

Sharing and Learning through Pair Writing of Scenarios

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ABSTRACT

This paper describes the results of an empirical study consisting of five sessions where scenarios are written by two writers working in unison, for instance a usability specialist and a software developer, making it possible for them to explore and reach a common understanding of requirements and design ideas. The study demonstrates that it is possible to produce scenarios through Pair Writing and it gives examples of how two writers can inspire, adjust and learn from each other through Pair Writing.

Author Keywords

Pair Writing, personas, scenarios, requirements

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

During the development of an interface, scenarios may be used to communicate and visualize the problems to be solved by the interface and possible interactions with it [6]. Scenarios can in particular be used to ensure that the different stakeholders in the development of an interface share a mutual understanding of the problems to be solved by the interface and the manner in which the user shall interact with it [4]. This requires not only that a scenario includes the necessary information, but also that it is accepted by the different stakeholders in the project. Otherwise they will disregard it.

Scenario writing is also a creative method: It can be used as a way of exploring possible situations of use and to sketch possible interactions with an interface before it is designed [6, 12]. In order to be successful such a creative process shall take into account as many as possible different aspects

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of the interaction with the interface, for instance: Possible and realistic situations of use, what earlier has been successfully implemented in similar interfaces and what it is possible to implement given technical and other constraints.

Scenarios are normally written by a single author and then presented to or reviewed by other stakeholders. This means that the feedback is so slow that there normally is not enough time to develop a scenario through a number of iterations. It also means that the author does not receive inputs before the scenario is finished. If he or she wants to incorporate any new ideas inspired by information received during the review, it will often require a rewrite of a substantial part of the scenario.

When a scenario is written by a single author, it will often primarily reflect his or her interests, and not the interests of other stakeholders. When a scenario is written by a single stakeholder, it is therefore more likely that it is rejected by other stakeholders

In this paper we will investigate how some of these problems can be solved through Pair Writing where scenarios are written by two stakeholders who offer each other feedback during the writing session, who are able to share information and to adjust the interests each of them express in the scenario.

Pair Writing

Pair Writing as described in this paper was invented and developed by the first and second authors. It was inspired by extreme programming where two programmers work collaboratively to develop software. One assumes a role as a driver who writes code, and the other assumes a role as an observer, who observes, comments and plans ahead [13].

In contrast, Elbow's [3] and Boice's [1] comments on the writing process and the results of Strom [9] indicate that fiction writing is much slower and probably of a lower quality when another person observes and comments upon it while it occurs. The difference is probably because fiction writing is much more complex and difficult than both programming and technical writing [9]. An analysis of conventional scenarios [10] indicate that the writing of scenarios can be regarded as less complex than normal

fiction writing. However, it is still possible that the observer's comments disrupt the writing process.

A common method in fiction writing, in particular when the fun of the process is considered more important than the result, is to let one author write for a short period of time after which he or she hands over the writing to the next author who then continues the writing. When this method is used, it is possible for the active author to focus on his or her writing without any fear of being disturbed or interrupted.

Pair Writing is designed as a similar game [8, 11]. The two participants negotiate the personas they will use as characters in the scenario, in particular which persona to use as main character. The personas function as an initial bridge between two participants who come from different object worlds [2], making it easier for the participants to express their assumptions, interests and knowledge.

The participants then take turns acting as writer and inquirer. The writer has a right to write five sentences without interruption and to ask questions to her partner while writing. The inquirer observes the writing and looks for unclear terms, illogical flow and non-detail descriptions, then subsequently discusses the issues with the writer when he or she has written five sentences. The session ends when the goal of a chosen main persona has been achieved or the pair cannot move on with the scenario. If it is difficult for a writer to finish his or her five sentences in ten minutes, the pair shall change the roles of writer and inquirer. If the other writer, after the role changing, cannot finish five sentences in ten minutes, the pair shall choose another persona for their scenario.

The main result of Pair Writing is one or more context scenarios of stakeholders. These scenarios can then be used as inputs for defining requirements or directly in a subsequent design and development process. If it is necessary to expand the scenarios, another cycle of Pair Writing with different partners can be conducted.

Method

Pair Writing was tested in 5 sessions with 9 different participants in Århus from April 1- 22, 2004. The sessions were part of a master thesis project [7]. The educational and professional backgrounds of the different pairs are shown in table 1. The topic for all sessions was the use of RFID (Radio Frequency Identification) technology in supermarkets. The concept of RFID is fairly simple, the technology offers a range of opportunities and problems, and we could expect that all participants had some knowledge about supermarkets and shopping.

The concept of RFID was introduced through a short verbal presentation. The workshop coordinators then briefly presented the concept of Pair Writing. Each pair was given printed personas of a shopper, a retail worker, and a wholesaler and asked to select which one they would use as main character in the scenario.

Session	First participant background	Second participant background
1	Industrial and Graphic Design	Interaction Design
2	Software and Business	User Experience Design
3	Software Design	Usability and writing
4	Engineering Design	Usability and writing
5	Software and Business	User Experience Design

Table 1: Professional backgrounds of the participants in the five sessions.

In sessions 1, 2 and 5, the participants were given only bullet-style personas: brief lists of personal characteristics. The following is an excerpt of such a persona:

Highly educated, hardworking, self-determined, open-minded and careful person.

The participants in sessions 3 and 4 were in addition given a set of narrative personas; each of these contained a short biography or life story. The following is an excerpt from such a persona:

Originally Bent came from Vejle, but he spent most of his life in Århus where he has studied, and now live and work... Being a hardworking and self-determined person who spent most of his time working and studying and gave almost no time for any leisure activities, he was able to finish his study within 2 years.

