



Figure 1: *Photoshop with Friends* is a Facebook application for Photoshop users where learners can exchange just-in-time help.

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Photoshop with Friends: A Synchronous Learning Community for Graphic Design

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Abstract

Photoshop with Friends is an online community of learners exchanging just-in-time help on graphic design tasks. The system attempts to provide an interactive, visual, context-aware, and personalized mode of learning. Developed as a Facebook application, *Photoshop with Friends* allows users to help each other in live sessions, with built-in screen sharing, recording, and voice chat support. Major design decisions are guided by two laboratory studies that identified challenges in learning graphic design skills on the web.

Keywords

graphic design; online learning; synchronous help

ACM Classification Keywords

H.5.2 [Information Interfaces and Presentation: User interfaces]: graphic design.

General Terms

Design

Introduction

An increasing number of professional and amateur designers are learning graphical design software to create websites, retouch photos, and merge images. While trial-and-error is a popular learning strategy for many [1],

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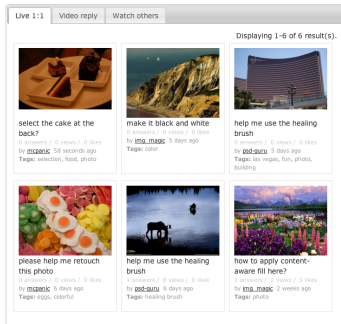


Figure 2: To better support the visual nature of graphical tasks, questions are labeled with image thumbnails rather than just words.

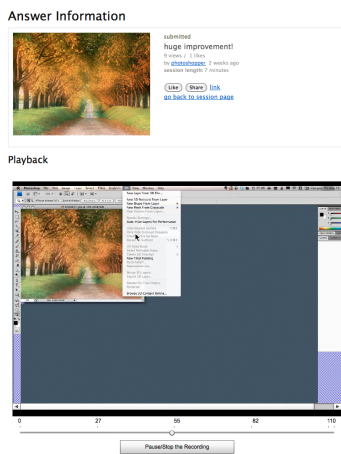


Figure 3: Session recordings allow not only asker and answerer but also others to review and learn from previous sessions.

users often combine exploration with external help [2], learning on one's own using prepared resources and learning with others. The web has expanded the amount and diversity of help options available, affecting the way users find, access, and learn from external help resources. Today's learners use the web to find information and post questions on social Q&A sites and user forums.

To better understand learning challenges in locating, understanding, and employing external help in the context of graphic design tasks, we conducted two laboratory studies. The first study investigated learning on one's own by searching the web for information. We found that participants struggled to formulate accurate queries, failed to recognize appropriate webpages, and had difficulty in transferring knowledge from the web content to the task at hand. The second study focused on learning with others by connecting with remote teachers for synchronous help. While the visual and synchronous nature of the interactions made it easier for learners to communicate their problems, we observed that these teacher-learner pairs faced difficulties in building and maintaining shared context, and in managing the cost of synchronous social interaction.

Based on the results of the studies, we extracted the following design goals for better learning environments:

- Support the visual language of design
- Encourage learning-by-doing
- Support various learning interactions
- Lower the overhead of synchronous sessions.

With these goals in mind, we built *Photoshop with Friends*, a learning platform that provides flexible and accessible synchronous learning to anyone (Figure 1). It aims to support a community of learners exchanging just-in-time help for graphic design tasks.

System Design

To support the visual language, *Photoshop with Friends* uses images as primary unit of communication. The system encourages browsing through user-posted images in a grid layout (Figure 2), with text descriptions supplementing each image. Pairs start a synchronous session upon joining a virtual room and agreeing to work together. To lower the barrier to joining in synchronous sessions, we implement two features. First, a lobby chatroom allows pairs to clarify their objective before starting a session. This prevents inaccurate descriptions from misguiding the teacher and helps learners revise their description. Second, each session is limited to 5 minutes to minimize the teacher's time commitment and make exiting sessions socially appropriate.

The system supports various learning methods: 1) learners can choose to record a session so that they or others can review the recording later and discuss (Figure 3), 2) the system can recommend relevant web tutorials and forum entries for each session to further the learning, 3) teachers can add video replies to learner questions asynchronously by self-recording their solution, and 4) spectators can join live sessions and watch other pairs work on tasks. In addition to enhancing the synchronous learning experience, our design also addresses community-building, teacher motivation, and matchmaking.

The next step is to evaluate the system with actual users to see if it achieves the stated design goals.

References

- [1] D. G. Novick, E. Elizalde, and N. Bean. Toward a more accurate view of when and how people seek help with computer applications. In *SIGDOC 2007*, pages 95–102.
- [2] J. Rieman. A field study of exploratory learning strategies. *ACM ToCHI*, 3:189–218, September 1996.