

Chapter 13

Tools for Students Doing Mobile Fieldwork

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ABSTRACT

Students are not always sitting at their desk when learning new things – they are also out in the world. The authors present a set of tools they developed to support groups of students who are doing field studies. Initially, the authors gave the students a Wiki for gathering field notes and their group work material. Based on observations on how they used it and collaborated, they developed additional tools to run along with the Wiki. These include a mobile application for capturing data (photo, video, audio, and text) and automatically uploading to the Wiki, and a set of Web tools which run on top of the Wiki for increasing the awareness between students, and for browsing the captured data. They describe the implementation of these tools and report on the experience from having students using them on their own equipment during the course.

INTRODUCTION

Students often work at a desk, either reading a book or listening to a lecture. But there are also many forms of activities where students are actually out in the real world. When being mobile, it is not always suitable to bring a laptop computer even if they need the capabilities that these devices offer. Instead they inhibit their freedom of movement, and can also serve as an obstacle when interacting

with other people at the same time. However, it might be that students are actually out gathering observations and experience about a phenomenon or practice, and therefore need to take notes or capture data which they have to bring back to their desktop for reflection and discussion. This poses various problems.

We report from a course teaching ethnography and design at the IT University of Göteborg, where students work in groups studying a workplace of their choice. They start by getting access to the workplace, and then spend two weeks out in the

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field. During this time they have to take notes and collect data - taking photos, recording videos or audio. The students themselves have reported that just deciding what kind of notebooks to bring into the field is hard (as it may affect how they are treated by the people they observe) (Brown, Lundin, Rost, Lymer, & Holmquist, 2007), suggesting that using a laptop computer is out of the question. At the end of the day however, they need to get what they have found into their computers to be able to share with their friends in the group to analyze the data. We were therefore interested in building tools to support the students in this endeavor.

In previous years we have experimented with having a *Wiki* – easily editable web pages - to support the students. They used the Wiki to type in their field notes, put up their work plans, and upload other material gathered in the field, such as photos and drawings. The Wiki thus served as a group repository, allowing the individuals to collect their own material as well as get access to their group's material (for more details, see (Lymer, Lundin, Brown, Rost, & Holmquist, 2007)). Having your material in one place was highly beneficial compared to having it spread out on the group members' personal computers. Users could access the material anywhere as long as they had access to a web browser, and they could link the material directly to individual Wiki pages and discuss it. Even if the Wiki supported the collaborative aspect of their work it did not support them when they were actually mobile. They still had to type in their notes when they got home, and upload any photos or videos after getting that data of their cameras. We therefore decided to build a mobile tool to easily take photos, record video and audio, and write short notes, and automatically get these into the Wiki.

When we studied the usage of the Wiki, it became apparent that the students found it very beneficial to look at each other's texts, and that they would benefit from an increased knowledge about the others' work - what in the field of

computer-supported cooperative work is known as *awareness* (Dourish & Bellotti, 1992). We therefore decided to provide an extension to the Wiki to provide this awareness, that would tell students at a glance what others had been doing, without forcing them to install any special new software.

In this paper we present three addons for Wikis; an awareness extension, a mobile application for capturing data in the field (photo, video, audio, text) and uploading the data to the Wiki, and an extension to the Wiki which let you browse through captured material on the Wiki. When capturing the data we also store where the data is gathered, using *cell IDs*. The cell ID is the ID of the current GSM base station that a mobile phone is communicating with. Thus taking for instance two photos at the same location would result in them both carrying the same cell ID and can therefore later be found together if organized by location.

RELATED WORK

ZoneTag (Ahern, Davis, Eckles, King, Naaman, Nair, et al., 2006) is an application for mobile phones that automatically uploads photos to the photosharing site Flickr (www.flickr.com). It uses cell IDs to tag the photos with location, and to suggest tags that the user might want to use, based on current location and previously used tags. If the location is not known, the user can specify the location on the *ZoneTag* web site. The location specified will propagate through the network of *ZoneTag* users so that other photos from the same location (identified by cell ID) will be named. Unlike *ZoneTag*, our intended use of cell IDs is not to simplify tagging, but rather to simplify the organization of material.

Meneses and Moreira investigated how cell IDs can be used to find a phone's location (Meneses & Moriera, 2006). Instead of just the current cell ID, their algorithm uses a set of last seen cell IDs and their time stamp. In this way they are able to

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