

Reflections on using Story-Dialogue Method in a workshop with interaction design students

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Abstract. Various narrative methods have been used in Human-Computer Interaction field (HCI), such as digital storytelling, and co-construction of stories. In this position paper, we shed light on the Story-Dialogue Method (SDM) which has been borrowed from constructivism, feminism, critical pedagogy and critical sciences, but has not yet been explored in the HCI field. We have used this method in a workshop where interaction design students took part. The paper provides here reflections, recommendations, and some advantages of using this method with interaction design students.

Keywords: Story-Dialogue Method, Interaction Design Student, Own Experiences, Reflection, Learning.

1 Introduction

Experimental methods and statistical analysis, surveys, diaries, interviews and focus groups, usability testing and other quantitative and qualitative data collection methods are well known to be recommended and used in the Human-Computer Interaction (HCI) field [1]. Ethnographic methods such as probes, e.g. cultural or domestics, have also been used as qualitative methods in HCI field [2], [3]. Each method has its advantages and disadvantages, and are used in specific contexts with specific purposes, e.g. experimental methods used in prototype and lab settings, usability testing used for testing specific prototypes or systems, diaries and probes focusing on participants' gathering data by themselves, interviews used when the researcher wants to investigate something in a dialogical way.

This paper introduces the story-dialogue method (SDM) [4] in a workshop setting, as a way of engaging interaction design students in design discourses. As a structured narrative method, based mainly on dialogue, the method provides students with reflection and learning opportunities, from their own experiences, but also from each other. Our purpose was to facilitate reflection and learning based on own experiences, at several levels, in a structured way: the students should reflect on their role as interaction designers when designing digital systems; the students should reflect on, and learn from

each other's experiences; to create individual and collective knowledge, on their own and together with the researchers.

Aim and limitation

The workshop's aim was to invite to reflection and a structured dialogue around the theme of giving feedback and interacting with digital systems. The theme of the workshop was feedback in various learning situations while using or not using various digital systems. In this contribution we reflect on the use of SDM narrative method for interaction design students, who are also the end-users of various digital systems.

Illustrating details about each of the shared students' experiences is outside of the scope of this paper.

2 Background

UDFeed project.

This workshop was part of UDfeed project. UDFeed is a pedagogical qualitative project at University of Oslo, Faculty of Mathematics and Natural Sciences, Institute of Informatics (IfI). The project is funded by Universell, the National Coordinator of Accessibility of Higher Education in Norway [5]. Amongst the project's objectives is to investigate how students perceive giving feedback in various learning situations while using or not using digital systems.

The context of the project is framed by Universal Design (UD) for learning and instruction. As of the start of 2018, the use of Information Communication Technologies (ICT's) in the Norwegian education, including Higher Education, in learning contexts should be universal design [2], [3]. UD has often been associated with accessibility for people with various disabilities: cognitive, physical or learning disabilities. However, as Lid (2013) pointed out, people may become disabled in some situations, although they are not medically diagnosed as disabled [6]. This means also that these digital systems should be accessible to as many students as possible. But the systems are not always designed accordingly, i.e. universally designed, having inclusion in mind. In the same way, students may become disabled while using digital systems when those do not work. Interaction design students are not an exception from this user group: they also encounter difficulties in interacting with other users (e.g. teachers) through a digital system, or interacting with the digital systems in themselves. The workshop provided us an opportunity to learn more about their experiences, and for them to learn from their own experiences.

Other narrative methods.

Amongst other narrative and dialogical data collection methods are digital storytelling, and co-construction of stories [7], [8].

Digital storytelling method is defined as a process where stories are told or created through the use of probes [3], e.g. photos, music, voice and video clips, and text during workshops [7]. The method is a narrative, story-based method used, for instance, in

indigenous contexts [7]. This type of narrative data collection method gives voice to those usually marginalized, as the stories are often own experiences told in first-person [7]. According to the authors, this method is complementary to other types of data gathering methods [7].

