%) who reported moderate to frequent web searching (4-6 searches per day, n=29, 23%; 7-10, n=34, 27%; <10, n=47, 37%). Respondents reported being heavy visitors of Google (<10, n=93, 74%) and Facebook (<10, n=91, 72%). In regard to use of online Q&A services, respondents identified as moderate visitors of Yahoo! Answers (Occasionally, n=52, 41%; 1-5 times a week, n=30, 24%) as well as occasional users, who are more likely to ask questions (n=46, 37%), than to answer them (n=28, 22%). Respondents also reported occasional use of Facebook Questions, to both answer (n=27, 21%) and ask questions (n=28, 22%).
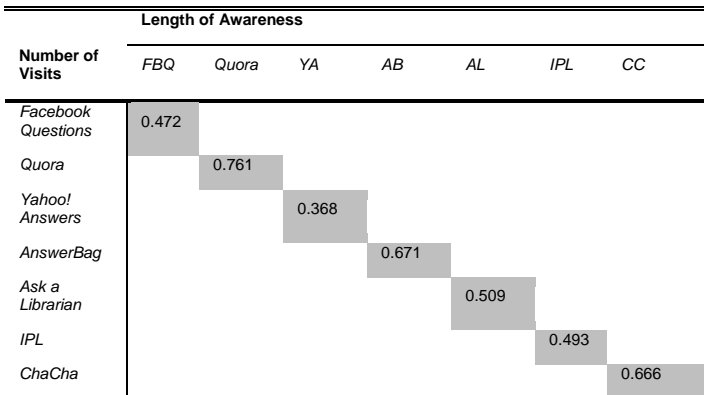
Aside from these two online Q&A services, there was a minimal amount of reported visits and use of the other services. One of the reasons for this observation might be explained by the significant positive correlations between how long a person has known about a site and the amount of reported visits, which is consistent among all listed services (see Table 1 for more details). The distributions of frequencies regarding length of time that a user was aware of a service's existence were all skewed left, toward "Never Used It" or "Less than a Month," (see Figure 1 for more details) with the exception of Yahoo! Answers, and to a lesser degree, Facebook Questions (see Figure 1 for more details).

The majority of respondents reported visiting Yahoo! Answers through a search engine result (n=93, 94%). One respondent vocalized this method of information-seeking by stating, "When I look at Q&A sites, it's usually because I am directed there by a general web search, where someone has asked a similar question. Sometimes it's helpful, sometimes not. I don't usually ask or answer questions on these sites." This conforms to findings from [3], which indicated that respondents looked for the "most bolded" words, which signifies a match in search term keywords, when selecting an appropriate response via a results list derived by a search engine. Therefore, it is also not surprising to find no statistically significant correlation

between use of online Q&A services and reported frequency of web searches.

	Length of Awareness						
Number of Visits	FBQ	Quora	YA	AB	AL	IPL	CC
Facebook Questions	0.472						
Quora		0.761					
Yahoo! Answers			0.368				
AnswerBag				0.671			
Ask a Librarian					0.509		
IPL						0.493	
ChaCha							0.666

Table 1: Correlations between number of visits to online Q&A services and the length of awareness of services among users. All correlations significant at p<0.001.
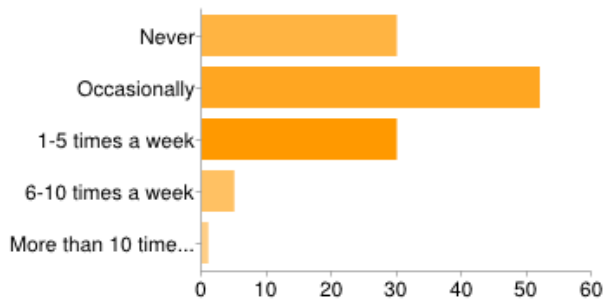
Figure 1: Distribution of amount of visits to online Q&A service, Yahoo! Answers.

Those who did report actively using online Q&A services to ask questions identified several motivations underlying use. Respondents indicated that online Q&A services were helpful when the answer to a question could not be found quickly via a search engine, answers contained intelligible explanations and, in some cases, expert opinions. The majority of people looked for fact-finding information (n=72, 63%), followed by advice (n=50, 43%), opinion (n=39, 34%) and self-expression (n=36, 31%). Many of them stated that SQA proved beneficial, since one often receives responses from "several people to form my own conclusions." In fact, a common action as acknowledged by respondent self-reports was to look at several answers to the same question to see if they were similar and then, based on the degree of similarity, judge if the information constituted a quality answer. People reported finding a satisfactory answer to their questions sometimes (n=43, 34%) or most times (n=42, 33%). However there was more of an even distribution between the types of questions these people chose to answer. An interesting observation was that occasionally people reported answering questions that already had answers (n=55, 44%). Motivations for answering questions were divided between altruism (e.g. to feel like they were helping someone, n=59, 50%), which extends past findings beyond the health information seeking realm, and those posting for fun (n=45, 38%). Respondents

who engaged in the latter reported that they posted answers because they had extra time on their hands and felt they were knowledgeable about the subject.

