1. **Matthew J. Ross**, attest that I have not violated the University of Connecticut Honor Code in preparation for or the taking of this test.

Read (posted on WebCT last week):


**Total Test = 100 points**

1. *(15 pts) Imagine you are a reviewer for the Journal of Educational Computing Research and have been asked whether the Metcalf and Tinker (2003) article is fit for publication. Give your review of the paper on the basis of*

   a) **Methods** *(are they sound scientific and convincing?)*
   b) **Conclusions** *(are they justified and reasoned based on the results?)*
   c) **Writing** *(is the article clear, concise, readable, and convincing?)*

The Metcalf and Tinker (2003) article discusses the research of the TEEMSS: Technology Enhanced Elementary and Middle School Science Project. As indicated in the article, the intended purpose of the project was “to test the feasibility and educational value of probeware and associated instructional materials in middle school science education” (Metcalf, 1). However, after reviewing the article, many questions remained unanswered, and the justifications given for integrating the technology were not supported by a clear, consistent set of variables.

The methods for conducting the study are well designed, however, the actual implementation of the study warrants discussion. The indicated goal “to develop two instructional units that use probeware that could be economically implemented…evaluate student learning of these units when they were implemented by typical teachers who had received a modest amount of inservice training…[and] demonstrating student learning of these difficult concepts with economical technologies and practical teacher professional development” (Metcalf, 1) has merit and can be accomplished in a manner that can clearly define the benefits of technology integration. However, the researcher’s did not implement the research in a manner that reduced the number of environmental variables that greatly effect the student learning.

The research plan indicates the development of curriculum based on NSES standards, as well as the standardization of the probeware, software, and a timeframe to deliver this curriculum to the students. The method of training the faculty was divided into two categories, online training and face-to-face training. The element of teacher competency and familiarity with computing technology surfaces by introducing this variable. Furthermore, does the teacher’s comfort level (or lack thereof) then translate into a gain
or loss of valuable information on the student’s behalf? An ideal research plan would have isolated (or eliminated) that variable in order to prevent doubt in the results.

Another possible environmental factor that could skew results is the way the trial groups were divided by geographic location, “Trial 1, a group of 19 teachers was introduced to the approach at a face-to-face workshop…teachers were from the United States, Australia, and Israel. For Trial 2, a second group of 11 teachers in locations around the United States received teacher professional development online” (Metcalf, 3). Ideally, each trial group would have contained a diverse group from the three locations. By limiting the online-training trial group to U.S. teachers only, one can not accurately discern the effectiveness of professional development in the online form vs. the face-to-face form. Another way of handling this problem might have been using U.S. teachers only as the trial population. However, the research could, then, only reflect the effectiveness of technology integration on U.S. classrooms.

Regarding the clarity of the written article, the authors do clearly define the scope of the project, the procedures, and the outcomes. Again, I do not believe that the data collected accurately reflects the intentions or goal of the study. The results achieved are tainted by too many extraneous variables. My final word on publishing this article – no.
2. [30 pts.] Consider that you are going to work in the new Mike's Magnet Middle School (3M School) whose theme is "Sports." Every child in the school comes to school with a palm pilot, the school also has a wireless network for students who have laptops and has fast Internet access and a large file server. The school emphasizes an integrated curriculum within the theme of the sports, so when students study the Civil War they emphasize the "the planning and strategies games of war," in Math they analyze, graph and predict sport statistics, and in Science they study health and wellness, body mechanics and exercise physiology. As a new teacher in this school you have been given a palm, a laptop computer and a desktop machine with projection to a smart board for the whole class. There are also at least 3 workstations in each classroom and a "lab" of 20 machines you can use in the school's library area.

You have been introduced to a variety of educational technologies in EPSY 343. Describe what technology(ies) you would apply and why for each of the following:

a) personal uses (Holiday Cards, letters, taxes, personal communications, etc. on your work computer)

As an ethical educator, I would not employ any technology other than my own personal computer in this scenario. Use of company (or school) owned property for personal use is truly an unethical matter.

However, many people do "borrow" company owned technology for personal use. There is some bending allowed to certain situations. For example, should I use my "work" computer to access my personal email account on a third party host (ex., Hotmail), the ethical nature of the situation is debatable. More importantly, if I were to be connecting over an ISP for which I pay the bill, and have explicit permission of my supervisor to do so, I believe the ethical nature of this situation is, again, debatable.

