



SlideQA: Supporting Effective Q&A in an Offline Academic Presentation

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Abstract

We aim to design a tool that can facilitate Q&A activities in offline academic presentations. We first identify several problems associated with current offline Q&A practices. We then address these problems with SlideQA that supports real-time textual Q&A and slide reviewing online. Our preliminary evaluation results show that SlideQA greatly helped users to understand the presentation content and effectively increased the participation of Q&A activities.

Author Keywords

Academic Presentation, Online Q&A Tool, Slides

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous;

Introduction

In academics, attending a conference or seminar is a common way for researchers to share their ideas. Therefore, lively interaction between participants is essential, as it leads to effective knowledge sharing. While there has been a lot of research on presentation skills, research on stimulating Q&A session is relatively insufficient. Online Q&A sessions have increased in recent years. However, these services do not fully cover the complexity of interaction and the motivating factors that make people address their opinion offline.

Therefore, in this research, we identified problems associated with current Q&A systems, particularly in an offline academic presentation. Based on a preliminary user study, we found several major problems on the questioning and answering sides. From the perspective of the questioning side, the first problem is low participation during questioning because of the personality, which is influenced by culture. The second problem is the understandability of the content in the presentation. People usually feel anxious of exposing their intellectual level when asking easy and simple questions. This also refrains people from asking questions. The third problem highlights inefficiency in the current Q&A process. In cases where the questioner cannot remember which slide, they usually find it difficult to describe the slide pertaining to their question. Also questioners have to wait until the beginning of the Q&A session. Lastly, from the perspective of the answering side, the fourth problem is inefficiency of recording questions & feedbacks from the audience.

From the perspective of these challenges, this research focuses on interactional factors that enhance efficiency of a Q&A session in an offline academic presentation. We designed a service that leverages text-based question answering through an online community to lessen the burden that questioners usually face. Also, linking questions to a slide provides contextual cues for clear communication. Lastly, an automatically recorded question list facilitates organizing a Q&A session. We propose SlideQA to deal with these concerns. We iteratively prototyped SlideQA and conducted a pilot study (n=19). Our results showed the helpfulness of SlideQA in facilitating Q&A activities in the context of academic presentations. Furthermore, we provide several practical design implications such as minimizing

distractions, balancing online/offline interactions, and supporting session chairs.

Related Work

Researchers studied the benefits of computer-supported collaborative learning to encourage more participation in education and collaboration work. Warschauer [8] found that electronic discussion can increase participation within groups who had low participation in face-to-face discussions. Citera [1] revealed that less dominating individuals participated more in computer-communication than face-to-face in group decision making. [4,5] showed that, in online seminars and e-learning courses, participants are more social and more active to exchange information (i.e., content-related asking and answering) in synchronous methods (e.g., chat and face-to-face) than in asynchronous methods (e.g., a discussion board). However, those studies mostly focused on distance education. Our work has focused on online computer-supported methods in a real time offline lecture.

There are existing services which can support active participation in a live lecture. For example, community question answering (CQA) systems, such as Yahoo! Answers and Piazza, have been widely used to exchange information online [3,6,7]. However, these CQA systems are unsuitable for facilitating Q&A communication in an offline community. On the other hand, several services targeting offline Q&A communities have been appearing in recent years. The service named 'Q&A pro' [9] provides voting-based interaction between presenter and audience during offline presentations in real time. In this case, the presenter can ask questions to the audience and receive answers through voting. 'Sli.do' [10] and 'SYMFLOW' [11] are supporting general Q&A communication in offline seminars. The audience can leave questions during the presentation via a question board and also access the

presentation materials. However, since these systems do not consider that many presentation materials are slide-based, our work designed a novel slide-based Q&A support system to encourage effective interactions between presenter and audience in offline seminars.

Formative Study

First of all, in this research, we identified problems associated with the Q&A session for an offline academic presentation through a preliminary user study. We interviewed five Korean graduate students who have attended academic presentations. We analyzed the interview data and identified four major concerns about the Q&A session.

The first problem is the personality. Four out of five interviewees said that they were uncomfortable with the attention received from others when asking a question. This might be related to cultural issue. Freedman and Liu [2] found that Asian American students tended to ask fewer questions compared to non-Asian students. One interviewee also said, "Because I don't want to receive attention from others." (P1)

The second problem is the difficulty of understanding presentation content. The representative replies were "I was concerned about the quality of my question," (P2) and "I couldn't understand the contents." (P5) This problem is particularly serious in the case of academic presentations, because these students are anxious of their intellectual level being exposed through the questions that they ask. Therefore, this lack of understanding leads to hesitation among the audience to ask a question.

