TRETC 2007
November 7th, 2007
Regional Learning Alliance Center
Cranberry Township
Room 1122
9:35AM – 10:50AM

Thank you for attending the Tablet PC/Educational Technology lecture/workshop. Here is an introduction to tablet PC and outline for our lecture/workshop.

What is a Tablet PC?

Over 40 hardware vendors now make Tablet PC's. Tablet PC was first introduced in November 2002 and adoption rates of the device have consistently increased. Today there are more than 1.5 million Tablet PC's in use, mainly in education, medicine, sales and marketing. Tablet PC is a regular Laptop PC with a digitizer that allows user to enter input using their own handwriting. You can do everything you do on a regular PC and more. Tablet PC cost vary between $800-$2000 per device based on manufacturer and configuration. Reliability of the device is the same as a regular laptop PC.

Benefits of using a Tablet PC in Education

- Using Journal Notes Writer (part of the standard tablet PC software package)
  - Use the graph paper template to draw graphs which can easy be rubbed out and modified without the need to start again.
  - Print a diagram to the background. Labels can be added in handwriting.
  - In class exams, quizzes and projects. These can be downloaded in any format, printed to the Journal and then completed in 'digital ink'. They can also be marked in a different color 'digital ink'.
  - Correcting Text. Words can easily be rubbed out and corrected in a different color 'digital ink'.
  - Handwritten notes can be taken during a lesson and then converted to typed text for presentation in a word processor at a later time.
  - Matching exercises. Link words or diagrams in two columns by drawing arrows.
- As a substitute for an interactive whiteboard.
- Annotating teaching notes and distributing them electronically.
- Instant access to the Internet via built-in wireless connectivity.
- Highly portable learning devices which can easily be transported home and extend learning out of school hours.
- To improve handwriting. The handwriting recognition is excellent and for most children if the computer does not recognize their handwriting, they improve it.
- To improve concentration. The students tend to focus in on to the tablet in an intense way. This mitigates against sharing work with their peers but does help concentration.
- To improve motivation.
- Brainstorming/Mind Mapping.

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In addition to enhanced features stated above, Tablet PC platform provides a unique opportunity to create discipline specific "magic paper" applications. For example, a student can draw a physical system on "physics magic paper", animate and see how the system behaves according to the Newtonian laws of Physics. PRAGMA Group at CMU and many others are studying the potential applications of Tablet PC in education.

Workshop Activities

Task 1 – Introduction to Windows Journal
- Go to Start→ All Programs → Windows Journal (or Journals shortcut on desktop)
- You now have a notepad open. Write notes as you like, project them on the screen if you have a projector connected to your machine. This can replace the smart board.
- If you need more space, you can move your handwritten notes around to create more space (really cool!!)
- Show notes in two page view(select from menu, page width → two pages), so students can see all notes written before
- Give your note a title(eg: Math Notes 11-07-07) and save the note. It will convert your hand writing to text and save the file with the same name(really cool!!)
- Here is another cool feature
  - Open any document – webpage, Powerpoint, pdf or word document
  - Choose File → Print → Journal Note Writer
  - This instantly converts your document into an annotatable document
  - You can highlight, write notes and draw diagrams on it
- Save all your electronic notes online for students
  - No need to look for your paper notes
  - You can instantly find your handwritten notes
  - Download cuteftp printer driver from http://www.cutepdf.com/Products/CutePDF/writer.asp
  - Convert your handwritten documents to pdf for easy access
- Play with the Journal. It is really a fun and useful Tablet PC based application.

Task 2 – Introduction to Presenter
- Presenter is an interactive classroom presentation tool developed for Tablet PC
- It can be used in a classroom or Lab where students have tablet PC's
  - There is a ubiquitous presenter program from UCSD that allows instructors to use presenter, even if students don't have tablet PC's
  - http://up.ucsd.edu/about/
- Presenter is developed by University of Washington (http://www.cs.washington.edu/education/dl/presenter/)
- Features of the system
  - Instructor presentation tool
  - Any power point lecture note can be converted to presenter slides

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- o Students can receive teacher annotations real-time
    - o Students can send their questions (anonymously) to teacher
    - o Teacher can discuss them in class
- Many schools are using Presenter
    - o Ellis School is using it in the 8th grade Geometry class
- Lets do a Presenter Activity
    - o Go to Start → All Programs → UW-CSE → Presenter 3.0
        - Or open from desktop shortcut
    - o From Connect through TCP/IP
    - o Make sure your role is student
    - o Now find the presentation and connect
    - o Instructor will now ask you to do certain activities
        - Solve an equation – show all work
        - Highlight the important words in a paragraph – use colors to emphasize your point
        - Name the body parts
    - o Send your answers to instructor
        - Click on the send/selected all ink
        - Send all ink
    - o Now instructor will discuss your answers

Task 3 – Introduction to Tablet Math Whiz
- Tablet Math Whiz is currently designed to address basic Math skills in K-6
- We are extending the Tablet Math Whiz to other types of math problems (eg: word problems, equations etc) and to allow teachers to create their own handwritten exercises. (available in Spring 08)
- Students will be able to playback the handwritten work of the teacher to understand the step-by-step process
- See Tablet Math Whiz Brochure for more information
- We will now do the following activities
    - o Introduction to the Tablet Math Web System
        - Adding a teacher
        - Adding a class
        - Adding Students
    - o Setting up a Goal Exercise for the class
        - Do 3 Multiplication problems (2-digit) in 1 minute
        - Achieve 100% proficiency
    - o Audience now open the Tablet Math Whiz
        - Look for the "Green Frog"
        - Sign in as instructed using your digital pen
        - User: **tretc01** (through tretc09)
        - DOB is 01 01 1991