For the first two workshops we choose paper as a media because of its affordance in supporting a writing activity [5]. The experiences from these made us decide to do the Pair Writing in the last three workshops in Microsoft Word on a laptop computer that easily could be shifted between two participants. In two sessions, it was connected to a PC-projector so we easily could follow what was being written.

Results

The participants preferred different input media. The two first participants expressed that they preferred large pieces of paper, a large table and space to work around. They liked to sketch their ideas along with their discussions. In the second session, we provided large pieces of paper. One of the participants then expressed that he preferred A4 paper, because he felt more comfortable with it. In both sessions it appeared that the participants found handwriting difficult. Therefore we used a computer in the last three sessions. The writing appeared to be somewhat faster when the participants used a computer.

The participants understood the rules of Pair Writing and were willing to follow them. However, we found that the participants in the first session often had lively discussions but frequently forgot to write down what they had discussed. In contrast, we observed how in particular the

participants in the third session consistently each wrote five sentences and then had a short discussion after which the new writer continued. If the new writer had some new ideas he might start by clarifying them in writing, adding details and sometimes using them as a basis for turning the scenario in a new direction.

The participants stated different reasons for choosing a persona. Some choose a retail worker because the retail worker appeared to be the one most involved in the use of the system. Other participants chose a persona that appeared to be familiar: One chose a shopper, because he was familiar with shopping, another chose a persona that he expressed resembled his own characteristics and personality.

It appeared that the use of a persona made it much easier for the participants to discuss possible contents of the scenarios and to start the actual writing. After having read a persona, most participants immediately started to discuss the character in the persona and how he or she might act.

As earlier described we used both bullet-style and narrative personas. We observed that a narrative persona is very useful for participants who only have very little background knowledge about the context of use. The narrative persona gave them a vivid understanding, which made it easier for them to write a scenario. In one session we observed that when the participants, who had no background knowledge about the context of use, used a bullet-style persona, the character in the scenario became a stereotype. In contrast, it appeared that bullet-style personas were the most useful type for participants who knew the context of use and people in it. With a bullet-style persona they only had to spend a minimal time reading; they could then fill out the details from their own background knowledge.

We observed that the participants learned from each other and adjusted to each other during the writing. They used the writing of the scenario as a basis for discussing and exchanging information about the usage context and possible problems experienced by the users, and we observed how some of them adjusted their writing styles to each other during their session. As an example, a participant with a software design background first wrote only in abstract and general terms. When he saw that the other participant, with a writing background, added more details about the setting, and that he used dialogue, he incorporated dialogue and setting details in his following pieces. The participant with a writing background tended to write very fast and disregard accidental spelling errors. However, during the session he began to correct his spelling errors, seemingly without realizing it at first.

The following is an excerpt from an early part of their scenario (translated from Danish – the first part is written by the software designer, the second part was written right after by the participant with writing experience):

Jens feels that he is wasting his time unnecessarily because of missing systems or limitations in existing systems. It appears to Jens that it is not possible to do something so the existing system can solve these problems, or not [sic] optimal workflows. Twice a day the shelves shall be filled with goods from the stock – goods that he cannot immediately localize. It is often that he picks the wrong goods for that reason.

Jens goes through the swinging door to the stock, he turns on the light and can barely read the labels on top of the pallets. He moves two pallets and finds the pallet that the frozen chickens should be in. At least it arrived Monday, and he thinks he remembers that Danish Crown was supposed to deliver it [the chickens] right after the weekend. He drives the pallet out and removes the bands. Then he lifts the boxes on top, frozen lamb, frozen sausages and frozen minced meat. He sets the boxes on one of the other pallets, until he can look down at the bottom layer. He lifts one of the boxes. The chickens were after all not on that pallet.

We found that a moderator sometimes is necessary during the sessions. In addition to answering questions about the context of the persona, the moderator occasionally had to remind the participants that they had to shift roles, and the moderator had to remind the participants in the first and fourth sessions that they should write down their thoughts and not only discuss them.

DISCUSSION AND CONCLUSION

The results show that Pair Writing is a viable method for producing scenarios. It appears that scenarios written in Pair Writing include more different aspects than scenarios written by single authors. The results also show that Pair Writing facilitate discussions between different stakeholders, and that they learn from each other and adjust their topics and writing styles to each other during the writing.

However, it is not proven that Pair Writing will be successful under all circumstances. All our participants appeared to be well motivated and wanting the Pair Writing to be successful. In addition, the settings were done in a neutral context. When Pair Writing is done as part of a project, it is possible that there are latent conflicts between some of the participants, and that some of them have specific interests that they want to pursue through the Pair Writing.

We obtained good results using a computer as media in Pair Writing. However, it appears that different participants prefer different media for the writing. The largest advantage of using a computer as compared to paper may be that it is unnecessary to type the results after the session.

We found that writers with different backgrounds benefited most from different types of personas. Whereas writers with good knowledge about the context of use could use very brief personas, writers with limited knowledge seemed to benefit from personas with more personal and situational details. However, even the most detailed persona cannot provide as good inputs for the writing, as a participant who has a deep personal knowledge about the users and context of use. The knowledge of such a person makes it easier to avoid stereotypes and misconceptions in the scenarios. Therefore, when feasible Pair Writing shall be organized such that at least one of the participants have a deep and direct personal knowledge about the users and context of use.

Pair Writing is designed as a game where the simple rules that structure the activity provide room for each participant to negotiate and maneuver the direction of the scenario writing. However, without a moderator who is familiar with Pair Writing, successful Pair Writing requires a guideline that makes it easy for a pair to manage their own joint writing. The development of such a guideline is one of the goals of future work. Another goal is to validate and explore Pair Writing through more empirical research, in particular through the use in different settings and as part of actual development projects.

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