In the Study Room of Students

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There was a time when my pride as a pure mathematician prevented me from opening myself up to technology. One day, when the internet bubble was bubbling, it dawned to me that there is a lot of opportunities to be grabbed from this new media.

I realized that I have to do some catching up. My strategy was simple:

- If there is an opportunity to learn a particular technology, I will do it.
- If there is a technology that will be helpful in my job / teaching, then I will figure out a way to learn it.

As much humble as I am regarding my political and leadership skills, I do have a mission and a vision. We can bring undergraduate instruction online to the study room of each student.

In Spring 99, for the first time, I posted complete lecture notes online for the Discrete Mathematics (Math 106).

How would I Teach?

My Elementary Statistics course (Math 365) and the Topics of Mathematics course (Math 105) have 3 components:

a. Provide complete lecture notes.
b. Provide multimedia interactive online illustrations and problem solutions.
c. An online homework system is used. The system provides instant grading and feedback and also has multiple submission option until the due date.

Student's Reaction:

a. Online Evaluation from Math 365 students.
b. Online Evaluation from Math 105 students.
c. Summary of survey data:

Unless Obvious, Maximum possible is 10									
	Course : Semester	Math 365 : Summer 00		Math 105 : Fall 00		Math 365 : Fall 01		Math 105 : Spring 02	
	The Question	mean	st. Dev.	mean	st. Dev	mean	st. Dev	mean	st. Dev
1	Student's Satisfaction Level	7.24	2.47	8.14	1.70	8.34	1.98	8.39	2.07
2	Student's Comfort Level	7.43	2.13	7.96	2.00	8.20	2.20	8.39	2.06
3	Student's Preference to Online Homework	7.55	2.22	9.18	1.32	8.44	2.28	8.47	2.00
4	Will You Receive a Better Grade?	**17 YES** out of 21		**44 YES** out of 49		**43 YES** out of 50		**296 YES** out of 342	
5	Did Your Confidence Level in Math Improved?	6.62	2.75	7.61	2.44	7.34	2.68	7.88	2.43
6	Spent More Time On Homework?	3.98	1.89	4.43	2.64	4.00	2.65	4.39	2.72
7	Spent More Time for the Course?	4.52	2.06	3.88	2.02	3.8	2.28	3.77	2.24

List of Courses

- Math 116: Calculus II (Spring 03)
- Math 365: Elementary Statistics (Spring 03)
- Math 791: Modern Algebra I (Fall 02)
- Math 105:Topics in Mathematics (Spring 02)
- Math 106 : Discrete Mathematics (Spring 99)

Online Support

- Online Course Manager
- List of Flash Animations

Online Evaluation

- Online Evaluation from Math 365 students.
- Online Evaluation from Math 105 students.

Funding

- NSF CCLI program.

8	Recommend Online Homework as Standard Feature?	6.62	2.84	8.49	2.36	7.78	2.51	7.99	2.40
9	Did You Have More Fun?	6.95	2.46	8.02	2.24	7.6	2.51	8.29	2.25
10	Is Online Homework a Good Teaching/learning Tool?	7.10	2.43	8.43	1.67	8.4	1.92	8.26	2.12
11	Overall Rating regarding Online homework?	7.33	2.46	8.61	1.43	8.42	2.12	8.53	2.17

Funding and Research

I had some success with internal funding but none with external funding. We (with Barbara Watkins) wrote a proposal last year. It should be possible to win external funding with the kind of work I am doing. A successful funding proposal may require collaboration across various desciplines. It will be nice if some of you would look at the NSF site on CCLI program.

Butterfly Graduates: Congratulations