Co-construction of stories method was used in participatory design [8]. The method is based on one hand, on re-illustrating past experiences, and on the other hand, on envisioning future experiences [8]. The method comprises two phases: sensitization and elaboration [8]. In the sensitization phase, the participants bring their past experiences based on a story told by the designer [8]. In the elaboration phase, the designer introduces a future scenario of the same story, and then asks the participants to become the main character in the story [8].

These narrative methods have the following in common: co-creative process of knowledge, mutual learning, telling and sharing stories, creating room for reflections, and personal engagement through sharing own stories. Section 3 gives more details on the SDM method, whereas in Section 4, we reflect on our experience with the method, including some recommendations and advantages of the method.

3 Method

SDM is a method based on a structured dialogue where the participants develop reflections based on an own experience around a pre-set theme for a workshop [4], [9]. The method derives from constructivism, feminism, critical pedagogy [9], and from critical sciences [10]. The participants' experiences are framed here as stories [4]. The stories can be described as a self-interview mainly based on textual data [4]. These are used during workshop sessions as a catalysator for reflection and analysis [4].

Participants and context .

Five master students in interaction design took part in this workshop. Each of the participants had to prepare in advance a story, e.g. an own experience, related to a learning situation. The story had to frame giving feedback to people via digital systems, or feedback from digital systems. Examples of such stories could illustrate: breakdown situations when the feedback, e.g. communication through digital systems, does not work; or when it works fine. The participants had around two weeks to prepare their stories. They brought their stories to the workshop session where they shared those in a structured process, described next.

Process.

The method (SDM) invites to four roles: story-teller, story-listener, story-recorder and facilitator. Each of the participants in the workshop went through each of the roles, one at a time. The researcher (SD) was a facilitator, whereas the co-researcher's role (PZ) was an observant. One or several story recorders were assigned for each of the stories told. The story recorder would take detailed notes while the story was told.

The participants would, after one story was told, go through a reflection circle, where everyone would write down reflections based on the story just heard.

These would be documented through post-its, which would act as story cards (Fig. 1a). Thereafter, a structured dialogue was facilitated through four stages. First the participants, together with the facilitator, asked descriptive questions, trying to understand the underlying problem. Second, the group tried to get a collective understanding why the problem occurred, or if it was a successful story, why it was successful. Third, the group brought out the lessons learned. Fourth, the group reflected on what it could have been done differently next time based on the lessons learned. These reflections were done in group and for each of the stories, in the form of a structured dialogue (Figure 1b-e). Finally, the group has created insight cards for each of the stages, which are also considered as theory notes [9] (Fig. 1f). For each step, a color code was used.



Fig. 1. Structured dialogue questions and story cards

4 Reflections

Target audience .

We planned initially to recruit first-year bachelor students studying the mandatory common course Systems, Requirements and Consequences for all informatics programs: interaction design, programming and networking, software engineering, global infrastructures, robotics and intelligent systems, and language technologies. We invited these students during multiple lectures, but only a few showed interest in the workshop, and thought this is a good initiative. However, none committed in the end to the workshop. In retrospective, we think that the method required too much preparation time from the participants side, e.g. about two weeks for preparing the story, prior taking part in the workshop. This could be a reason why the students were not willing to take part in the workshop. Another reason could be that this type of recruitment was not appropriate for a large and diverse group of students – personal contact worked better in this case. However, these are reflections based on our own experiences, and the information has not been verified with the potential participants. Moreover, the workshop required the allocation of a half-day timeslot for participation, on a pre-settled date. This added constraints for the actual participation to the workshop. As we shown earlier, we turned instead to master students. We realized that they may see the value in taking part in a such workshop: the students would reflect on one hand, on their own experience which that they could easily relate to, and on the other hand, on their role as interaction designers, when designing digital systems. In this way, they have been able to learn the method, and possibly use it in their master theses or future research. To our surprise, one of the participants that was not intended to take part from the start in the workshop, expressed interest in the method – this being the main reason for attending the workshop. Another one asked for details about the method, after the workshop, and planned to use it in another course.

We have the following recommendations: the method could be easily used in smaller seminar groups, in other courses, at all levels, if it is integrated in the course, e.g. the story should be written as part of an assignment; the use outside of class is recommended in senior years; the method could be appropriate to be used in conference workshops where the participants write their contribution in the form of a position-paper, or another free form.