- o You should see the assigned exercise
  - ▪ Let's do the assignment. Feel free to write in the scratch work area. We need to see your work (not just the answer)
  - ▪ Are you rusty with your basic math skills? Not to worry!! We wont tell anyone ☺
  - ▪ Enter your answers in the box provided and click the submit button
    - • Write answers clearly. Computer will mark messy handwriting as wrong.
    - • This will interpret your handwriting and tell you whether you are right or wrong
    - • Keep an eye on the timer and how many more problems to solve
  - ▪ If you did achieve 100% proficiency, then you can do "self-study". If not, you will have to do this again until you get it right.
- o Now we will show you how you have done
  - ▪ We will show you what teachers can check online
    - • They can look at individual students
    - • They can look at student scratch work
    - • They can understand type of help student may need and design a test (really easy to do)
    - • Teachers can find out who has completed the exercise
    - • Who has done the most number of self studies
  - ▪ Teachers can generate reports on individual students, groups or entire class.
  - ▪ Download the results as an excel sheet. Integrate the scores to your grade book.

Task 4 – Introduction to Adaptive Book/Measuring Reading Comprehension
- • Adaptive Book is a collaborative platform for reading, annotating, and sharing and analyzing marked up textbook content
- • Use the Adaptive Book software to reduce the time to grade reading assignments
  - o Ask students to read a particular chapter/ topic
  - o Ask students to markup the content
  - o Ask student to submit the content to analyze
  - o This is interactive, keep doing this until you can reach a specific reading goal
- • Open the Adaptive Book – click on the desktop icon
- • Understand the navigation and search tools
  - o Chapters, sections, pages
  - o Searching the book
- • Lets create a markup
  - o Click on new markup (second tool bar – first icon from left)
  - o Select a color/concept from the menu
  - o Drag the pen and highlight something

- o Click on the stick note icon (next to highlight tools)
- o Click on any place on the book and write a note
- o After you are done with several of these, click on the save button
  - Enter a title and author information
  - Close the markup and close the book
  - Now if you re-open the book and select open markup button (second menu bar – second from the left), you can actually see the markup you created
- o Share your markup with others
  - Click on open markup icon (second menu bar– second from the left)
  - Select the markup and export that to desktop
  - Send the markup as a email attachment (or if you have a server, then this will be done automatically)
  - Other person can just import the markup, open and comment on her own. Save it and share with others if necessary
- o How good is your markup?
  - This is a good question to ask since we do not know what students read and highlight on their books
  - Until now there was no software that can detect and "grade" the markup
  - Using sound reading comprehension strategies from English Program at CMU, we have created a "smart" program to measure the "goodness" of your mark up against an expert
  - This will be demonstrated now!!!
  - This can be used to reduce the time to grade reading assignments
  - It keeps students engaged in reading and trying to get a better reading score by interactively improving the markup
  - Great results from pilot projects – it is like a game, students like it
  - Significant correlation between reading scores and course performance
- Using Adaptive Book, you can make short notes (with pen annotations) and share them with friends
- Benefits of using Adaptive Book
  - o Now you can read, markup and share the markups
  - o You can even see how "good" your markup is
  - o Reduce the textbook costs and increase the use of a textbook
  - o Work collaboratively.
  - o Adaptive book is the first online textbook reading platform designed on the basis of community computing
    - ebooks are currently in pdf or Microsoft reader formats
    - Very little use other than printing and reading it
    - Some publishers have supplements online (fine. But limited use)

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- How to be a part of the Adaptive Book
  - You can be a part of Adaptive book project if you
    - Want to reduce the textbook cost
    - Want to create your own custom books
    - Reduce the weight of the book bag
    - Give students a flexible option to read the book
    - Want books to be more interactive and collaborative
    - Want to measure and improve the reading comprehension
    - Want to increase the ability and desire to read the book
  - Send email to Ananda Gunawardena (guna@cs.cmu.edu) or call 412-268-1559

Task 5 – Grant Programs
CMU will work with School Districts/Administrators/Teachers to implement some of the ideas discussed in the presentation. There are several grant programs available.

HP Technology for Teaching
The HP Technology for Teaching Grant Initiative is designed to support the innovative use of mobile technology in K-16 education, and to help identify K-12 public schools and two- and four-year colleges and universities that HP might support with future grants. A basic grant from HP provides 5 tablet PC's and supporting equipment to integrate technology in the classroom. HP leadership grants are designed to provide schools with more tablet PC computers to implement programs to benefit students. This is a great way to get some hardware for your school. Find more information at
http://www.hp.com/hpinfo/grants/us/programs/tech_teaching/k12_main.html

State of Pennsylvania E-Grants
The eGrants system is designed to allow licensed educational agencies and certain community-based programs within the Commonwealth online access to many of the PA Department of Education grants.
http://egrants.ed.state.pa.us/

References
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[2] Tablet Math Whiz System (http://srv01.pragma.cs.cmu.edu:1280/)
[3] Adaptive Book Project (http://www.cs.cmu.edu/~ab)
[4] How to Choose a Tablet PC
(http://www.microsoft.com/windowsxp/tabletpc/howtobuy/default.mspx)
[5] Tablet PC Reviews (http://pencomputing.com/TabletPC/)
[6] HP Technology for Teaching Grants -
http://www.hp.com/hpinfo/grants/us/programs/tech_teaching/k12_main.html
[7] Classroom Presenter - http://www.cs.washington.edu/education/dl/presenter/