Comparing Classroom Note Taking across Multiplatform Devices

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ABSTRACT
Many educators have suggested that note taking can be beneficial for the students’ educational growth. Note taking is the core activity for students in a classroom and there has been a large amount of research conducted, both from industry and from academia, into facilitating the note taking process. As such, there are many available systems for taking notes. However, what has not been given as much attention is how different devices, such as Tablet PCs and PDAs, effect this task. In this paper, we study students’ current note taking behavior and the changes caused by the use of different platforms for this activity. Our goal is to provide ideas and general design guidelines for future note taking systems.

Author Keywords
Note taking, multiplatform devices, context

INTRODUCTION
More and more computing platforms are developed and coming out to our everyday life. Home appliances are also equipped with simple computers. We may argue that computers are everywhere nowadays. This multiplatform computing trend is also happening in the classroom. Increasingly, students are bringing various gadgets, like notebook computers, graphing calculators, cellular phones, and PDAs, with them to school. As more types of computing devices, with a greater variety of functionality, become available, people want these devices to take over the roles of some of the more traditional devices. They will want to take pictures with their camera phones and transfer them to electronic photo albums instead of using a 35mm camera to create glossy prints. They will want to manage their calendars from their desktop and their PDAs rather than simply using a paper version. One issue raised by this migration to electronic devices is whether the new device supports all the tasks expected by the user. It may supply a plethora of new abilities, but it may come at the cost of other used and needed functions. Another interesting issue is to consider how the change in devices effects the tasks performed.

computer can do to looking at how the user can use the device to perform some action. A broad range of analysis involving human-computer interaction (HCI) has already recognized that system design can profit from explicitly studying the context in which users work [11]. To achieve systems that are more centered on the actions of the user, we should attempt to learn from the context that they occur in [7]. We need to understand what users think they are doing and how they use and manipulate items in their environment to achieve their goals. With this viewpoint, we can see that by changing the context of the action, through the addition new devices or the removal of old ones, we fundamentally change what is happening. We need to understand what that change is.

The activity of note taking in the classroom is an interesting one. What has traditionally been a very simple endeavor, which used little technology, is being radically transformed. Now, the use of computers in a classroom has become common. PowerPoint slides and projector have replaced blackboards in many places. While still in its early stages, it is becoming more common to find students who bring notebook computers to take their notes. This may increase as hardware prices decrease and more usable note taking software becomes available. This provides opportunities to leverage this technology and enhance the potential learning of the students. Many research groups have anticipated this change to an e-classroom and have suggested suitable and efficient use of handheld devices, Tablet PCs, and desktop computers for the note taking activity [1, 4, 5, 6, 10]. These generally focus on capturing part of the context, through methods such as video or audio capture, which surrounds the activity. However, less work has been conducted to see how this move to an electronic classroom will effect the notes taken and, consequentially, the learning of the students.

Research Questions
In this paper, we investigate what users require from a note taking system. To determine what kinds of actions note taking software should support, we have surveyed students about their note taking skills. We asked about what they...