To summarize, the situation gives no indication of permissions granted, or location of the activity. Therefore, I would answer, that I would not partake in the above activity.

b) professional (continuing your own education, parent correspondance, administrative "paperwork," discussion with other teachers and the like)

In order to most effectively and efficiently communicate with parents, peers, co-workers, etc. I would most likely employ the use of a threaded discussion/bulletin board. Ideally, given the resources mentioned, I would develop a simple website on which I would post daily notices to the parents, informing them of activities in class. I would encourage parents to share their email address (however, not require) to facilitate communication (In both directions) about their child and his/her class work.

In addition, I would create a bulletin board section on my website or encourage my principal to invest in a threaded discussion forum (i.e. WebBoard, WebCT, or Blackboard) for faculty use. By using such a tool, which can be used to collect and archive thoughts of others, communication throughout the faculty can be encouraged and improved. Issues that can take hours to discuss, after finally arranging a meeting that
conforms to everyone's schedule, can be handled via the Discussion Board. Comments can then receive responses, and everyone gets a chance to add input.

By introducing these "new" technologies to my school, I can develop my skills as a web-author, a discussion board moderator, and my overall knowledge of various technology tools.

c) **instructional applications** - On WebCT's "Final Examples" forum, post an integrated sport-related project (can be in an actual sports activity or in Math, Reading, Science, Language Arts, History, or other domain) that uses the Palmpilots and other technologies in the school. Give a Brief description of it along with a justification of why your example represents the wise use of technology.

Pursuant Connecticut General Statutes, Section 10-221a

**Sec. 10-221a. High school graduation requirements.**
**Diplomas for veterans of World War II.**
(a) For classes graduating from 1988 to 2003, inclusive, no local or regional board of education shall permit any student to graduate from high school or grant a diploma to any student who has not satisfactorily completed a minimum of twenty credits, not fewer than four of which shall be in English, not fewer than three in mathematics, not fewer than three in social studies, not fewer than two in science, not fewer than one in the arts or vocational education and not fewer than one in physical education.
(b) Commencing with classes graduating in 2004, and for each graduating class thereafter, no local or regional board of education shall permit any student to graduate from high school or grant a diploma to any student who has not satisfactorily completed a minimum of twenty credits, not fewer than four of which shall be in English, not fewer than three in mathematics, not fewer than three in social studies, including at least a one-half credit course on civics and American government, not fewer than two in science, not fewer than one in the arts or vocational education and not fewer than one in physical education.
(c) Any student who presents a certificate from a physician stating that, in the opinion of the physician, participation in physical education is medically contraindicated because of the physical condition of such student, shall be excused from the physical education requirement, provided the credit for physical education may be fulfilled by an elective.

As stated, each student must participate and successfully complete at least one credit of physical education coursework prior to graduating high school. Therefore, the lesson I
propose would encompass the President's Physical Fitness Award program, tracking the progress of each student using the handheld technology, and graphing that progress over time using the computers provided to the school.

For example:

Objective: To learn to effectively use handheld technology to track one's personal fitness, as well as use graphing techniques to chart the progress over a three month period, culminating in the achievement of one of the five Presidential Physical Fitness Awards

Introduction: Each student will be issued a handheld device with a software package, pre-loaded, to be used to track the individual's results of various physical fitness tests (i.e. pull-ups, sit-ups, 1-mile run). The student will track his/her own progress over a three month period. During such time, the student will learn to use the graphing techniques within MS Excel to plot the progress over time. At the end of the three month period, that student will compare his/her plot to that of the national average and write a brief description of comparison and whether the student achieved the goal. That data will be submitted to the Presidential Physical Fitness Program, for review and awarding.

By implementing such a lesson plan, the instructor is accomplishing the following:
• Engaging the students by encouraging interest in
  o Personal fitness
  o Achievement of some goal (recognition, award, reward, etc.)
• Facilitating the learning of handheld devices and their use for tracking data
• Facilitating the learning of a simple graphing/spreadsheet program and making necessary calculations (math skills)
  o Averages
  o Percentiles
  o Basic statistics
  o Interpreting Graphs/Charts (in written form as well)
• Meeting a requirement of the C.G.S.

The students, through the application (hands-on use) of the technology are more likely to be engaged and might retain the knowledge and experience of the exercise.

d) Post a comment about (reply to) one of your fellow classmate's examples that expands or elaborates on their justification. That is, do not address the details of the classroom activity per se, but rather either refute their claim that it is a wise use or support it through further evidence. Apply information from the class readings and be sure to use citations when appropriate.

