

Development, implementation and pilot evaluation of a collaborative model to teach health

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Rationale

- Health education and promotion curriculum planners should consider innovative ways to enhance the learning about health by using technology in systematic and creative ways.
- Web Based Instruction must be designed to accommodate individual learning styles.
- Instructors have to select from a large variety of available technologies that will directly contribute to enhance learning.

Theoretical Background



Ritchie and Hoffman (1997):

well-designed courses

- motivate the learner
- specify what is to be learned
- prompt the learner to recall
- apply previous knowledge
- provide new information
- offer guidance and feedback
- test comprehension
- supply enrichment or remediation

Theoretical Background



Constructivist theory (Staver, 1998)

- learners should be viewed as cognitive subjects engaged in the process of active knowledge construction
- emphasize students' prior knowledge and focus on challenging existing misconceptions they may have that are at odds with accepted scientific views.



Purpose of Study

- **to evaluate the impact of technology integration in redesigning three health courses for graduate students majoring in community health.**
 - **Obesity and related disorders HED 583**
 - **Pathophysiology of disease HED 4/570**
 - **Pathophysiology of diabetes HED 4/579**



Instructional Tools

- **WebCT**

- On-line syllabus
- Reference links
- Power Point class/lecture notes
- asynchronous on-line discussions mediated by an on-line facilitator

- **Libraries' Electronic Reserve (e-reserve)**

http://scholar.csuohio.edu/screens/m_course.html

- **multimedia resources**

- 3-D graphics, animation, videos (inside-organ journey)

Questionnaire

- Section 1 - Information about the population being surveyed
- Section 2 - Attitudes Toward the Use of Technology
- Section 3 - Self-Efficacy Toward Use of Technology
- Section 4 - Technology Use
- Section 5 - Barriers to Using Technology
- Section 6 - Qualitative comments on the experiences of respondents with respect to the use of nontraditional teaching and learning methods



Perspectives from Students

1. ***“The process actively engaged us; we were able to verify and apply new concepts on our own and that definitely enhanced our learning experience...”***
2. ***“I had the opportunity to work on my own pace, so I could really evolve as the course progressed...”***
3. ***“The fact that lecture notes were available at any time and place made a tremendous difference in my learning...”***
4. ***“I was able to communicate so much better with my classmates and therefore prepare better for the midterm...”***



Perspectives from Instructor

- *Material for class can be easily updated and made available instantly to students*
- *Web based instruction can create meaningful learning environments*
- *Opportunity to monitor students' learning*
- *Students can access other web resources, including video clips*
- *Learning experience is enhanced by access to vivid, rich sources of information*
- *Can be challenging and time-consuming*

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Course Content and Related Materials




Syllabus



Calendar



Content Module



Diabetes Journals

Internet

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Dia Care -- Table of Contents (January 2004, 27 [90001]) - Microsoft Internet Explorer

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Diabetes Care

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- Insulin 2 PowerPoint (File: INSULIN2.ppt)
- Type 1 PowerPoint (File: TYPE1.ppt)
- Obesity PowerPoint (File: obesity.ppt)

Actions
☛ indicates a selection is required from the main frame.

☛ **Use Content Module Wizard**

Options: Content Module

Update student view
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Leading Causes of Death in the United States by Age (Years)

Table 1.2
Leading Causes of Death in the United States by Age (Years)

