3-1-2005

Faculty Perceptions for Tablet PCs for Teaching, Research, & Service: A College of Business Perspective

Paul Schwager
schwagerp@mail.ecu.edu

John Anderson

Richard Kerns

Recommended Citation

Schwager, Paul; Anderson, John; and Kerns, Richard, "Faculty Perceptions for Tablet PCs for Teaching, Research, & Service: A College of Business Perspective " (2005). *SAIS 2005 Proceedings*. 20.
http://aisel.aisnet.org/sais2005/20

FACULTY PERCEPTIONS OF TABLETPCS FOR TEACHING, RESEARCH, & SERVICE: A COLLEGE OF BUSINESS PERSPECTIVE

Paul H. Schwager
East Carolina University
schwagerp@mail.ecu.edu

John E. Anderson
East Carolina University
andersonj@mail.ecu.edu

Richard L. Kerns
East Carolina University
kernsr@mail.ecu.edu

Abstract

This paper is the first in a series that examines the use of TabletPCs in an academic environment, specifically a College of Business. It is an exploratory study which focuses on faculty perspectives at a medium sized university and provides a starting point to explore additional issues related to TabletPCs in an academic environment. This paper presents a summary of the qualitative data obtained about key issues. These issues are addressed from a faculty perspective covering the areas of: Teaching, Research, & Service.

Introduction

"The Tablet PC represents the evolution of mobile, powerful, versatile computing for education. Windows XP Tablet PC Edition offers the power of Windows XP Professional, with the added benefit of pen and ink. With lightweight designs and built-in wireless support, Tablet PCs can go wherever you go—to class, to the library, on the go, or at your desk. Using the Tablet PC, students and educators can create, capture, and collaborate in new and unique ways." (Microsoft, 2004)

The above, ambitious quote serves as the starting point for Microsoft's web pages that address the use of TabletPCs in education. Microsoft has made a significant commitment to the development of the TabletPC as a platform and has made an extensive amount of resources available that stress the benefits of the platform in an academic environment. In addition to Microsoft, several education industry publications have also offered glowing reviews such as:

"The TabletPC is the perfect juxtaposition of the monolithic technology initiatives now dominating the eLearning landscape and the spontaneous, playful, social learning environments reminiscent of schoolyards and chalkboards."(Lomas, 2003)

Other articles have gone on to describe the TabletPC as enabling professors to: "focus more time on students' needs and less time on 'chalking and talking' (Lindsey, 2003)

Yet another stated: "In countless ways, the tablet PCs have proven themselves as an indispensable asset both inside and outside of the classroom." (Barton, 2003)

In addition, when addressing the issue of grading one said: "Electronic submissions of student assignments certainly provide many advantages for faculty members and graders." (Herrmann, 2003)

One writer, when addressing the TabletPC's fit for the academic profession commented:

"…seldom has there been a new computer introduced that seems more in tune with both the way business is conducted and the nature of the workers in a single professional community. In this case, the actors are teachers and students, true information nomads moving from one learning oasis to another, receiving multiple daily presentations, engaging in bursts of collaboration, then moving on and synthesizing their experience in periodic reports." (McCloskey, 2004)

Recently even MIT has experimented with TabletPCs. MIT has undertaken a project called iCampus with the thought of using technology as a means to enhance education (Microsoft, 2002). John Williams, Director of the Intelligent Engineering Systems Laboratory at MIT had this to say about TabletPCs:

"The Tablet PC is a 'killer' computer: powerful enough to complete the heavy number crunching, flexible enough to keep track of assignments and due dates, and compact enough to unobtrusively take it to meetings or into classrooms and lectures." (Microsoft, 2002)

To sum up MIT's experience with the TablePCs, Williams commented: "People are just going to take to the Tablet PC like water." (Microsoft, 2002)

So with all these benefits why don't all faculty members use a TabletPC? To begin answering this question it would be helpful to understand the benefits that faculty members are actually receiving from the use of TabletPCs. The faculty perspective has been an important component of previous MIS studies (Hill, 1994; Vijayaraman, 1994) and will be the central issue explored by this qualitative study.

This paper is the first in a series that explores the impact that TabletPCs are having on faculty in the College of Business. It addresses the three primary areas of the faculty member's job: teaching, research, and service.