The third problem is related to a less efficient process of a Q&A session. From the perspective of a questioner, it is often difficult to remember or describe the slide their question pertains to. One participant commented, "During I am asking, it is inconvenient to describe slide that is related to my question." (P5) Other opinions related to the inefficient process are "If I have a question, I have to wait until the beginning of the Q&A session. It bothers me to concentrate on the left part of presentation." (P1), "Compared to shortage of allocated Q&A time, especially for the large-scale presentation, the selecting question is not considering the main concerns that most of audience are interested in." (P2)

The fourth problem is related to tracking questions and feedback from the audience. Most of participants considered the questions raised from the floor as a helpful source of information. The related reply that we received is "I consider question as a feedback of my presentation," (P4) and "Questions are helpful for improving my work." (P3) Thus, they usually want to record them for later review.

System Design

We designed SlideQA to address these problems, and Figure 1 illustrates our design rationales.

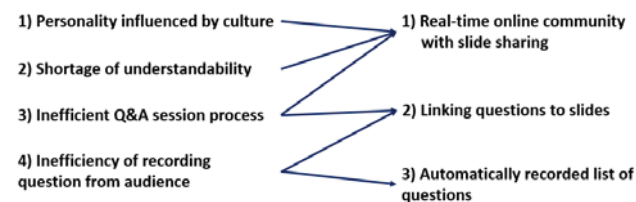


Figure 1: Problems and solutions

For a given academic talk, SlideQA offers a text-based communication space for lessening the questioners' discomfort on the attention received from others. The participants can scan the list of questions and can answer each other's questions during the presentation. Furthermore, by sharing slides, SlideQA aims to improve the audience's understanding of academic presentations. SlideQA supports slide reviewing by allowing users to freely browse slides regardless of the presenter's pace.

SlideQA allows users to post questions to a specific slide that the users are currently looking at. Users need to simply select a posting option of marking a question as a slide-specific question. Since slide-specific questioning provides contextual cues for questioning, this will facilitate easy and clear interaction during the Q&A session. This would be also helpful for the presenter to update the slides later on.

During the presentation, all questions and feedback from users are recorded. The presenter or the session chair can later access the list when having a Q&A session. This feature will help the presenter to quickly understand how many questions are posted, and what are the main concerns.

System Implementation

The system overview of SlideQA is shown in Figure 2. There are three entities: i.e., presenter, audience, and session chair. Before the presentation starts, the presenter gives a presentation file to the session chair. The session chair creates a session in SlideQA with the submitted presentation file. After session creation, the session chair distributes a session code to the audience so that they can participate in the current session. The participating audiences can browse slides and post

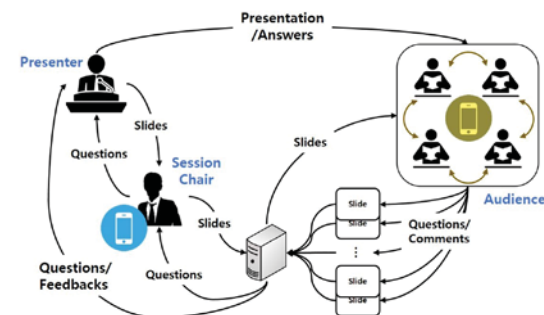


Figure 2: System overview

questions while listening to the presentation. After the presentation is over, the session chair will look over the question list and deliver the questions to the presenter on behalf of the audience. For those questions, the presenter will give the answer. Also the presenter can access the question list after the whole session is over.

Based on the requirements from our system design, we implemented a web-based service. Concerning the circumstances of an offline academic presentation, a web-based service seems appropriate from the viewpoint of the ease and convenience of use. The main interfaces of SlideQA are shown in Figure 3. In the session page, slides and question lists are displayed. Users can freely screen slides during participation in the session and leave questions in the input box at the bottom. They can choose two options: 1) anonymizing a question and 2) selecting a general question option.

Users can post a question in a text box located at the bottom of a slide. If the general question option is unchecked, a posted question is considered as a slide-specific question. SlideQA provides separate spaces for general questions and slide-specific questions. The list



Figure 3: Interface of SlideQA

of questions will be automatically updated as users browse the slides. Users can vote for others' questions or leave comments. SlideQA allows users to browse the entire list of questions and comments with the related page number.