Rank	All Ages	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+
1.	Diseases of heart 725,192	Unintentional injuries 1,896	Unintentional injuries 1,459	Unintentional injuries 1,552	Unintentional injuries 15,656	Unintentional injuries 11,890	Malignant neoplasms 16,752	Malignant neoplasms 46,691	Malignant neoplasms 89,047	Diseases of heart 602,205
2.	Malignant neoplasms 548,638	Congenital anomalies 549	Malignant neoplasms 509	Malignant neoplasms 503	Homicide and legal intervention 4,998	Suicide 5,106	Unintentional injuries 15,231	Diseases of heart 34,894	Diseases of heart 64,167	Malignant neoplasms 390,122
3.	cerebrovascular diseases 162,566	Malignant neoplasms 418	Congenital anomalies 237	Homicide and legal intervention 248	Suicide 3,901	Homicide 4,231	Diseases of heart 15,660	Unintentional injuries 11,659	Chronic lower respiratory 11,297	Cerebrovascular diseases 148,599
4.	Chronic lower respiratory diseases 124,181	Homicide and legal intervention 376	Homicide and legal intervention 306	Suicide 242	Malignant neoplasms 1,724	Malignant neoplasms 4,005	Suicide 6,886	Chronic liver disease cirrhosis 6,368	Cerebrovascular diseases 6,652	Chronic lower respiratory diseases 108,112