Methodology

This study focuses on the qualitative part of the data collected specifically for this study. A quantitative analysis of additional questions will be developed at a later date. As a part of a broader survey, open ended questions were created to address the primary areas of faculty responsibilities; teaching, research and service. These open ended questions were added to a web-based survey which was administered over the summer term to allow faculty the opportunity to clearly think about their responses. A web-based methodology was chosen to encourage participation due to its ease of use as well as the availability of the technology to all participants. An e-mail was sent to solicit participation at the start of the first summer term and a reminder sent at the start of the second summer term asking for faculty participation.

The e-mails were sent to 50 College of Business faculty members who participated in the TabletPC program at a medium sized university. Thirty seven faculty members responded to the survey, yielding a response rate of 74%. Faculty from all academic departments in the College responded. Table 1 presents some basic information about the respondents:

Table 1: Description of respondents

Description	Response	N		Departments	N
Gender	Male	30		Accounting	8
	Female	5		Decision Sciences (MIS, OM, & MS)	14
	No Response	2		Finance	6
Age	20-30	0		Management	3
	31-40	14		Marketing	5
	41-50	6		No Response	1
	51-60	3			
	60+	6			
	No Response	3			

From this information it appears that the respondents are a good mix across academic departments and age groups. The respondents also represent both genders. In addition to this descriptive data, faculty were also asked about the number of years they have been teaching as well as their use of their TabletPC. Table 2 summarizes these questions.

Table 2: Years teaching and TabletPC usage

	Min	Max	Mean

Years teaching	3	31	13.54
Percentage of time used as laptop	0	100	57.5
Percentage of time used as tablet	5	100	41.47
Percentage of overall computing time on this machine	5	85	36.39
Number of months using the TabletPC	1	24	10.51

From the information in Table 2 it is evident that the respondents are for the most part, seasoned academics who have invested quite a bit of time into their TabletPCs. There is a good mix of respondents with some having used their TabletPCs for two years and others just beginning to use the device.

Presentation and Discussion

Faculty are responsible for three primary areas: Teaching, Research, and Service. Different institutions place different weights on each. In examining the data we looked for trends and common themes. The most common of which are presented in the following figures which address each area.

Teaching - In the classroom

To address the use of the TabletPC in teaching it is necessary to examine its use inside and outside of the classroom. Figure 1 presents a summary of the themes which were evident in the faculty comments about the use of TabletPCs in teaching while in the classroom. The most cited comment is the ability of the device to draw diagrams, graphs, and models. This is a feature that can not be accomplished with a TabletPC. The other top themes had to do with TabletPC specific features as well, including annotating and being able to highlight and emphasize important points during a lecture. It was evident that the Tablet can be a replacement of the chalkboard, but more importantly it extends the functionality of the chalkboard. Lectures and notes can be digitized and saved for future reference and sharing with students. One respondent summed it up nicely:

> "I use the tablet in conjunction with Power Point, Journal and Excel in my lectures. Using the pen I solve example problems, make notations, highlight key points, draw graphs and do everything I used to do using a chalkboard. But since the notes I'm writing can be saved digitally, I save them and post them on the web for my students to review later in case they missed something. It allows me to cover much more material than I could before because I can move faster without fear that students are falling behind. It also allows the students to pay more attention to what I'm saying and less to what they're writing, which I'm convinced increases their comprehension."
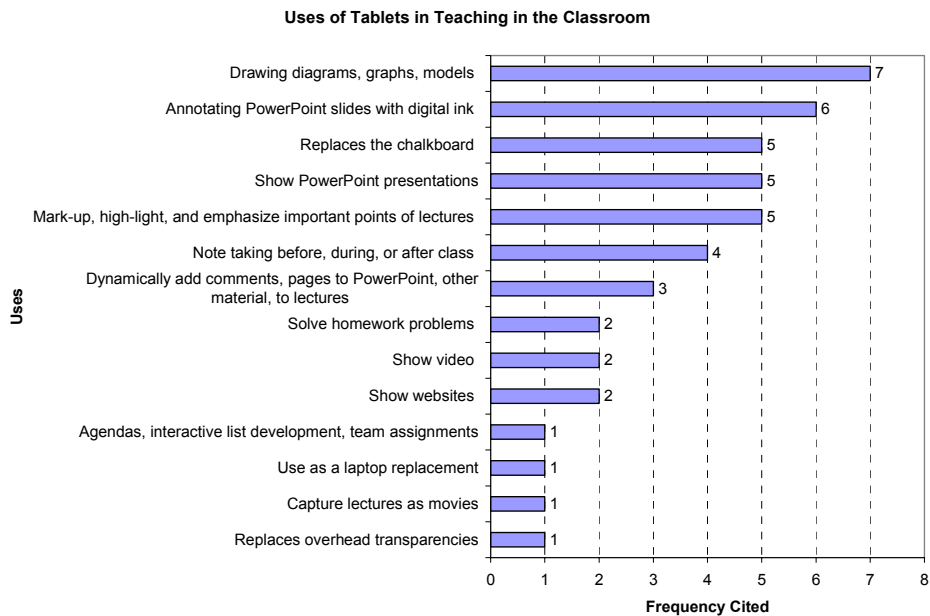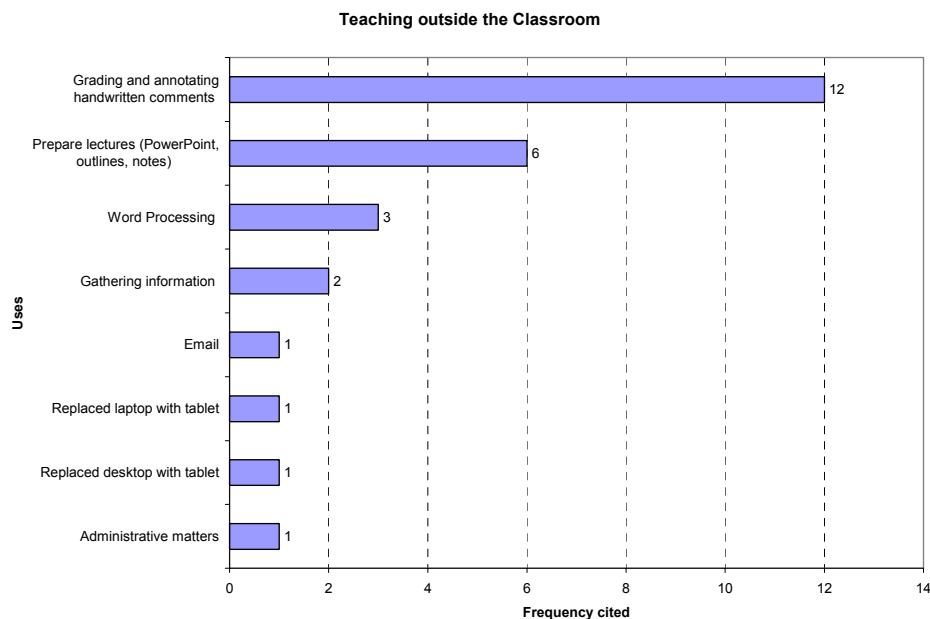
Figure 1: Use of TabletPC in the classroom

Teaching - Outside the classroom

Figure 2 presents a summary of the themes which were evident in the faculty comments about the use of TabletPCs in teaching while outside the classroom. The TabletPC appears to provide the greatest benefit in the area of grading. One professor summarized the overarching theme:

"Wonderful for grading projects electronically. Saves a lot of time and paper and correction frustration."

Figure 2: Use of TabletPC outside of the classroom

In addition some made special comments about how they are using it for distance education. One in particular seemed to summarize what many were saying