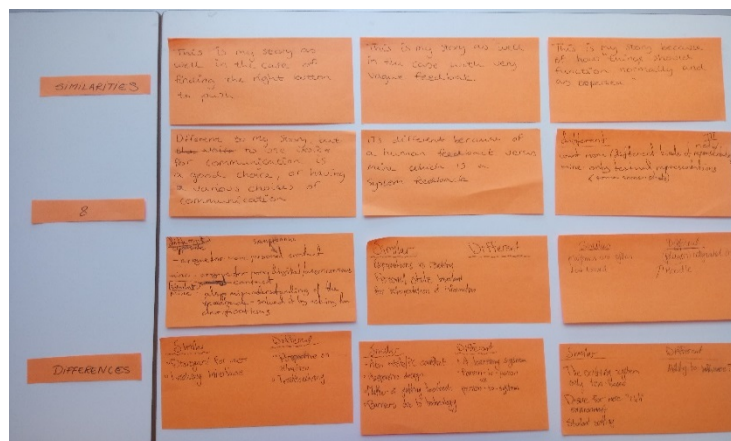
Process.

Often, many of our everyday experiences with digital systems may be left without having us taking some time reflecting on those fragmented breakdown situations when the technology we interact with does not work. In this workshop, through the SDM, the participants had the opportunity to share their stories with the others, one at a time. This created a possibility to engage and empathize with the other participants stories. The participants got, at the same time, the opportunity to see different perspectives on how others encounter their experiences. SDM facilitated learning based on own experiences. This is referred by Kolb (1984) as experiential learning [11]. The SDM process in itself can be viewed as following the experiential learning model. According to Kolb (1984),

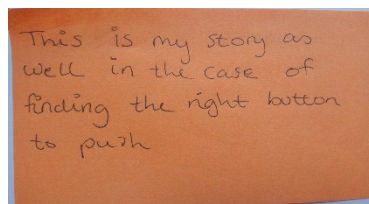
the learning occurs through transactions between: concrete experiences, reflective observations, abstract conceptualizations and active experimentation [11].

The concrete experiences here were the stories brought by the participants themselves. However, we do not give details on the shared stories here, as this is outside of the scope of this paper.

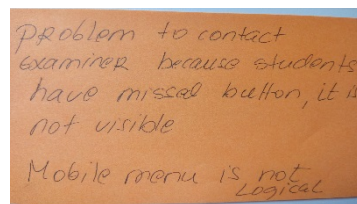
The reflective observations occurred during the interactions between participants and during the structured dialogue of the method. For instance, during the reflection circle, we asked the participants to reflect on how the story heard is also their story, and what were the differences and similarities. The story tellers would reflect on their own stories. These type of reflections are referred by Schön (1983) as reflection *on* action [12]. The story listeners and recorders would reflect individually on the story while the story was unfolding. This would be referred by Schön (1983) as reflection *in* action [12]. Figure 2a shows several of the shared reflections documented through story cards. Figure 2b and 2c shows two examples of story cards where participants can relate to another participant story, regarding its interaction with a digital system, where one cannot find the right button for submitting an assignment.



a. Example on several shared reflections during the reflection circle



c. Example 1 of reflection on another participant's story



c. Example 2 of reflection on another participant's story

Fig. 2. Story cards from the reflection circle

The abstract conceptualizations concretized into the insights cards. The insight cards, or theory notes were created in group by the participants, at the end of the structured dialogue. They represented the result of the shared stories, reflection circle, and structured dialogue. This could be seen as a group meta-reflection, where the participants together extracted the essence from the whole process. This again, in Schön's (1983) wording, would be described as reflection on action.

The active experimentation would take place outside of the workshop, where each of the students takes his/her own learnings and insights gotten during the workshop, and apply those in their professional becoming roles, as interaction designers.

Values brought by story dialogue method.