5.	Unintentional injuries 61,980	Diseases of heart 185	Diseases of heart 116	Congenital anomalies 221	Diseases of heart 1,069	Diseases of heart 3,066	Human immunodeficiency virus infection 6,232	Cerebrovascular diseases 5,543	Diabetes mellitus 9,097	Pneumonia and influenza 57,882
6.	Diabetes mellitus 60,339	Pneumonia and influenza 150	In situ and benign neoplasms 84	Diseases of heart 161	Congenital anomalies 454	Human immunodeficiency virus infection 2,729	Chronic liver diseases and cirrhosis 3,802	Suicide 5,081	Unintentional injuries 2,205	Diabetes mellitus 51,843

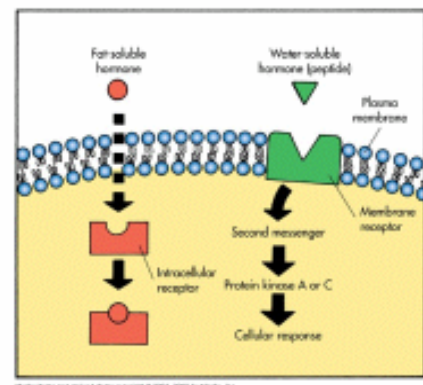
Source: "10 Leading Causes of Death, United States, 2001, All Races, Both Sexes," National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, Data from National Center for Health Statistics Vital Statistics System (see http://www.cdc.gov/ncepc/pub-ns/research_agenda/chart.htm).

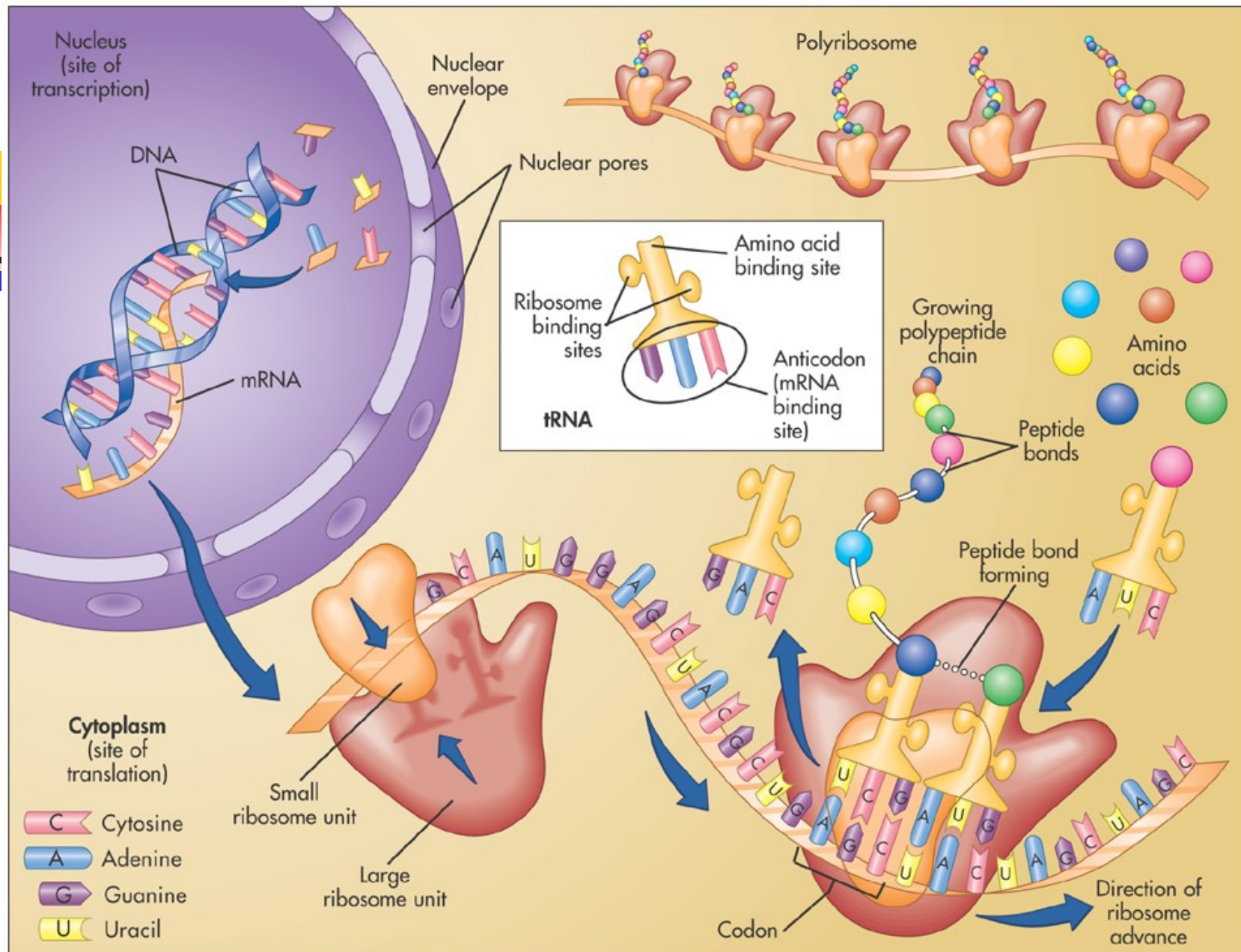
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From Thibodeau GA, Patton KT: *Anatomy & physiology*, ed 5, 2003, St Louis, Mosby.