"For online courses, the tablet has proven invaluable. I write out my notes and chapter outlines using the tablet PC and post them for my students as a template to use in studying the chapters. For drawing graphs and writing equations, the tablet is vastly superior to a regular PC. I can't imagine going back to the old paradigm now. I also insert voice comments on some of the more complex topics, and the students seem to find them helpful…I grade my students exams and projects digitally using a tablet and send the graded versions back to them digitally. This works extremely well and saves a tremendous amount of time over the old method of scanning in my handwritten comments and e-mailing the scanned image or of inserting typed comments."
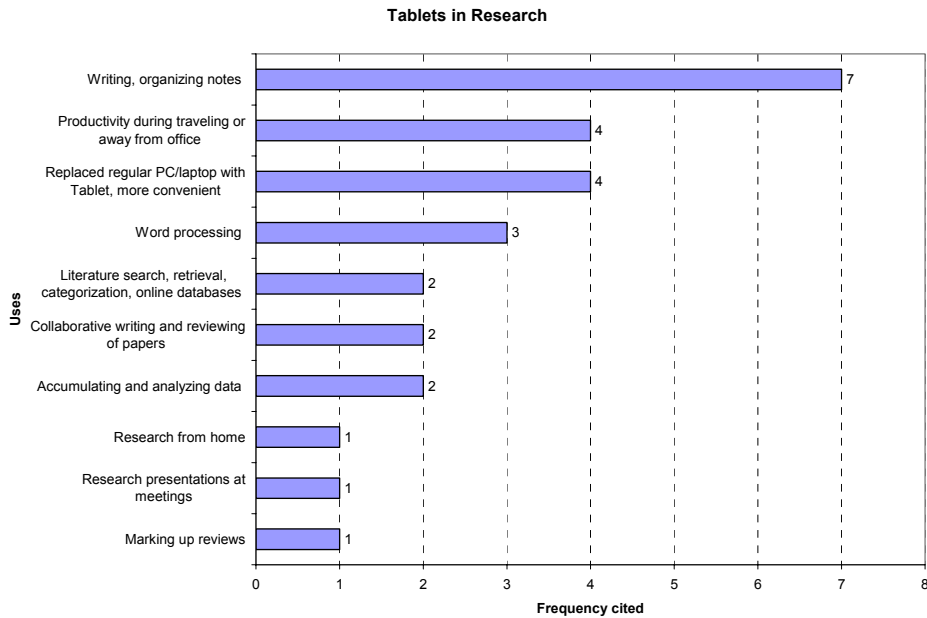

Teaching outside Classroom: Distance Education
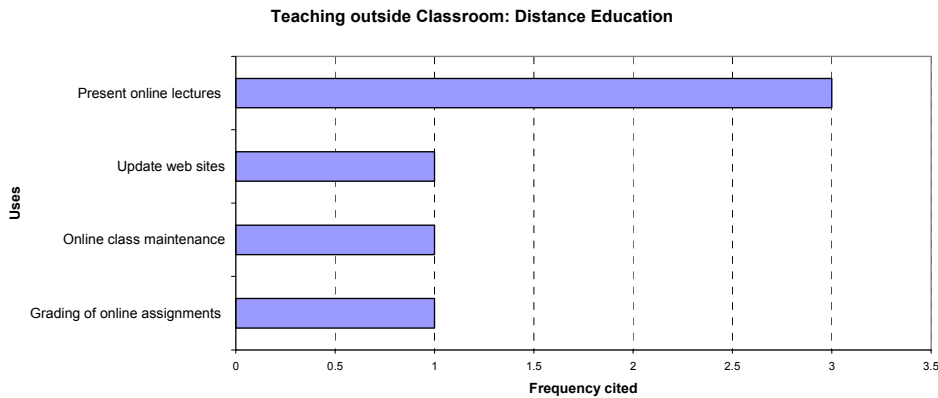
Figure 3: Use of the TabletPC in distance education

Research

Figure 4 presents a summary of the themes which were evident in the faculty comments about the use of TabletPCs in their research. It appears that the primary theme is as an organization aid due to the flexibility of the device and the advanced features. Two respondents clearly articulated these thoughts.

"When I write papers or rather when I try to put my thoughts together on any topic the journal is great, and the ability to put your thoughts into text is well nigh miraculous. At home I increasingly write to MS Word first and then cut and paste to say Outlook as I've often lost my text in other programs, like Blackboard, and email."