According to Fischer & Herrmann's (2013), meta-design allows users to act as designers based on principles such as: cultures of participation, empowerment, a procedural model facilitating an under-design to better design, semi-structured communication model, and facilitation of the process [13]. Although the method in itself is not a framework for meta-design, we can identify some elements that can facilitate meta-design. On one hand, the method encourages the participation of each of the students, having them going through each of the roles: story-teller, story-listener and story-recorder. This empowers each of the participants to an active participation. They are also the owners of the problems that can contribute to design, at use time (compare to design time) [13]. On the other hand, through the structured dialogue, the communication between participants is facilitated. The facilitation of the process was possible through the researchers. The authors' and participants' conclusion is that the workshop based on SDM seems to provide an opportunity for students to develop their own learning, and for researchers to learn more about students' experiences, by involving them actively in a reflection based learning process. The process of the method facilitates participation, where the students go from a "have to"- to a "want to"- culture of participation [14].

Further, SDM is different from the digital storytelling. Through digital story-telling, a lot of focus is put on creating digital probes [7] and on the "digital" representation of the story. In this case, the focus of the participants may slightly be moved from the stories, to the representation of the stories. Moreover, the digital storytelling is created during the workshop itself, compared to the SDM where the participants are required to prepare their stories in advance. In this way, SDM provides a culture of participation where the participants engage in design discourses based on stories meaningful to them [15].

Furthermore, SDM is also different from the co-construction of stories. While in co-construction of stories the researcher shares a story that the participants should relate to [8], in SDM, the participants are the main characters of the stories. Again, the participants engage in stories meaningful for them [15]. Co-construction of stories is similar to the digital storytelling method, in the sense that the participants do not need to prepare the stories in advance, but to reflect while they listened to the researcher's story. Moreover, the focus of the co-construction of stories is on future scenarios based on a fictional story, whereas in SDM, the participants are the story-tellers, and the owner of the problems.

One advantage of the SDM method over digital story-telling and co-construction of stories is that it allows room for each of the participant stories to mature, and to be reflected on, also prior the workshop. Another advantage of the method is that the focus on the mutual learning in a structured way: both participants and researchers learn from the method, rather than focusing on only what the researchers are interested to find out. Finally, as a result of following the structured process of SDM, the participants engage in co-creation of knowledge through theory notes.

Universal Design discourse.

According to Lid (2013), UD needs to be situated in different embodied perspectives, and not only be used as a standard for *inclusion* [6]. Using the SDM method for a workshop where students had to reflect on their interactions with others through the use of digital systems, or with the systems themselves, proved to be an appropriate method for this purpose. For prospective interaction designers, this method seemed to be highly relevant. First, the method gave the students the opportunity to get broader insights on the application and use of universal design, in addition to having the digital systems accessible to as many people as possible, e.g. inclusive design. Second, having the legislation that will come into force, regarding UD in HE in Norway [16], [17], the method is a way for including prospective interaction designers in discourses on reflecting on the universal designed ICT systems, design trade-offs of digital systems, and design opportunities that support the values of universal design regarding equality [6].

All in all, the method facilitated the students' reflections on their role as future interaction designers, on the way current digital systems are designed, and on how to design with inclusion in mind.

5 Summary and Further work

This paper presented SDM as a method for encouraging reflection and learning from own experiences, of the interaction design students. We started the paper by introducing various qualitative methods used in HCI. We have thereafter presented the SDM method, introduced the aim and limitations of the paper. In section 2, we have presented UDFeed project – the workshop presented in this study is part of the UDFeed project. We have also introduced two other narrative methods: digital story-telling and co-construction of stories. Section 3 described the method, including the participants and context, and the process. In section 4, we reflected on the target audience and gave recommendations on the use of the method. Thereafter we reflected on the process of the method, and the values brought by it, in comparison to the other two narrative methods, e.g. digital storytelling, and co-construction of stories. Finally, we reflected on the use of the method for engaging students in discourses on inclusion and universal design of digital systems.

Further, we would like to continue using the method in other contexts involving learning situations and use of digital systems, as this method is underexplored in HCI field. We encourage also others to engage with the method, both students and senior

researchers. We plan also to continue analyzing the data from the workshop and we will publish the final results in a future publication.

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