Analysis of the survey data uncovered a strong relationship between time and satisfaction. There was a strong positive correlation between how quickly a person gives up given that they have not received a satisfactory answer to their question and how quickly a person checks back to see if a posted question is answered (r=0.901), as well as a very strong positive correlation between how often a person finds a perceived satisfactory answer to their question and how quickly a person checks back to see if a posted question is answered (r=0.847). This suggests that the more patient the user, the longer he or she can wait for an answer and still perceive it as satisfactory. Such findings are concordant with the literature, which suggests that timeliness proves a strong indicator of asker satisfaction [12].

Surprisingly, there was a negative relationship between visits to VR as well as active participation in some SQA platforms, and timeliness. There was a moderate negative correlation between how frequently a person answers an SQA question that already has an answer and how quickly a person checks back to see if a posted question is answered. (r=-0.506); a weak negative correlation between how frequently a person visits Ask a Librarian and how quickly a person checks back to see if a posted question is answered (r=-0.237); and, finally, a weak negative correlation between amount of participation in Yahoo! Answers community, as well as amount of participation in answering role for Facebook Questions, and how quickly a person checks back to see if a posted question is answered (r=-0.282). This finding may be attributed to reported use of these services to browse through information and emphasis of motivations for use of these services to obtain a multitude of opinions and/or quality answers. It appears that these users recognize that it might take longer to receive this information and appear willing to wait.

DISCUSSION

Although correlation does not infer causation, findings from this study identify a few variables that appear to be promising routes for further study in relation to online Q&A. One of the first variables identified was awareness. Findings indicate a significant relationship between how long the user has been aware of a service and the amount they use it. While this observation appears intuitive, it begs to question whether a reported lack of awareness may impede users from taking advantage of a service they might find valuable, specifically in regard to VR services. Many respondents who posed fact-based questions to SQA sites identified a drawback of these services in not providing a means through which to verify the veracity of an answer and appeared to view soliciting fact-based information from these sites as a crapshoot – sometimes receiving satisfactory answers, sometimes not. Perhaps these respondents were also among the majority who had never heard of VR

services Internet Public Library and Ask a Librarian. An intriguing avenue for future study would be to further explore the propensity of users to utilize VR services if made aware of them as this might prove an influential variable in predicting use.

Another interesting observation was that many respondents identified trust as an influential factor for use of different information-seeking services. Within SQA services, they equated trust with consensus. In regard to fact-based questions, many respondents indicated that they would look at several answers to the same question to see if they were similar and based on this, judge if was the "right" answer. For more opinion-based or personal questions, one respondent indicated the sentiment of many, in expressing the desire to obtain responses from "several people to form my own conclusions." Perhaps an interesting avenue for exploration in SQA could be to determine whether askers actually judge an answer based on the number of votes it has received, and if so, how much this can account for the likelihood of characterizing an answer as a "Best Answer."

Perhaps the most intriguing area for future study was raised by the significant and very high positive correlation between time, represented by how quickly a person checks back to see if a question has been answered, and satisfaction. This suggests that the longer the surveyed respondents were able to wait, the better answer they received. On the other hand, it also indicates that those respondents not able to wait for longer amounts of time were less frequently satisfied. Although further study must be performed to determine whether this link is observed among other samples and also the level of variability time plays in predicting satisfaction, these initial findings signify that perhaps in some cases answers can be sent piece-meal, as they are found, rather than all at once after having been compiled.

CONCLUSION

This study has two unique attributes. First, it surveyed a group of students who reported various levels of experience with online Q&A services. Unlike previous user-based studies, in which the sampled population included actual users of a service or services (e.g. someone who asks and/or answers questions), this sample also included more casual visitors, who passively looked at archived site content reportedly accessed via a search engine using a natural language based query. This group proves important to study since they reflect an unobserved population of what one respondent called "lurkers," those who rely on online Q&A services, but do not belong to a community and/or frequent a service. This differentiation signifies that subsequent motivations for using these services might differ from community members. The second unique attribute is that the survey conceptualized SQA and VR services under one umbrella, online Q&A. This is important, since it suggests that these services may in fact be directly comparable and, from learning concordant strengths and weaknesses, be improved as a whole.

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