



# The Impact of Unsolicited Online Help on the Usability of Software Applications

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## ABSTRACT

*This paper will report on work in progress aimed at exploring whether unsolicited online help, within a software application, provides the end user satisfaction and ease of use. Using the theory of the field of Human Computing Interaction (HCI) and a classification of end users into different skill levels, the impact on each skill level will be investigated. Empirical data is currently being collected and will be used to illustrate that the more skilled an end user is, the less satisfaction there will be with unsolicited online help.*

## INTRODUCTION

The area of HCI is a vast “multi-disciplinary” field that incorporates many other fields of study: these include psychology, ergonomics, art, engineering, design and many others (Faulkner, 1998; Preece, 1993). “HCI is the study of relationships which exist between human users and the computer systems that they use in the performance of their various tasks” (Faulkner, 1998). Preece (1993) suggests that the aim of HCI research is to improve the usability of software applications. This is achieved when the software application can be used both easily and effectively by its intended end users (see Shackel, 1991).

Contributing to this research area a study is currently underway, that examines how unsolicited online help, specifically the MS Paper Clip, affects end users differently based on their skill level in terms of user satisfaction and usability of the software application. The following two sections of the paper describe the study's key concepts.

### Usability and User Satisfaction

Usability is the “capability of the computer in human functional terms to be used easily and effectively by a specified range of end users, given specified training and user support, to fulfill the specified range of tasks, within a specified range of environmental scenarios” (Shackel, 1991).

According to Schneiderman in a survey of 6 000 computer users, it was found that an average of 5.1 hours per week were wasted trying to use computers. Many authors have discussed the benefits of improved software usability; these include reduced user errors, increased user satisfaction and software utilization, improved productivity and user performance and reduced user frustration (Preece, 1993; Henneman, 1999). If software applications are not usable, the number of errors that users encounter increases, thus resulting in reduced user satisfaction and increased user frustration. So, usable applications are those that aim to reduce the number of possible errors that users are able to make (Norman, 1990).

User satisfaction is “a feeling of happiness or pleasure because you have achieved something or got what you wanted” (Longman English Dictionary). In order to provide for the above benefits, software designers must take into account effective design of error messages, online help and user manuals (Bolton, 2001).

### Online Help

“Help and usability are intertwined” (Kalk, 2001). “Online help is a necessity for all users, whatever their skills, knowledge, cognitive capabilities

and type of use”. It should help users learn and master the use of the software through helping them achieve the tasks they are required to perform (Capobianco & Carbonell, 2001).

Dix et al., (1998) suggest that any form of online help should fulfill certain requirements; these include, availability, accuracy and completeness, consistency, robustness, flexibility and unobtrusiveness. Many authors agree that good online help systems are those that describe the error clearly, are understandable, offer constructive guidance, take on a positive tone and are represented in a user-centered style, i.e. it should allow users to feel in control of the software application and should never blame the end user when an error occurs (Schneiderman, 1987; Gaine, 2000; Bolton, 2001; Nielsen, 2001; Seebach, 2002).

There is a difference between online help that is searched out by the user and online help that comes up on the screen when the software application detects an error that the user is about to make or is able to suggest a better way to achieve the task currently being performed. The latter referred to, as ‘unsolicited help’ is the focus of the current study. Dix describes these as adaptive help systems, which monitor the activity of an end user and construct a model of the specific end user.

All adaptive systems must have some knowledge of the system itself, in order to provide the correct and relevant assistance to the end user. One way that this can be achieved is through domain and task modelling, which allows the help system to select the appropriate advice for the end user. Overlay models of the system hold a record of known user errors and the user's actual behaviour is compared with these. “Potential errors may be matched when partially executed and help given to enable the user to avoid the error” (Dix, 1998). Unsolicited online help should be able to offer user support without being obtrusive, i.e. that the software application should be designed to avoid errors, and should solve errors without disturbing the user (Bolton, 2001).

The issue of who holds the initiative in the request for online help is an area that also needs to be addressed i.e. who is in control of the system activity? As adaptive help systems can be intrusive to the user. The majority of authors agree that there should be a mix of initiative i.e. the user should be able to question the system at any time, and the system can offer hints to the end user, this should be done in a sensitive manner and the user should be able to switch off the help if desired (Dix, 1998).

The unsolicited online help to be tested in this study is the Microsoft (MS) Office Assistant Paper Clip, affectionately known as ‘Clippy’, which offers tips on tasks that you perform as you work. For example when you write a letter, the MS Paper Clip automatically displays topics to help you create and format the letter. Research has shown that many people curse when they mention the animated MS Paper Clip. “But it is a big mistake to attribute user aggravation to the cutesy graphic. The problem is not the messenger. It is the message: MS thinks it knows what you want better than you do” (Postrel, 1998). Postrel also makes the claim that if applications display intelligence then they should do what the user requires them to do and not what they want to. She likens the changes and suggestion of the MS paper Clip to your car suddenly reconfiguring the pedals or rearranging the dashboard.

## THE STUDY

The authors' hypothesis is that the more skilled the end user is, the less satisfaction and ease of use the unsolicited online help will provide.

Classification of end users in the study is based on the combination of categories as described by Dix, Schneiderman & Prescott and Crichton. Usually the designer will have a 'typical' user in mind and will build the interface accordingly. In most cases, the user model assumes that all users are essentially the same and have the same help requirements (Dix, 1998).

Schneiderman suggests a generic separation of end users into 3 categories; novice or first time, knowledgeable-intermittent, and expert-frequent users, and suggests that different software design goals will be more or less appropriate for each user category. Prescott and Crichton et al. group end users into the following categories according to skill level; Beginner i.e. a user who has never been in front of a computer or has extremely limited experience; Intermediate i.e. a user who is comfortable with the basic operations of the computer and; Advanced i.e. a user who has above average knowledge in computer usage. These groupings will be used to evaluate the user population that will be questioned in this study.

The term "user" will refer to South Africans working in a corporate environment who have a need to use computers. A cross section of the population will be examined.

The method in which the required information is to be collected is a questionnaire, which consists of open and closed ended questions that will evaluate the experience of the different user categories together with the software usability and user satisfaction associated with the presence of unsolicited online help i.e. MS Paper Clip.

The results of this study will be available online at <http://www.isys.wits.ac.za/hci>.

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