
Beyond Questioning and Answering: Teens' Learning Experiences and Benefits of Social Q&A Services

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Abstract

We present preliminary results of a study of teens who actively provide answers for other users' questions using an academic social Q&A service. Through an analysis of 18 interviews, we identified three types of learning occurring when teens create answers for their peers: reinforcing knowledge for better recall, divergent thinking from multiple perspectives, and enhancing learning through explanation. Participants reported that as a result of providing answers they were able to expand their knowledge bases, improve inquisitiveness, embrace challenging questions, and increase self-confidence. We conclude that academic social Q&A services have the potential to support teens' critical learning and creativity with proper intervention to be designed.

Author Keywords

Social Q&A; Learning in social media; Social Q&A as a learning process.

ACM Classification Keywords

H.3.5. Online Information Services

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Introduction

Digital technologies offer ample opportunities for teens to create asynchronous communication and to access online educational content at any time in any space [1]. A Pew Research Center report shows that 92% of American teens go online daily, 56% go online several times a day, and 24% go online almost constantly [4]. Furthermore, new online educational resources have emerged to support students' learning. Among these resources are social question-answering (Q&A) services, which help facilitate question-answering interactions among teens for the purpose of seeking and sharing academic information. Given the growing prevalence of information-seeking behaviors using social Q&A services to support online learning among teens, we are concerned with the extent to which the time spent by teens in social Q&A services contributes to their learning experiences and outcomes.

Unlike previous research focusing on how "askers" formulate their questions [5] or evaluate the credibility of answers [3], the present study investigates the intersection of learning experiences and social interactions among teens who actively take part in social Q&A services as "answerers" primarily. It attempts to conceptualize social Q&A activities as a learning process in which teens experience distinct types of learning as they engage in social interactions by exchanging information with peers online without the space and time limitations of school settings.

Brainly (www.brainly.com) has been selected as the social Q&A service for the study. Brainly is an online learning community for teens where they can voluntarily ask and answer questions on school subjects (e.g., mathematics, physics, biology, etc.), while

moderators curate content to improve the quality of answers.

The results of the present study contribute to our knowledge of how academic social Q&A services can better facilitate a learning process in which teens have opportunities to enhance their learning by helping their peers with specific posted questions.

Research Methods

The study employed a qualitative research method by conducting phone interviews with 18 Brainly users. Participants were invited to the study through a pop-up message on brainly.com from June-July 2016 and through a private message in October 2016. Those interested in participating in a phone interview provided us with their email address. Each subject was asked to submit the teen assent form by email. To be eligible for the interview, their parent or guardian was also required to submit a parent consent form to us. With separate permissions from teens and parents or guardians, interviews were audio-recorded for data analysis. Transcribed interviews were imported into the Nvivo 11 qualitative data analysis software for coding purposes. See Table 1 for demographic characteristics of the 18 interview participants.

Results

Research Question 1: What types of learning do teens experience in the process of creating answers in a social Q&A service?

The purpose of the study was to identify different kinds of perceived learning experiences. We identified instances when participants explicitly described the process of learning. Three distinct types of learning experience were reported by the participants.

S#	Age	Gender	Brainly Use Time (weekly)
S01	16	F	30 min.
S02	13	F	1 hr.
S03	13	M	5 hrs.
S04	16	F	3 hrs.
S05	15	F	1 hr.
S06	17	F	1-2 hrs.
S07	13	F	30 m-1hr.
S08	17	F	1 hr.
S09	15	M	2 hrs.
S10	17	F	1-2 hrs.
S11	16	F	10 hrs.
S12	15	M	2 hrs.
S13	16	M	1-1.5 hrs.
S14	17	M	45 hrs.
S15	15	F	5 hrs.
S16	17	F	49 hrs.
S17	14	F	7 hrs.
S18	17	M	5-7 hrs.