Evaluation

We conducted a pilot study with the prototype. The study was designed to have two 20 minute presentation in a row (15 minute presentation and 5 minute Q&A). The study was conducted in a class presentation with a total of 19 participants of graduate students. There were 2 presenters, 16 audiences, and 1 session chair (gender: 11 males and 8 females; ages: 23~36). The presentation topics are each team's project outcome based on contents of a class. SlideQA was used as illustrated in our user scenario (see Figure 2). After the class was ended, we had semi-structured interviews to find the users' responses to our solutions related to the

	Total questions	Anonymous questions	General questions
Presentation 1	17	12 (70.6%)	10 (58.8%)
Presentation 2	14	7 (50%)	9 (64.3%)

Table 1: Results of the data of questions for each presentation current problems with the Q&A session in academic presentations.

Results

Table 1 shows the number of audience actions. For two 15-minute presentations, there were 17 and 14 questions, respectively. This number indicates that the audience actively participated in the Q&A session. It was surprising to find that the ratio of anonymous questions was greater than 50%. This high rate shows that anonymity may have positively influenced participation.

Most of the audience said that their level of participation increased by using our system. Their responses can be summarized as follows: pressure of asking questions was reduced with anonymity, their motivation was improved due to participation of others, and other people's questions helped them to compose related questions.

All the audience concurred that slide reviewing greatly helped them to better understand presentations. In particular, slide reviewing enabled the audience to personalize the pace of a slide show. One participant responded, "I could freely revisit the past slide to make up for the missing part" (P2), and another commented, "I could freely stay on the interesting slide to see in detail." (P9)

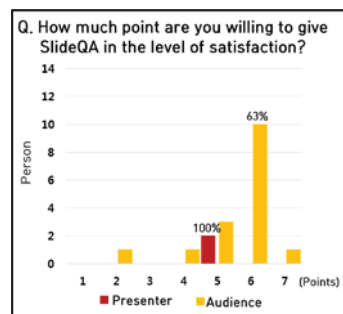


Figure 4: result of survey in terms of overall satisfaction

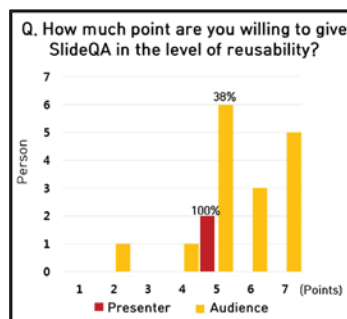


Figure 5: result of survey in terms of reusability

We found that slide specific questioning brought easier and clearer interactions. A listener commented, *"When writing a question, I could remember what the presenter said in a certain slide, and so I can deliver the question more clearly."* (P17) Presenters were able to better understand their intentions, by saying *"Sharing slides made communication easier."* (P11) Overall, our audience was generally positive about reviewing questions during the Q&A session, as one participant commented, *"Slide-specific questioning helped me to focus on the questions and think together."* (P13)

Knowing that all the questions and comments are available to review, the presenters felt less pressure on note keeping, which helped them to focus more on the Q&A session. One presenter said, *"I don't need to write down questions and feedbacks for recalling, so I can just concentrate on the Q&A session."* (P11)

We also asked about overall satisfaction and how likely they are to reuse SlideQA in a 7-point Likert scale. The results are displayed in Figure 4 and Figure 5. Audience satisfaction was 5.50 (SD=1.12) and the reuse score was 5.56 (SD=1.32). Two presenters' satisfaction scores were given as 5 and 5, respectively, and their reuse scores were given as 5 and 5, respectively.

Discussion and Future Work

Our work attempted to deal with several major challenges in offline academic presentations. We designed SlideQA that supports slide reviewing and slide specific Q&A in online. Our pilot study results showed the SlideQA could facilitate Q&A activities in offline academic presentations.

Both presenters and the audience were satisfied and are willing to use SlideQA again. However, several listeners were distracted due to real time Q&A activities. Manually tracking the current slide was another source of distraction (to ask a question to the current slide, a user has to sync slides manually. Also, offline question asking was notably decreased (when compared with other presentations that immediately preceded the experimental sessions), since question asking was shifted to online space. During the Q&A session, most of the time was used for dealing with online questions. It seemed like our audience was reluctant to ask further questions offline during the Q&A session. Thus, Q&A tools for academic presentations should carefully balance the trade-off between offline and online Q&A activities. Moreover, they should effectively deal with distractions during the offline presentations (e.g., automatically syncing the current slide).

Our prototype addressed various stakeholders. In particular, we found that the role of the session chair was critical. The session chair felt some burden of creating a session, filtering and understanding questions, clustering related questions, and managing both offline and online interactions simultaneously. Q&A tools for academic presentations should carefully address extra burdens imposed on the session chair.

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