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Protein synthesis.

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Mail



Discussions

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Compose message Search Message settings

You have 4 new messages in your Inbox.

Folder	Unread	Total
<input type="radio"/> Inbox	4	8
<input type="radio"/> Outbox	0	35
<input type="radio"/> Draft	0	0
All	4	43

Actions
⊞ indicates a selection is required from the main frame.

Options: Folders

Create folder

⊞ Rename folder: Go

⊞ Delete folder

Options: Messages

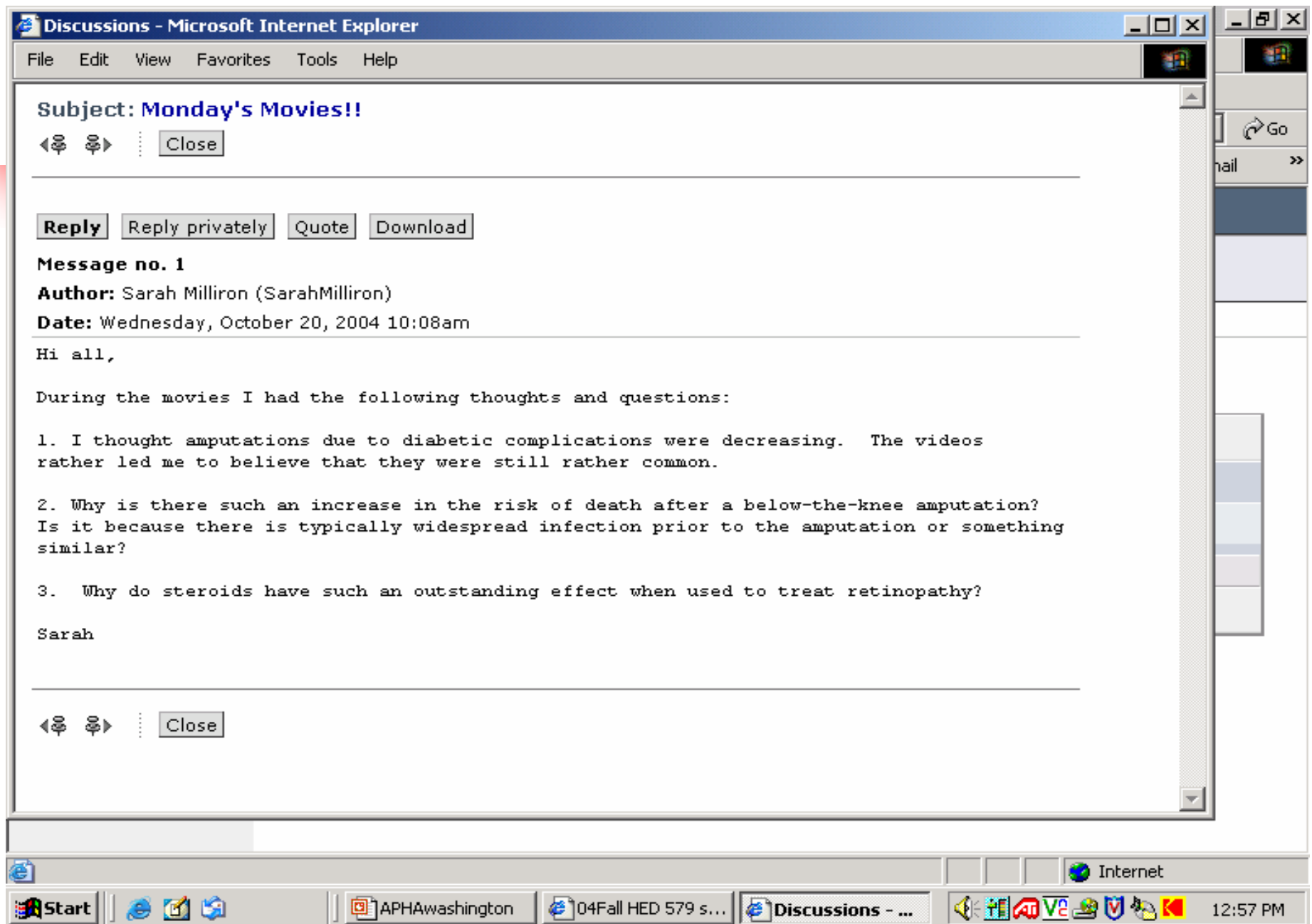
Delete all mail messages from the selected folder.

⊞ Delete messages

Delete all mail messages from all of my folders.

Delete all messages

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WebCT Chat

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Note: Conversations in the following rooms will be recorded:
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Applet started Internet

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*----- bawemi--sichinga--(Sichinga) left 0510_DHED_N579_S001_Room2. Friday, October 1, 2004 12:06pm
*----- bawemi--sichinga--(Sichinga) left 0510_DHED_N579_S001_Room2. Friday, October 1, 2004 12:06pm
*****
Session in 0510_DHED_N579_S001_Room2 ended. (all participants have left).
Friday, October 1, 2004 12:06pm
*****
*^-----
New session has begun in 0510_DHED_N579_S001_Room2.
Friday, October 1, 2004 12:54pm
*^-----
*+----- demin--wen--(deminwen) entered 0510_DHED_N579_S001_Room2. Friday, October 1, 2004 12:54pm
*+----- demin--wen--(deminwen) entered 0510_DHED_N579_S001_Room2. Friday, October 1, 2004 12:54pm
*+----- Amit--Aurora--(2415482) entered 0510_DHED_N579_S001_Room2. Friday, October 1, 2004 12:54pm
Amit Aurora--(2415482)>>hello just checking to see if it works

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Done Internet

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My Grades
My Grades allows students to see information that is released via **Manage Students**, including WebCT Quiz and Assignment results, and midterm and final grades. Note: The data presented on this page is for demonstration purposes only. It shows an example of what a student might see in My Grades. This page is the same in both View and Designer Options.

Lily Green (lgreen)		
Quiz1 (Out of 40)	20.0	View statistics
Moby Dick essay	---	---
Midterm Grade	---	---
Memo	Some words...	View text

http://webct.csuohio.edu:8900/# Internet

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Suggestions and Conclusions

- 3D graphics motivated students to learn the content than the text-only information.
- virtual reality is a feasible alternative instructional tool for teaching concepts, especially concepts for which visualization is required
- Web - based instruction can create meaningful learning environments by engaging students in active application of knowledge, concepts and giving them an opportunity to control pace and monitor learning
- enhance students' health science learning, assist health education, and possibly affect their health behaviors.