Figure 1. Demographic characteristics of participants

Reinforcing knowledge for better recall. The most common learning experience was that providing answers to other users gave answerers the opportunity to refresh their existing knowledge, which in turn helps those answerers better recall information. S11 said that “Even though I already knew how to solve it, it had become so normalized to do those problems by then that I no longer really remembered the steps to do it.” Thus, writing an answer can “refresh the information” she already has.

Divergent thinking from multiple perspectives. One of the most interesting findings was that participants reported divergent thinking, a core critical learning skill. A majority of participants stressed that when creating answers they tended to investigate how others answer a question before and after participants post their answer, which allows the answerers to compare their answer with those created by others. S03 pointed out how he compared his solution to a math question with another user’s answer. He noted that although the answer itself was the same, he and another user employed different methods. S03 showed excitement saying “that’s a much faster way to solve that type of question.” In addition to looking at other users’ answers, participants also brought multiple perspectives when searching for additional information in order to create an answer. As S07 vocalized, “I usually just try to look it up. I go through about four websites to see how similar or how different the answers are.” Additionally, S13 reported that when he conducted a search, “I can evaluate different ways of answering questions that I didn’t know before.”

Enhancing learning through explanation. Another important finding was that an academic social Q&A

service provides opportunities for teens to enhance their learning by allowing them to explain what they know by answering a question. Several cases were identified that illustrate how participants made efforts to explain what they know in their answer. They seemed to recognize that explaining their answers also helped their own learning. As S09 indicated, “I thought of something like if I were to teach someone something, it’ll help me learn that better.” S12 also said that “by explaining to somebody, I can emphasize my learning to a whole new level,” while S08 stated that finding easier ways to explain the answer made her understand the topic better.

Research Question 2: What do teens perceive as learning benefits after they provide answers to other users in a social Q&A service?

The next part was to understand what learning benefits teens perceive after they provide answers to other users. Four themes were identified among participants’ responses.

Expanding knowledge base. Participants reported that providing answers helped them expand what they already know. It is worth noting that they seemed to be positively surprised by the fact that they learned more than what they initially expected from their experience as answerers. S01 highlighted the learning benefits she obtained upon discovering “what people are having problems with” and “what I’m supposed to be knowing.”

Improving inquisitiveness. One of the significant findings is that answering activities in a social Q&A service can motivate users to be more inquisitive about new topics. S07 noted that providing answers can give

her “studying time” because she normally becomes curious while skimming through other people’s questions or flipping through her own notes. S15 illustrated her learning benefits as “expanding your horizons,” while S14, who actively uses Brainly for about 45 hours per week as a homeschooled student, also pointed out that “It can lead to another topic, which I’m interested in, and then that can lead to another one; it’s just like a loop.”

Embracing challenging questions. There were several participants who were willing to take risks by answering questions in a wide range of topics or particularly challenging questions. S07 exemplified her cases indicating that “[for] the more challenging questions that I am determined to answer I will go back into books and stuff like that, and it definitely does help me understand it a little bit better.”

Increasing self-confidence. Some participants explained the learning benefits in terms of emotions and feelings. For example, they said that they felt a sense of accomplishment when they were able to provide useful answers to other users and when they received thank-you messages. They also reported that helping others made them feel better about themselves and more confident in their knowledge. S17 also felt confident that she can use knowledge later because “it’s embedded in my head a little more” as a result of providing an answer.

Conclusion

A recent study [2] showed that question-answering might be a more powerful social-capital-building activity than is question-asking. We found that the benefits of participating in social Q&A services exceed

simply building social capital or acquiring new knowledge. The findings indicate that the academic social Q&A services have the potential to improve teens’ critical learning. The design implication of this study is that social Q&A services may focus on building social learning analytics tools for recommending different levels of question difficulty in order to expand knowledge base and improve teens’ inquisitiveness. Future work should include studying how social Q&A services could support teens’ critical thinking skills and creativity by designing interventions to reinforce the kinds of learning experiences and benefits found in this study.

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