Please see Discussion Board on WebCT - (reply to Tom's Sports Technology Lesson)
3. [15 pts.] One day you are minding your own business having coffee in the faculty lounge at 3M School when you overhear a conversation between two other faculty members. The woman, apparently a math teacher from what she has said, insists that the State’s funding for Blueribbon Schools in general and the $150K spent to wire the 3M school for wireless technology will completely change the way teachers teach. The gentleman, apparently the school’s English teacher (poetry, literature and writing), is unconvinced. He contends, “It’s just another cable TV fiasco and the datajacks that are costing so much to install do not really change a thing in terms of student achievement,” He says it’s all about books, reading and writing. If teachers can accomplish that, it will be the better schools we all want. Slowly they turn and look at you. “ Didn’t you take a Masters level course in Educational Technology at our flagship public University and top-50 ranked School of Education?” “What do you think?” Tell me briefly how you might respond, using the information and experiences you have gained in the course and particularly think about multimedia literacy with the palms and laptops in this context.

I would start by proving both individuals wrong. Wireless technology and infrastructure can not ‘change the way teachers teach.” There are several key requirements to a successful integration of the wireless technology. “Based on the research literature, the six conditions that must be met are these: sufficient access to technology; adequate teacher preparation; effective curriculum; relevant assessment; supportive school/district administration; and supportive family/community” (Norris, 2003, para. 2). I believe the foundation of an effective integration is the strong buy-in and training of the faculty prior to integration into the school. The student population is coming to school more prepared than ever with regard to technology. Should your faculty not be comfortable with the technology, or worse, feel threatened by the fact that their students are coming in knowing more about the technology, the integration will be a “bust”.

In response to the English teacher’s concerns, “Ample empirical data from the past 25 years suggest that when certain conditions are met, computing technology has a positive impact on learning and teaching in the primary and secondary grades” (Norris, 2003, para. 1). By touching upon all six conditions, the integration can be very effective. “In fact, we see a range of impacts—increased time on task, higher test scores, lower cost and increased motivation” (Norris, 2003, para. 2)

Another important condition that must be met is the availability of the technology to all students.

Even though the classes had access to an Internet lab with 25 workstations, it could only be scheduled one day a week. This meant that much of the work had to be completed at home. The students who did not have a computer and/or Internet access at home were at a definite disadvantage; however, many of them came to school early or stayed late to finish their projects. A shortage of equipment in the classroom made it difficult to keep students on task. (Rice, 2001, Benefits, para. 8)
The lack of resources weakens the motivation of the student to pursue further inquiry. It also enhances the ever-looming "digital divide" by further separating the "have" and "have-not". The student that has access to a computer at home might be inclined to pursue further inquiry and build upon the classroom knowledge, while the student without such luxury must rely on classroom training provided. By providing each student with his/her own unit to take home, etc. the school chips away at the "divide"

References:


4. [15 pts.] According to Willis Hawley (Ed.) 2002, the Keys to effective schools include:

1. a shared understanding of school goals,
2. open communication and collaboration,
3. a consistent and coherent program of assessment for decision-making,
4. quality professional development and learning,
5. adequate resources, and
6. innovative learner-centered pedagogy (curriculum and instruction).

Consider all that you have read and researched as part of EPSY 343 such as the Indiana teacher videos (ILF), the treasure hunt technologies, and the research reports discussed on WebCT. How could technology be used to support each of these "keys" to effective schools at 3M? -- for example, How could technology enhance open communication and collaboration among the teachers at 3M?

1. Shared understanding of school goals

The school should identify a shared vision of technology and the technology initiative

In doing so, the initial discussions can be carried out using a discussion board (i.e. WebCT, WebBoard)

Drafts of the "Shared Vision" can be circulated using email, or posted to a central file server for download and modification.

The final "Shared Vision" can then be posted to a webpage, linked from the school's homepage

2. Open communication and collaboration

Effective communication and collaboration can be enhanced by the use of discussion boards, email, and instant messaging (IM).

Discussion boards provide an archived location for discussions, and a good reference point for anonymous communication

Email is an effective means on one-to-one communication and can also be used for parent-teacher communication

IM can be used for a variety of implementations in the school, including attendance, notices, and short communications. As discussed in class, I don’t believe it is an effective means of communication for emergencies.

3. A consistent and coherent program of assessment for decision-making

By using the handheld PDAs and the laptops, the teachers (and school at-large) can collect and assess the students’ work.
The fileserver allows for long term storage of the large amounts of data, as well as sharing capabilities among faculty.

4. Quality professional development and learning

By simply providing the faculty with new technology, one is promoting professional development. However, the necessity for structured professional development is still present.

Faculty can attend web-based seminars (web-inars) and partake in online tutorials.

The ability to keep one's schedule on the PDA also enhances one's organizational skills.