"Excellent for remote work on manuscripts (typing). Good for marking up reviews. Keep handy for jotting down ideas. Good for notes for manuscript revision. Can sketch figures and models"
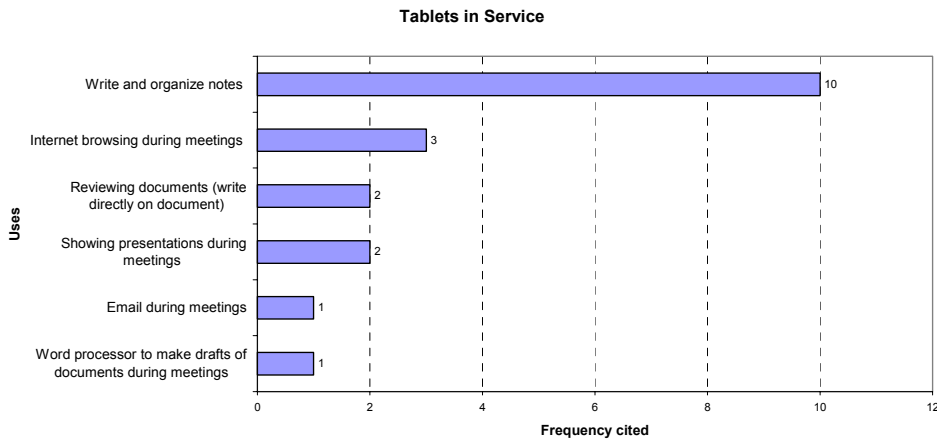
Tablets in Research

Writing, organizing notes — 7
Productivity during traveling or away from office — 4
Replaced regular PC/laptop with Tablet, more convenient — 4
Word processing — 3
Literature search, retrieval, categorization, online databases — 2
Collaborative writing and reviewing of papers — 2
Accumulating and analyzing data — 2
Research from home — 1
Research presentations at meetings — 1
Marking up reviews — 1

Uses (y-axis) / *Frequency cited* (x-axis, 0–8)

Figure 4: Use of the TabletPC in faculty research

Service

Figure 5 presents a summary of the themes which were evident in the faculty comments about the use of TabletPCs in faculty service. Again the primary theme appears to be as an organizational tool. One faculty member addressed the organization as well as access to information this way:

> "I take all my committee notes on my tablet now, and never have to worry about leaving important notes from past meetings in my office, which used to happen fairly regularly. I also have access to all my e-mail correspondence over the wireless network and this has proven invaluable in several meetings."

Tablets in Service

Write and organize notes — 10
Internet browsing during meetings — 3
Reviewing documents (write directly on document) — 2
Showing presentations during meetings — 2
Email during meetings — 1
Word processor to make drafts of documents during meetings — 1

Uses (y-axis) / *Frequency cited* (x-axis, 0–12)

Figure 5: Use of the TabletPC in faculty service

Conclusion, Limitations & Directions for Future Research

It appears at this point in time the greatest impact of the TabletPC can be seen in the teaching area of a faculty's responsibility. Drawing, annotating, replacing the chalkboard and enhancing grading were common themes.

In the areas of research and service it appears that the TabletPC serves primarily as an organizational tool to assist in note gathering and expression of thoughts.

As the first paper in a developing study there are some clear limitations. First this paper only presents a summary of the qualitative data collected. In addition the study only examines one school and one college. Future studies would benefit from addressing a wider audience to increase the generalizability of the findings.

References

Barton, C., and Collura, Kenneth. (2003). Catalyst for change. *T.H.E. Journal*.

Herrmann, N., and Popyack, Jeffrey L. (2003). Electronic grading: When the Tablet is mightier than than pen. *Syllabus.*

Hill, J. A., Scriven, Jolene, and Wunsch, Daniel. (1994). The effect of computers on faculty performance from a faculty perspective and department chair perspective. *Journal of Computer Information Systems*, 79-83.

Lindsey, S. D. (2003). On-demand lectures create an effective distributed education experience. *T.H.E. Journal*.

Lomas, C., and Rauch, Ulrich. (2003, 1 September 2003). Learning with TabletPCs: True learning tools or trendy devices. *Syllabus*.

McCloskey, P. (2004, 1 December 2002). Tablet PCs Stake Out Higher Ed. *Syllabus*.

Microsoft. (2002). *Massachusetts Institute of Technology Changes the Face of Education using Tablet PCs.*

Microsoft. (2004). *Windows XP Tablet PC Edition 2005 Resources for Education*.

Vijayaraman, B. S., Ramakrishna, H.V., and Quarstein, V.A. (1994). MIS faculty's perspective on the structure and content of information technology courses in MBA programs. *Journal of Computer Information Systems*, 72-78.