Again, I see professional development as the foundation for a successful integration program.

5. Adequate resources

Without equal and fair access for all students, the integration is a failure. The idea behind the integration of technology is to raise the bar for all students. To provide resources for only a few, would greatly hinder the learning and achievement of the "have-not" students. In some (if not most) cases, students complete assignments as homework. What are the ramifications, then?

6. Innovative learner-centered pedagogy (curriculum and instruction).

By introducing the new technologies to the students (and for that matter the faculty), a sense of engagement can be fostered. The faculty could incorporate the technology in the lesson plans that they teach, enhancing their current technology skills in the development of new skills. In turn, those lessons engage the students, who have hands-on access to the new technology to promote further inquiry and investigation. Again, we are using technology as a catalyst to spark the student's interests in new and exciting educational opportunities. Furthermore, the student with his/her own laptop/PDA has a sense of ownership when relating to an assignment or project.
5. [15 pts.] Your first day at 3M your principal comes to you and says that tomorrow night is Parents Night and she must talk to all the parents in the auditorium to convince them to support the use of technology in the school. But she wants to be sure she has anticipated the parents’ questions. Some parents have raised ethical concerns about kids using computers one-on-one and not getting any social skills. The teacher asks if there are any other concerns these parents might raise. What would you advise her to be prepared to answer?

I would advise this principal to be prepared to answer questions relating to the following:

- Security and Privacy
- Social Development and Communication
- Added benefit to the curriculum
- Added benefit to the student

With respect to security, the parents are going to want to be sure that the students will not be exposed to inappropriate materials. These materials would include: pornography, adult-themed sites, un-monitored chat rooms, etc. Parents would more than likely want to be sure that any communications are kept within the classroom or school bounds. A parent would more than likely not want a child talking to a stranger over an internet link. Student's files and records would also need privacy protection.

With regards to the one-to-one communication and its ethical ramifications, I would advise the principal to emphasis the benefit and increased social interaction the technology can offer. Students can now communicate; not only with classmates, but with students across the country and world (again, security plays a big role in this issue).

Regarding the added benefit to the curriculum and also the student, the faculty can broaden the scope of the student's academics by incorporating various technology innovations into the curriculum. By exposing the student to the new technologies, the teacher might spark an interest in further exploration and learning. I use myself as an example. My interest in computers stems from the use of SchoolNet in 5th grade. My teacher handed the computer to a classmate and myself and asked us to "set it up". We played around with it until it worked and my interest in computers grew from that point.
6. Personal Goals. [10 pts.] Rate yourself on a 1 to 10 scale regarding the achievement of your personal goals, as given in the first week of class. Describe at least three (3) new specific goals you would set at this time for your continued learning about educational technology and the resources (technology, people, texts, courses, online help, etc.) you would use to accomplish them.

Goals:

1. Determine a file sharing solution for all NSOE users (including Mac users).
   (9 out of 10)

The following items pertain to my parents surprise 25th anniversary party. I plan to put together a slide show presentation of “The Last 25 Years”. I will also have still cameras and video cameras at the party. I would like to compile all the images and video after the party to make a nice DVD keepsake for my parents.

2. Record a video using a digital camera, edit the video, and compile as a movie presentation.
   (6 out of 10)

3. Create a slide show presentation from still images.
   (10 out of 10)

4. Burn the slide show and movie to a DVD to be played on my DVD player.
   (9 out of 10)

My 2 sisters and I are in Storrs/Mansfield, while my parents live in Bristol (45 minutes away – and most importantly a toll call). I don’t have cell phone service at my apartment, so I rely on alternative means for communication. My parents are consistently carrying on conversations with my sisters and I at the same time. I would like to show them how to incorporate those multiple conversations in to one.

5. Teach my parents how to start a multi-person conversation using AOL IM.
   (7 out of 10)

New Goals

1. I would like to continue my personal education on how to effectively teach others. I originally set out to develop a workshop for the faculty, however, decided against the idea (and also ran short of time to do so). I would like to pursue that goal in the future, actively engaging faculty and staff in a professional development workshop related to new technology.

2. I would also like to improve upon my web authoring creativity and ability. I find myself “stuck” in a particular pattern of creativity when authoring web pages
(personal or work-related). I would like to branch out into new technologies like Flash, Fireworks, and other multimedia.

3. The most important (somewhat non-technical) goal I have for myself is to become more active in reading the articles and latest studies related to educational technology or technology in general. I continuously find myself losing ground on current issues, and also “clueless” in intelligent discussions related to “this latest research” or “that latest study”.